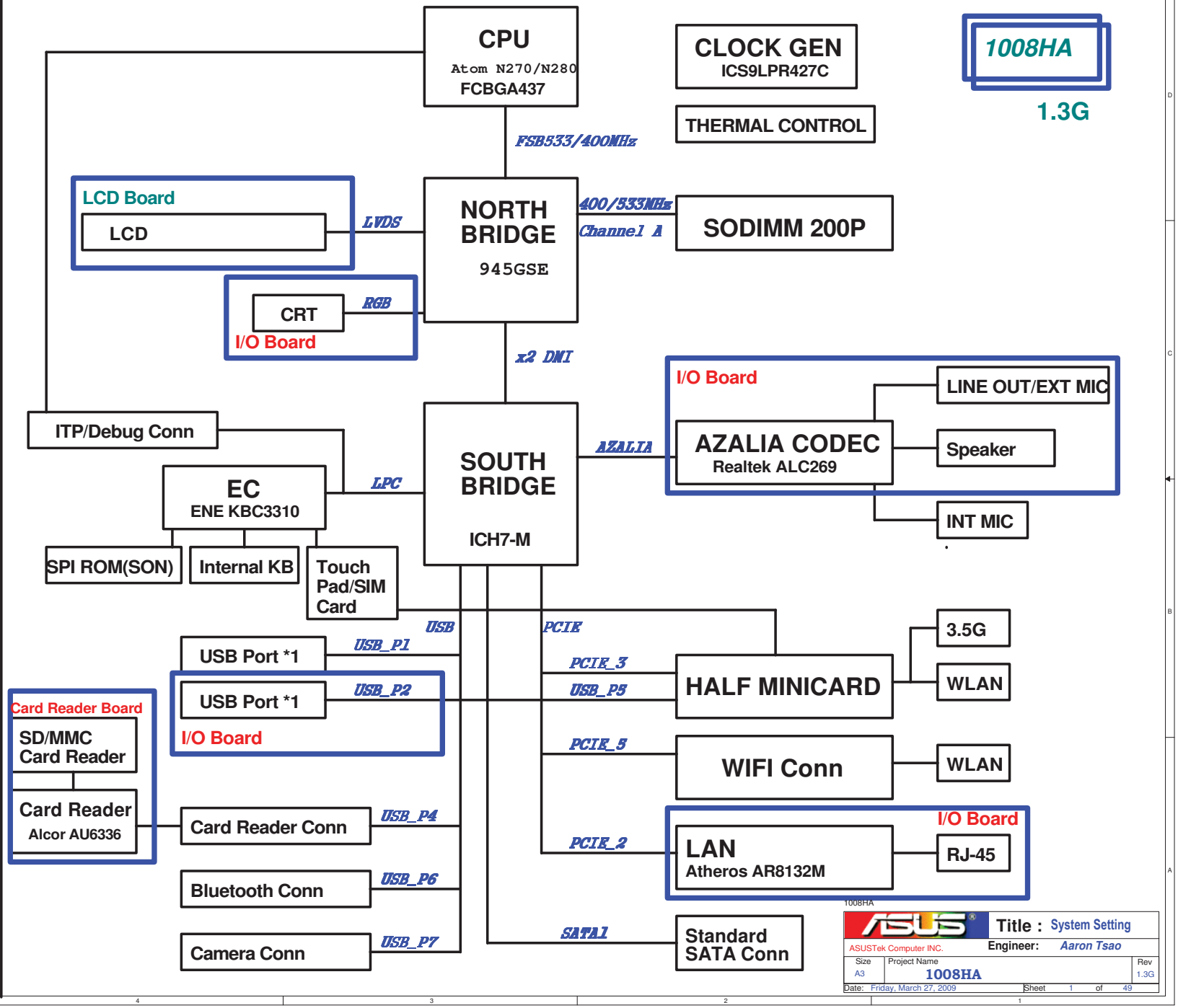


EEE PC 701 PCB version

GPI37	GPI38	GPI39	PCB version
0	0	0	
0	0	0	
0	0	1	
0	0	1	
0	1	0	
0	1	0	
0	1	1	
0	1	1	
1	0	0	
1	0	0	
1	0	1	
1	0	1	
1	1	0	
1	1	0	
1	1	1	
1	1	1	

USB

USB 0	USB Conn
USB 1	USB Conn
USB 2	NA
USB 3	NA
USB 4	Card Reader
USB 5	Minicard
USB 6	Bluetooth
USB 7	Camera

PCIE

PCIE 1	NC
PCIE 2	LAN
PCIE 3	Minicard
PCIE 4	SSD

Azalia

ACZ_SDIN0	CODEC
ACZ_SDIN1	NC
ACZ_SDIN2	NC

1008HA

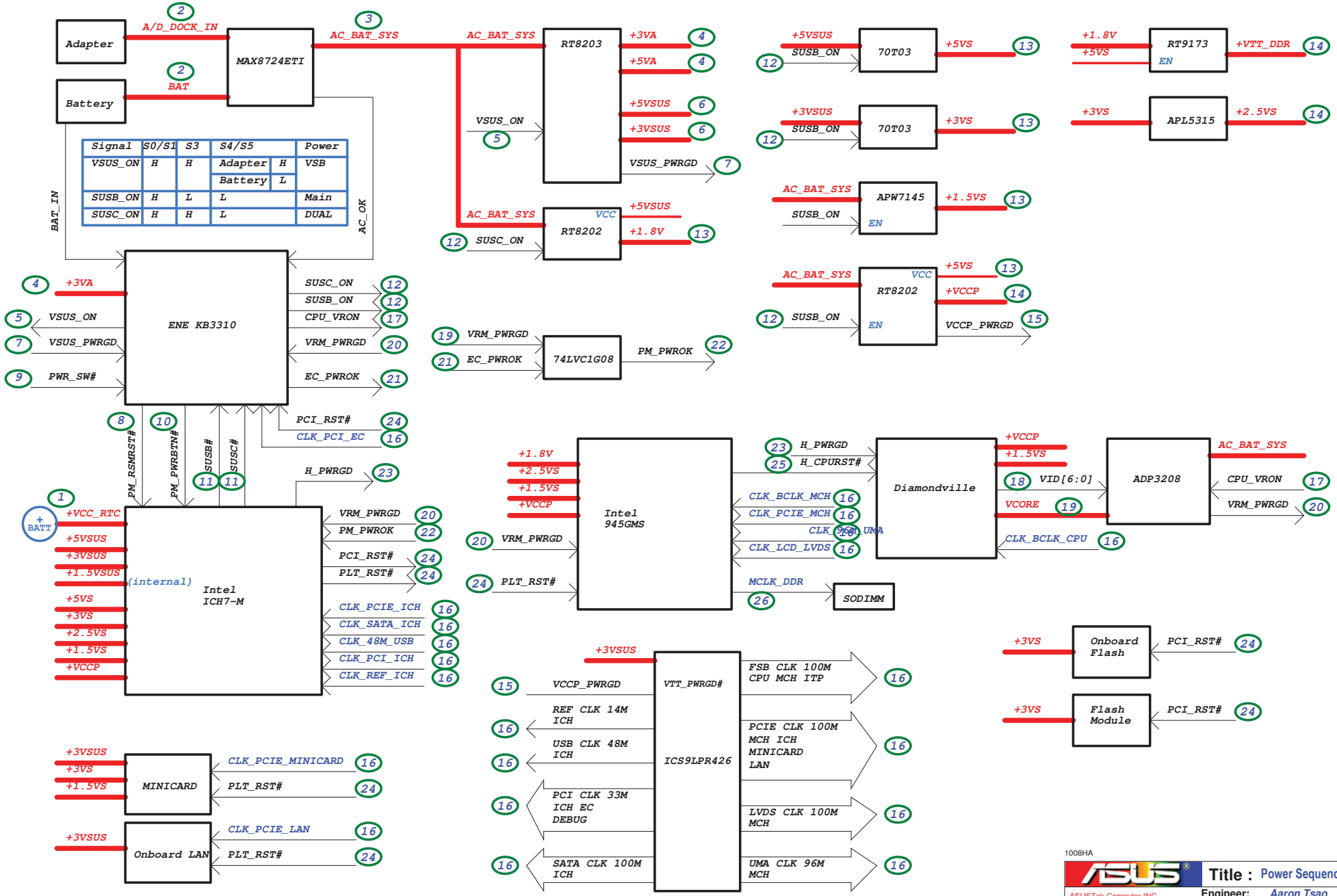
ASUSTek Computer INC.

Title : System Setting

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 2 of 49



1008HA

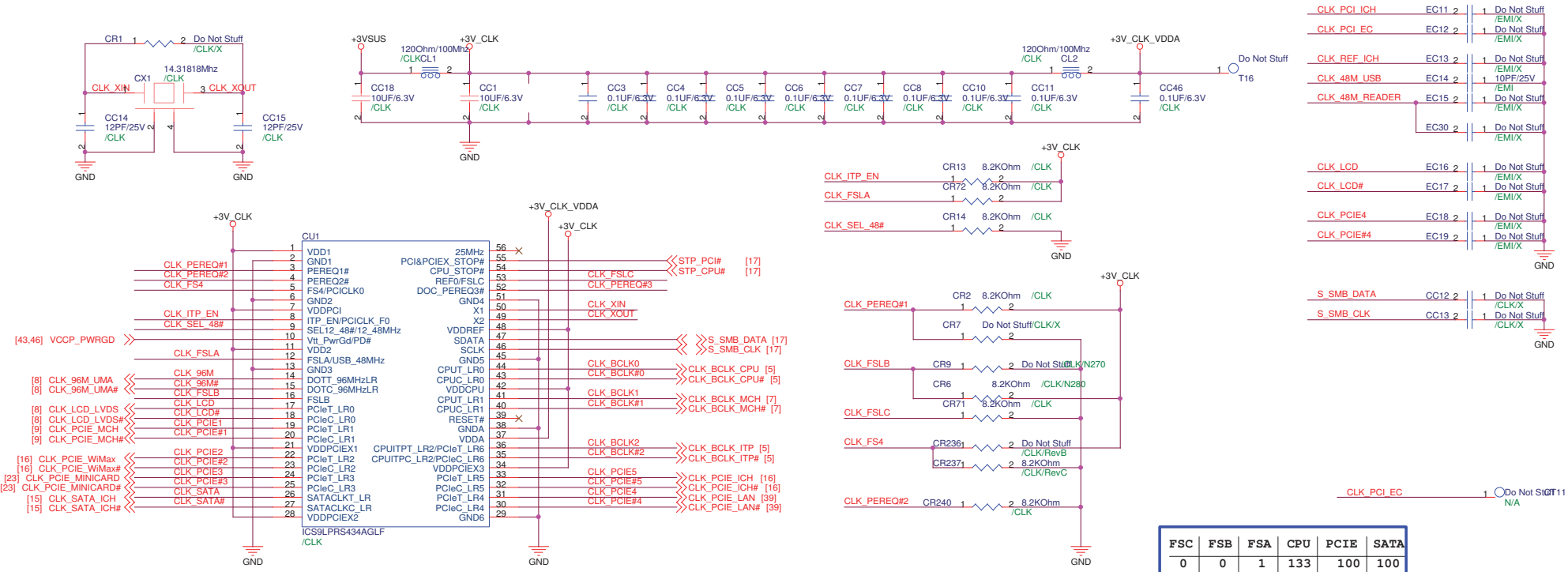
Title : Power Sequence

ASUSTek Computer INC.

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 3 of 49



FSC	FSB	FSA	CPU	PCIE	SATA
0	0	1	133	100	100
1	0	1	100	100	100

Selected through the I2c
1:Disable
0:Enable

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

DOC1	DOC2	Voltage	Status
L	L	2.3~2.52V	Performance
H	L	0V	Power Saving
H	H	0V	Power Saving
L	H	1.1~1.2V	Normal

1008HA

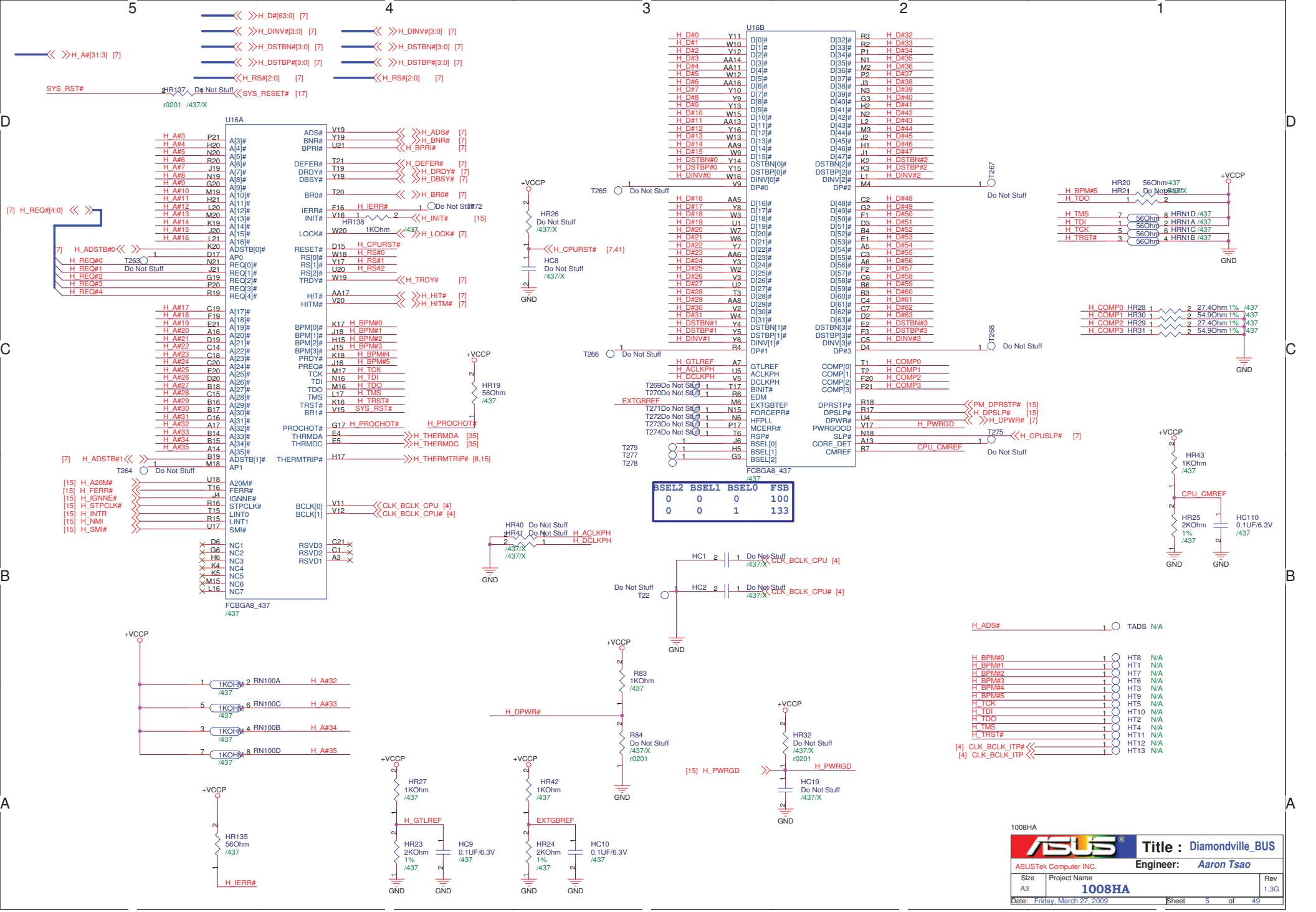
ASUSTek Computer INC.

