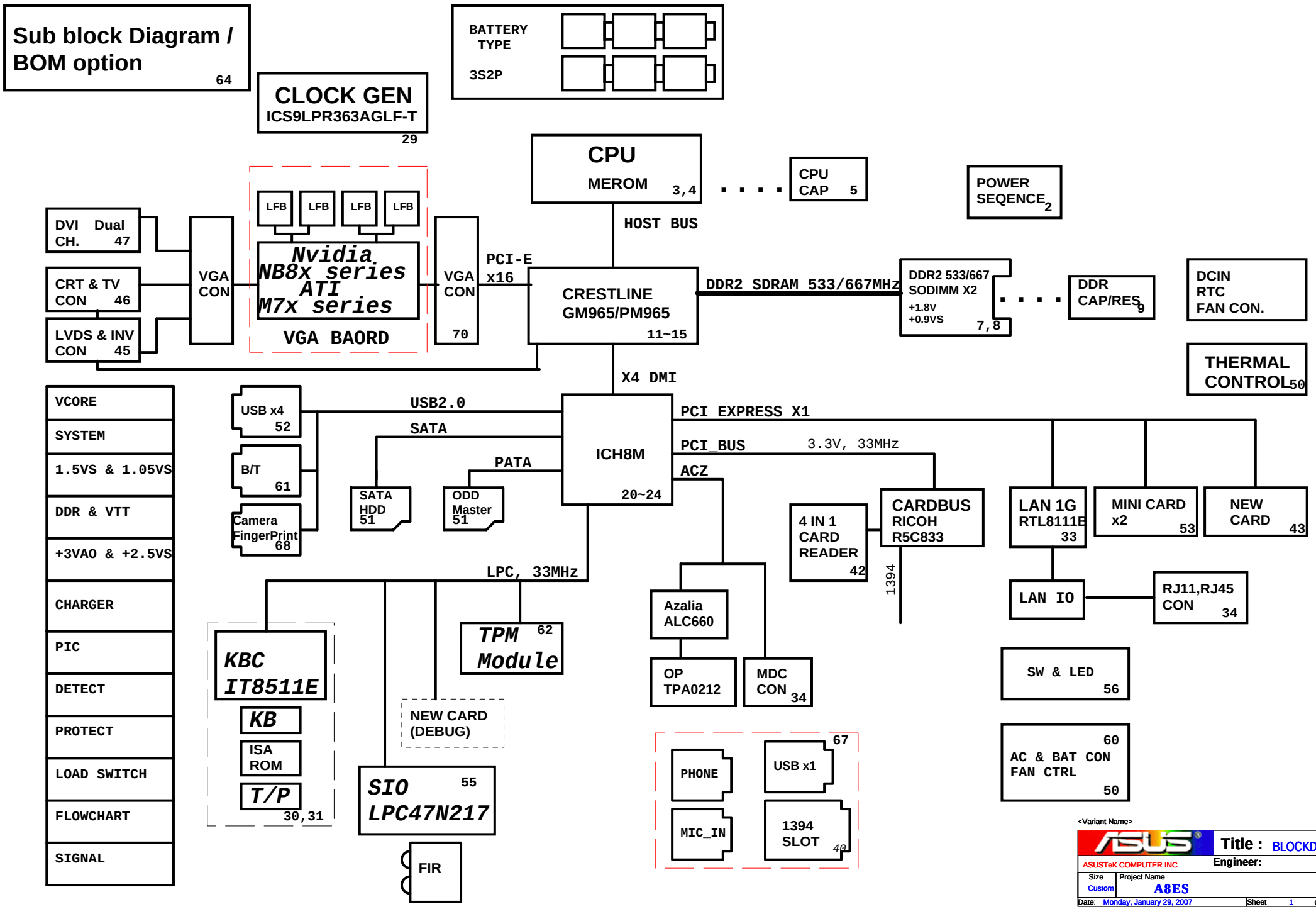
A8E/A8S Merom/GM965/PM965 BLOCK DIAGRAM



<Variant Name>

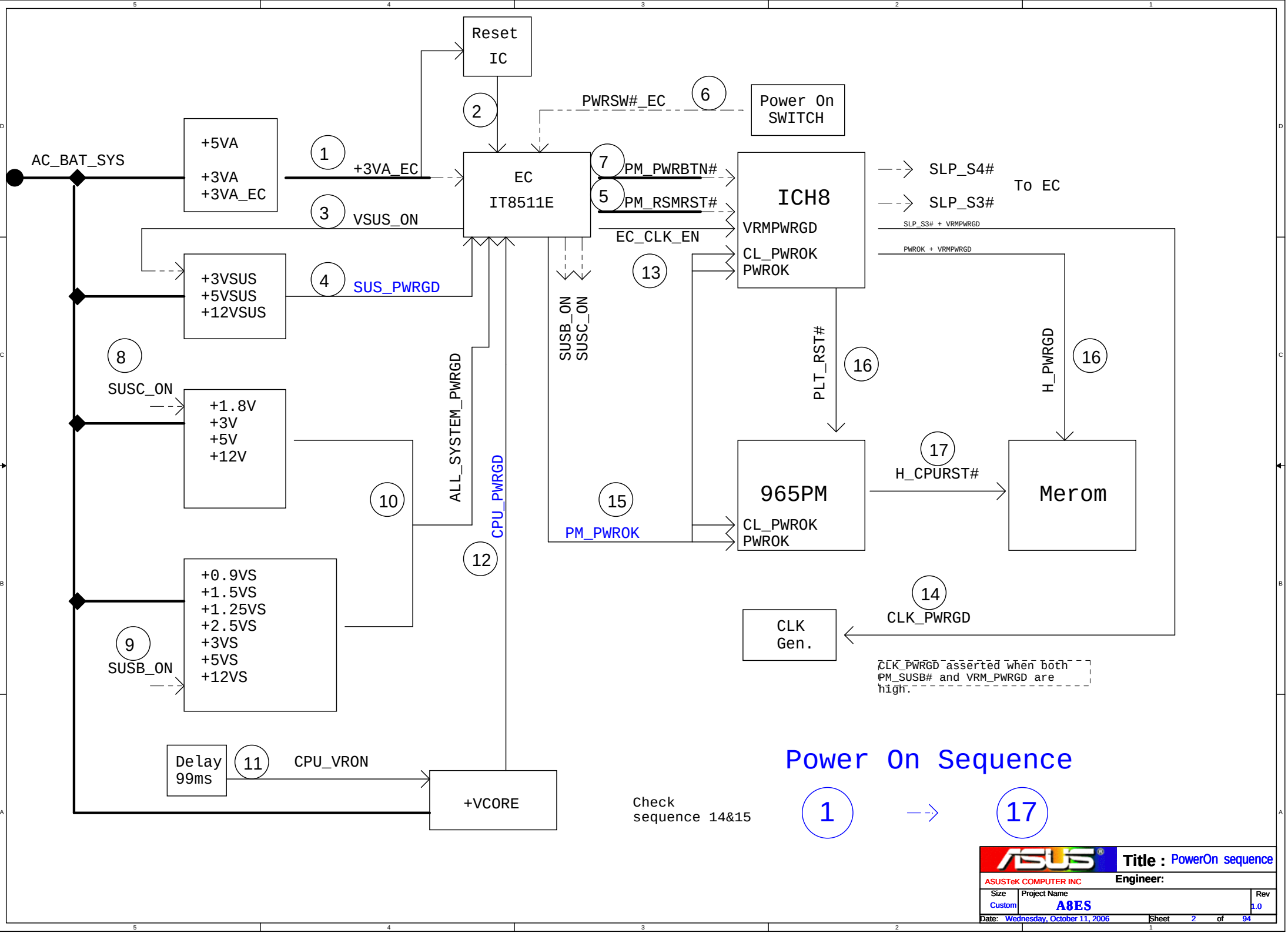
ASUSTeK COMPUTER INC

Title : BLOCKDIAGRAM

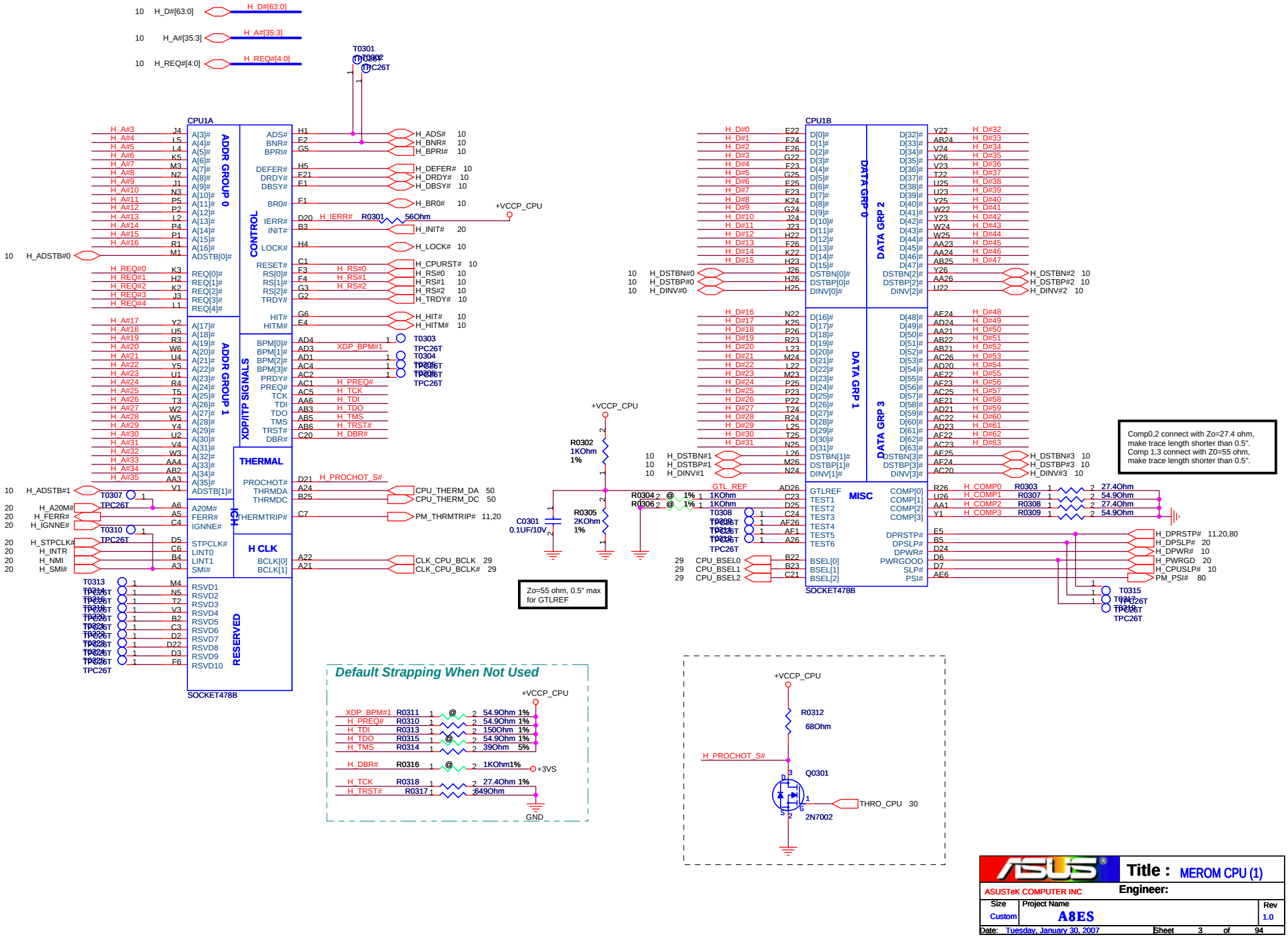
Engineer:

Size	Project Name	Rev
Custom	A8ES	2.0

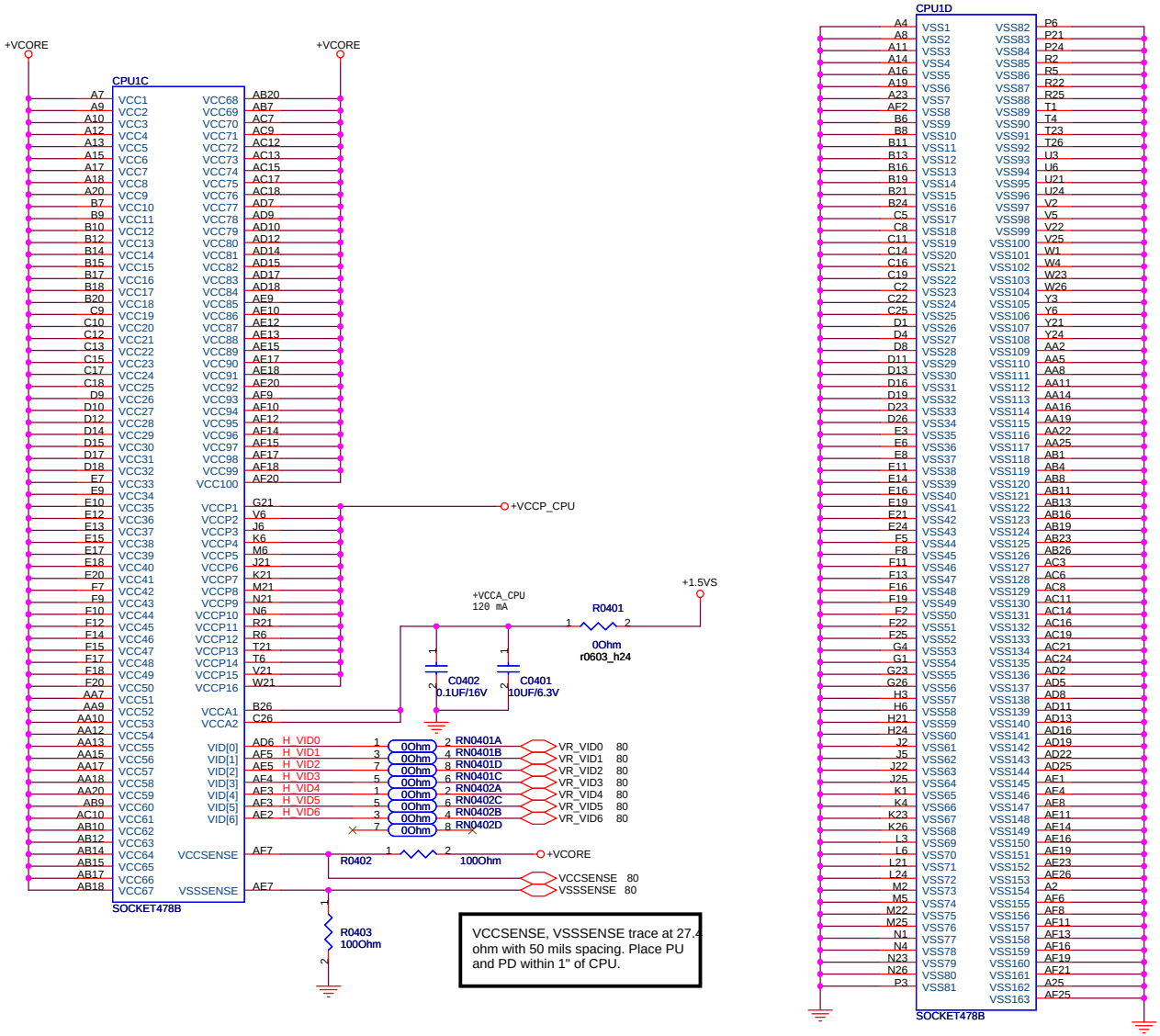
Date: Monday, January 29, 2007 Sheet 1 of 94



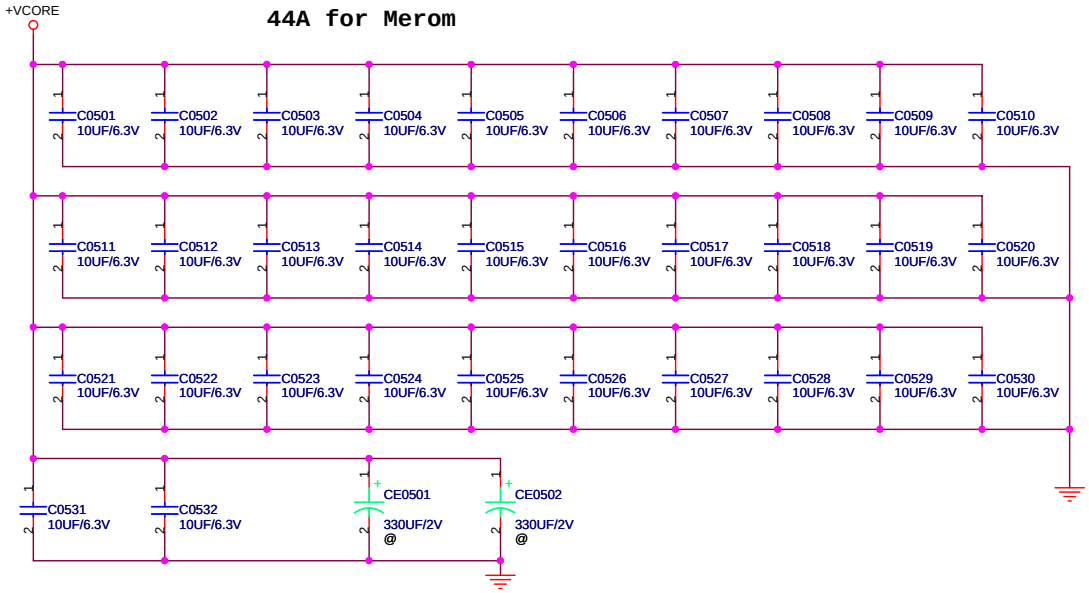
Title : PowerOn sequence			
ASUSTeK COMPUTER INC	Engineer:		
Size: Custom	Project Name: A8ES		Rev: 1.0
Date: Wednesday, October 11, 2006	Sheet 2 of 94		



ASUSTeK COMPUTER INC	Title : MEROM CPU (1)		
	Engineer:		
Size: Custom	Project Name: A8ES		Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 3 of 94		



ASUSTeK COMPUTER INC	Title : MEROM CPU (2)		
	Engineer:		
Size: Custom	Project Name: A8ES		Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 4 of 94		

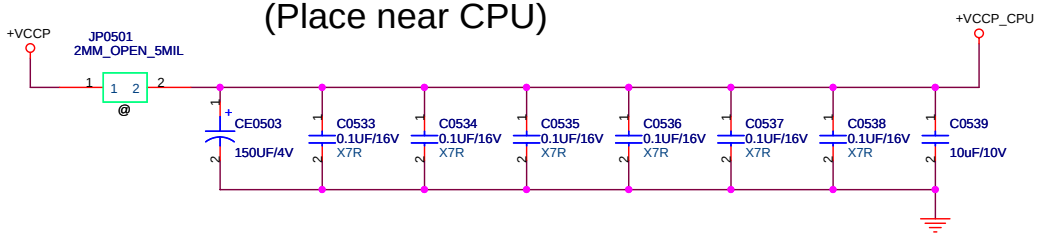


Decoupling guide from INTEL

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

VCORE	10uF/10V	* 32pcs
	330uF/2V	* 0pcs
VCCP	0.1uF	* 6pcs for CPU
	150uF	* 1pcs for CPU
	10uF/10V	* 1pcs

+VCCP Decoupling Capacitor (Place near CPU)



ASUSTeK COMPUTER INC

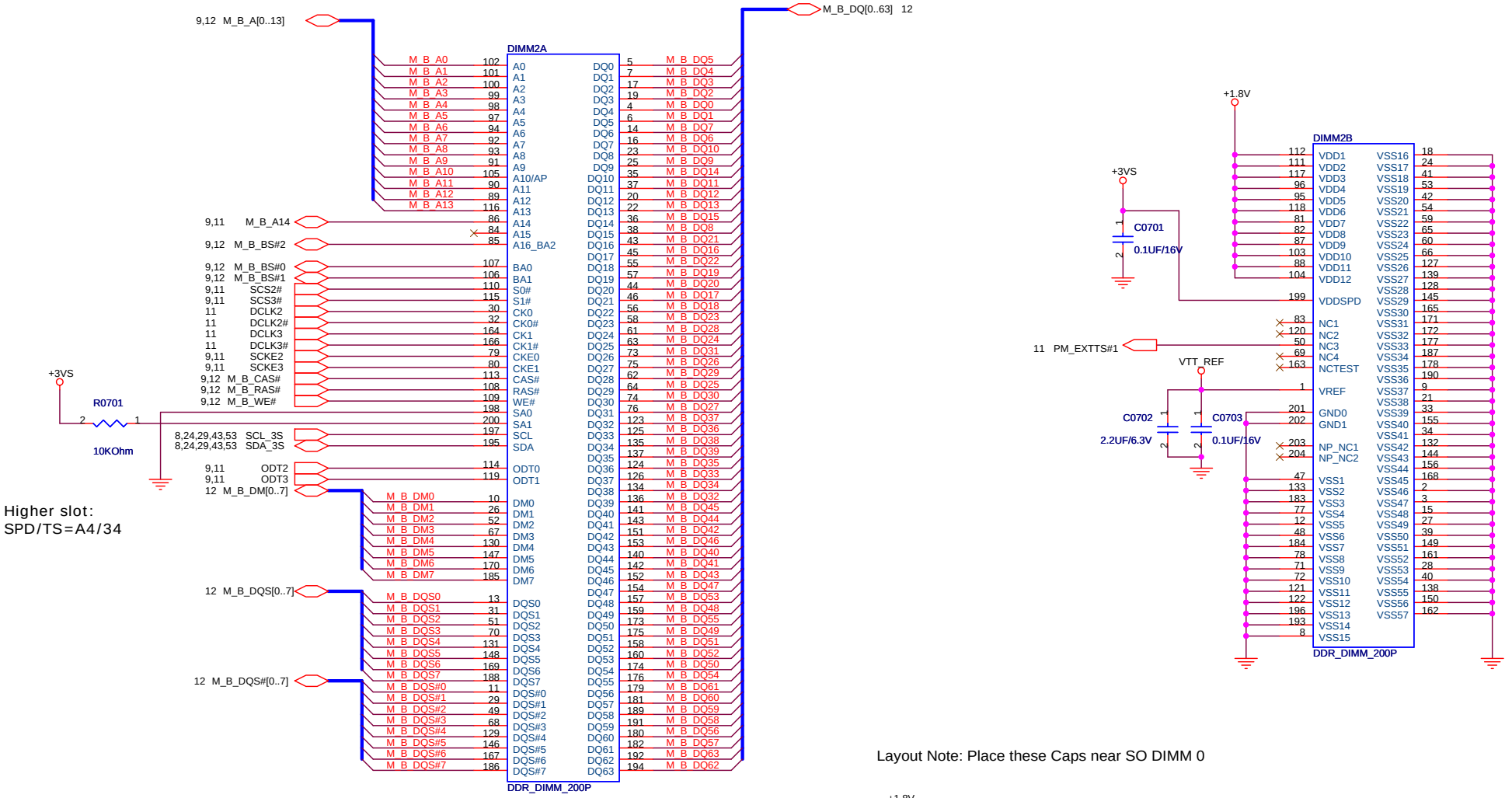
Title : CPU CAP

Engineer:

Size	Project Name	Rev
B	A8ES	1.0

Date: Friday, October 13, 2006 Sheet 5 of 94

ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 6 of 94		


9,12 M_B_A[0..13]
M_B_DQ[0..63] 12
DIMM2A
M_B_A0 M_B_A1 M_B_A2 M_B_A3 M_B_A4 M_B_A5 M_B_A6 M_B_A7 M_B_A8 M_B_A9 M_B_A10 M_B_A11 M_B_A12 M_B_A13
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 A12 A13 A14 A15 A16_BA2
9,11 M_B_A14
9,12 M_B_BS#2
9,12 M_B_BS#0
9,12 M_B_BS#1
9,11 SCS2#
9,11 SCS3#
11 DCLK2
11 DCLK2#
11 DCLK3
11 DCLK3#
9,11 SCKE2
9,11 SCKE3
9,12 M_B_CAS#
9,12 M_B_RAS#
9,12 M_B_WE#
BA0 BA1 S0# S1# CK0 CK0# CK1 CK1# CKE0 CKE1 CAS# RAS# WE#
+3VS
R0701
10KOhm
SA0 SA1
8,24,29,43,53 SCL_3S
8,24,29,43,53 SDA_3S
SCL SDA
9,11 ODT2
9,11 ODT3
ODT0 ODT1
12 M_B_DM[0..7]
M_B_DM0 M_B_DM1 M_B_DM2 M_B_DM3 M_B_DM4 M_B_DM5 M_B_DM6 M_B_DM7
DM0 DM1 DM2 DM3 DM4 DM5 DM6 DM7
12 M_B_DQS[0..7]
M_B_DQS0 M_B_DQS1 M_B_DQS2 M_B_DQS3 M_B_DQS4 M_B_DQS5 M_B_DQS6 M_B_DQS7
DQS0 DQS1 DQS2 DQS3 DQS4 DQS5 DQS6 DQS7
12 M_B_DQS#[0..7]
M_B_DQS#0 M_B_DQS#1 M_B_DQS#2 M_B_DQS#3 M_B_DQS#4 M_B_DQS#5 M_B_DQS#6 M_B_DQS#7
DQS#0 DQS#1 DQS#2 DQS#3 DQS#4 DQS#5 DQS#6 DQS#7
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15 DQ16 DQ17 DQ18 DQ19 DQ20 DQ21 DQ22 DQ23 DQ24 DQ25 DQ26 DQ27 DQ28 DQ29 DQ30 DQ31 DQ32 DQ33 DQ34 DQ35 DQ36 DQ37 DQ38 DQ39 DQ40 DQ41 DQ42 DQ43 DQ44 DQ45 DQ46 DQ47 DQ48 DQ49 DQ50 DQ51 DQ52 DQ53 DQ54 DQ55 DQ56 DQ57 DQ58 DQ59 DQ60 DQ61 DQ62 DQ63
M_B_DQ5 M_B_DQ4 M_B_DQ3 M_B_DQ2 M_B_DQ0 M_B_DQ1 M_B_DQ7 M_B_DQ6 M_B_DQ10 M_B_DQ9 M_B_DQ14 M_B_DQ11 M_B_DQ12 M_B_DQ13 M_B_DQ15 M_B_DQ8 M_B_DQ21 M_B_DQ16 M_B_DQ22 M_B_DQ19 M_B_DQ20 M_B_DQ17 M_B_DQ18 M_B_DQ23 M_B_DQ28 M_B_DQ24 M_B_DQ31 M_B_DQ26 M_B_DQ29 M_B_DQ25 M_B_DQ30 M_B_DQ27 M_B_DQ37 M_B_DQ36 M_B_DQ38 M_B_DQ39 M_B_DQ35 M_B_DQ33 M_B_DQ34 M_B_DQ32 M_B_DQ45 M_B_DQ44 M_B_DQ42 M_B_DQ46 M_B_DQ40 M_B_DQ41 M_B_DQ43 M_B_DQ47 M_B_DQ53 M_B_DQ48 M_B_DQ55 M_B_DQ49 M_B_DQ51 M_B_DQ52 M_B_DQ50 M_B_DQ54 M_B_DQ61 M_B_DQ60 M_B_DQ59 M_B_DQ58 M_B_DQ56 M_B_DQ57 M_B_DQ63 M_B_DQ62
DDR_DIMM_200P
Higher slot:
SPD/TS=A4/34
+1.8V
+3VS
C0701
0.1UF/16V
DIMM2B
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDD9 VDD10 VDD11 VDD12 VDDSPD
VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSS13 VSS14 VSS15 VSS16 VSS17 VSS18 VSS19 VSS20 VSS21 VSS22 VSS23 VSS24 VSS25 VSS26 VSS27 VSS28 VSS29 VSS30 VSS31 VSS32 VSS33 VSS34 VSS35 VSS36 VSS37 VSS38 VSS39 VSS40 VSS41 VSS42 VSS43 VSS44 VSS45 VSS46 VSS47 VSS48 VSS49 VSS50 VSS51 VSS52 VSS53 VSS54 VSS55 VSS56 VSS57
NC1 NC2 NC3 NC4 NCTEST VREF GND0 GND1 NP_NC1 NP_NC2
11 PM_EXTTS#1
VTT_REF
C0702
2.2UF/6.3V
C0703
0.1UF/16V
DDR_DIMM_200P
Layout Note: Place these Caps near SO DIMM 0
+1.8V
C0704 C0705 C0706 C0707
0.1UF/16V 0.1UF/16V 0.1UF/16V 0.1UF/16V
Layout Note: Place these High-Freq decoupling Caps near the GMCH
+1.8V_GMCH
C0708 C0709 C0710 C0711
0.1UF/16V 0.1UF/16V 0.1UF/16V 0.1UF/16V
Layout Note: Place these Caps near SO DIMM 0
+1.8V
C0712 C0713 C0714 C0715
1UF/10V 1UF/10V 1UF/10V 1UF/10V
Upper:Channel B
Title :DDR SO-DIMM
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
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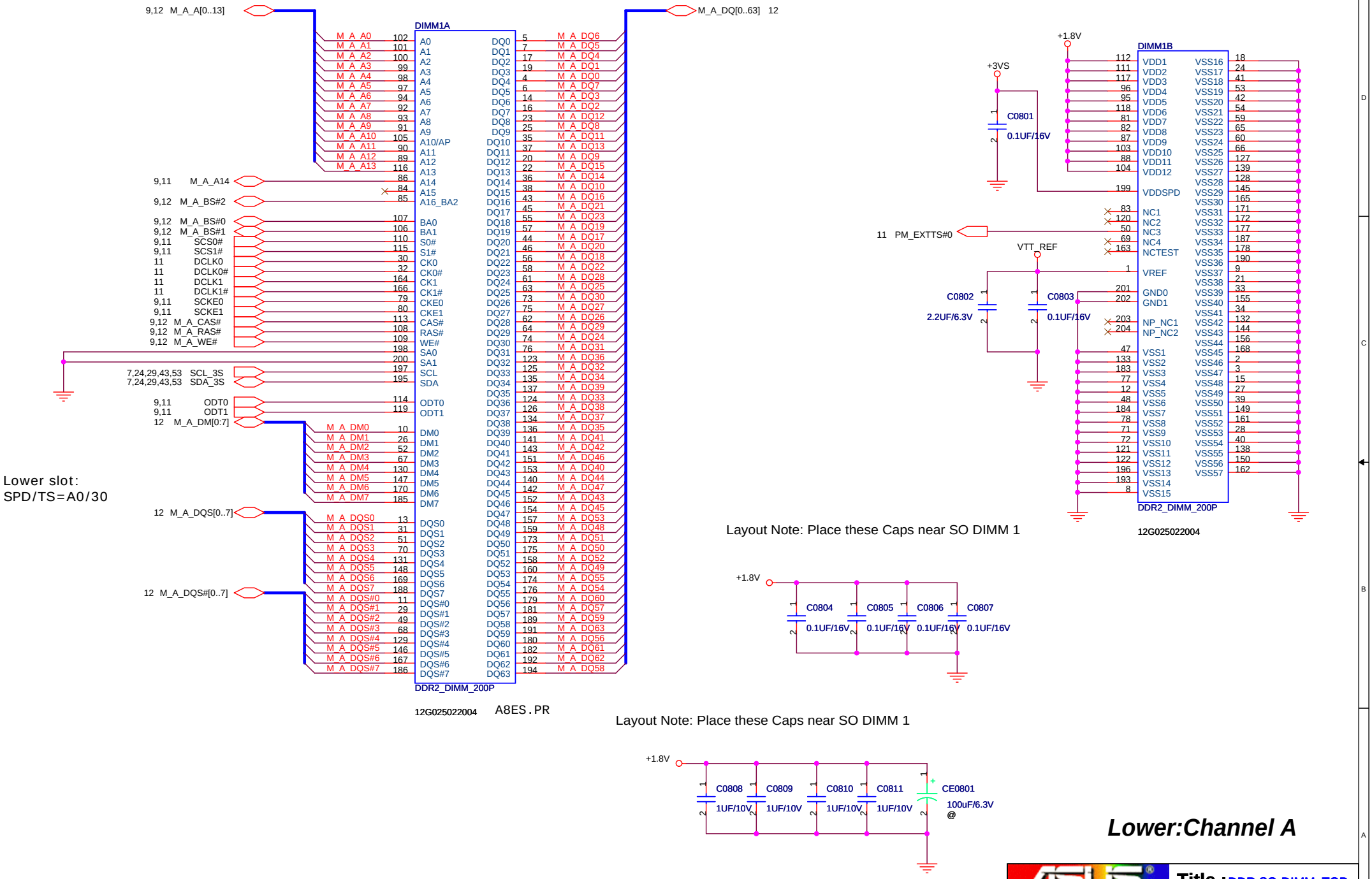
9,12 M_A_A[0..13]
M_A_DQ[0..63] 12
DIMM1A
9,11 M_A_A14
9,12 M_A_BS#2
9,12 M_A_BS#0
9,12 M_A_BS#1
9,11 SCS0#
9,11 SCS1#
11 DCLK0
11 DCLK0#
11 DCLK1
11 DCLK1#
9,11 SCKE0
9,11 SCKE1
9,12 M_A_CAS#
9,12 M_A_RAS#
9,12 M_A_WE#
7,24,29,43,53 SCL_3S
7,24,29,43,53 SDA_3S
9,11 ODT0
9,11 ODT1
12 M_A_DM[0:7]
12 M_A_DQS[0..7]
12 M_A_DQS#[0..7]
DDR2_DIMM_200P
12G025022004
A8ES.PR
Lower slot:
SPD/TS=A0/30
+1.8V
+3VS
C0801
0.1UF/16V
DIMM1B
11 PM_EXTTS#0
VTT_REF
C0802
2.2UF/6.3V
C0803
0.1UF/16V
DDR2_DIMM_200P
12G025022004
Layout Note: Place these Caps near SO DIMM 1
+1.8V
C0804
C0805
C0806
C0807
0.1UF/16V
Layout Note: Place these Caps near SO DIMM 1
+1.8V
C0808
C0809
C0810
C0811
CE0801
1UF/10V
100uF/6.3V
@
Lower:Channel A
Title : DDR SO-DIMM_TOP
ASUSTeK COMPUTER INC
Engineer:
Size
Custom
Project Name
A8ES
Rev
1.0
Date: Tuesday, January 30, 2007
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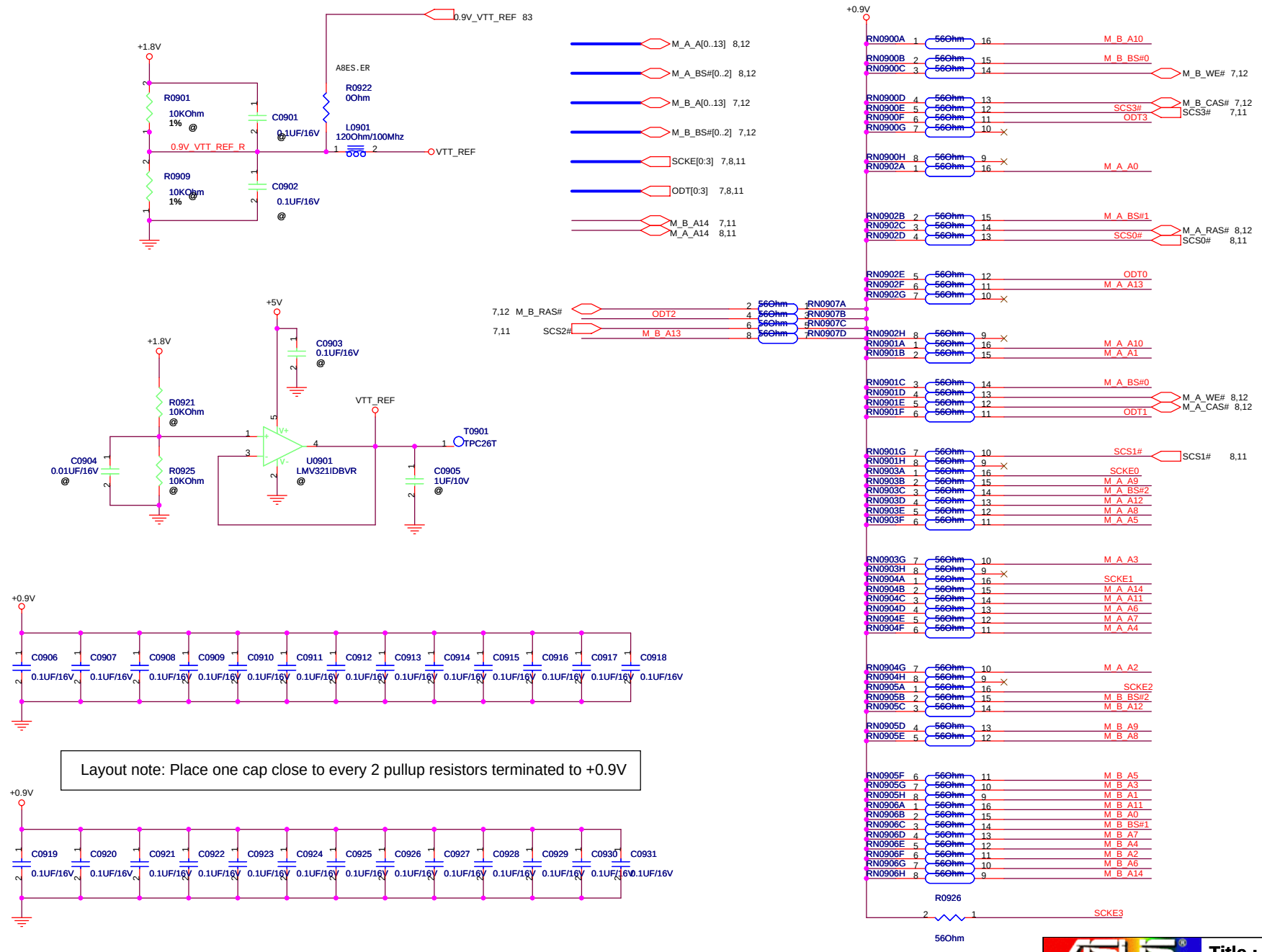
0.9V_VTT_REF 83
+1.8V
A8ES.ER
R0901
10KOhm
1%
@
C0901
0.1UF/16V
@
R0922
0Ohm
L0901
120Ohm/100Mhz
VTT_REF
0.9V_VTT_REF_R
R0909
10KOhm
1%
@
C0902
0.1UF/16V
@
M_A_A[0..13] 8,12
M_A_BS#[0..2] 8,12
M_B_A[0..13] 7,12
M_B_BS#[0..2] 7,12
SCKE[0:3] 7,8,11
ODT[0:3] 7,8,11
M_B_A14 7,11
M_A_A14 8,11
+0.9V
RN0900A 1 56Ohm 16 M_B_A10
RN0900B 2 56Ohm 15 M_B_BS#0
RN0900C 3 56Ohm 14 M_B_WE# 7,12
RN0900D 4 56Ohm 13
RN0900E 5 56Ohm 12 SCS3# M_B_CAS# 7,12
RN0900F 6 56Ohm 11 ODT3 SCS3# 7,11
RN0900G 7 56Ohm 10
RN0900H 8 56Ohm 9
RN0902A 1 56Ohm 16 M_A_A0
RN0902B 2 56Ohm 15 M_A_BS#1
RN0902C 3 56Ohm 14 M_A_RAS# 8,12
RN0902D 4 56Ohm 13 SCS0# SCS0# 8,11
RN0902E 5 56Ohm 12 ODT0