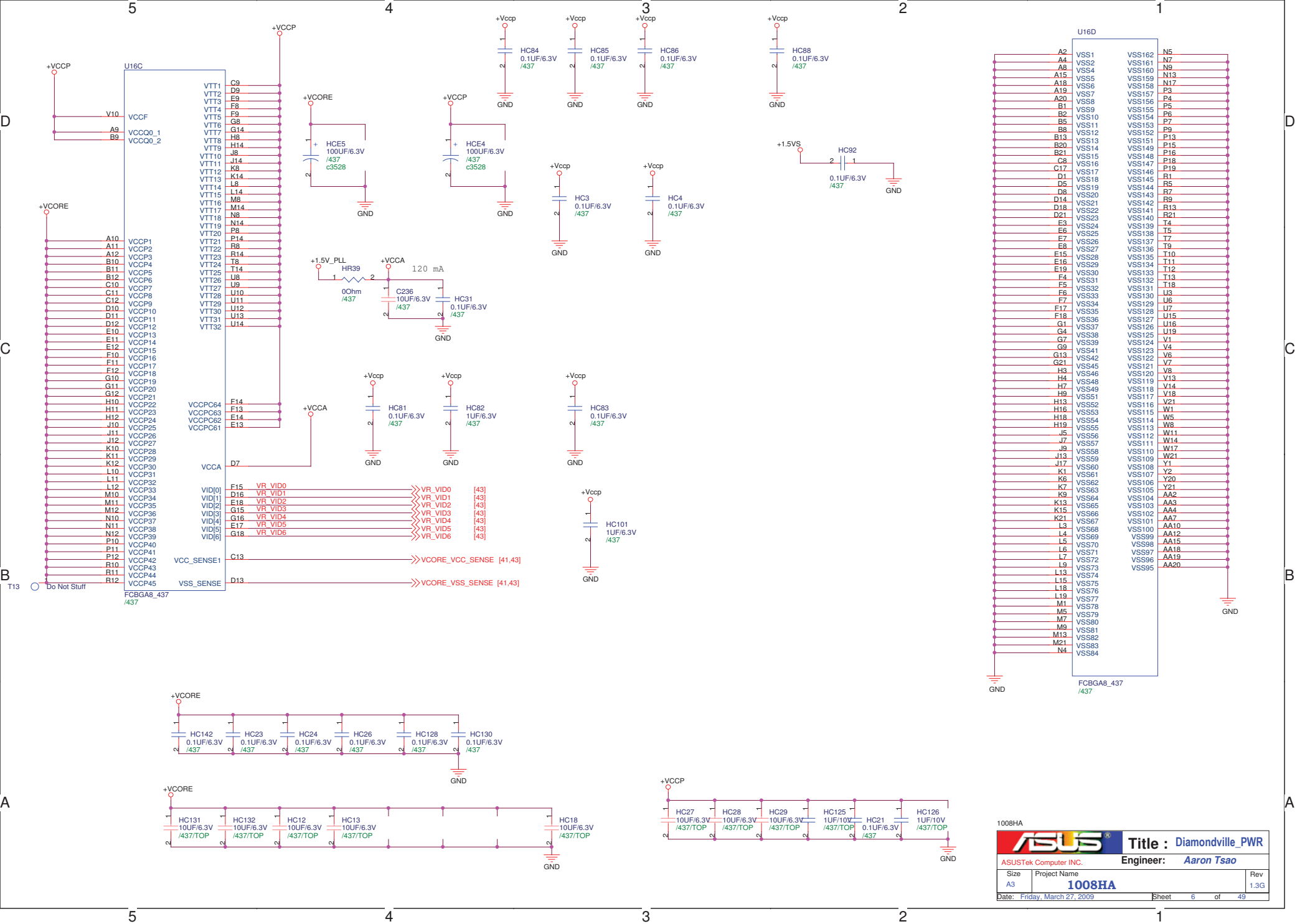
Title : Clock ICS9LPRS427

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 4 of 49

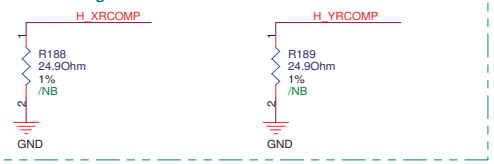




Power:
+VCCP

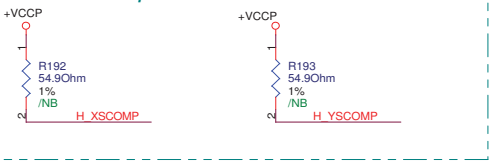
RCOMP

For Calibrating the FSB I/O Buffer



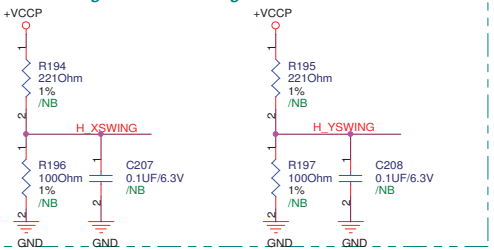
SCOMP

For Slew Rate Compenssation on the FSB

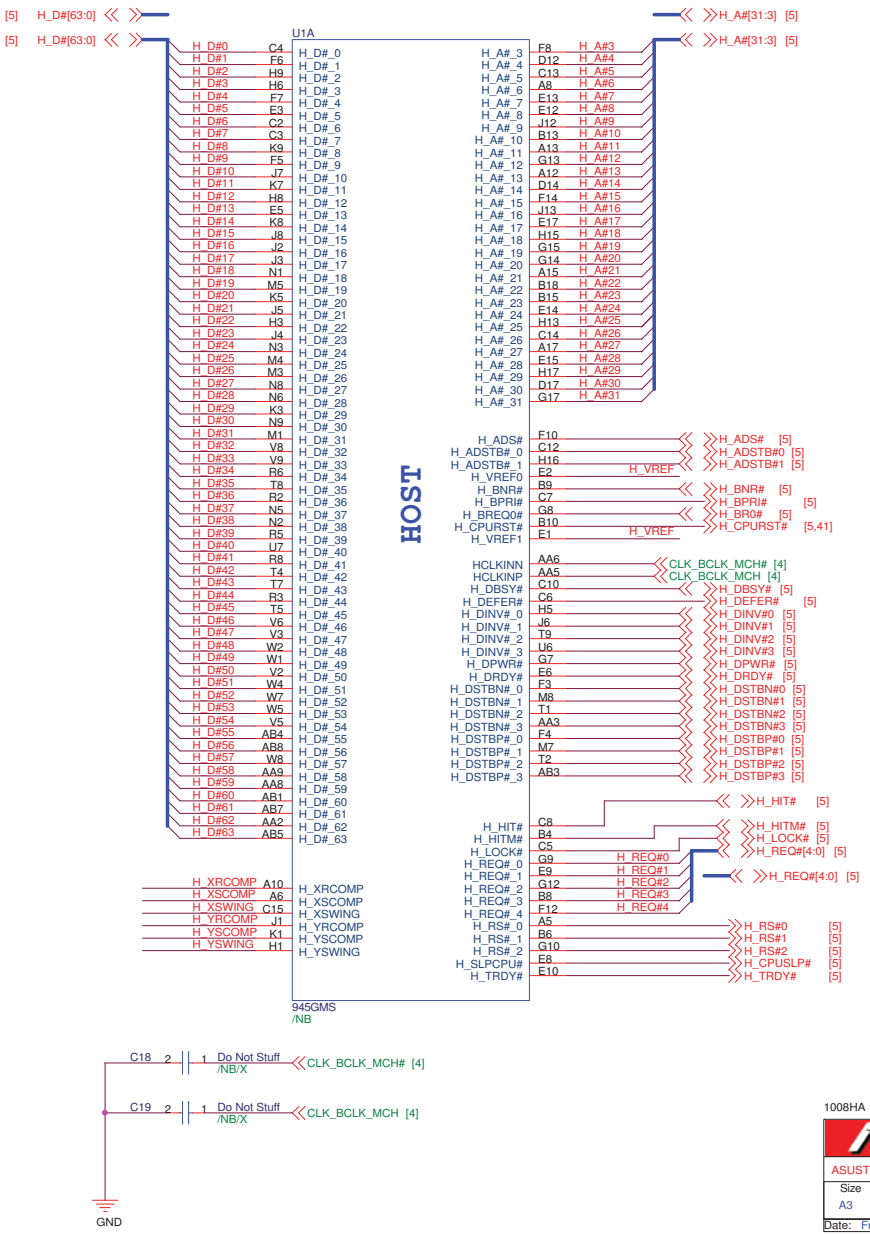


Voltage Swing

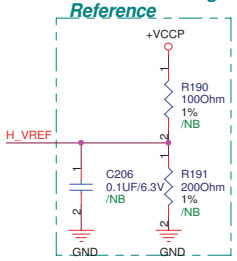
For Providing a Reference Voltage to The FSB RCOMP circuits



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



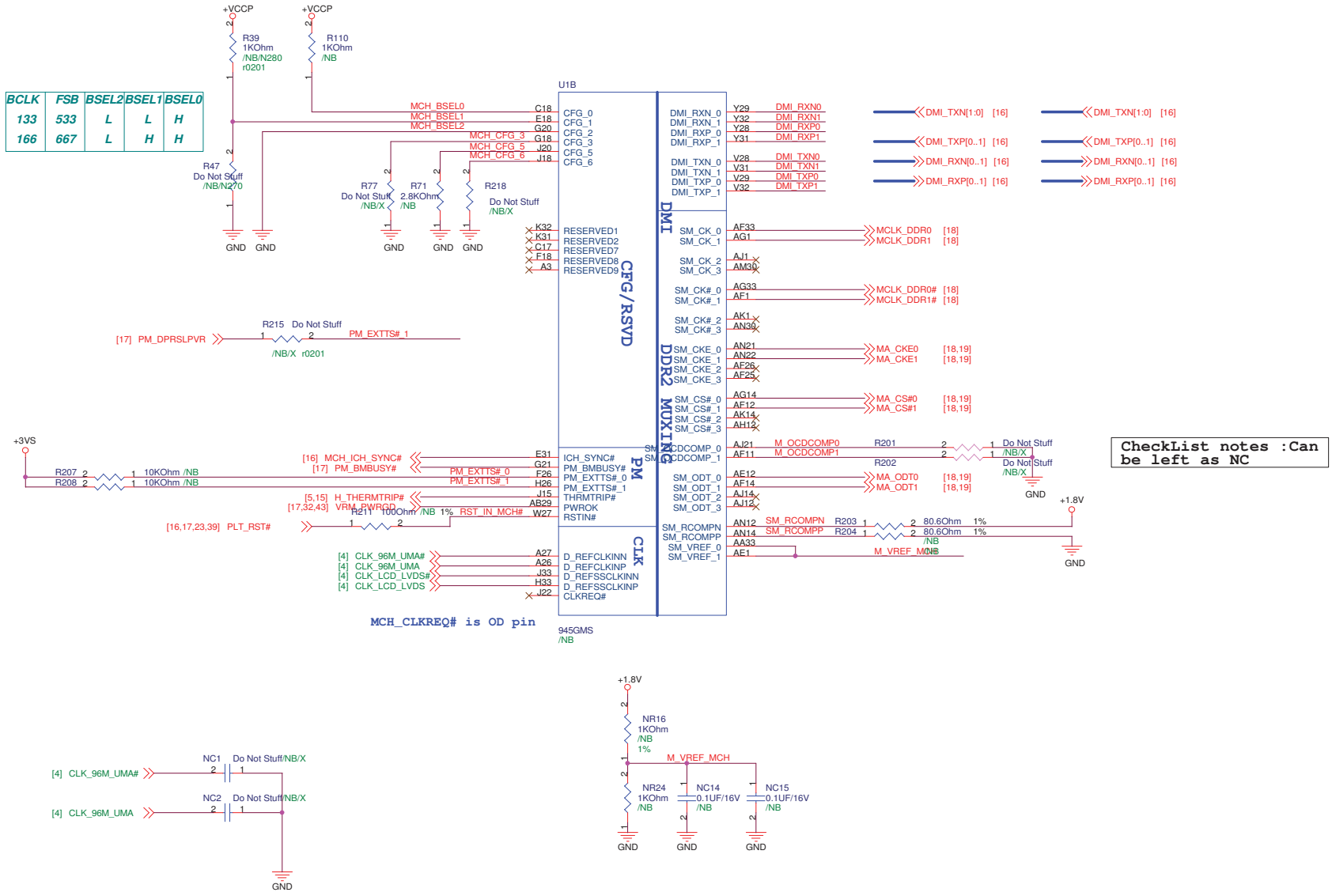
AGTL+ I/O Voltage Reference



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

1008HA

ASUSTeK COMPUTER INC.	Title : NB-945GMS(HOST)	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 7 of 49	



1008HA

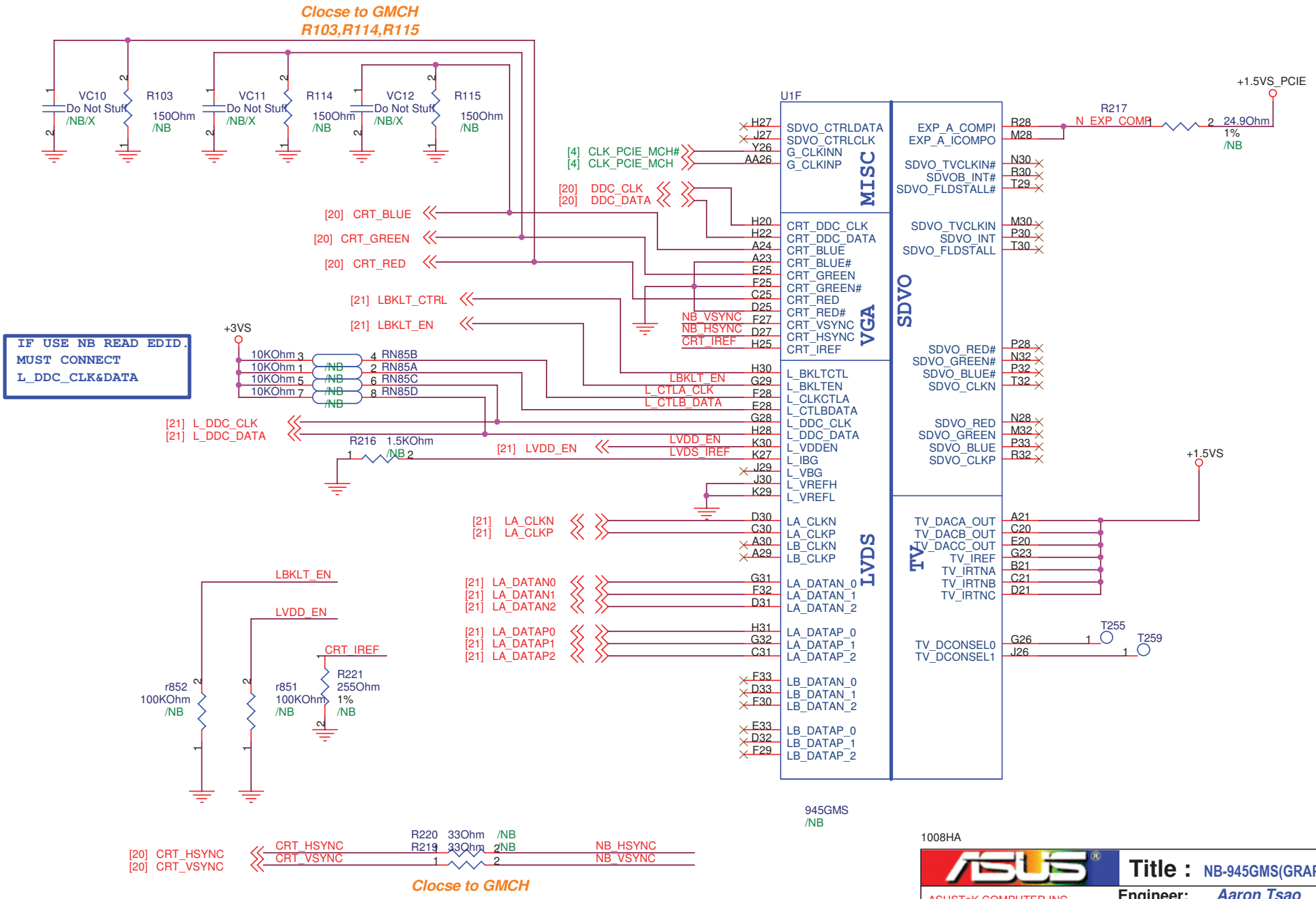
ASUSTeK COMPUTER INC.

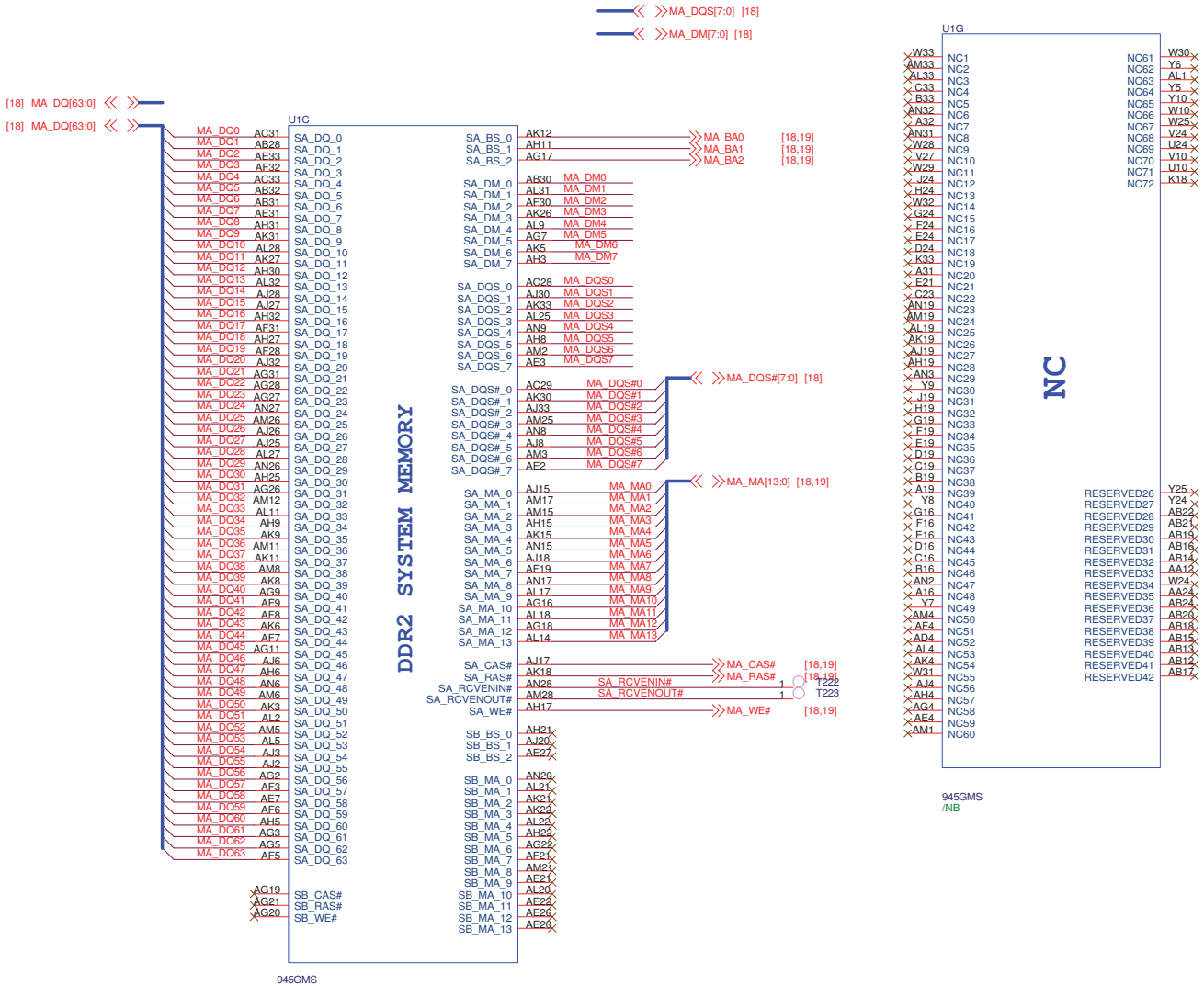
Title : NB-945GMS(DMI & CFG)

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

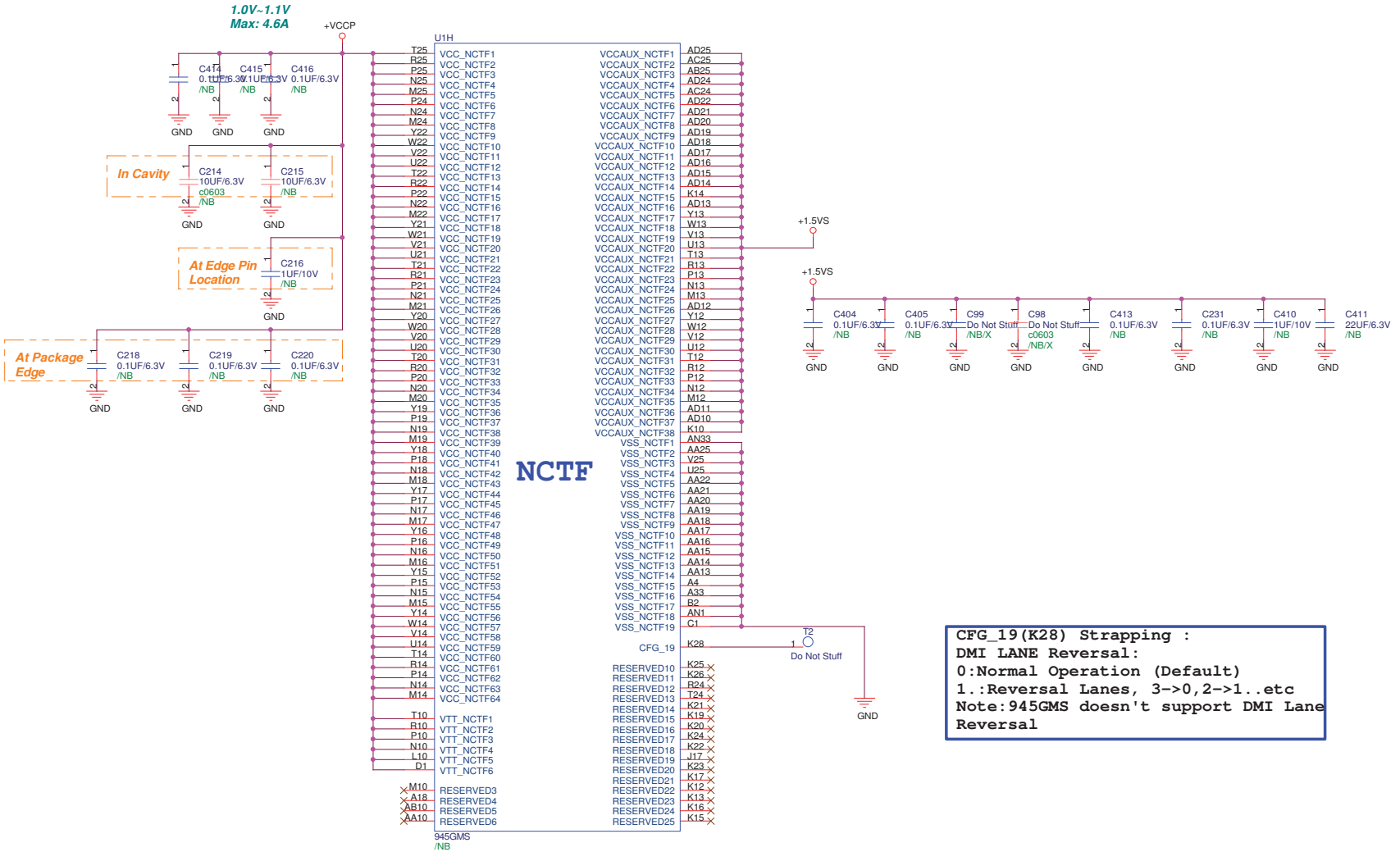
Date: Friday, March 27, 2009 Sheet 8 of 49





1008HA

ASUSTeK COMPUTER INC.	Title : NB-945GMS(DDR2)	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 10 of 49	



1008HA

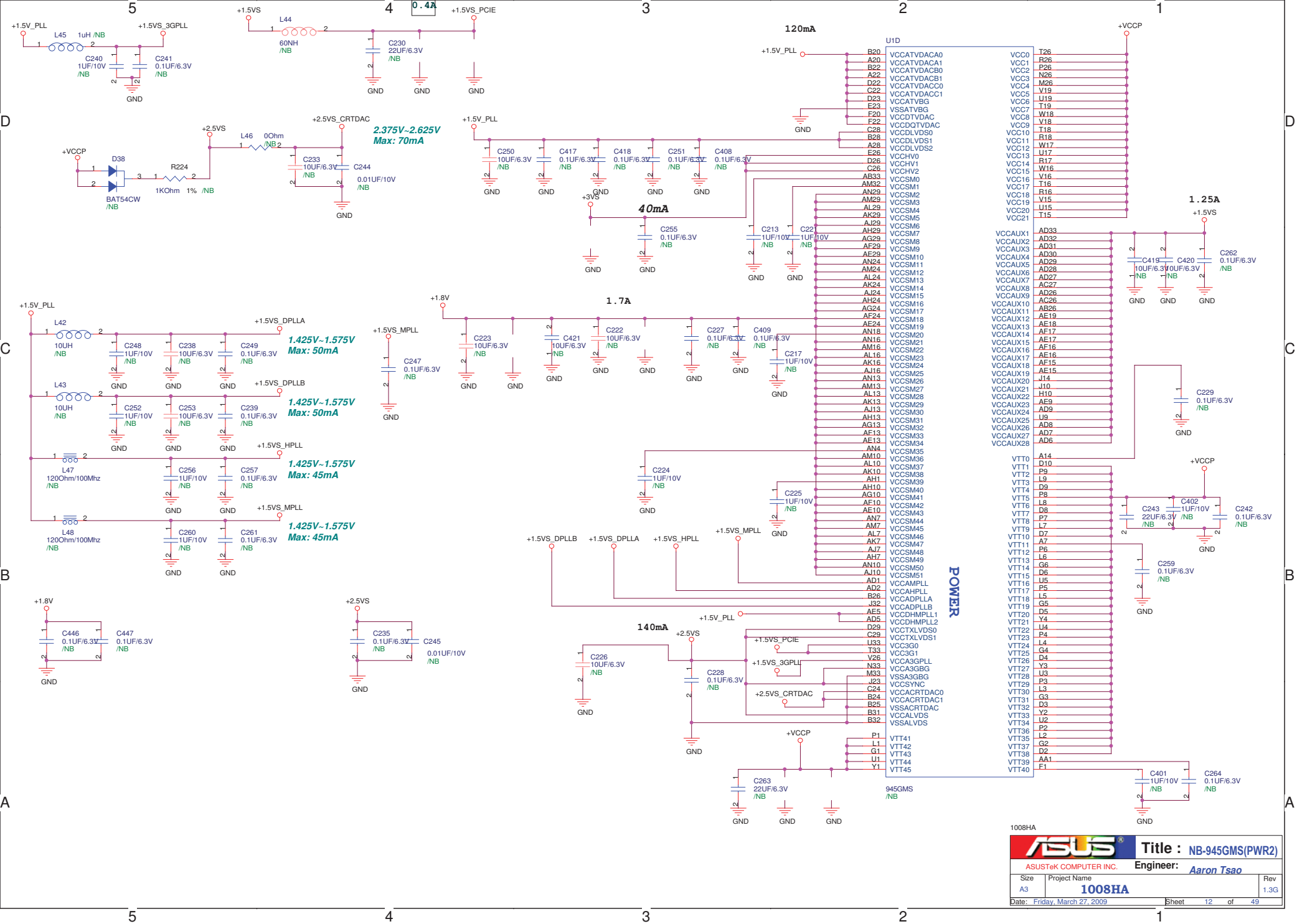
ASUSTeK COMPUTER INC.

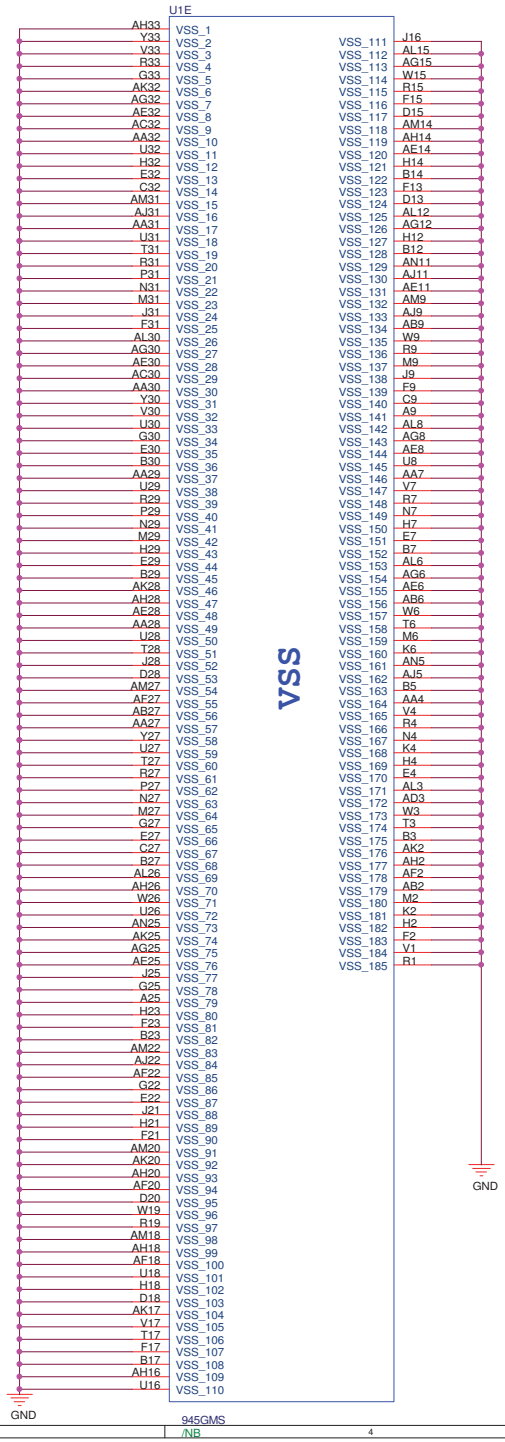
Title : NB-945GMs(PWR)

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

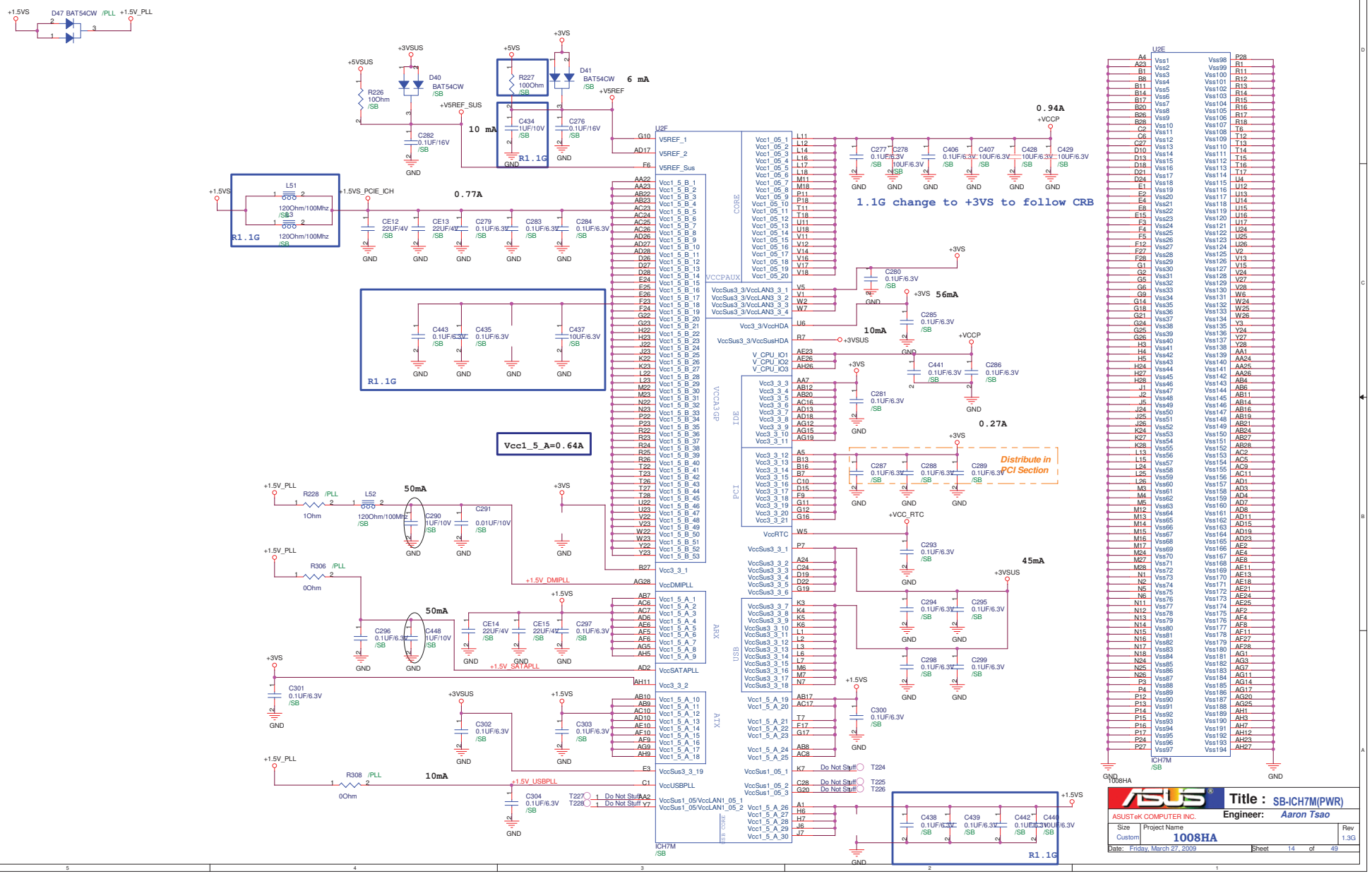
Date: Friday, March 27, 2009 Sheet 11 of 49





1008HA

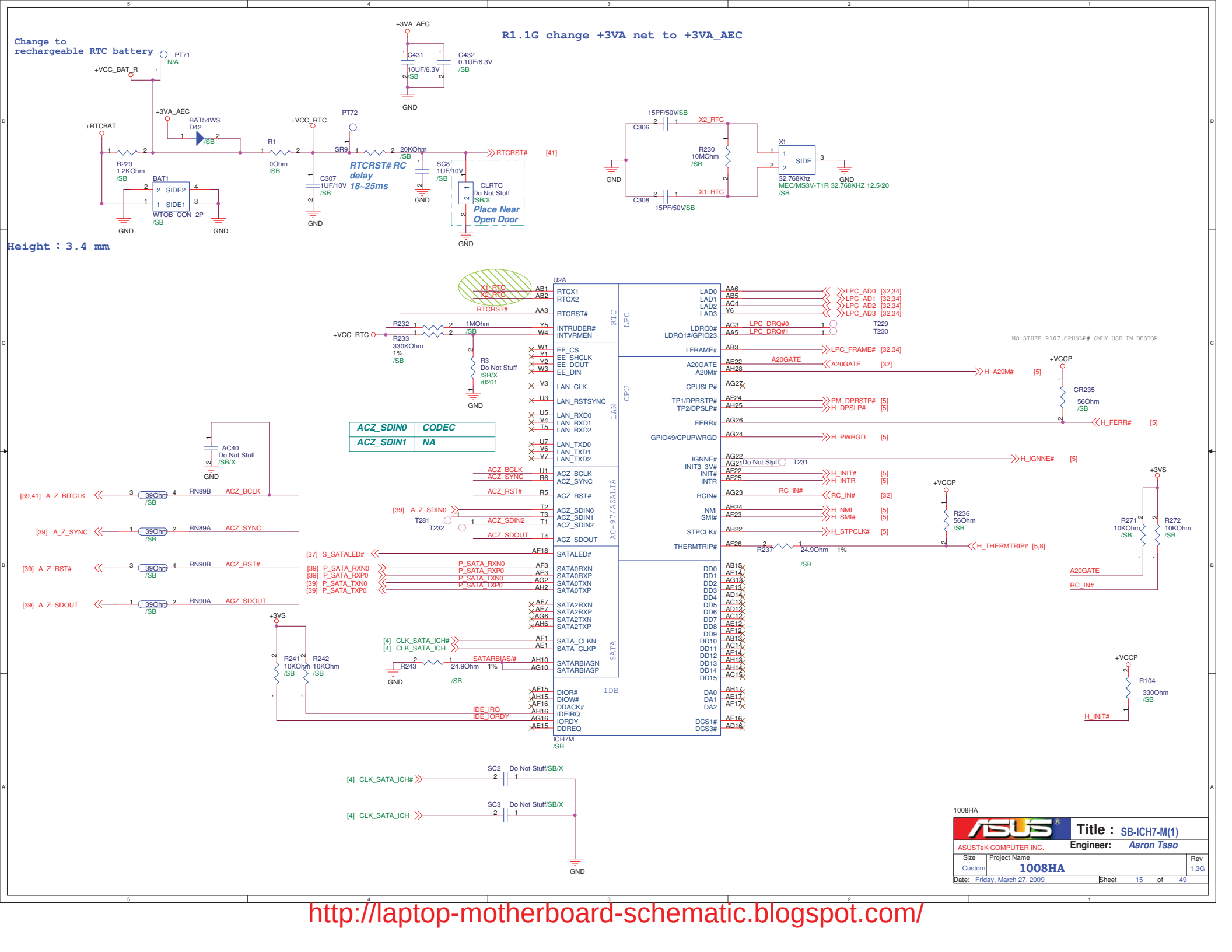
ASUSTeK COMPUTER INC.	Title : NB-945PMS(GND)	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 13 of 49	