RN0902F 6 56Ohm 11 M_A_A13
RN0902G 7 56Ohm 10
7,12 M_B_RAS#
ODT2
7,11 SCS2#
M_B_A13
RN0907A
RN0907B
RN0907C
RN0907D
RN0902H 8 56Ohm 9
RN0901A 1 56Ohm 16 M_A_A10
RN0901B 2 56Ohm 15 M_A_A1
RN0901C 3 56Ohm 14 M_A_BS#0
RN0901D 4 56Ohm 13 M_A_WE# 8,12
RN0901E 5 56Ohm 12 M_A_CAS# 8,12
RN0901F 6 56Ohm 11 ODT1
RN0901G 7 56Ohm 10 SCS1# SCS1# 8,11
RN0901H 8 56Ohm 9
RN0903A 1 56Ohm 16 SCKE0
RN0903B 2 56Ohm 15 M_A_A9
RN0903C 3 56Ohm 14 M_A_BS#2
RN0903D 4 56Ohm 13 M_A_A12
RN0903E 5 56Ohm 12 M_A_A8
RN0903F 6 56Ohm 11 M_A_A5
RN0903G 7 56Ohm 10 M_A_A3
RN0903H 8 56Ohm 9
RN0904A 1 56Ohm 16 SCKE1
RN0904B 2 56Ohm 15 M_A_A14
RN0904C 3 56Ohm 14 M_A_A11
RN0904D 4 56Ohm 13 M_A_A6
RN0904E 5 56Ohm 12 M_A_A7
RN0904F 6 56Ohm 11 M_A_A4
RN0904G 7 56Ohm 10 M_A_A2
RN0904H 8 56Ohm 9
RN0905A 1 56Ohm 16 SCKE2
RN0905B 2 56Ohm 15 M_B_BS#2
RN0905C 3 56Ohm 14 M_B_A12
RN0905D 4 56Ohm 13 M_B_A9
RN0905E 5 56Ohm 12 M_B_A8
RN0905F 6 56Ohm 11 M_B_A5
RN0905G 7 56Ohm 10 M_B_A3
RN0905H 8 56Ohm 9 M_B_A1
RN0906A 1 56Ohm 16 M_B_A11
RN0906B 2 56Ohm 15 M_B_A0
RN0906C 3 56Ohm 14 M_B_BS#1
RN0906D 4 56Ohm 13 M_B_A7
RN0906E 5 56Ohm 12 M_B_A4
RN0906F 6 56Ohm 11 M_B_A2
RN0906G 7 56Ohm 10 M_B_A6
RN0906H 8 56Ohm 9 M_B_A14
R0926
SCKE3
56Ohm
+5V
C0903
0.1UF/16V
@
+1.8V
R0921
10KOhm
@
VTT_REF
T0901
TPC26T
C0904
0.01UF/16V
@
R0925
10KOhm
@
U0901
LMV321IDBVR
@
C0905
1UF/10V
@
+0.9V
C0906 C0907 C0908 C0909 C0910 C0911 C0912 C0913 C0914 C0915 C0916 C0917 C0918
0.1UF/16V
Layout note: Place one cap close to every 2 pullup resistors terminated to +0.9V
+0.9V
C0919 C0920 C0921 C0922 C0923 C0924 C0925 C0926 C0927 C0928 C0929 C0930 C0931
0.1UF/16V
Title : DDR2 ADDR TERM
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
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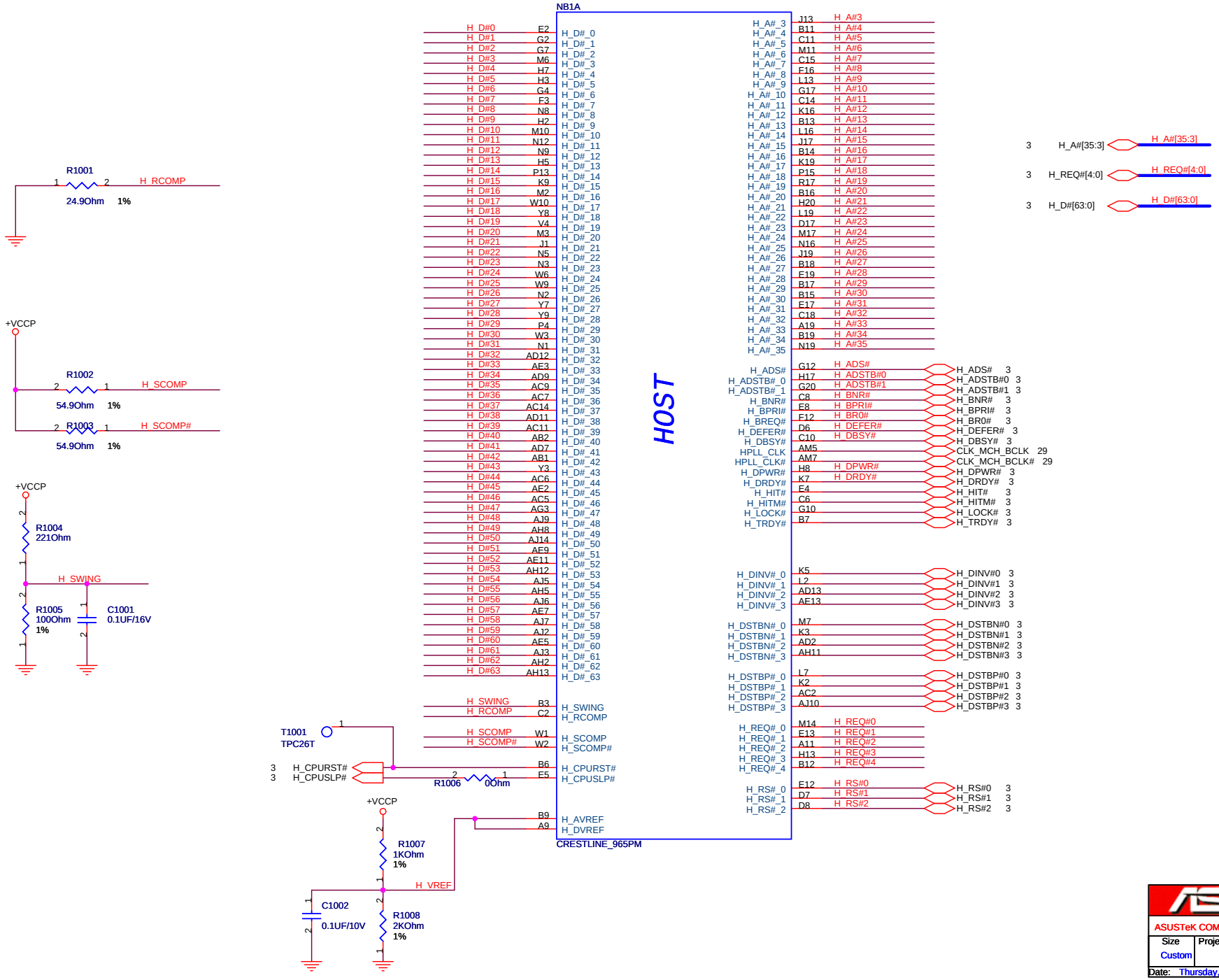
NB1A
HOST
CRESTLINE_965PM
H_D#0 E2
H_D#1 G2
H_D#2 G7
H_D#3 M6
H_D#4 H7
H_D#5 H3
H_D#6 G4
H_D#7 F3
H_D#8 N8
H_D#9 H2
H_D#10 M10
H_D#11 N12
H_D#12 N9
H_D#13 H5
H_D#14 P13
H_D#15 K9
H_D#16 M2
H_D#17 W10
H_D#18 Y8
H_D#19 V4
H_D#20 M3
H_D#21 J1
H_D#22 N5
H_D#23 N3
H_D#24 W6
H_D#25 W9
H_D#26 N2
H_D#27 Y7
H_D#28 Y9
H_D#29 P4
H_D#30 W3
H_D#31 N1
H_D#32 AD12
H_D#33 AE3
H_D#34 AD9
H_D#35 AC9
H_D#36 AC7
H_D#37 AC14
H_D#38 AD11
H_D#39 AC11
H_D#40 AB2
H_D#41 AD7
H_D#42 AB1
H_D#43 Y3
H_D#44 AC6
H_D#45 AE2
H_D#46 AC5
H_D#47 AG3
H_D#48 AJ9
H_D#49 AH8
H_D#50 AJ14
H_D#51 AE9
H_D#52 AE11
H_D#53 AH12
H_D#54 AJ5
H_D#55 AH5
H_D#56 AJ6
H_D#57 AE7
H_D#58 AJ7
H_D#59 AJ2
H_D#60 AE5
H_D#61 AJ3
H_D#62 AH2
H_D#63 AH13
H_A#_3 J13 H_A#3
H_A#_4 B11 H_A#4
H_A#_5 C11 H_A#5
H_A#_6 M11 H_A#6
H_A#_7 C15 H_A#7
H_A#_8 F16 H_A#8
H_A#_9 L13 H_A#9
H_A#_10 G17 H_A#10
H_A#_11 C14 H_A#11
H_A#_12 K16 H_A#12
H_A#_13 B13 H_A#13
H_A#_14 L16 H_A#14
H_A#_15 J17 H_A#15
H_A#_16 B14 H_A#16
H_A#_17 K19 H_A#17
H_A#_18 P15 H_A#18
H_A#_19 R17 H_A#19
H_A#_20 B16 H_A#20
H_A#_21 H20 H_A#21
H_A#_22 L19 H_A#22
H_A#_23 D17 H_A#23
H_A#_24 M17 H_A#24
H_A#_25 N16 H_A#25
H_A#_26 J19 H_A#26
H_A#_27 B18 H_A#27
H_A#_28 E19 H_A#28
H_A#_29 B17 H_A#29
H_A#_30 B15 H_A#30
H_A#_31 E17 H_A#31
H_A#_32 C18 H_A#32
H_A#_33 A19 H_A#33
H_A#_34 B19 H_A#34
H_A#_35 N19 H_A#35
3 H_A#[35:3] H_A#[35:3]
3 H_REQ#[4:0] H_REQ#[4:0]
3 H_D#[63:0] H_D#[63:0]
H_ADS# G12 H_ADS#
H_ADSTB#_0 H17 H_ADSTB#0
H_ADSTB#_1 G20 H_ADSTB#1
H_BNR# C8 H_BNR#
H_BPRI# E8 H_BPRI#
H_BREQ# F12 H_BR0#
H_DEFER# D6 H_DEFER#
H_DBSY# C10 H_DBSY#
HPLL_CLK AM5
HPLL_CLK# AM7
H_DPWR# H8 H_DPWR#
H_DRDY# K7 H_DRDY#
H_HIT# E4
H_HITM# C6
H_LOCK# G10
H_TRDY# B7
H_ADS# 3
H_ADSTB#0 3
H_ADSTB#1 3
H_BNR# 3
H_BPRI# 3
H_BR0# 3
H_DEFER# 3
H_DBSY# 3
CLK_MCH_BCLK 29
CLK_MCH_BCLK# 29
H_DPWR# 3
H_DRDY# 3
H_HIT# 3
H_HITM# 3
H_LOCK# 3
H_TRDY# 3
H_DINV#_0 K5
H_DINV#_1 L2
H_DINV#_2 AD13
H_DINV#_3 AE13
H_DINV#0 3
H_DINV#1 3
H_DINV#2 3
H_DINV#3 3
H_DSTBN#_0 M7
H_DSTBN#_1 K3
H_DSTBN#_2 AD2
H_DSTBN#_3 AH11
H_DSTBN#0 3
H_DSTBN#1 3
H_DSTBN#2 3
H_DSTBN#3 3
H_DSTBP#_0 L7
H_DSTBP#_1 K2
H_DSTBP#_2 AC2
H_DSTBP#_3 AJ10
H_DSTBP#0 3
H_DSTBP#1 3
H_DSTBP#2 3
H_DSTBP#3 3
H_REQ#_0 M14 H_REQ#0
H_REQ#_1 E13 H_REQ#1
H_REQ#_2 A11 H_REQ#2
H_REQ#_3 H13 H_REQ#3
H_REQ#_4 B12 H_REQ#4
H_RS#_0 E12 H_RS#0
H_RS#_1 D7 H_RS#1
H_RS#_2 D8 H_RS#2
H_RS#0 3
H_RS#1 3
H_RS#2 3
H_SWING B3
H_RCOMP C2
H_SCOMP W1
H_SCOMP# W2
B6 H_CPURST#
E5 H_CPUSLP#
B9 H_AVREF
A9 H_DVREF
R1001 H_RCOMP 24.9Ohm 1%
+VCCP
R1002 H_SCOMP 54.9Ohm 1%
R1003 H_SCOMP# 54.9Ohm 1%
+VCCP
R1004 221Ohm
H_SWING
R1005 100Ohm 1%
C1001 0.1UF/16V
T1001 TPC26T
3 H_CPURST#
3 H_CPUSLP#
R1006 0Ohm
+VCCP
R1007 1KOhm 1%
H_VREF
C1002 0.1UF/10V
R1008 2KOhm 1%
ASUSTeK COMPUTER INC
Title : 965PM -- CPU (1)
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Thursday, January 25, 2007
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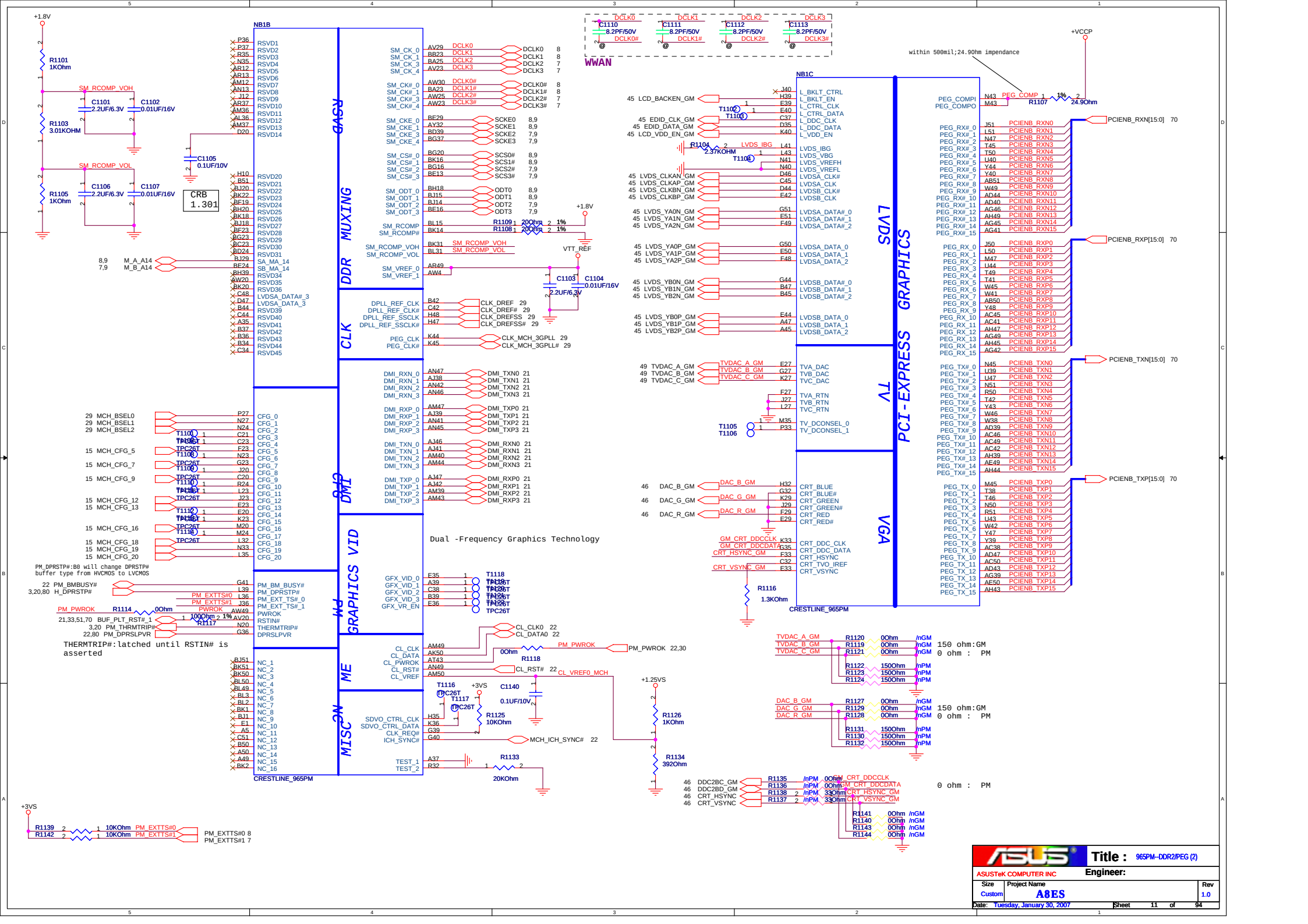
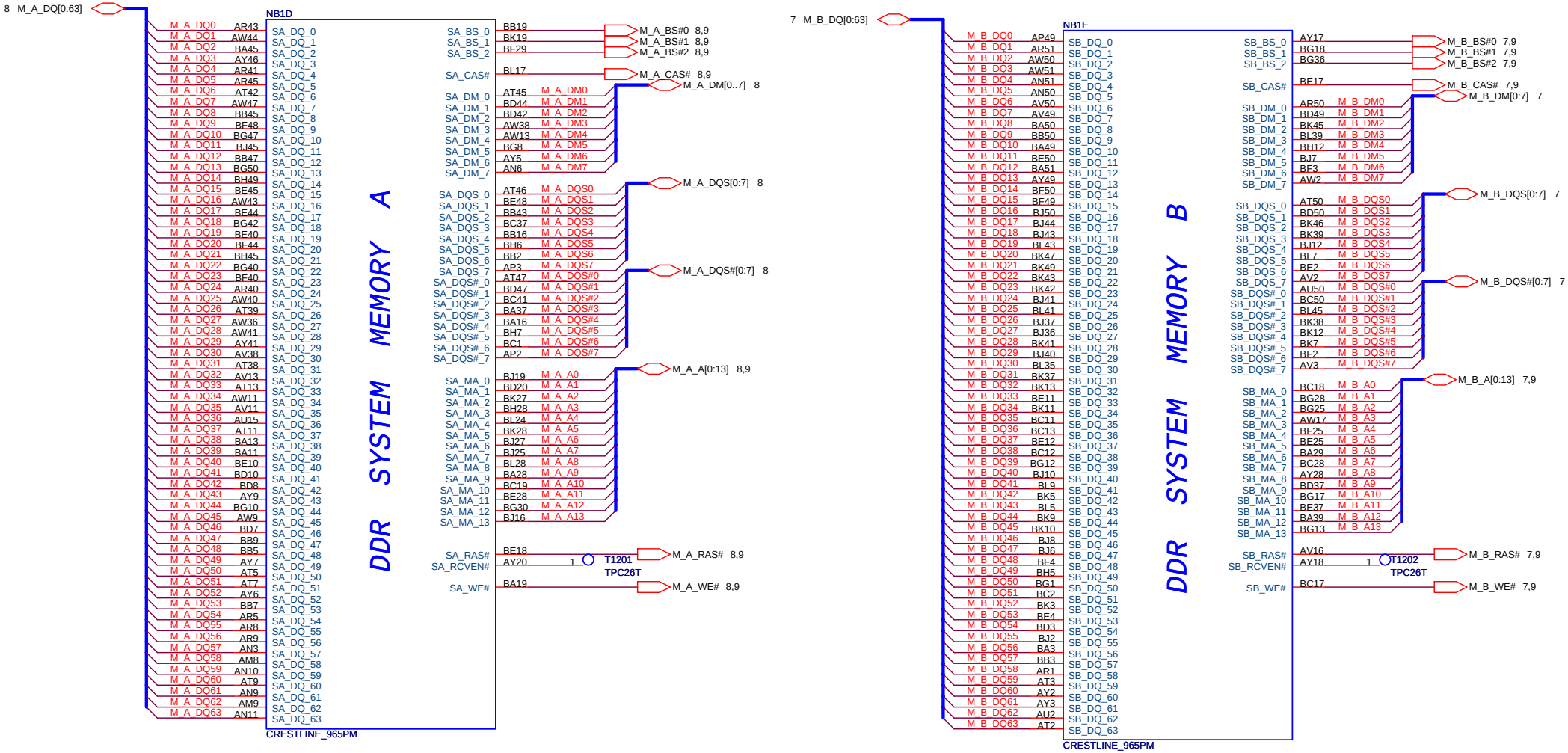