Change to
rechargeable RTC battery

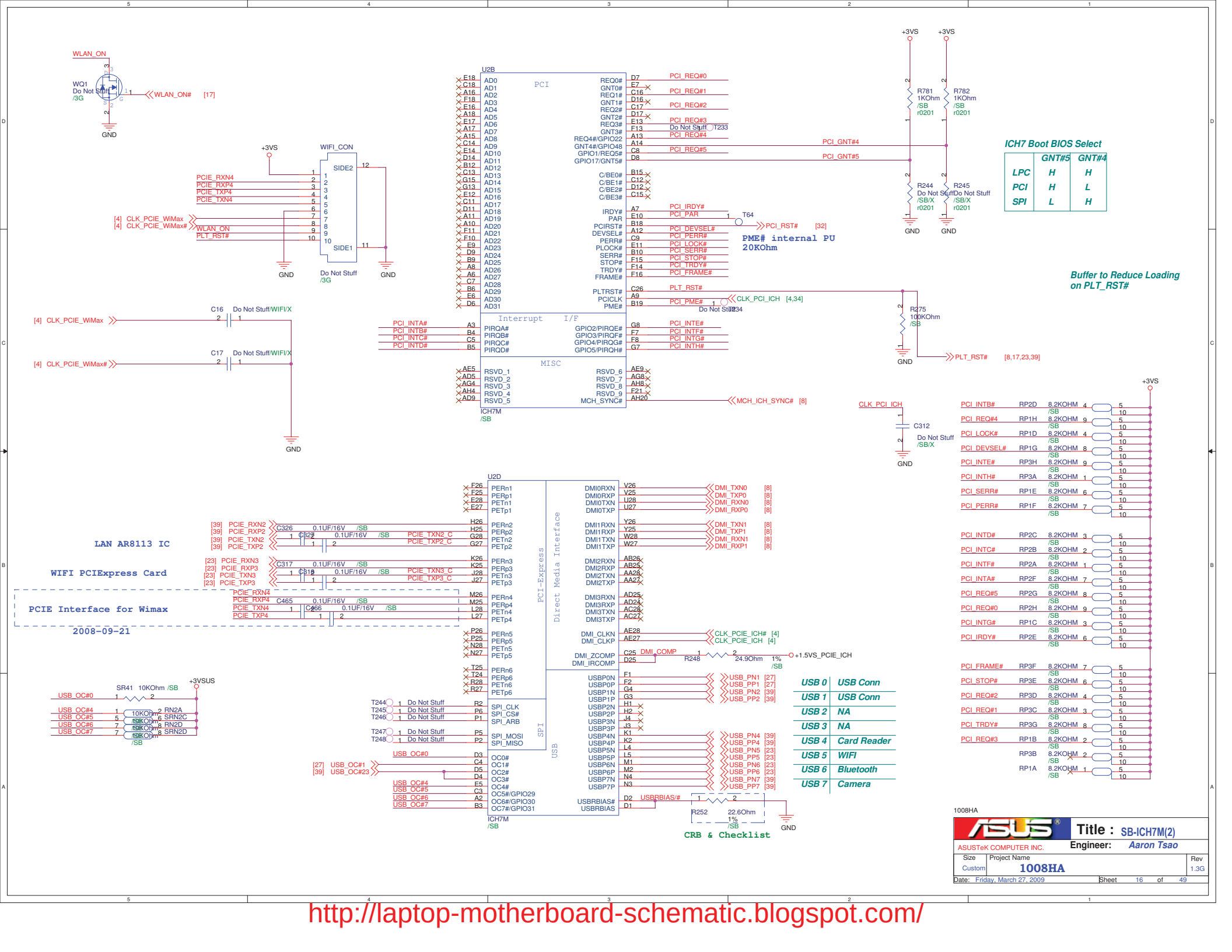
R1.1G change +3VA net to +3VA_AEC

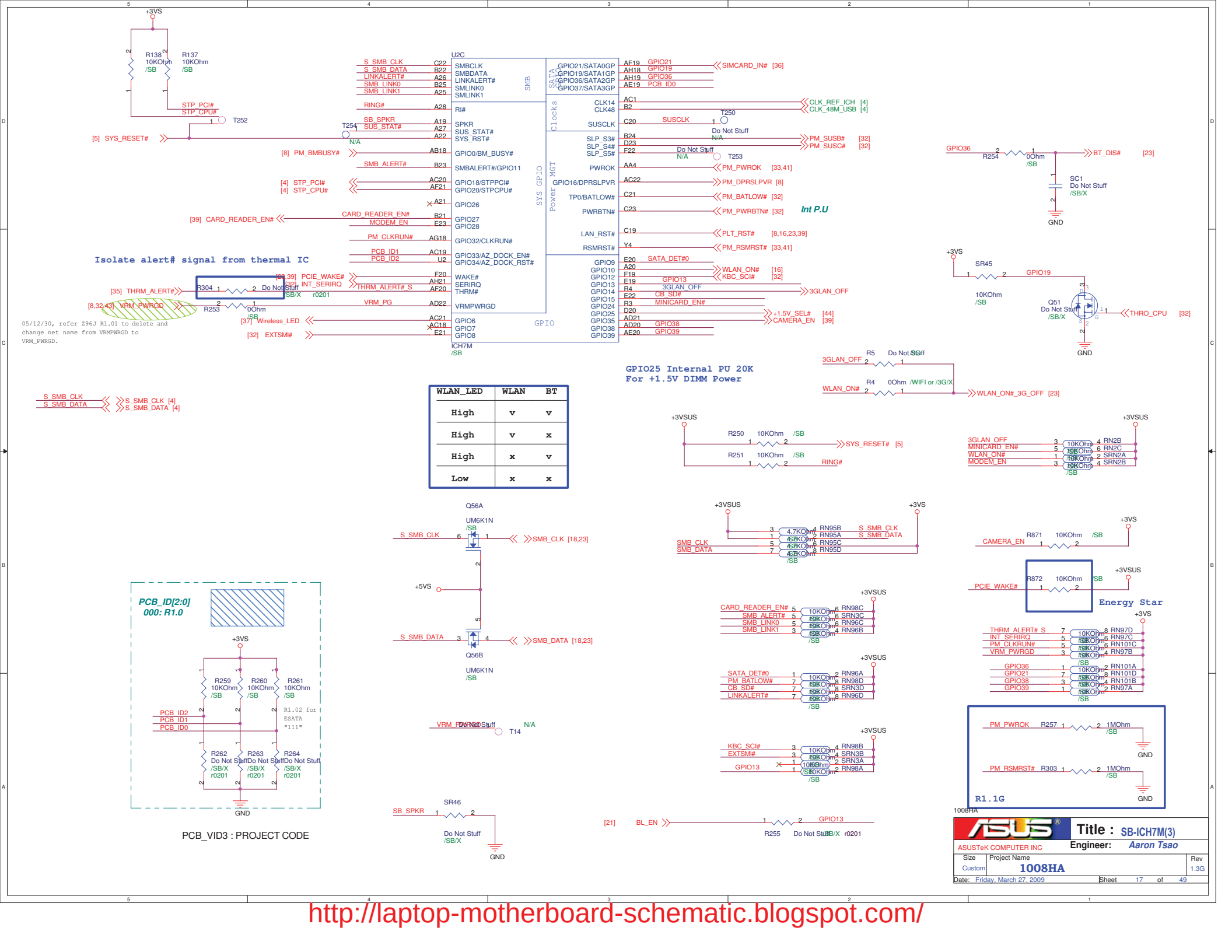
Height : 3.4 mm

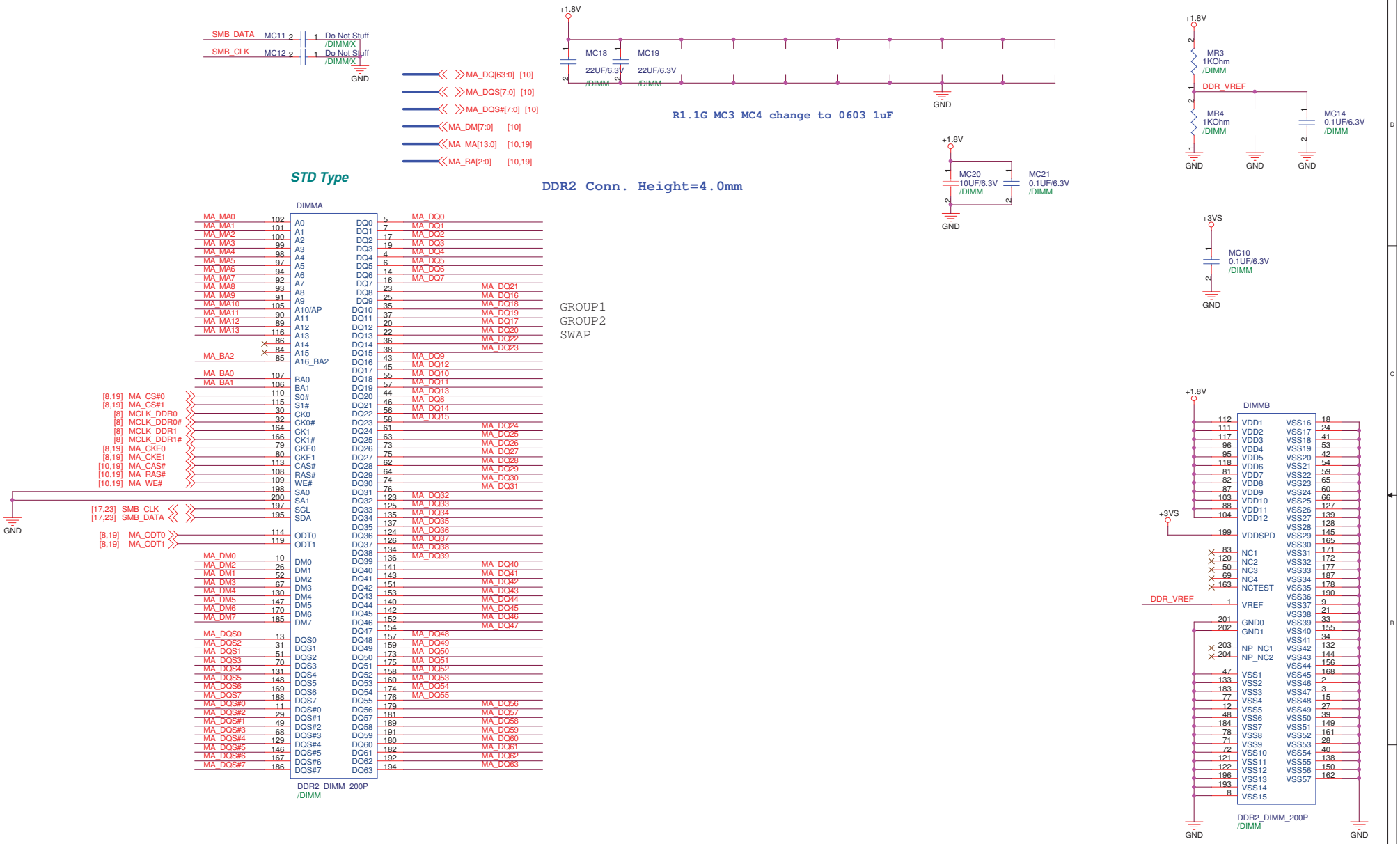


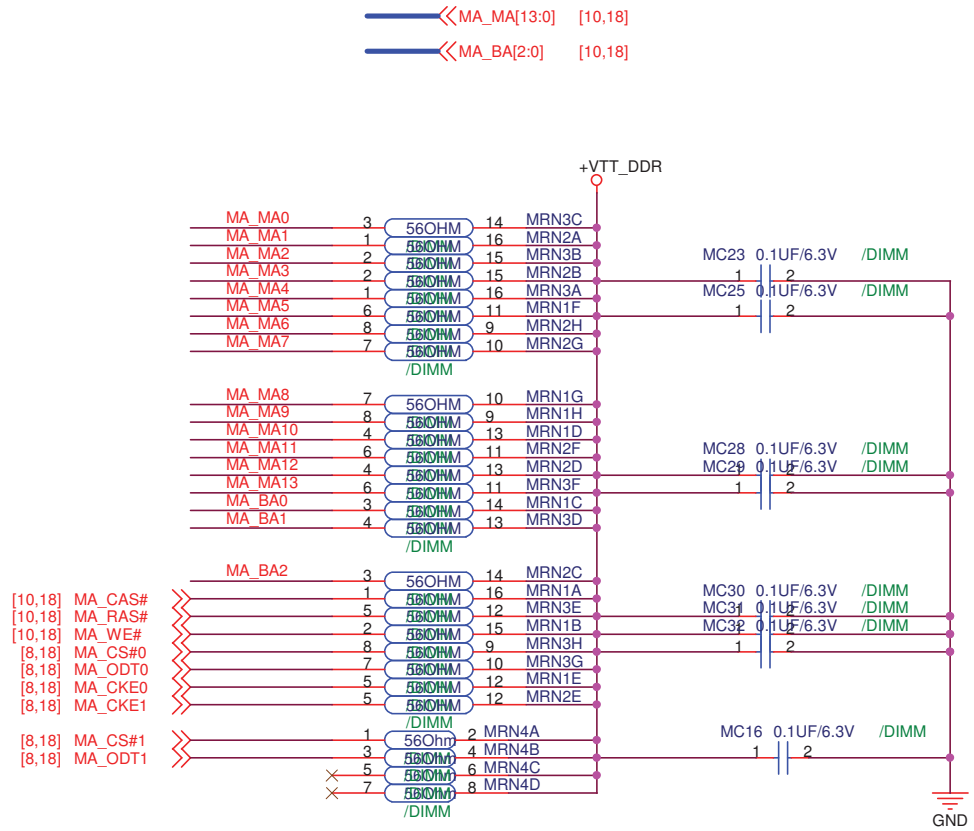
1008HA

ASUSTeK COMPUTER INC.	Title : SB-ICH7-M(1)	
	Engineer: Aaron Tsao	
Size: Custom	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 15 of 49	



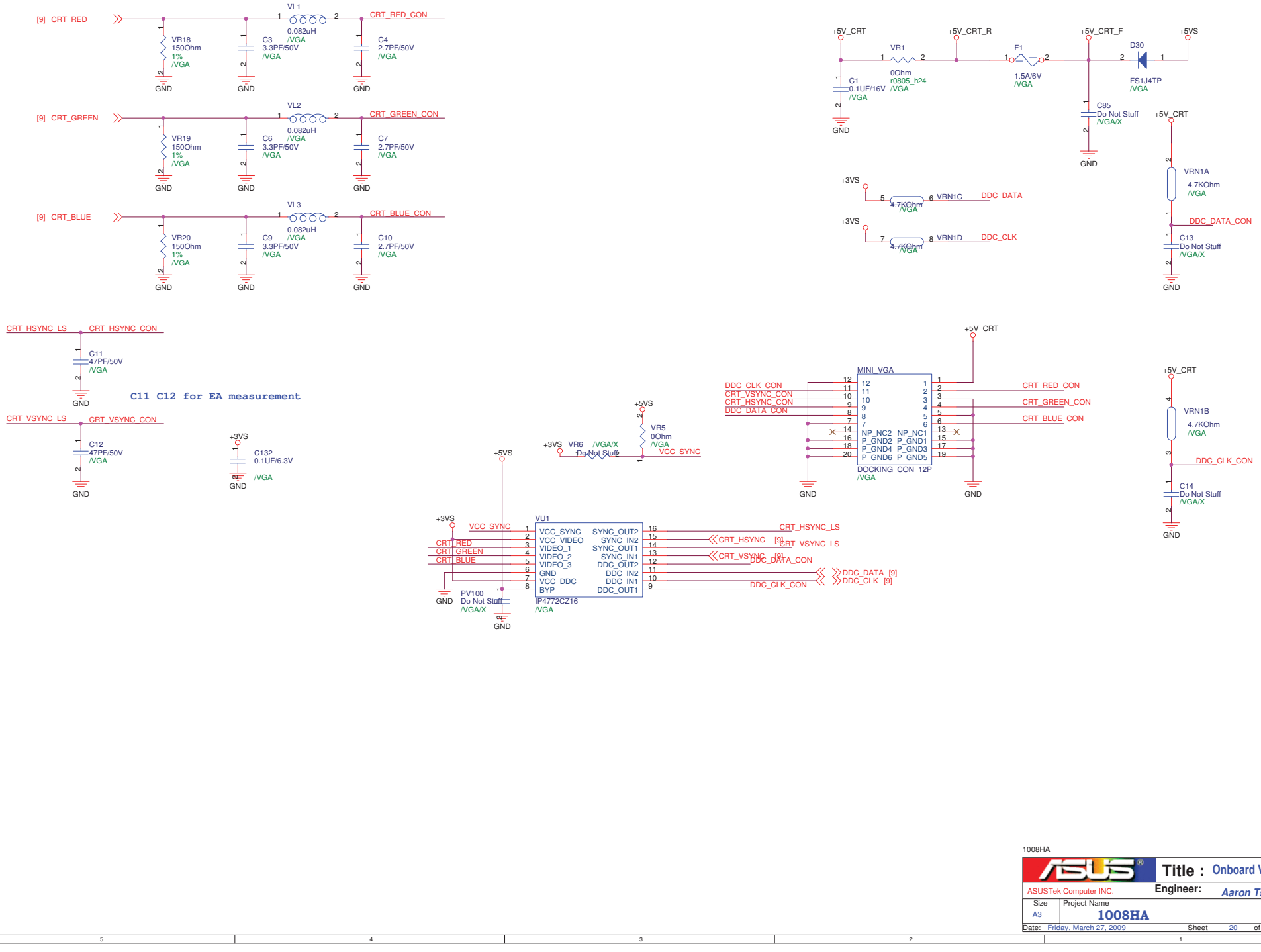






1008HA

ASUSTek Computer INC.	Title : DDR2_Termination	
	Engineer: *Aaron Tsao*	
Size: A4	Project Name: **1008HA**	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 19 of 49	



1008HA

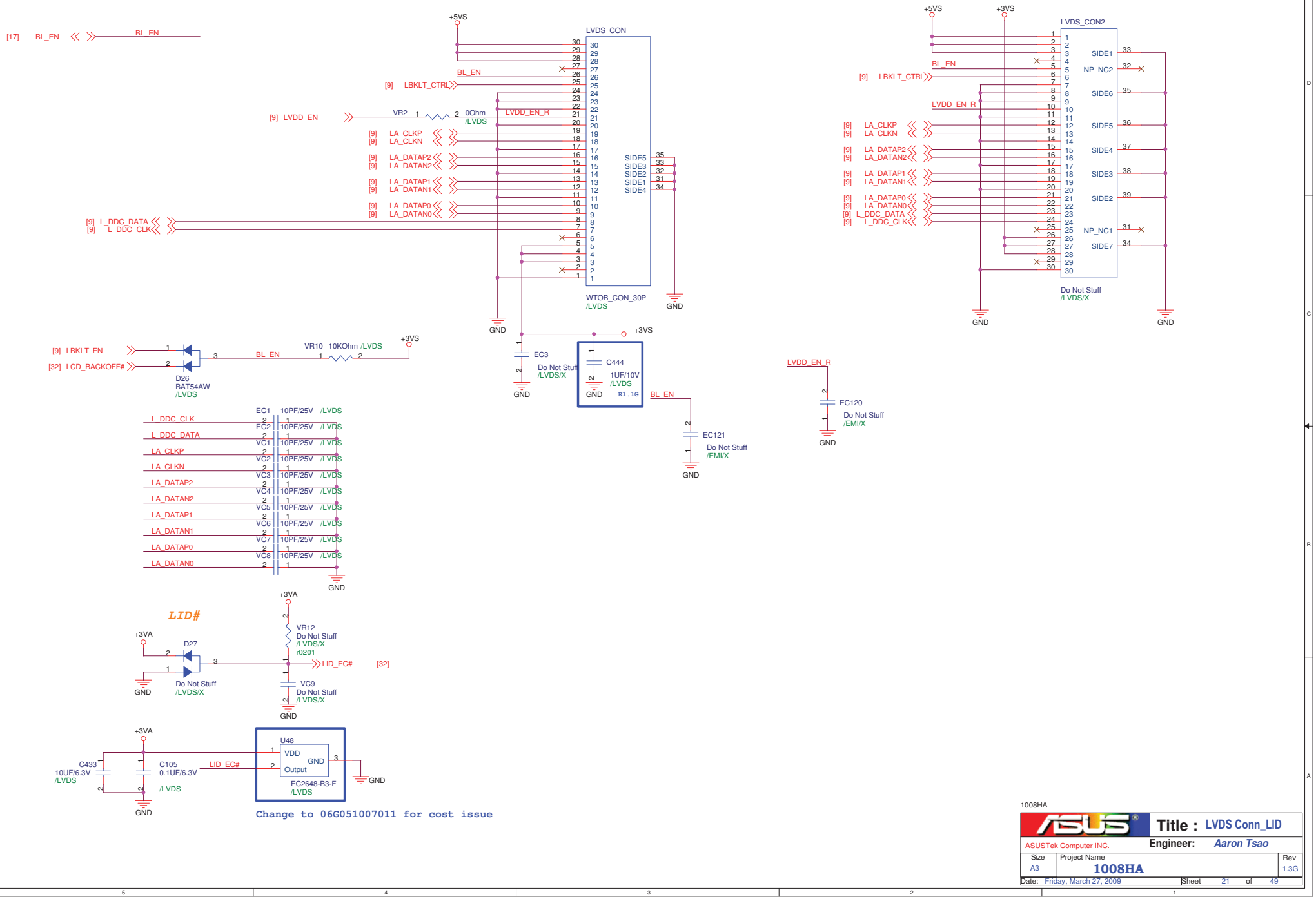
ASUSTek Computer INC.

Title : Onboard VGA

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 20 of 49



Change to 06G051007011 for cost issue

1008HA

ASUSTek Computer INC.	Title : LVDS Conn_LID	
	Engineer: Aaron Tsao	
Size A3	Project Name 1008HA	Rev 1.3G
Date: Friday, March 27, 2009	Sheet 21 of 49	

LID_EC#

1008HA

3.5G Module & External Antenna

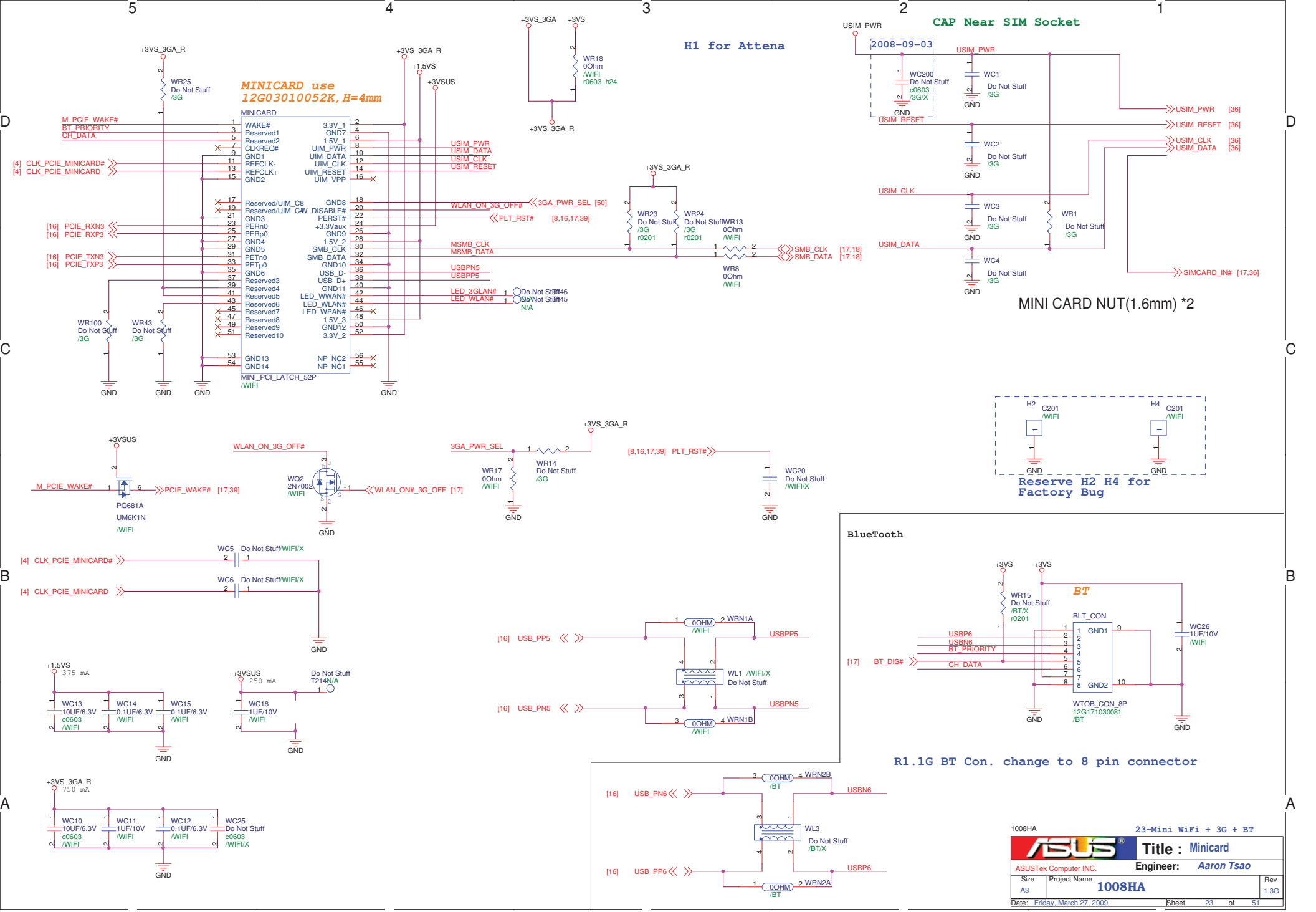
Title :

ASUSTek Computer INC.

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 22 of 49



1008HA

Title : AR8132

ASUSTek Computer INC

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 24 of 49

1008HA

Title : RJ45

ASUSTek Computer INC.

Engineer: Aaron Tsao

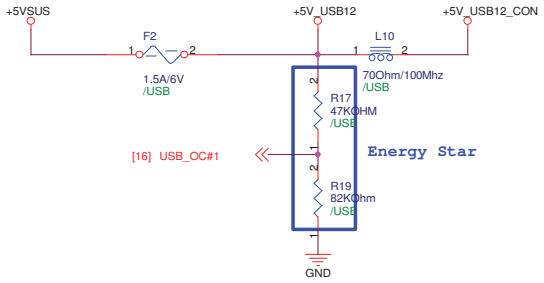
Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 25 of 49

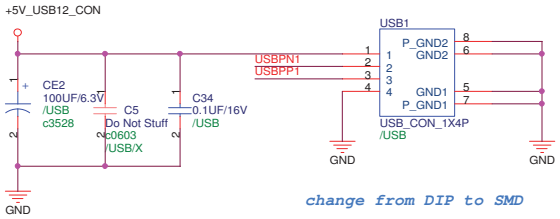
Naming Rule:
IC:IU?
R:IR?
C:IC?
L:IL?

1008HA

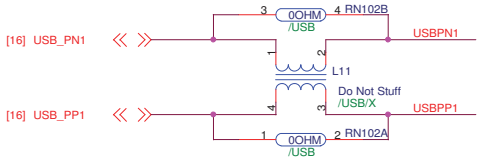
ASUSTek Computer INC.	Title : G-Sensor	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 26 of 49	

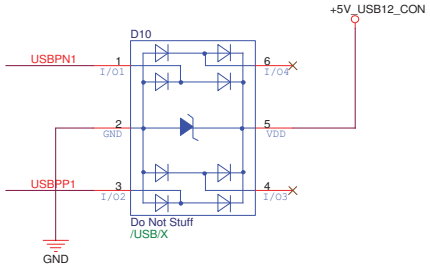


1.1G change USB con. to 12G131030042

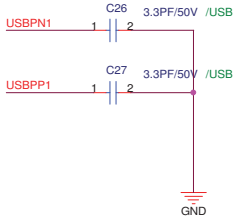


change from DIP to SMD





1.1G change CE2 CE3 CE4 to POSCAP, 100uF/6.3V



1008HA

ASUSTek Computer INC.	Title : USB Port	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 27 of 49	

1008HA

Title : Camera Power

ASUSTek Computer INC.

Engineer: Aaron Tsao

Size	Project Name	Rev
A4	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 28 of 49

1008HA

ASUSTek Computer Inc.	Title : AU6336-C52	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 29 of 49	

1008HA

ASUSTek Computer Inc.	Title : ALC269-1	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 30 of 49	

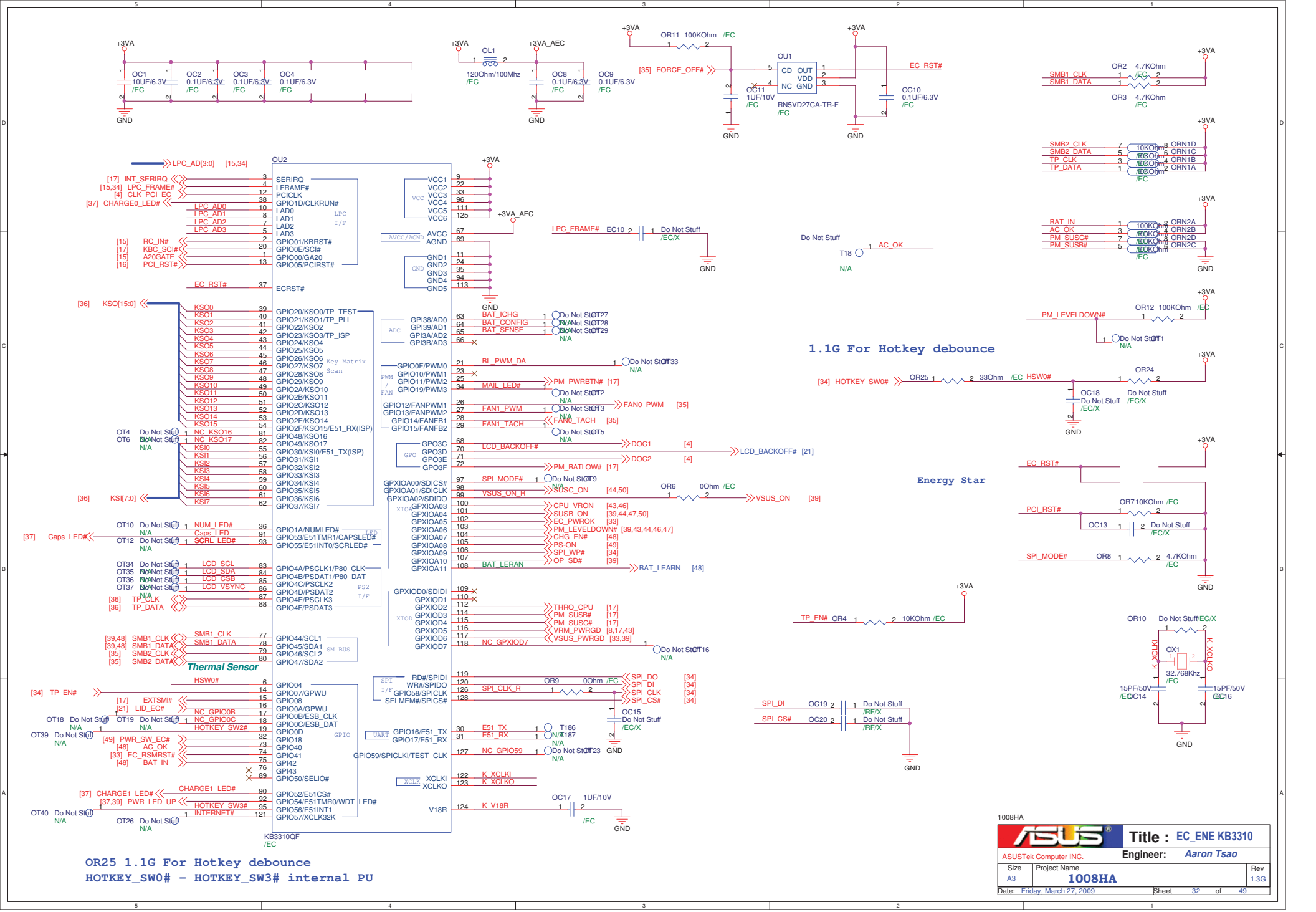
1.1G add PWR LED and Charge LED

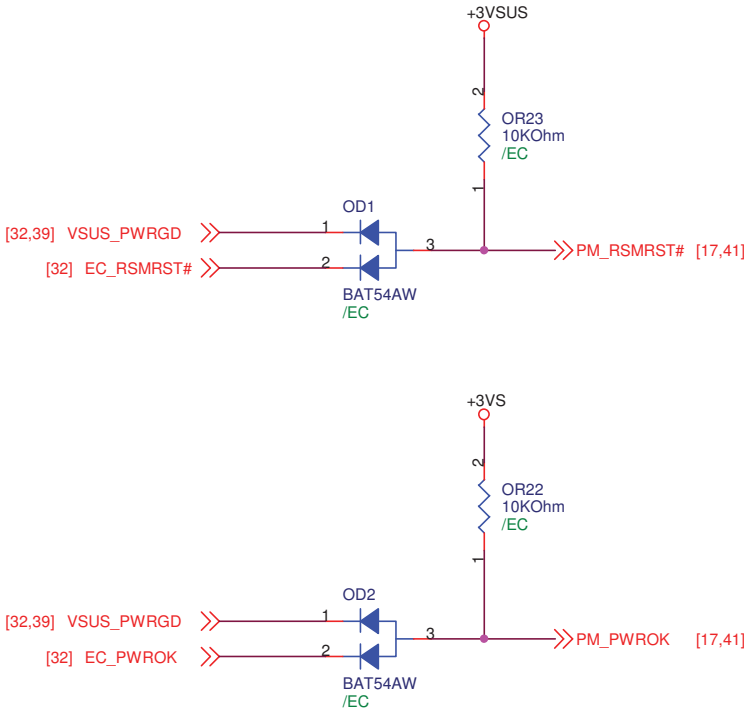
DMIC Cable length should be less 30cm

Change R291 R292 R293 to 510 Ohm

1008HA

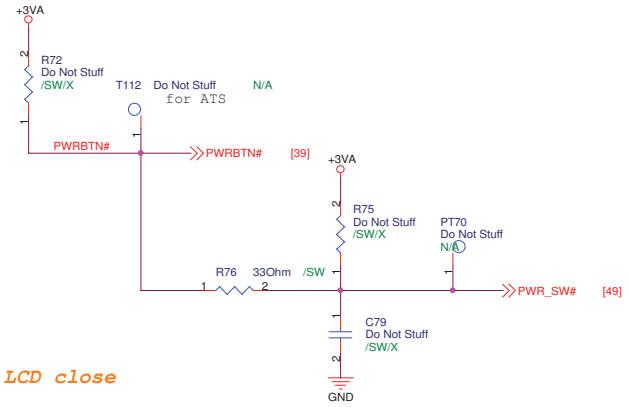
ASUSTek Computer Inc.	Title : ALC269-2		
	Engineer: Aaron Tsao		
Size: A3	Project Name: 1008HA		Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 31 of 49		





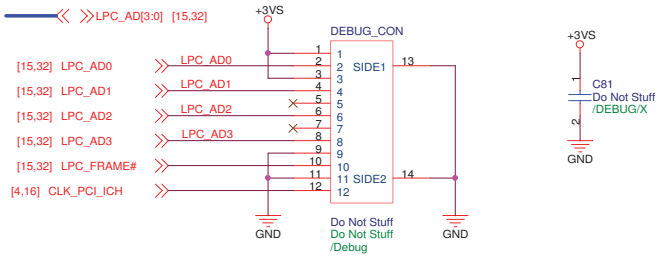
1008HA

ASUSTek Computer INC.	Title : EC	
	Engineer: Aaron Tsao	
Size: A4	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 33 of 49	

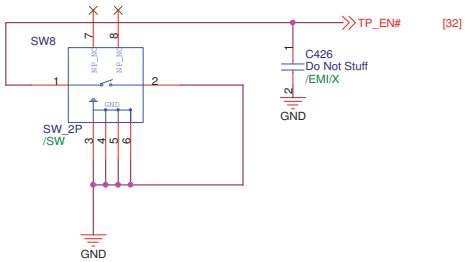


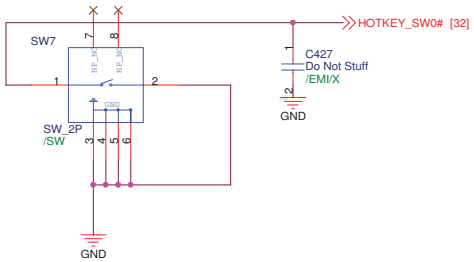
prevent system power on when LCD close

For Debug

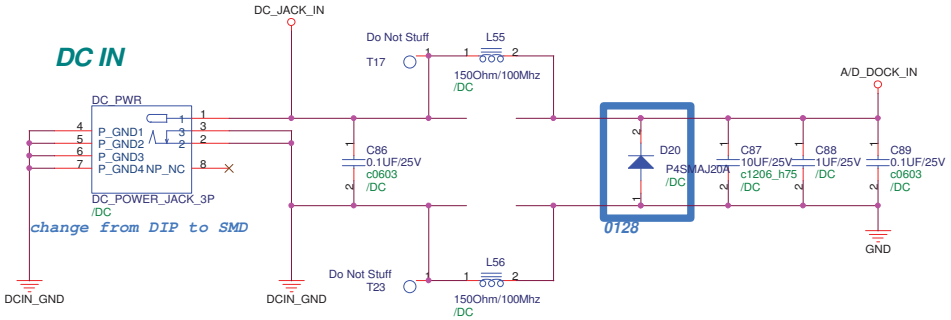


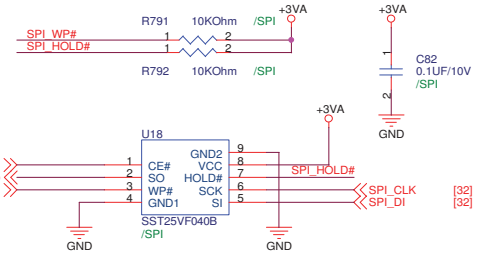
Debug Card cable use Z96 Touch Pad cable, P/N:
14G124110126, 14G124110120, 14G124110121
14G124110124, 14G124110125





DC IN





1008HA

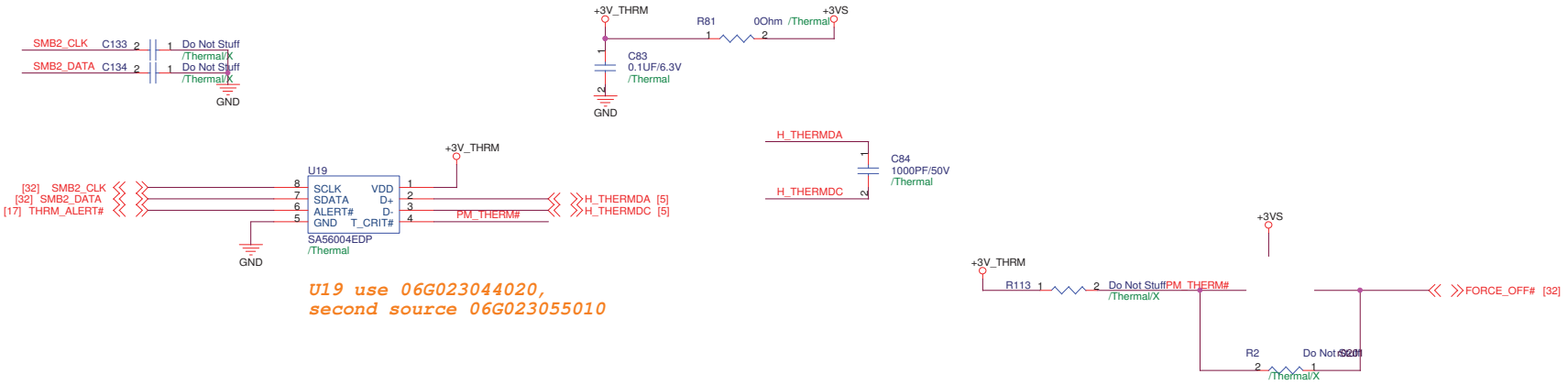
ASUSTek Computer INC.

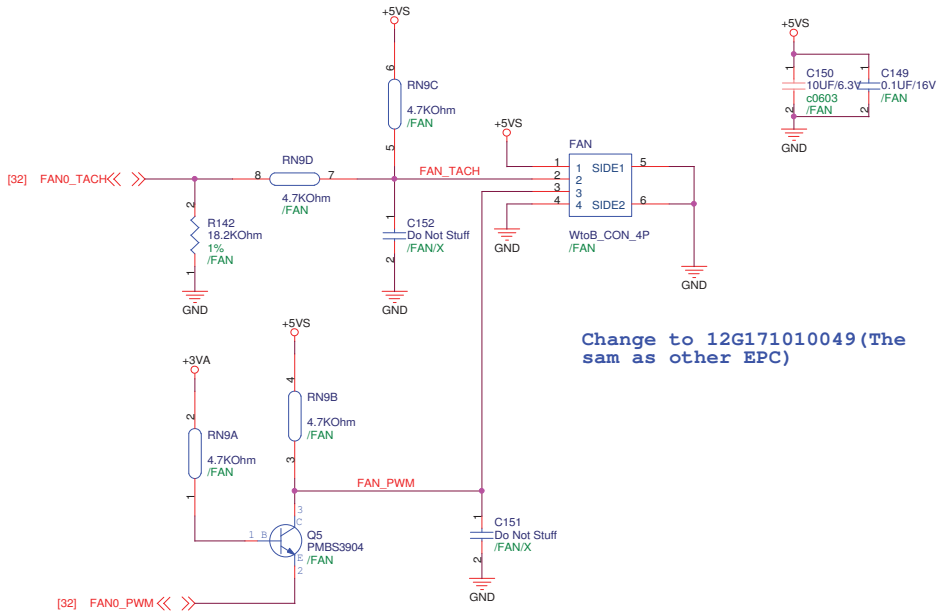
Title : 34_Switch_SPI _ITP_Debug

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 34 of 49

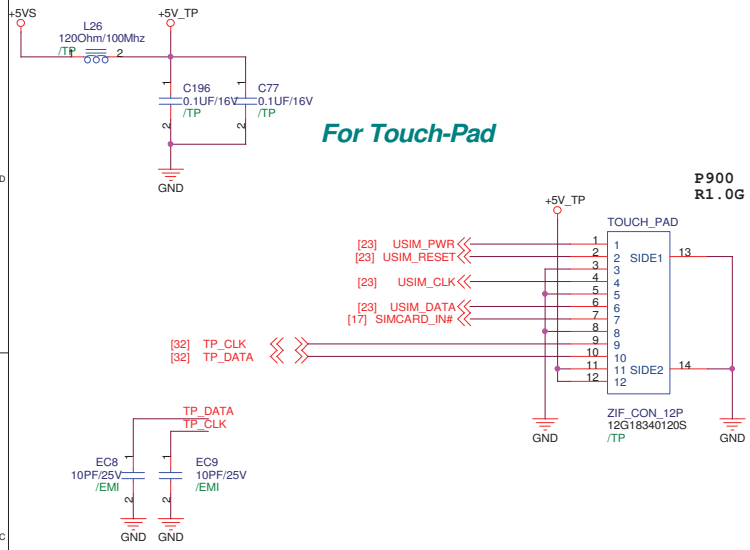




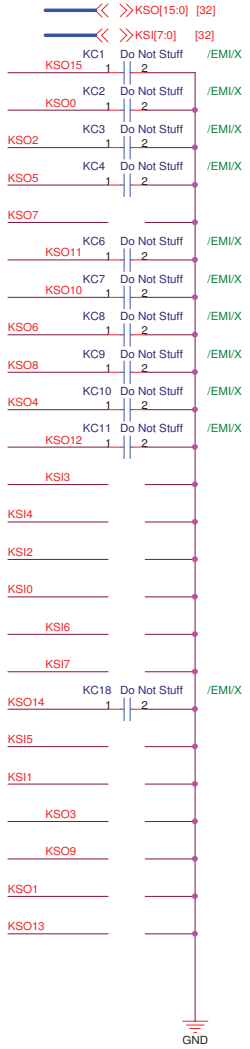
1008HA

ASUSTek Computer INC.	Title : Thermal Sensor_FAN	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 35 of 49	