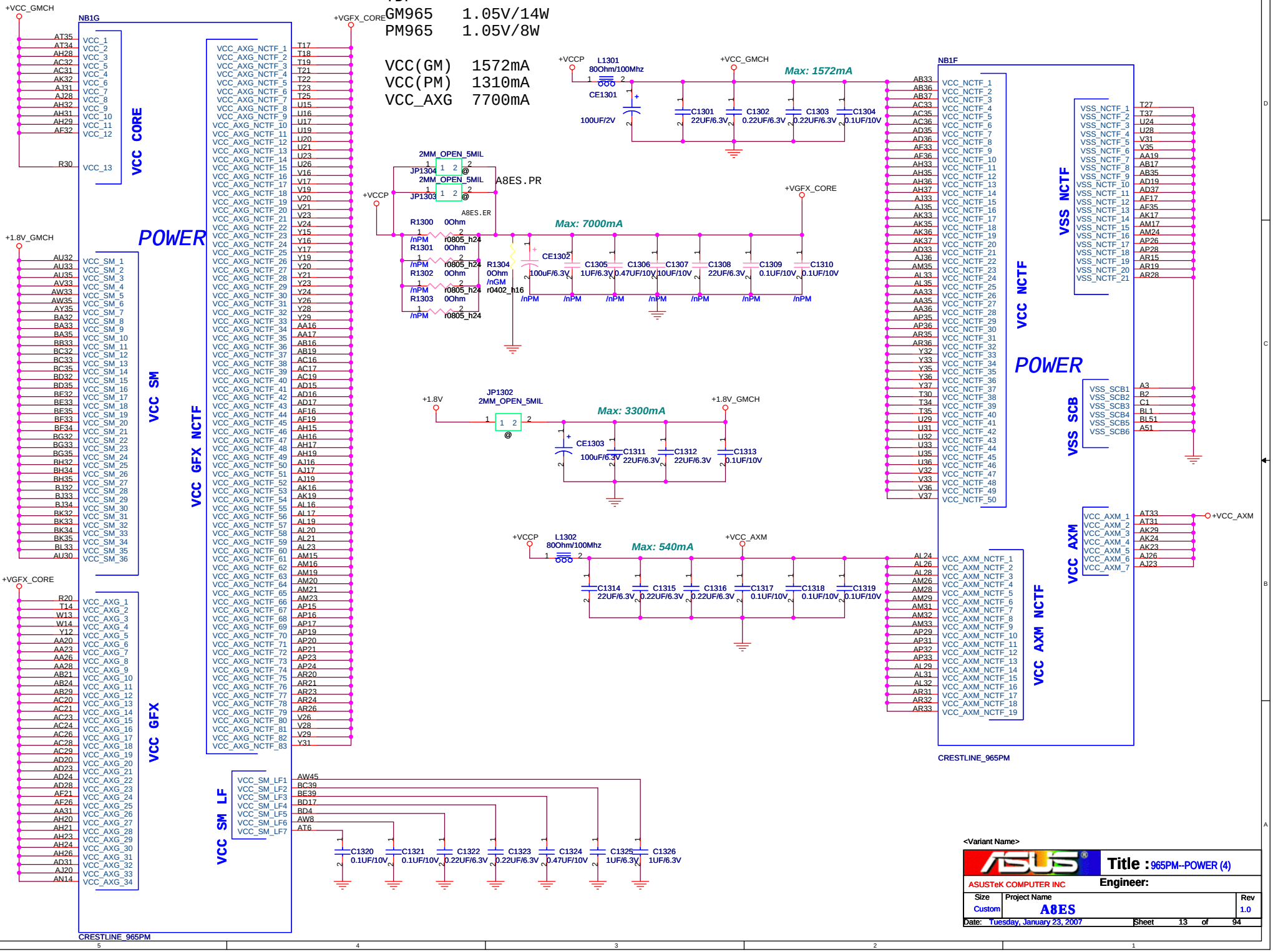
Title :	965PM--DDR2/PEG (2)		
ASUSTeK COMPUTER INC	Engineer:		
Size	Project Name		Rev
Custom	A8ES		1.0
Date: Tuesday, January 30, 2007	Sheet 11 of 94		



ASUSTeK COMPUTER INC	Title : 965PM--DDR2 bus (3)	
	Engineer:	
Size: B	Project Name: A8ES	Rev: 1.0
Date: Thursday, January 25, 2007	Sheet 12 of 94	