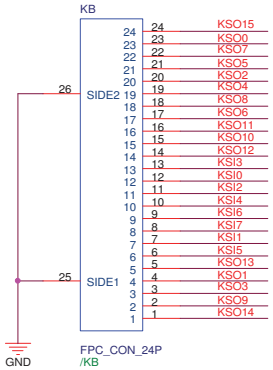
For Touch-Pad



For Keyboard Connector



For assembly direction, KB pin1 to KB conn. pin24



1008HA

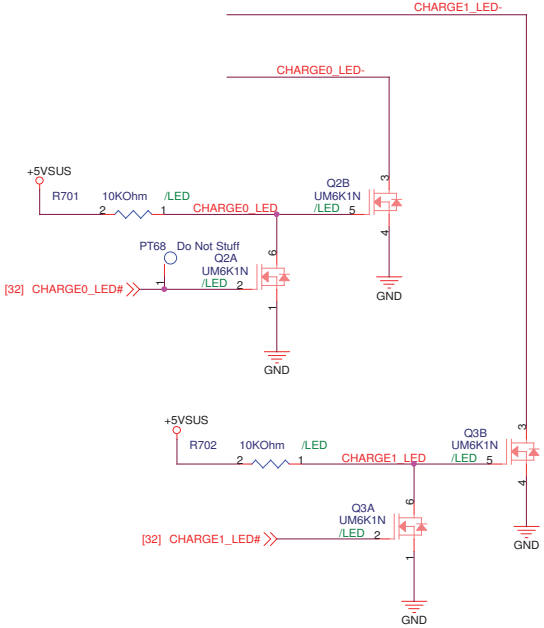
ASUSTek Computer INC.	Title : KB_Touch Pad	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 36 of 49	

1.1G change to EVERLIGHT

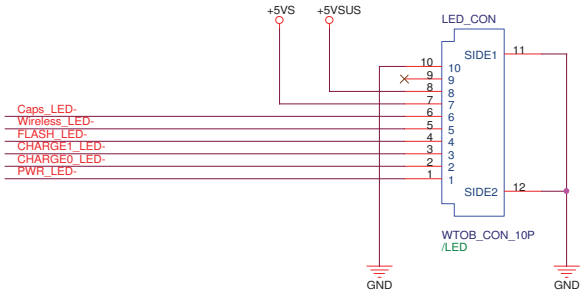
for CHARGE LED
Height : 0.55mm

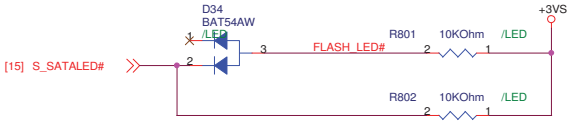
for POWER LED
White

for FLASH LED
White

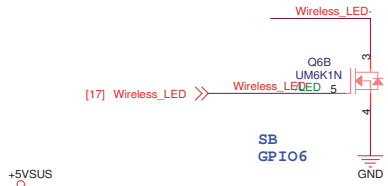


Change LED resistor to 510 Ohm, about 4mA



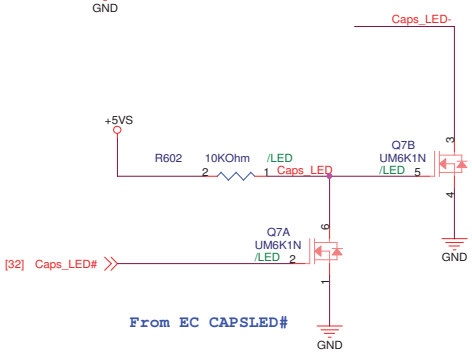


for WIFI/BlueTooth LED
White

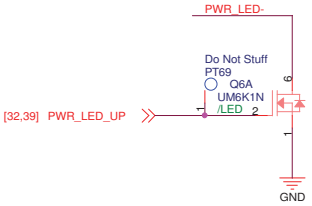


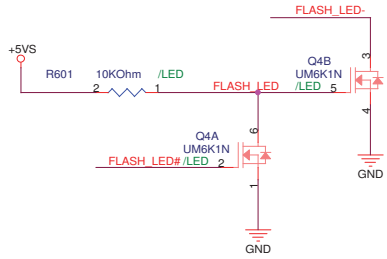
SB
GPIO6

for Caps Lock LED
White



From EC CAPSLED#





1008HA

ASUSTek Computer INC.	Title : LED	
	Engineer: Kenneth_Hung	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 37 of 50	

1008HA

Title : Discharge

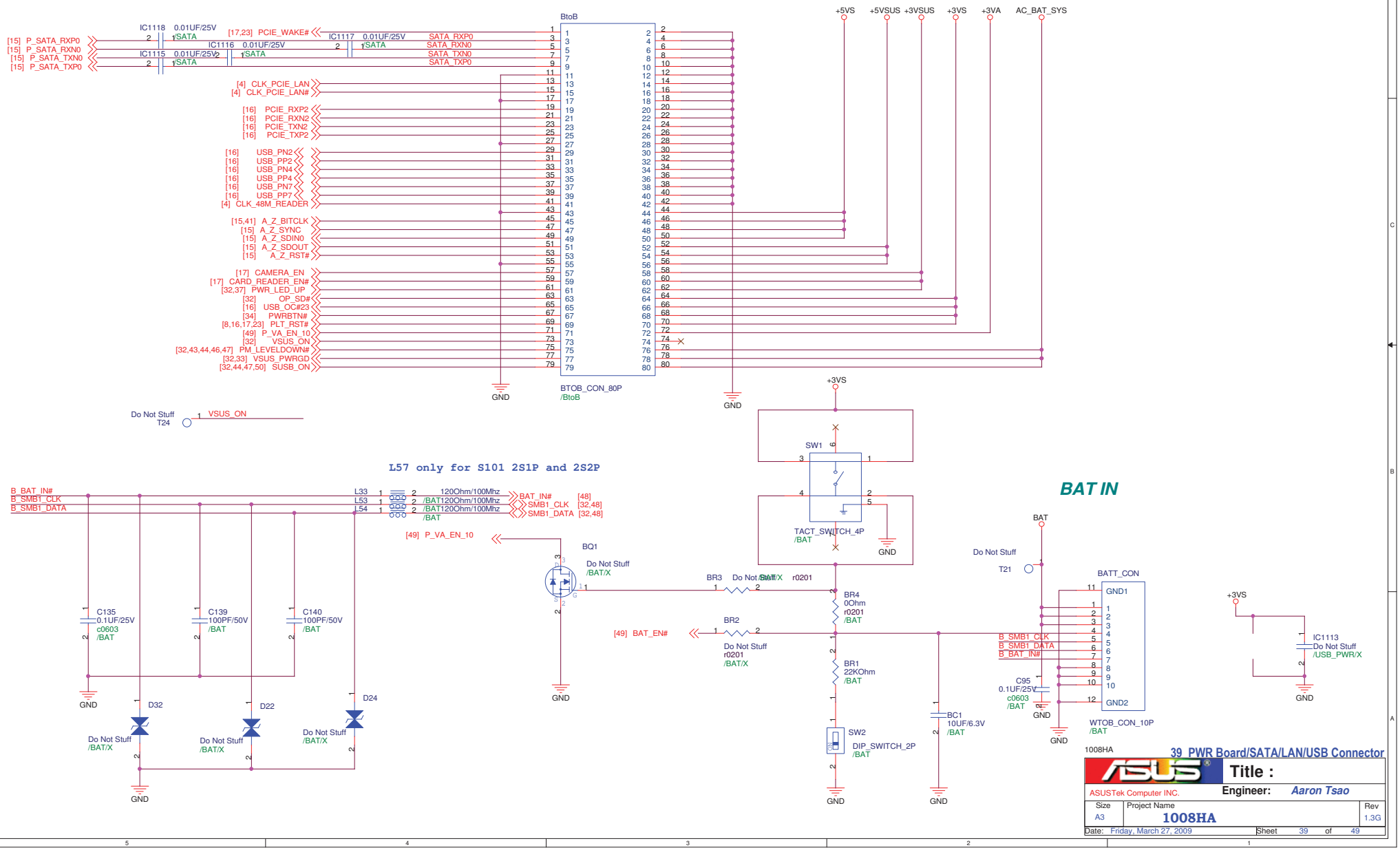
ASUSTek Computer INC.

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 38 of 49

PWR Board/SATA/LAN/USB Connector



1008HA

39 PWR Board/SATA/LAN/USB Connector

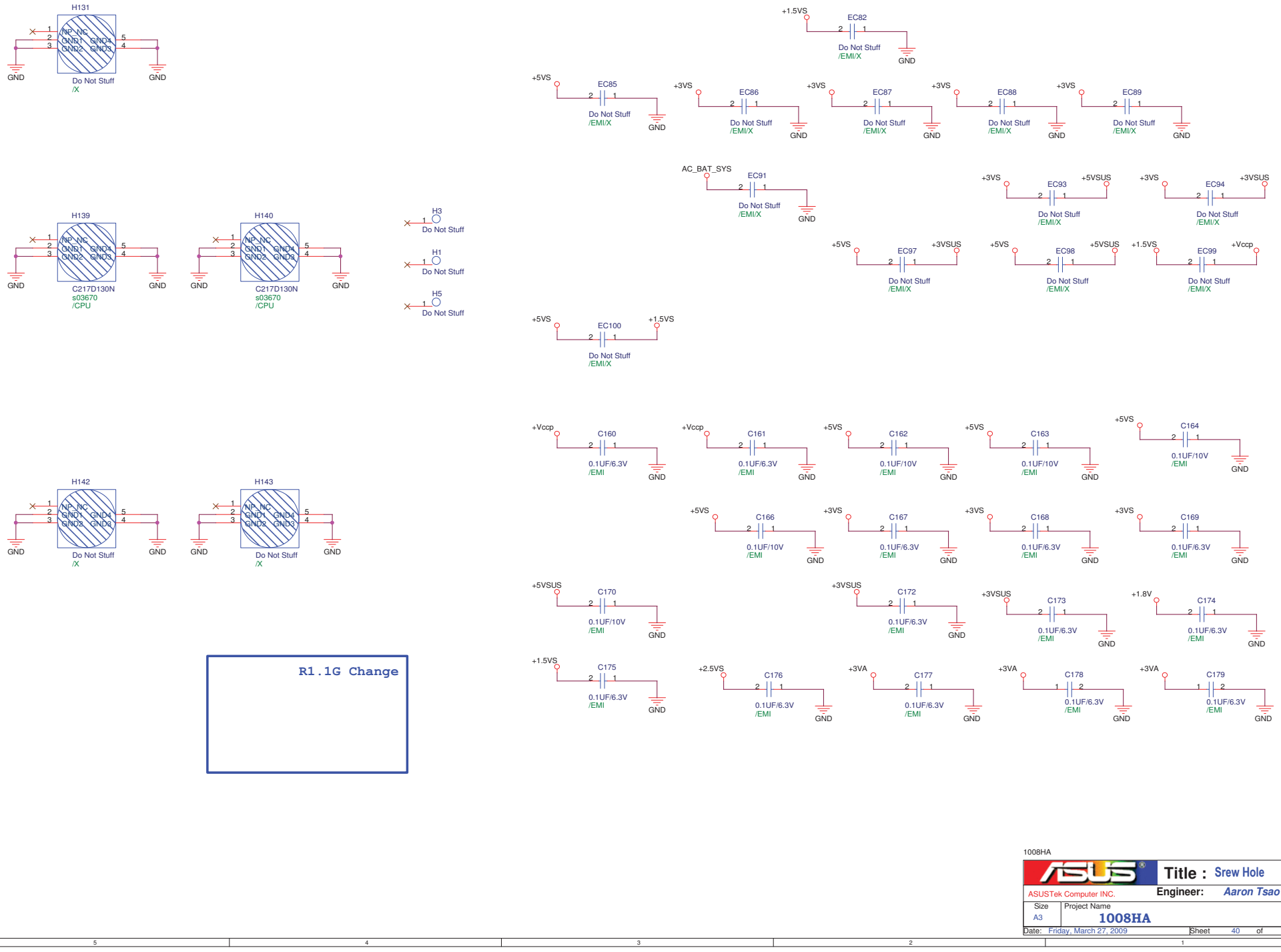
ASUSTek Computer INC.

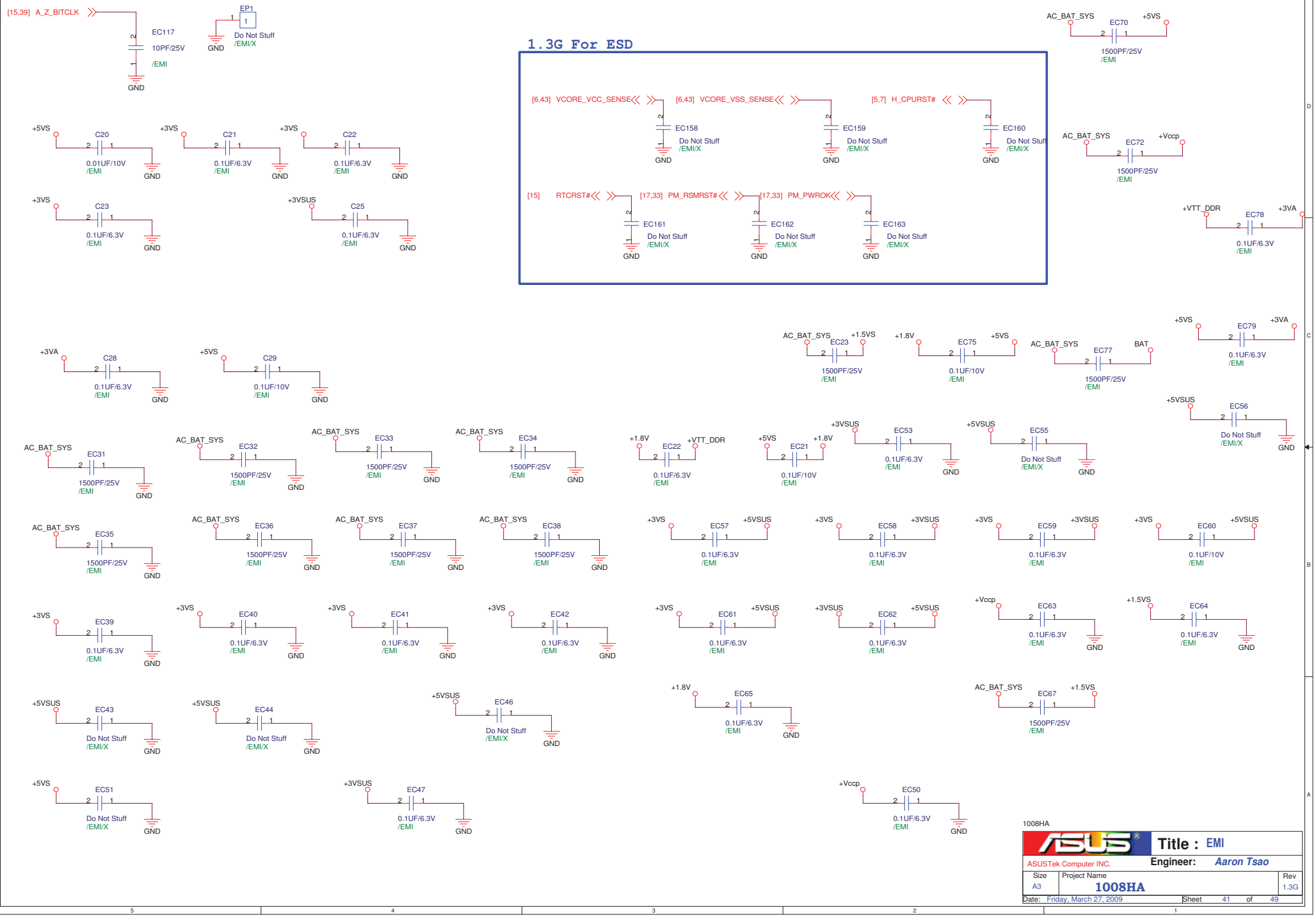
Title :

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

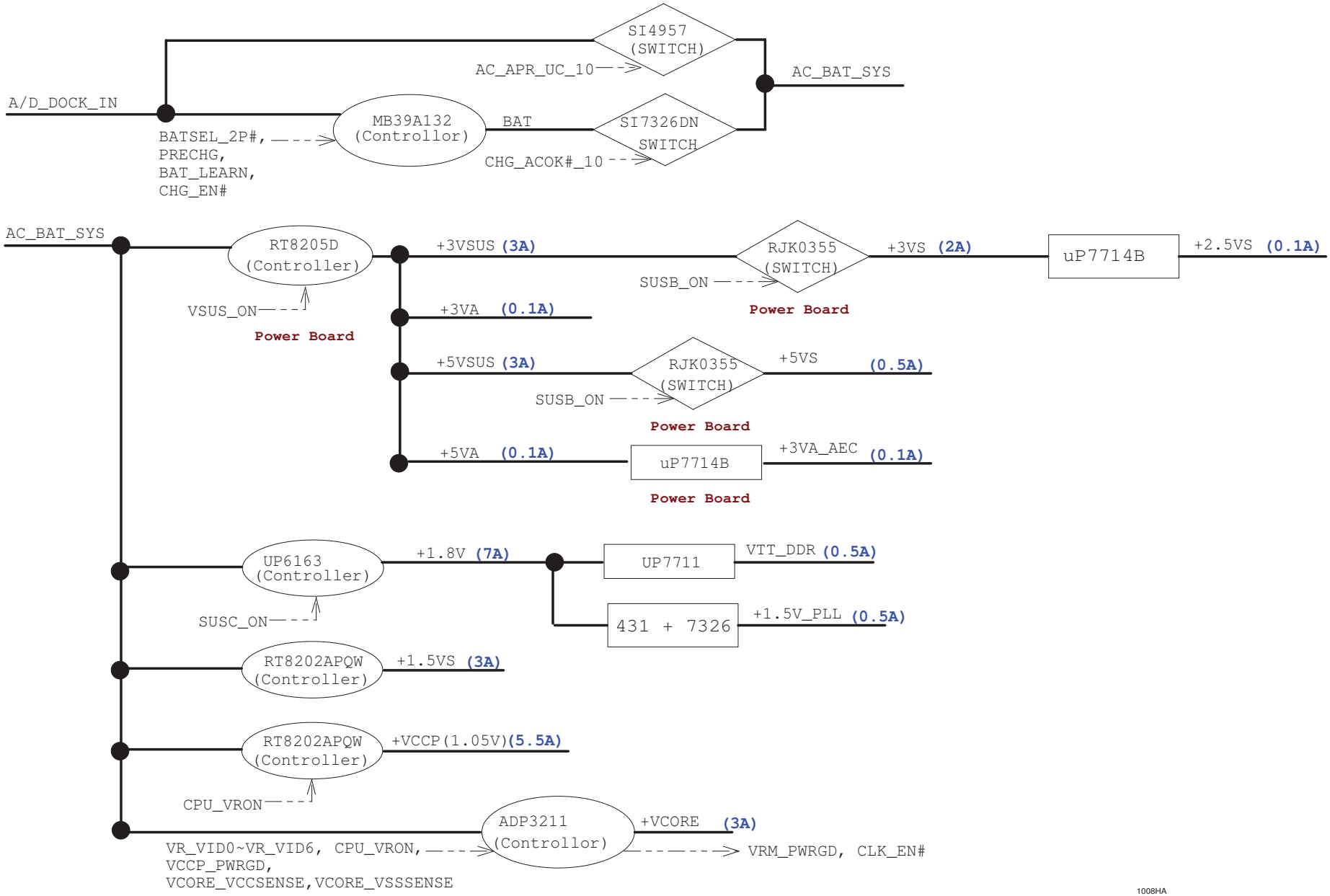
Date: Friday, March 27, 2009 Sheet 39 of 49