TDP
GM965 1.05V/14W
PM965 1.05V/8W

VCC(GM) 1572mA
VCC(PM) 1310mA
VCC_AXG 7700mA



<Variant Name>

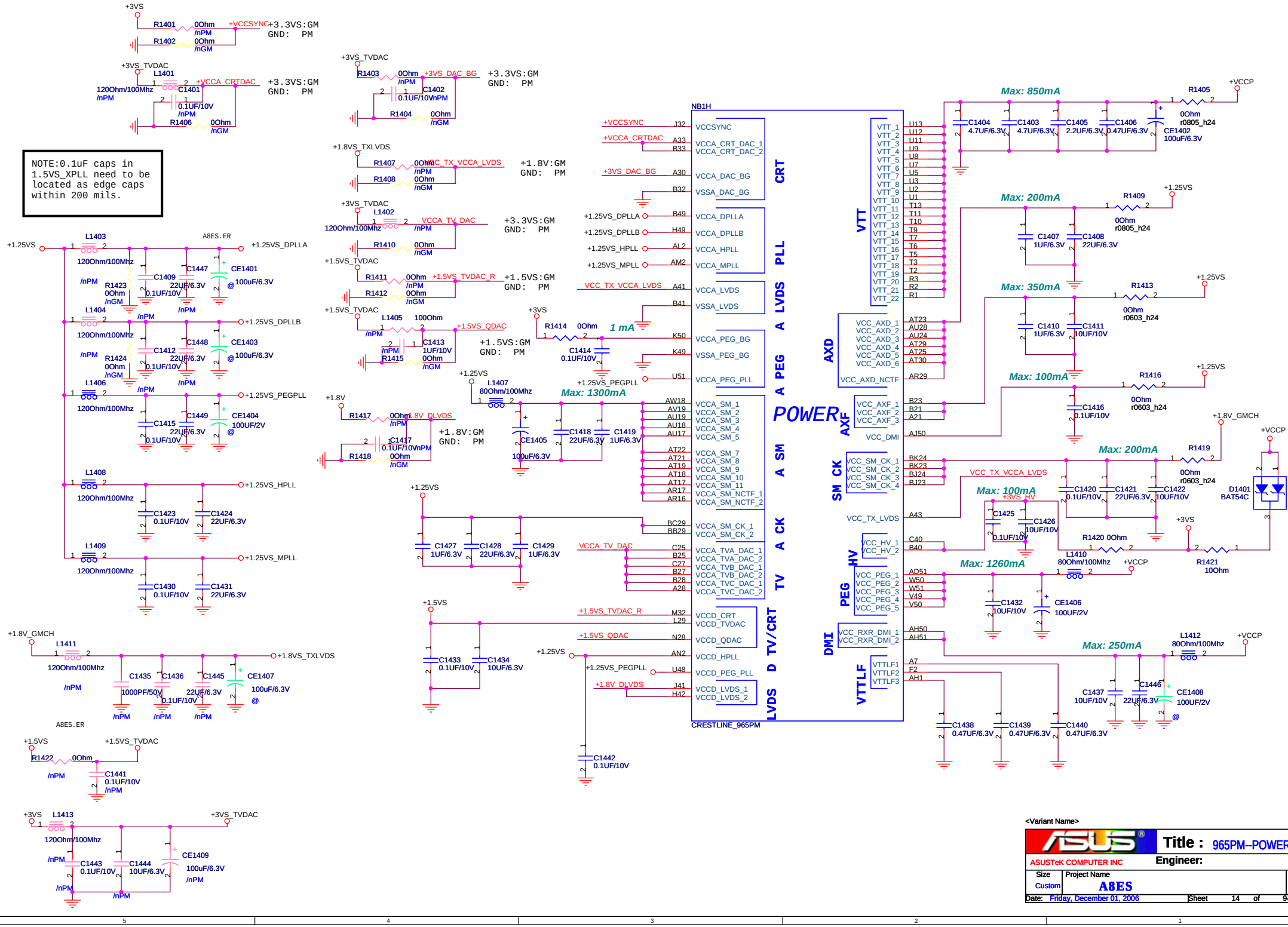
ASUSTeK COMPUTER INC

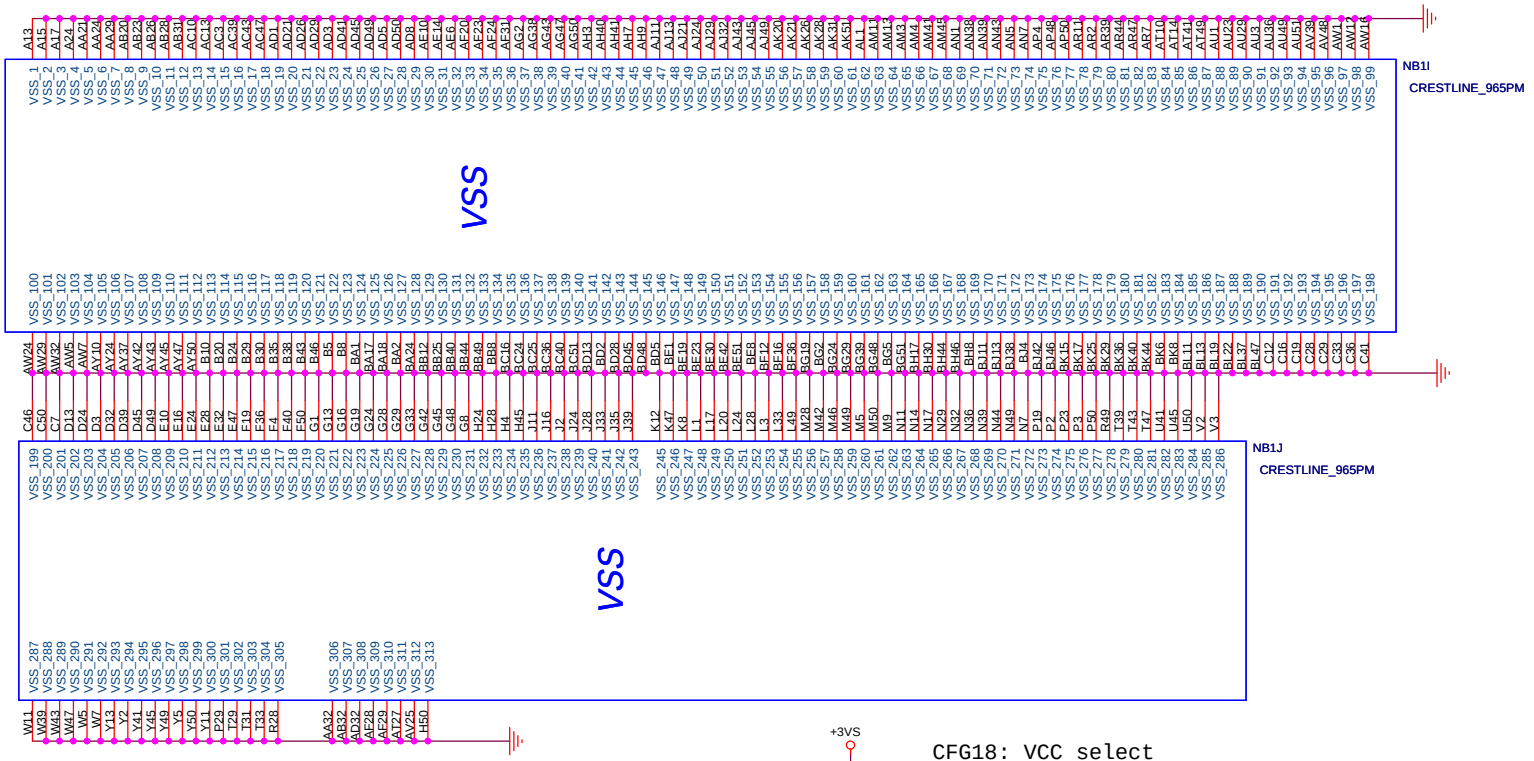
Title : 965PM--POWER (4)

Engineer:

Size	Project Name	Rev
Custom	A8ES	1.0

Date: Tuesday, January 23, 2007 Sheet 13 of 94


NOTE:0.1uF caps in 1.5VS_XPLL need to be located as edge caps within 200 mils.
NB1H
CRESTLINE_965PM
POWER
CRT
PLL
LVDS
A PEG
A SM
A CK
TV
TV/CRT D
VTT
AXD
AXF
SM CK
HV
PEG
DMI
VTTLF
Max: 850mA
Max: 200mA
Max: 350mA
Max: 100mA
Max: 1300mA
Max: 200mA
Max: 100mA
Max: 1260mA
Max: 250mA
1 mA
+3.3VS:GM GND: PM
+1.8V:GM GND: PM
+1.5VS:GM GND: PM
+1.25VS_DPLLA
+1.25VS_DPLLB
+1.25VS_PEGPLL
+1.25VS_HPLL
+1.25VS_MPLL
+1.8VS_TXLVDS
+1.5VS_XPLL
+3VS_TVDAC
+1.5VS_TVDAC
A8ES.ER
<Variant Name>
ASUSTeK COMPUTER INC
Title : 965PM--POWER (5)
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Friday, December 01, 2006
Sheet 14 of 94



CFG18: VCC select
LOW=1.05V (default)
HIGH= 1.5V

+3VS
R1509 1KOhm @
11 MCH_CFG_18

11 MCH_CFG_13
11 MCH_CFG_12
R1503 2.2KOhm @
R1502 2.2KOhm @

CFG [13:12] : XOR/ALL-Z
00 = Reserved
01= XOR Mode Enabled
10= All-Z Mode Enabled
11= Normal Operation (Default)

11 MCH_CFG_5
R1501 2.2KOhm @

CFG5 : DMI STRAP
HIGH = DMI X 4 (Default)
LOW = DMI X 2

+3VS
R1504 1KOhm @
11 MCH_CFG_19

CFG19 : DMI LANE REVERSAL
LOW = NORMAL (default)
HIGH = LANES REVERSED

11 MCH_CFG_7
R1505 2.2KOhm @

CFG7 : CPU STRAP
HIGH = Mobile CPU (Default)
LOW = Reserved

+3VS
R1506 1KOhm @
11 MCH_CFG_20

CFG20 : SDVO/PCIE CONCURRENT MODE
LOW = ONLY SDVO or PCIE is Operational
HIGH = SDVO and PCIE are operating simultaneously via the PEG port

11 MCH_CFG_9
R1507 2.2KOhm @

CFG9 : PCIE GRAPHIC LANE
LOW = REVERSE LANE
HIGH = Normal Operation (Default)

11 MCH_CFG_16
R1508 2.2KOhm @

CFG16 : Dynamic ODT STRAP
Low = Dynamic ODT Disabled
HIGH = Dyanamic ODT Enabled (default)

ASUSTeK COMPUTER INC	Title : GND/Strapping (6)	
	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Thursday, January 25, 2007	Sheet 15 of 94	

Title : BLANK

ASUSTeK COMPUTER INC

Engineer:

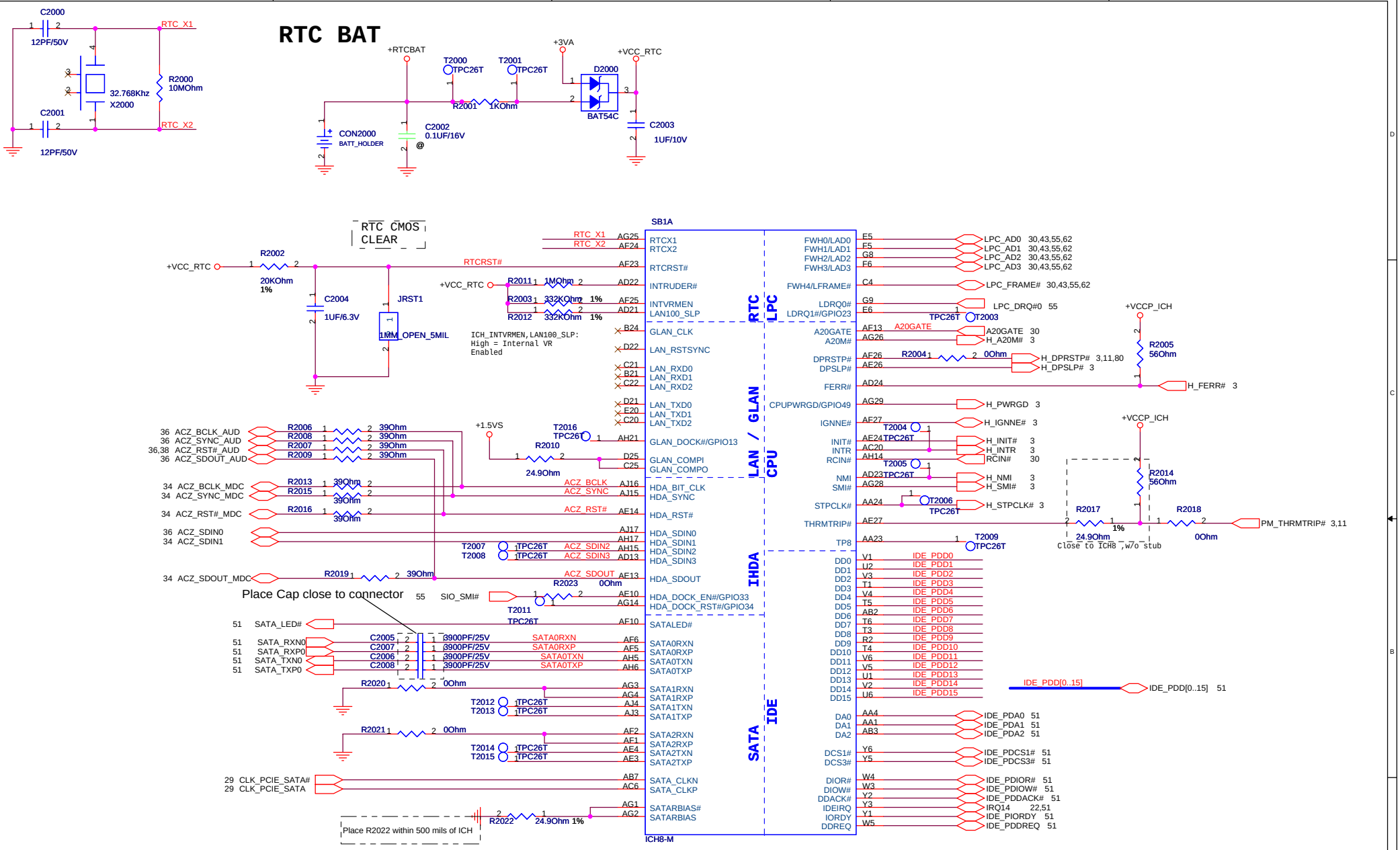
Size	Project Name	Rev
A	A8ES	0

Date: Wednesday, October 11, 2006 Sheet 16 of 94

ASUSTeK COMPUTER INC	Title : BLANK		
	Engineer:		
Size: A	Project Name: A8ES		Rev: 0
Date: Wednesday, October 11, 2006	Sheet 17 of 94		

ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 18 of 94		

ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 19 of 94		



SATA if it non-used,
1)SATA[0:3]RXpn SATABIAS,SATABIAS# and SATA_CLKpn should be PD.
2)SATA[0:3]TXpn and SATALED# NO connect.