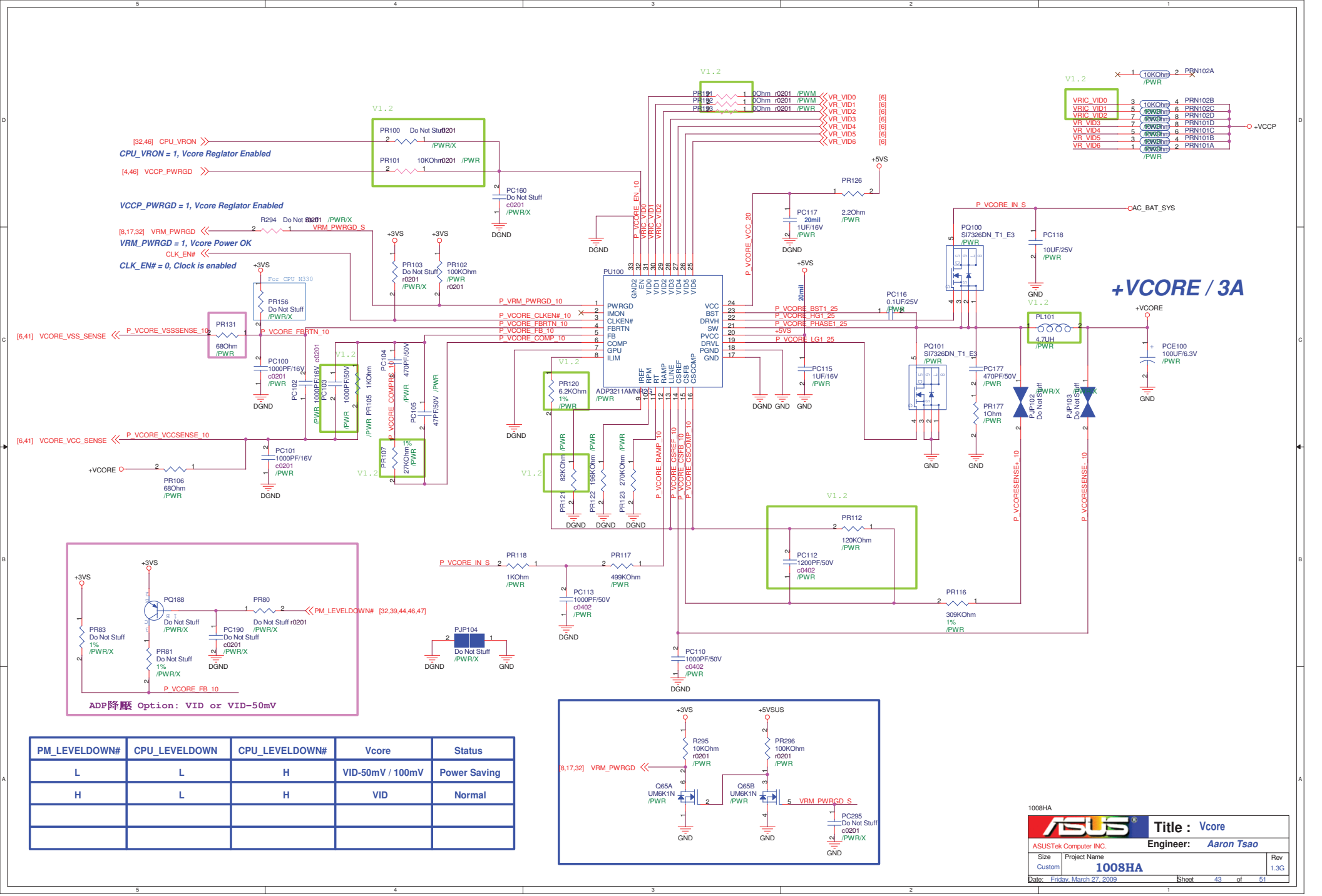
1008HA

ASUSTek Computer INC.	Title : EMI	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 41 of 49	



1008HA

ASUSTek Computer INC.	Title : Power Flow	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 42 of 49	



PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Vcore	Status
L	L	H	VID-50mV / 100mV	Power Saving
H	L	H	VID	Normal

1008HA

ASUSTek Computer INC.

Title : Vcore

Engineer: Aaron Tsao

Size: Custom | Project Name: 1008HA | Rev: 1.3G

Date: Friday, March 27, 2009 | Sheet 43 of 51

S3 And S5 Truth Table

State	S3	S5	VDDQ
S0	Hi	Hi	On
S3	Low	Hi	On
S4/S5	Low	Low	Off (Discharge)

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

Controller

1. Voltage & Current:
   +1.8V@3A
2. Frequency:
   PR127=1Mohm Fosc=250KHz
3. OCP:
   PR181=22Kohm ->10A
4. POR:
   POR Hysteresis =20mV
   V on =3.9-4.5V
5. UVP:
   Vout*70%
6. OVP:
   Vout*115%
7. Enable Voltage:
   V rising = 2 V
   V falling = 0.8V
8. Soft start time:
   Tss=512us
9. Phase selection:
   /X
10. Inrush Current:
    C total = 110 uF
    I inrush= 0.39 A

Power stage

1. I/P Current:
   I in = Vo*Io/(0.8 * Vin) =0.94A
2. Ripple Current:
   I rip= 1.78A
   I spec=2A ×1 pcs
3. Dynamic:
   I peak=5 A
   ESR =18 mohm
   △V =90mV
4. Inductor Spec:
   I sat=10 A
   I dc =5.5 A
   DCR=37 mohm
5. MOSFET Spec:

   H-side MOSFET: AP4800AGM

   Rds(ON)= 21 mohm (Vgs=4.5 V)
   I cont = 9.6 A (T =25 ℃)
   I peak = 40 A

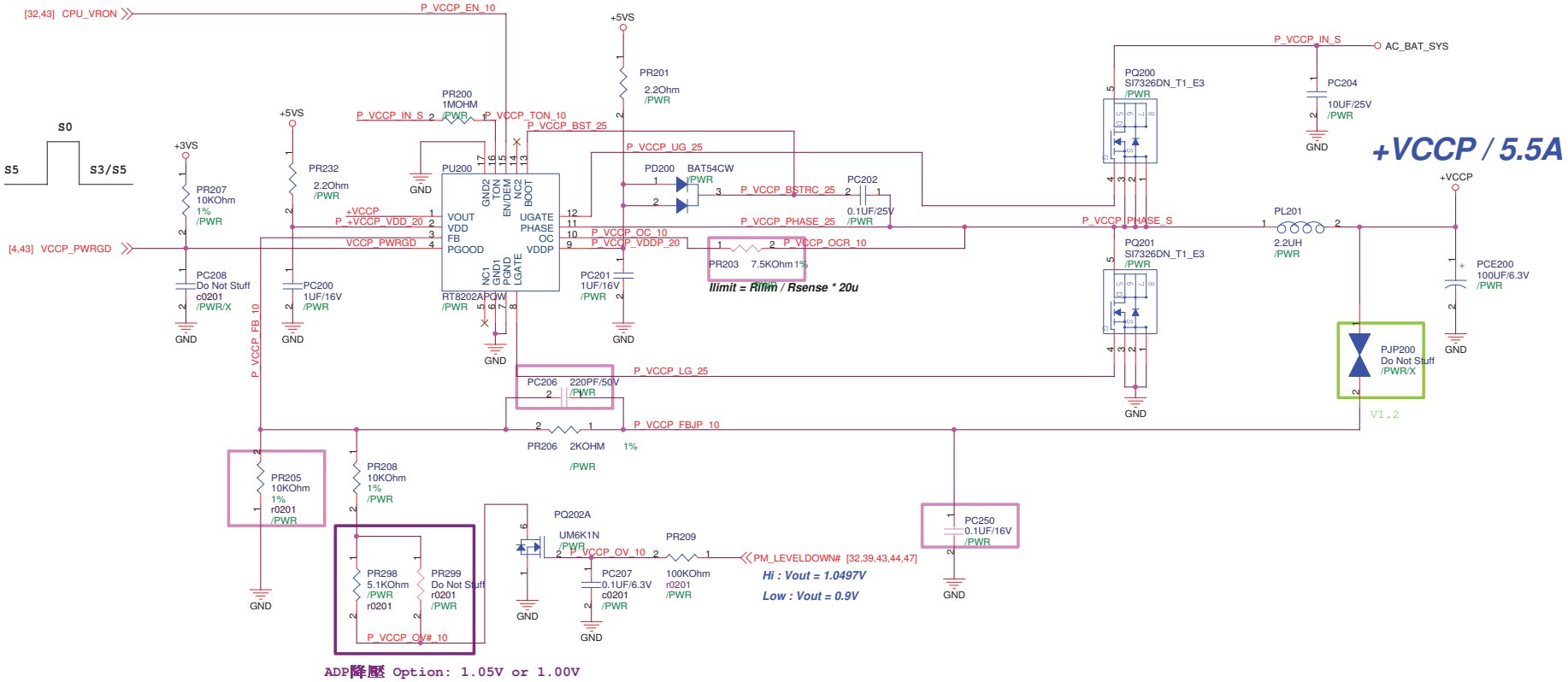
   L-side MOSFET: RAP4800AGM

   Rds(ON)= 21 mohm (Vgs=4.5 V)
   I cont = 9.6 A (T =25 ℃)
   I peak = 40 A

+1.5V_SEL#	PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
H	L	L	H	1.72V	Power Saving
H	H	L	H	1.82V	Normal
L	L	L	H	1.4V	Power Saving
L	H	L	H	1.5V	Normal

ADP降壓 Option: 1.82V or 1.72V

1008HA
Title : +1.8V & VTTDDR
ASUSTek Computer INC.
Engineer: Aaron Tsao
Size A2 | Project Name 1008HA | Rev 1.3G
Date: Friday, March 27, 2009 | Sheet 44 of 47



PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
L	L	H	0.9V	Power Saving
H	L	H	1.05V	Normal

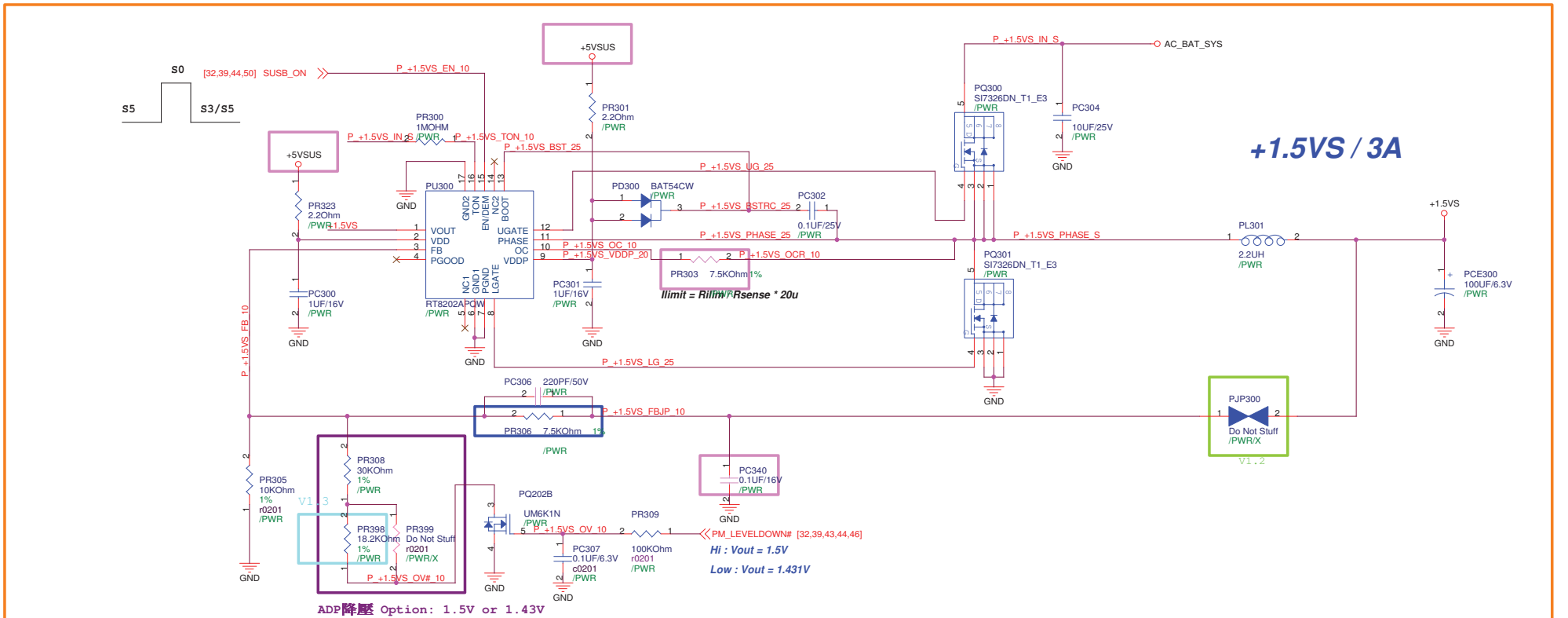
1008HA

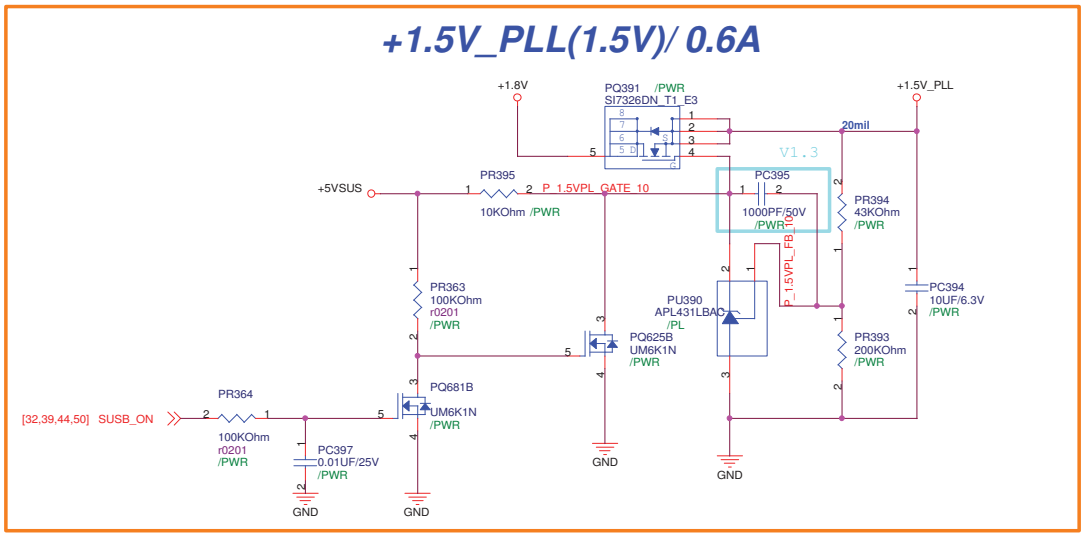
Title : VCCP

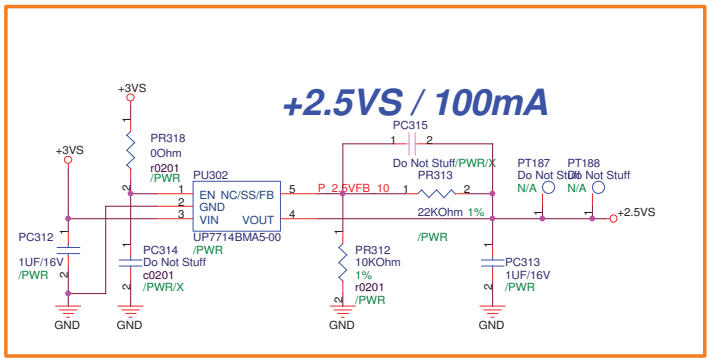
ASUSTek Computer INC. Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 46 of 51