<Variant Name>

ASUSTeK COMPUTER INC	Title : ICH8-M (1)	
	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 20 of 94	

40 PCI_AD[0..31] PCI_AD[0..31]

+3VS PCI BUS cross moat, add Stitching cap
C2110 0.1UF/10V C2111 0.1UF/10V C2112 0.1UF/10V +1.5VS

SB1B

PCI_AD0 D20 AD0
PCI_AD1 E19 AD1
PCI_AD2 D19 AD2
PCI_AD3 A20 AD3
PCI_AD4 D17 AD4
PCI_AD5 A21 AD5
PCI_AD6 A19 AD6
PCI_AD7 C19 AD7
PCI_AD8 A18 AD8
PCI_AD9 B16 AD9
PCI_AD10 A12 AD10
PCI_AD11 E16 AD11
PCI_AD12 A14 AD12
PCI_AD13 G16 AD13
PCI_AD14 A15 AD14
PCI_AD15 B6 AD15
PCI_AD16 C11 AD16
PCI_AD17 A9 AD17
PCI_AD18 D11 AD18
PCI_AD19 B12 AD19
PCI_AD20 C12 AD20
PCI_AD21 D10 AD21
PCI_AD22 C7 AD22
PCI_AD23 E13 AD23
PCI_AD24 E11 AD24
PCI_AD25 E13 AD25
PCI_AD26 E12 AD26
PCI_AD27 D8 AD27
PCI_AD28 A6 AD28
PCI_AD29 E8 AD29
PCI_AD30 D6 AD30
PCI_AD31 A3 AD31

PCI

REQ0# A4 PCI_REQ#0 22,40
GNT0# D7 PCI_GNT#0 40
REQ1#/GPIO50 E18 PCI_REQ#1 22
GNT1#/GPIO51 C18 1 T2100
REQ2#/GPIO52 B19 PCI_REQ#2 22
GNT2#/GPIO53 F18 1 TPC26T T2101
REQ3#/GPIO54 A11 PCI_REQ#3 22
GNT3#/GPIO55 C10 1 TPC26T T2102
TPC26T

C/BE0# C17 PCI_C/BE#0 40
C/BE1# F15 PCI_C/BE#1 40
C/BE2# F16 PCI_C/BE#2 40
C/BE3# E17 PCI_C/BE#3 40

IRDY# C8 PCI_IRDY# 22,40
PAR D9 PCI_PAR 40
PCIRST# G6 PCI_RST#_ICH
DEVSEL# D16 PCI_DEVSEL# 22,40
PERR# A7 PCI_PERR# 22,40
PLOCK# B7 PCI_LOCK# 22
SERR# F10 PCI_SERR# 22,40
STOP# C16 PCI_STOP# 22,40
TRDY# C9 PCI_TRDY# 22,40
FRAME# A17 PCI_FRAME# 22,40

PLTRST# AG24 PLT_RST#_SB
PCICLK B10 CLK_ICHPCI 29
PME# G7 PCI_PME#

Interrupt I/F

22 PCI_INTA# F9 PIRQA#
22 PCI_INTB# B5 PIRQB#
22 PCI_INTC# C5 PIRQC#
22 PCI_INTD# A10 PIRQD#
PIRQE#/GPIO2 F8 PCI_INTE# 22,40
PIRQF#/GPIO3 G11 PCI_INTF# 22,40
PIRQG#/GPIO4 F12 PCI_INTG# 22
PIRQH#/GPIO5 B3 PCI_INTH# 22

ICH8-M

miniCard 1

LAN

miniCard 2

NEW CARD

SB1D

53 PCIE_RXN2 M27 PERN1
53 PCIE_RXP2 M26 PERP1
53 PCIE_TXN2 C2104 0.1UF/10V L29 PETN1
53 PCIE_TXP2 C2103 0.1UF/10V L28 PETP1

33 PCIE_RXN3 K27 PERN2
33 PCIE_RXP3 K26 PERP2
33 PCIE_TXN3 C2100 0.1UF/10V J29 PETN2
33 PCIE_TXP3 C2102 0.1UF/10V J28 PETP2

53 PCIE_RXN4 H27 PERN3
53 PCIE_RXP4 H26 PERP3
53 PCIE_TXN4 C2101 0.1UF/10V G29 PETN3
53 PCIE_TXP4 C2105 0.1UF/10V G28 PETP3

43 PCIE_RXN5 F27 PERN4
43 PCIE_RXP5 F26 PERP4
43 PCIE_TXN5 C2107 0.1UF/10V E29 PETN4
43 PCIE_TXP5 C2106 0.1UF/10V E28 PETP4

PERN5 D27
PERP5 D26
PETN5 C29
PETP5 C28

PERN6/GLAN_RXN
PERP6/GLAN_RXP
PETN6/GLAN_TXN
PETP6/GLAN_TXP

PCI-Express Direct Media Interface

DMI0RXN V27 DMI_RXN0 11
DMI0RXP V26 DMI_RXP0 11
DMI0TXN U29 DMI_TXN0 11
DMI0TXP U28 DMI_TXP0 11

DMI1RXN Y27 DMI_RXN1 11
DMI1RXP Y26 DMI_RXP1 11
DMI1TXN W29 DMI_TXN1 11
DMI1TXP W28 DMI_TXP1 11

DMI2RXN AB26 DMI_RXN2 11
DMI2RXP AB25 DMI_RXP2 11
DMI2TXN AA29 DMI_TXN2 11
DMI2TXP AA28 DMI_TXP2 11

DMI3RXN AD27 DMI_RXN3 11
DMI3RXP AD26 DMI_RXP3 11
DMI3TXN AC29 DMI_TXN3 11
DMI3TXP AC28 DMI_TXP3 11

DMI_CLKN T26 CLK_PCIE_ICH# 29
DMI_CLKP T25 CLK_PCIE_ICH 29
Place within 500 mils of ICH

DMI_ZCOMP Y23
DMI_IRCOMP Y24
R2100 24.9Ohm 1% +1.5VS
Place within 500 mils of ICH

SPI

+3V
RN2101D 10KOhm
RN2101C 10KOhm
T2103 TPC26T
RN2101A 10KOhm
RN2101B 10KOhm

SPI_CLK C23
SPI_CS0# B23
SPI_CS1# E22
SPI_MOSI D23
SPI_MISO F21

USB

52 USB_OC#01 AJ19 OC0#
USB_OC#2 AG16 OC1#/GPIO40
USB_OC#3 AG15 OC2#/GPIO41
USB_OC#4 AE15 OC3#/GPIO42
43 USB_OC#4 AF15 OC4#/GPIO43
52 USB_OC#57 AG17 OC5#/GPIO29
USB_OC#6 AD12 OC6#/GPIO30
AJ18 OC7#/GPIO31
USB_OC#8 AD14 OC8#
52 USB_OC#9 AH18 OC9#

USBP0N G3 USB_PN0 52
USBP0P G2 USB_PP0 52
USBP1N H5 USB_PN1 52
USBP1P H4 USB_PP1 52
USBP2N H2 USB_PN2 61
USBP2P H1 USB_PP2 61
USBP3N J3 USB_PN3 68
USBP3P J2 USB_PP3 68
USBP4N K5 USB_PN4 43
USBP4P K4 USB_PP4 43
USBP5N K2 USB_PN5 52
USBP5P K1 USB_PP5 52
USBP6N L3 USB_PN6 68
USBP6P L2 USB_PP6 68
USBP7N M5 USB_PN7 52
USBP7P M4 USB_PP7 52
USBP8N M2 USB_PN8 53
USBP8P M1 USB_PP8 53
USBP9N N3 USB_PN9 52
USBP9P N2 USB_PP9 52

USBRBIAS# F2 USBBIAS
USBRBIAS F3 R2101 22.6Ohm 1%
Place within 500 mils of ICH

ICH8-M

0:I/O
1:I/O
2:Bluetooth
3:Finger Print
4:New Card
5:I/O
6:Camera
7:I/O
8:miniCard 2
9:I/O

Note: PLTRST# is in VccSUS3_3 well

Check Buffer/leakage

+3V
U2100C VCC GND SN74LV08APWR
PLT_RST#_SB
BUF_PLT_RST# 1 BUF_PLT_RST#_1 11,33,51,70

+3V
U2100B VCC GND SN74LV08APWR
BUF_PLT_RST# 2 BUF_PLT_RST#_2 30

+3V
U2100D VCC GND SN74LV08APWR
BUF_PLT_RST# 3 BUF_PLT_RST#_3 55,62

+3V
U2100A VCC GND SN74LV08APWR
PCI_RST#_ICH
PCI_RST# 40,43,53

+3VSUS
USB_OC#6 RP2101A 8.2KOHM
USB_OC#3 RP2101B 8.2KOHM
USB_OC#4 RP2101C 8.2KOHM
USB_OC#8 RP2101D 8.2KOHM
USB_OC#2 RP2101E 8.2KOHM
USB_OC#01 RP2101F 8.2KOHM
USB_OC#9 RP2101G 8.2KOHM
USB_OC#57 RP2101H 8.2KOHM