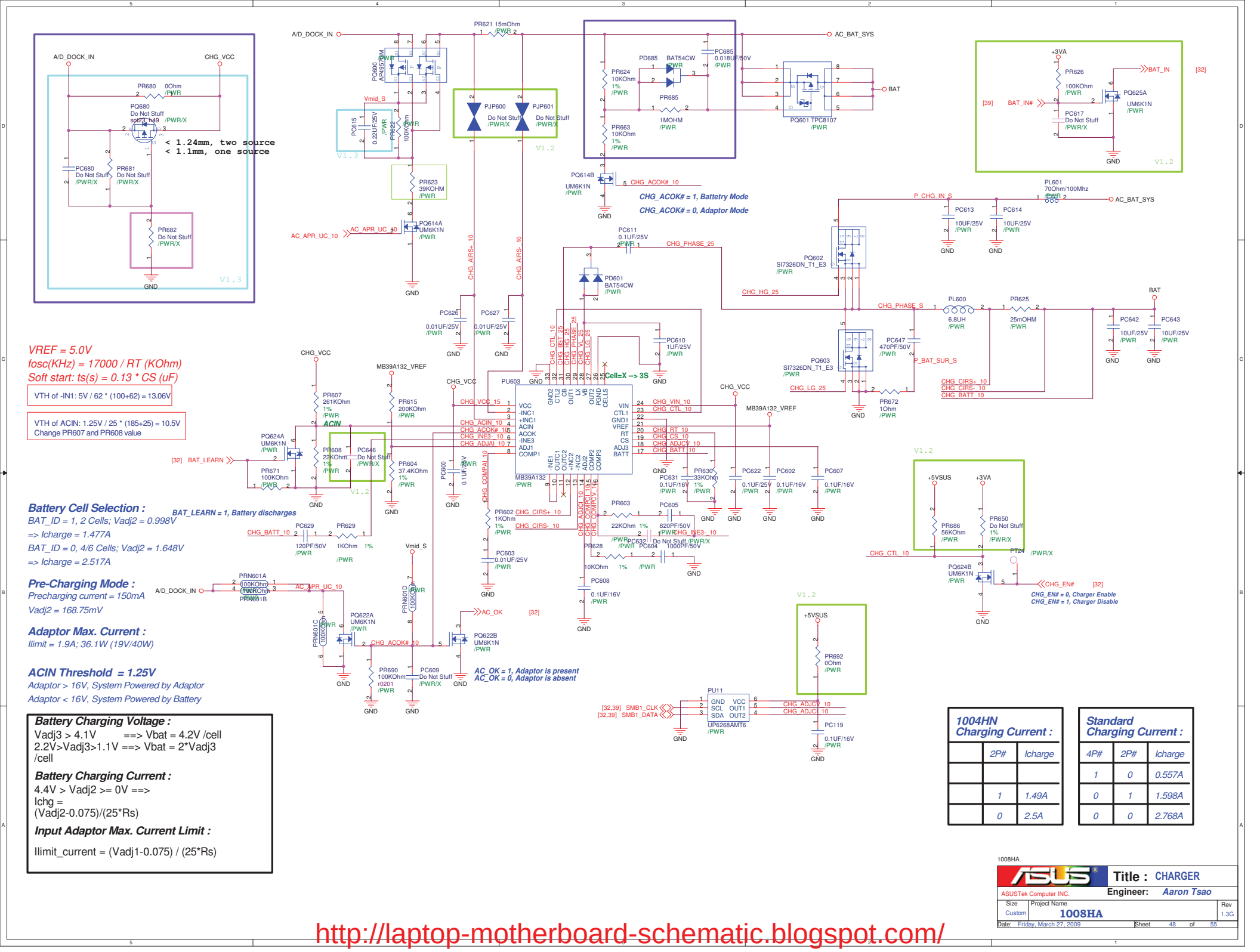


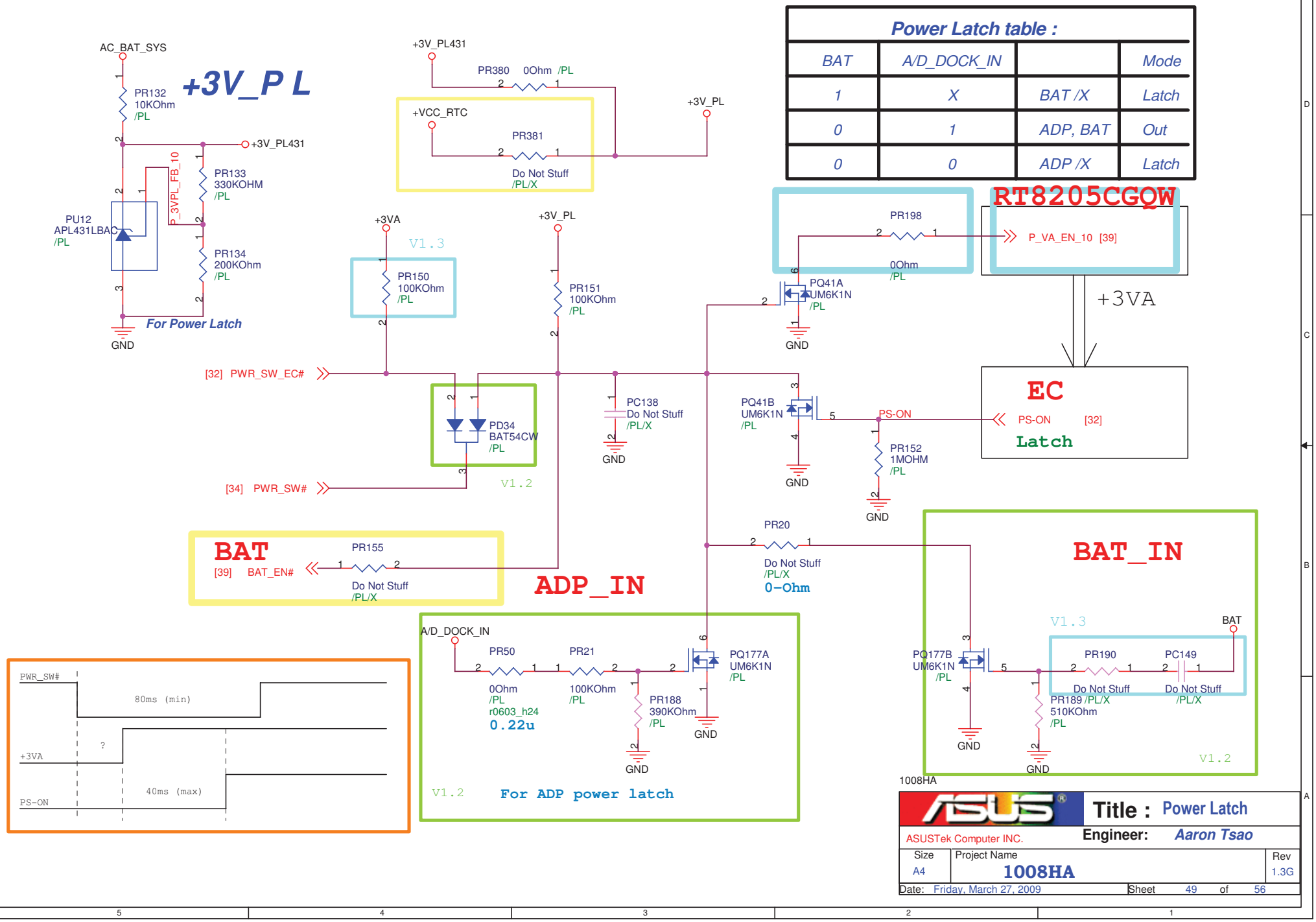


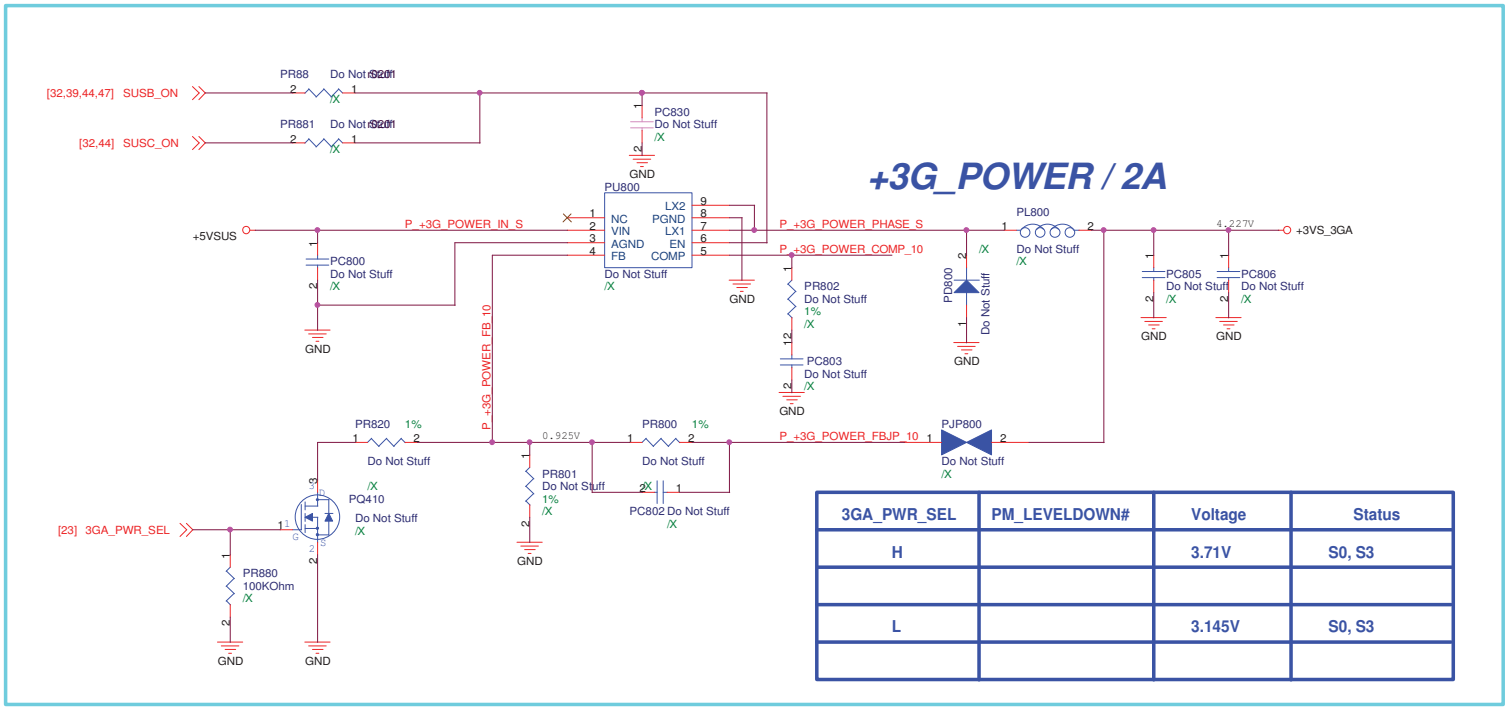


1008HA

ASUSTek Computer INC.	Title : +1.5VS & +2.5VS	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 47 of 51	



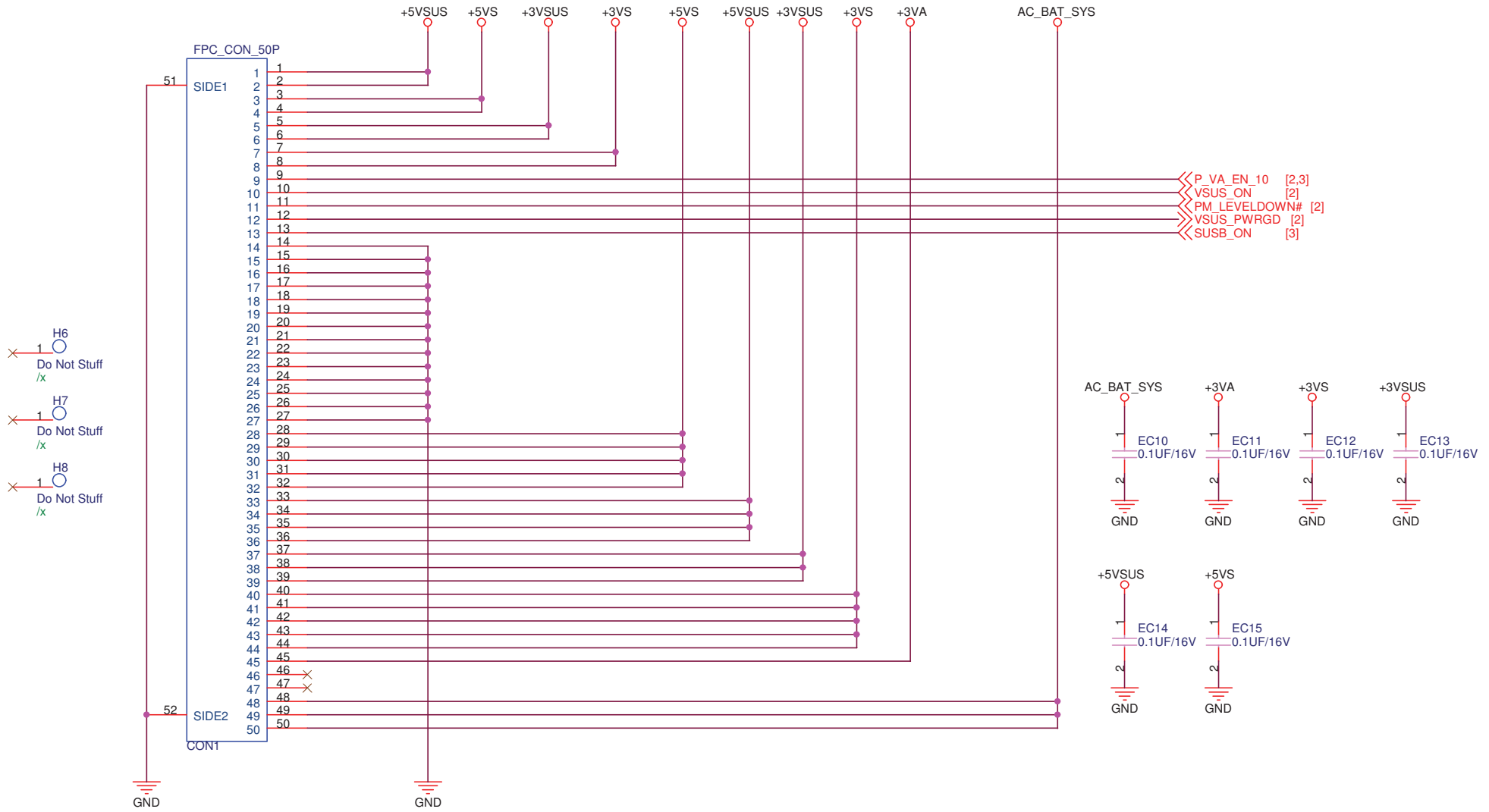


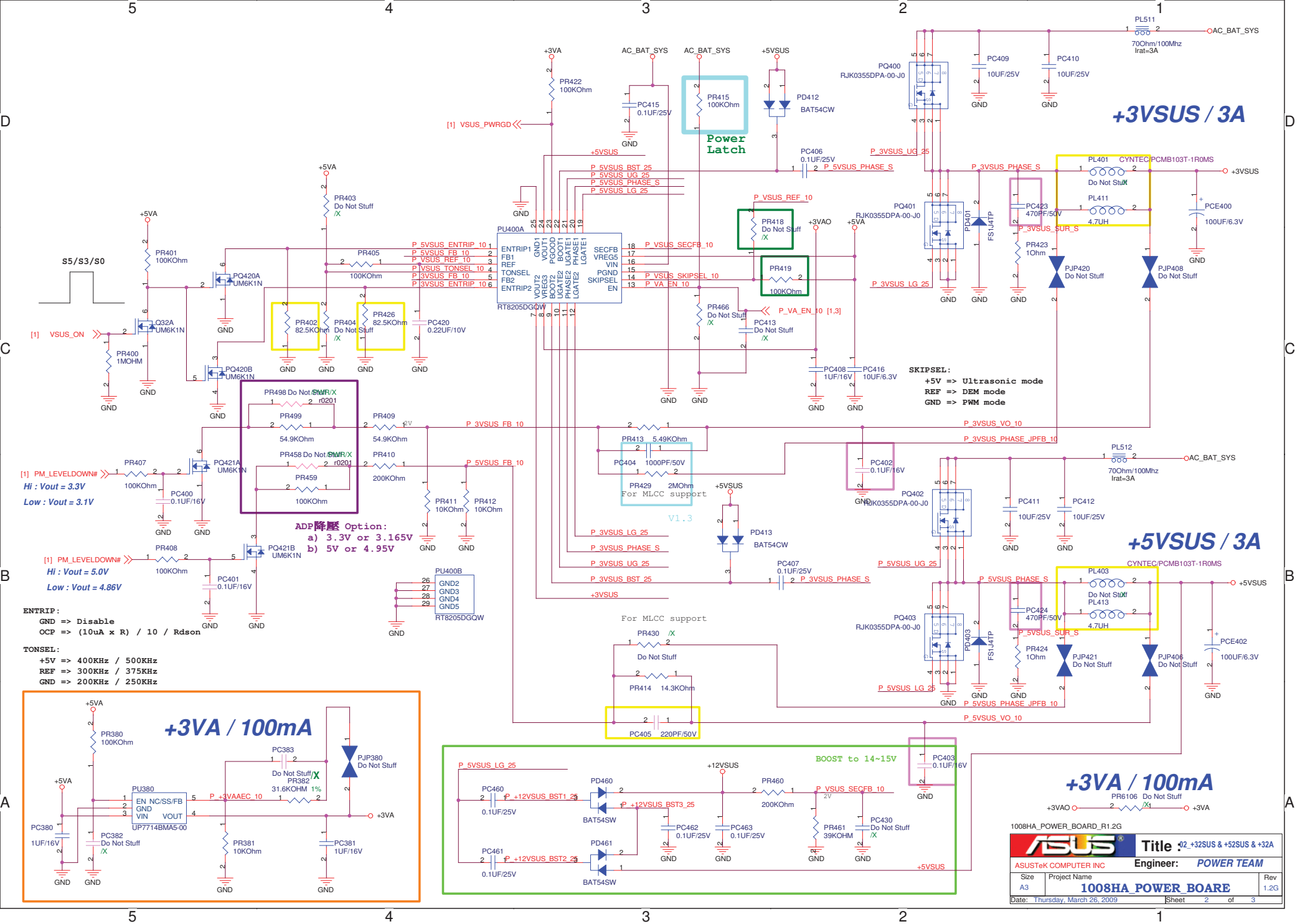


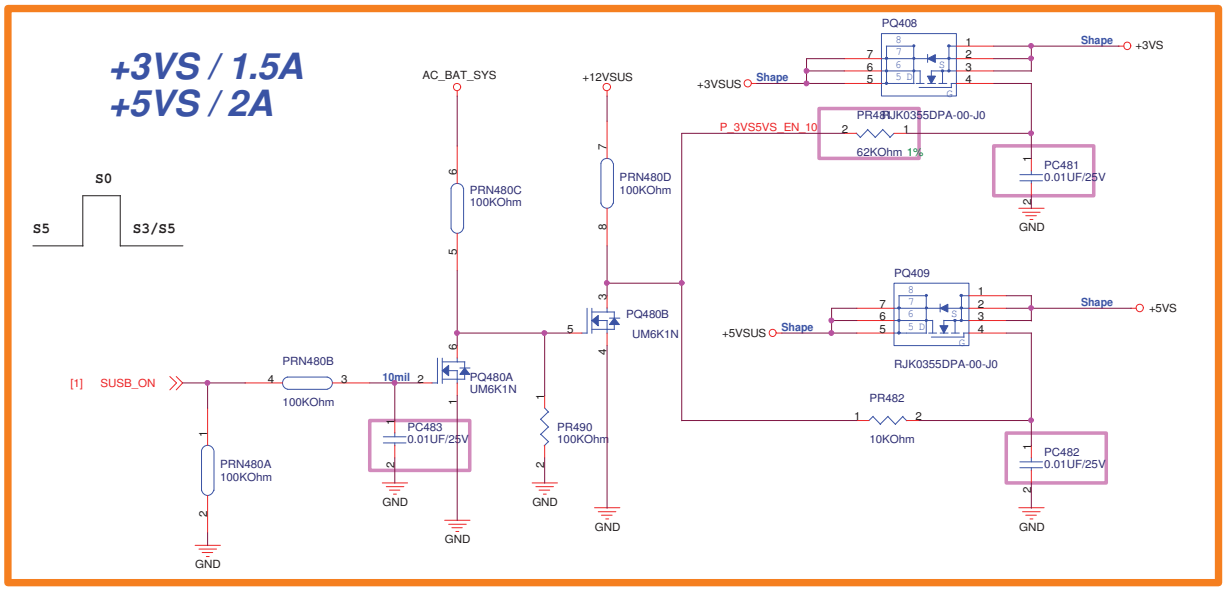
3GA_PWR_SEL	PM_LEVELDOWN#	Voltage	Status
H		3.71V	S0, S3
L		3.145V	S0, S3

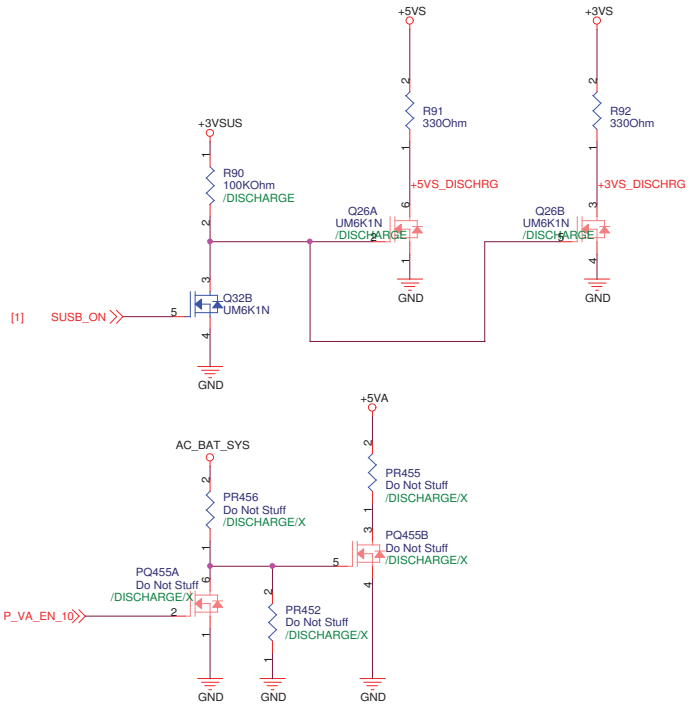
1008HA

ASUSTek Computer INC.	Title : History	
	Engineer: Aaron Tsao	
Size: A3	Project Name: 1008HA	Rev: 1.3G
Date: Friday, March 27, 2009	Sheet 50 of 51	









1008HA_POWER_BOARD_R1.2G

ASUSTek Computer INC.	Title : 03_+32S & +52S	
	Engineer: POWER TEAM	
Size: A3	Project Name: 1008HA_POWER_BOARE	Rev: 1.2G
Date: Thursday, March 26, 2009	Sheet 3 of 3	

Rev0.7	Initial release	2008/10/22
Rev0.71	Remove hotkey switch(R2, C427, SW6, OR25)	2008/10/22
	Remove White LED (LED4, R86, Q17, SB_GPIO7)	
	Add 40 pin FPC connector	
	Change netname from BT_LED to Wireless_LED	
	Change NMOS from 2N7002 to UM6K1N(Q25, 23, Q18, Q15, Q58, Q19, Q16, Q19)	
	Change 3G power name to +3VS_3GA	
	Add dual-core support (not ready)	
Rev0.72	Change the part for LAN connector	2008/10/23
	Change the SPEAKER connector (same as FAN)	
Rev0.73	Remove CC36-40, CC45, CC24-25, CC16-17 for layout space	2008/10/27
	Remove HC32, 33 for Layout space	
	Remove HC14-16, HC125 (stuff HC126) for Layout space	
	Remove C422, 212, 232 (stuff C223) for Layout space	
	Remove C436, 292, 305 for Layout space	
	Change U47 to /X and sutff R265	
	Remove MC5, 6, 7, 9, 15, 17, 22, 24, 26, 27, 33 for Layout space	
	Remove WIFI & 3G RSV component	

1008HA

ASUSTek Computer INC.

Title : History

Engineer: Aaron Tsao

Size	Project Name	Rev
A3	1008HA	1.3G

Date: Friday, March 27, 2009 Sheet 51 of 49