OC[9..0]# not 5V tolerant

PCI_PME# R2102 10KOhm
Internal PH with 18K~42K

ICH8 Boot BIOS select

		GNT#0	SPI_CS#1	
LPC	11	1	1	(default)
PCI	10	1	0	
SPI	01	0	1	

<Variant Name>

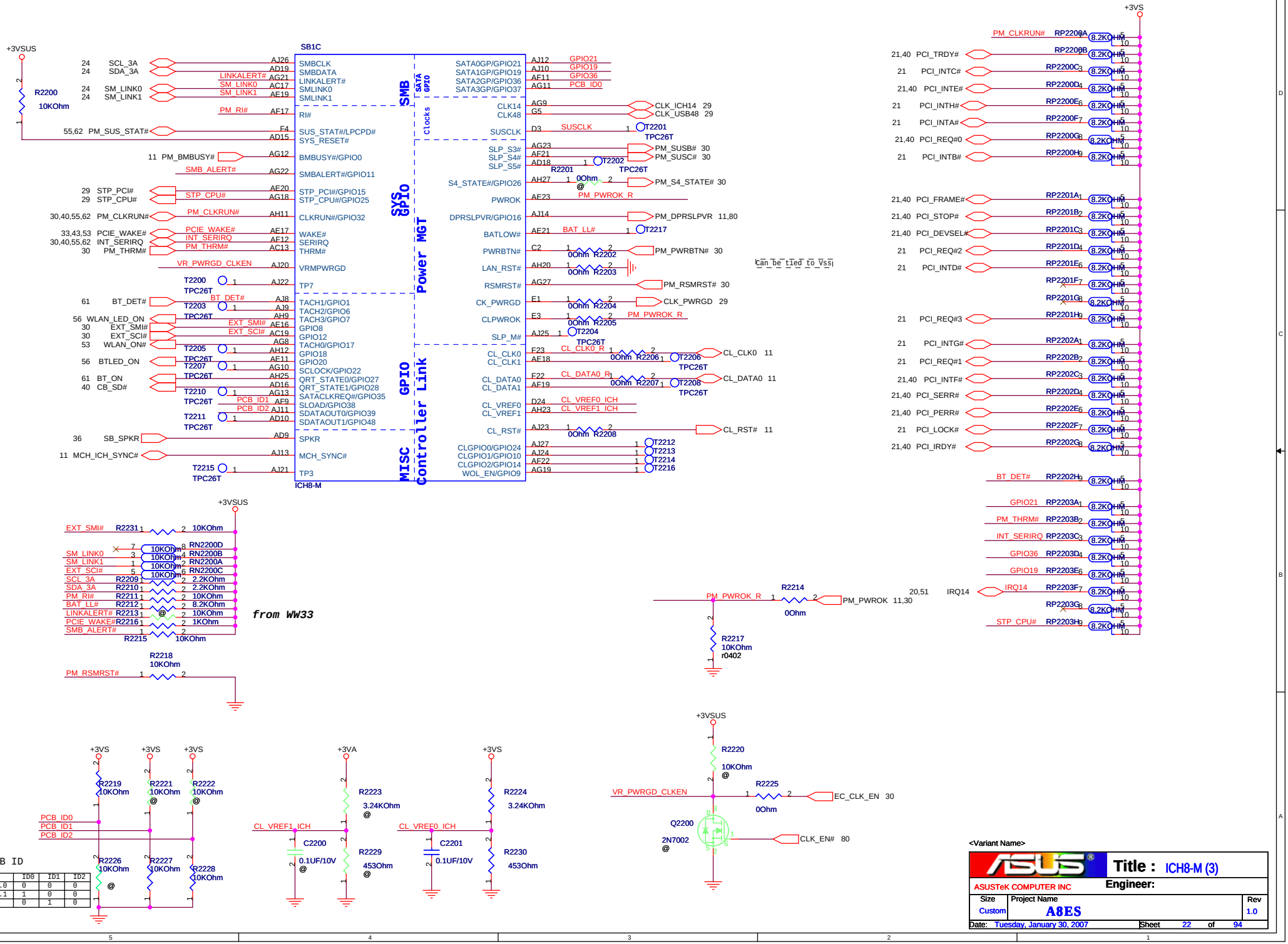
ASUSTeK COMPUTER INC

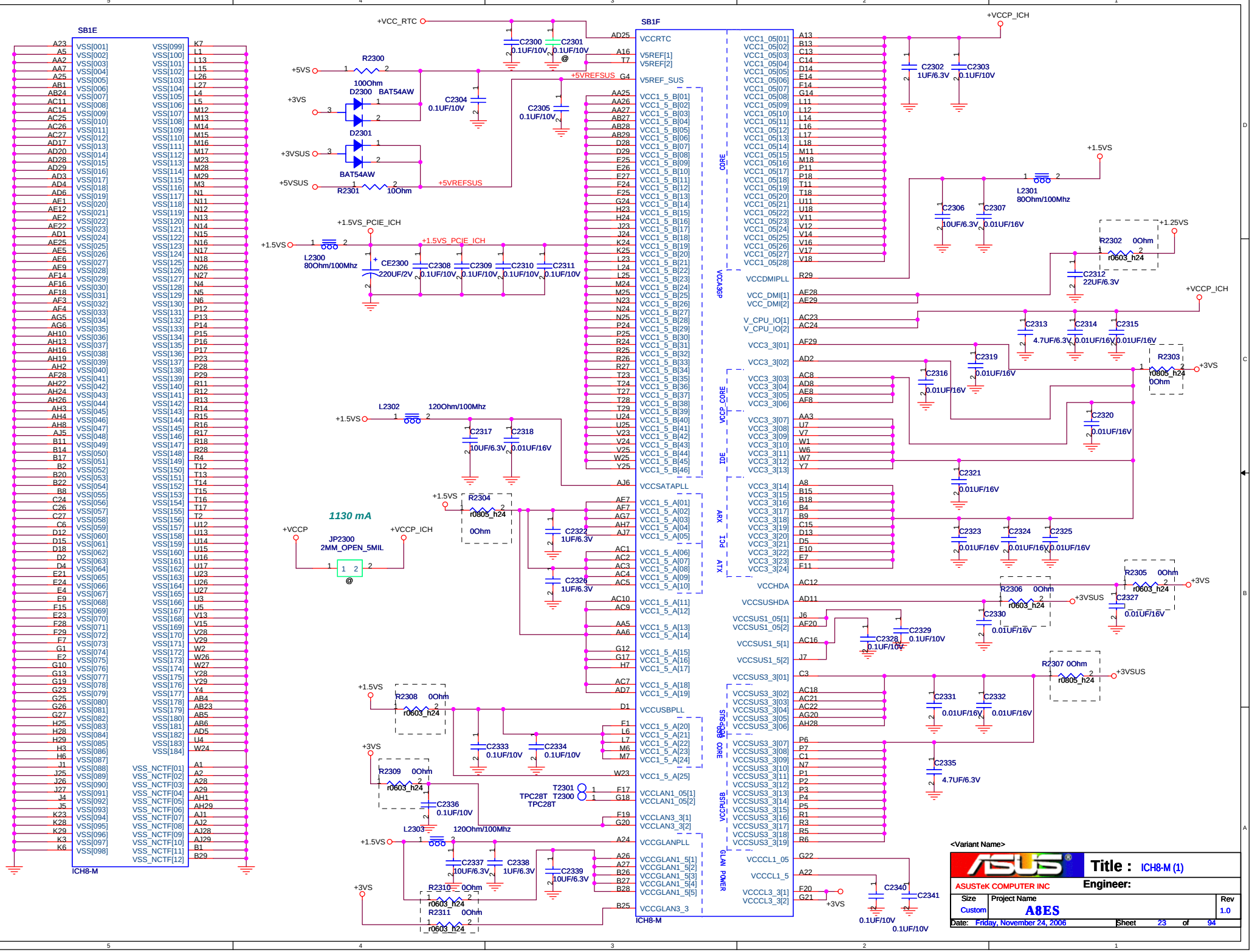
Title : ICH8-M (2)

Engineer:

Size	Project Name	Rev
Custom	A8ES	1.0

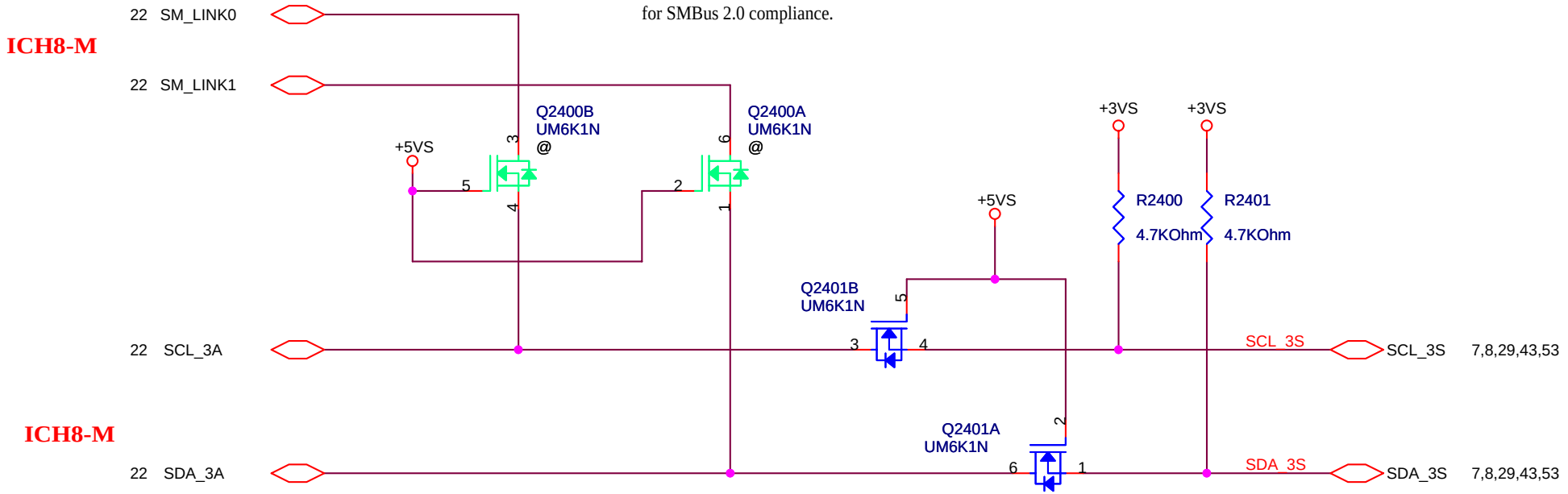
Date: Tuesday, January 30, 2007 Sheet 21 of 94


SB1C
ICH8-M
SMB
SATA GPIO
Clocks
SYS GPIO
Power MGT
GPIO
Controller Link
MISC
+3VSUS
+3VS
+3VA
R2200 10KOhm
SMBCLK
SMBDATA
LINKALERT#
SMLINK0
SMLINK1
RI#
SUS_STAT#/LPCPD#
SYS_RESET#
BMBUSY#/GPIO0
SMBALERT#/GPIO11
STP_PCI#/GPIO15
STP_CPU#/GPIO25
CLKRUN#/GPIO32
WAKE#
SERIRQ
THRM#
VRMPWRGD
TP7
TACH1/GPIO1
TACH2/GPIO6
TACH3/GPIO7
GPIO8
GPIO12
TACH0/GPIO17
GPIO18
GPIO20
SCLOCK/GPIO22
QRT_STATE0/GPIO27
QRT_STATE1/GPIO28
SATACLKREQ#/GPIO35
SLOAD/GPIO38
SDATAOUT0/GPIO39
SDATAOUT1/GPIO48
SPKR
MCH_SYNC#
TP3
SATA0GP/GPIO21
SATA1GP/GPIO19
SATA2GP/GPIO36
SATA3GP/GPIO37
CLK14
CLK48
SUSCLK
SLP_S3#
SLP_S4#
SLP_S5#
S4_STATE#/GPIO26
PWROK
DPRSLPVR/GPIO16
BATLOW#
PWRBTN#
LAN_RST#
RSMRST#
CK_PWRGD
CLPWROK
SLP_M#
CL_CLK0
CL_CLK1
CL_DATA0
CL_DATA1
CL_VREF0
CL_VREF1
CL_RST#
CLGPIO0/GPIO24
CLGPIO1/GPIO10
CLGPIO2/GPIO14
WOL_EN/GPIO9
can be tied to Vss
PM_CLKRUN#
PM_TRDY#
PM_INTC#
PM_INTE#
PM_INTH#
PM_INTA#
PM_REQ#0
PM_INTB#
PM_FRAME#
PM_STOP#
PM_DEVSEL#
PM_REQ#2
PM_INTD#
PM_REQ#3
PM_INTG#
PM_REQ#1
PM_INTF#
PM_SERR#
PM_PERR#
PM_LOCK#
PM_IRDY#
BT_DET#
GPIO21
PM_THRM#
INT_SERIRQ
GPIO36
GPIO19
IRQ14
STP_CPU#
RP2200A
RP2200B
RP2200C
RP2200D
RP2200E
RP2200F
RP2200G
RP2200H
RP2201A
RP2201B
RP2201C
RP2201D
RP2201E
RP2201F
RP2201G
RP2201H
RP2202A
RP2202B
RP2202C
RP2202D
RP2202E
RP2202F
RP2202G
RP2202H
RP2203A
RP2203B
RP2203C
RP2203D
RP2203E
RP2203F
RP2203G
RP2203H
8.2KOHM
RN2200D
RN2200B
RN2200A
RN2200C
2.2KOhm
10KOhm
8.2KOhm
1KOhm
from WW33
R2214 0Ohm
R2217 10KOhm r0402
R2218 10KOhm
R2219 10KOhm
R2221 10KOhm @
R2222 10KOhm @
R2223 3.24KOhm @
R2224 3.24KOhm
R2226 10KOhm @
R2227 10KOhm
R2228 10KOhm
R2229 453Ohm @
R2230 453Ohm
C2200 0.1UF/10V @
C2201 0.1UF/10V
R2220 10KOhm @
R2225 0Ohm
Q2200 2N7002 @
EC_CLK_EN 30
CLK_EN# 80
PCB ID
ID0 ID1 ID2
1.0 0 0 0
1.1 1 0 0
0 1 0
<Variant Name>
Title : ICH8-M (3)
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
Sheet 22 of 94


SB1E
ICH8-M
SB1F
ICH8-M
+VCC_RTC
+5VS
+3VS
+3VSUS
+5VSUS
+5VREFSUS
+1.5VS
+1.5VS_PCIE_ICH
+VCCP_ICH
+VCCP
+1.25VS
+3VS
+3VSUS
1130 mA
JP2300
2MM_OPEN_5MIL
L2300
80Ohm/100Mhz
L2301
80Ohm/100Mhz
L2302
120Ohm/100Mhz
L2303
120Ohm/100Mhz
D2300 BAT54AW
D2301
BAT54AW
R2300
100Ohm
R2301
10Ohm
R2302 0Ohm
R2303 0Ohm
R2304 0Ohm
R2305 0Ohm
R2306 0Ohm
R2307 0Ohm
R2308 0Ohm
R2309 0Ohm
R2310 0Ohm
R2311 0Ohm
T2301 TPC28T
T2300 TPC28T
CE2300 220UF/2V
C2300 0.1UF/10V
C2301 0.1UF/10V
C2302 1UF/6.3V
C2303 0.1UF/10V
C2304 0.1UF/10V
C2305 0.1UF/10V
C2306 10UF/6.3V
C2307 0.01UF/16V
C2308 0.1UF/10V
C2309 0.1UF/10V
C2310 0.1UF/10V
C2311 0.1UF/10V
C2312 22UF/6.3V
C2313 4.7UF/6.3V
C2314 0.01UF/16V
C2315 0.01UF/16V
C2316 0.01UF/16V
C2317 10UF/6.3V
C2318 0.01UF/16V
C2319 0.01UF/16V
C2320 0.01UF/16V
C2321 0.01UF/16V
C2322 1UF/6.3V
C2323 0.01UF/16V
C2324 0.01UF/16V
C2325 0.01UF/16V
C2326 1UF/6.3V
C2327 0.01UF/16V
C2328 0.1UF/10V
C2329 0.1UF/10V
C2330 0.01UF/16V
C2331 0.01UF/16V
C2332 0.01UF/16V
C2333 0.1UF/10V
C2334 0.1UF/10V
C2335 4.7UF/6.3V
C2336 0.1UF/10V
C2337 10UF/6.3V
C2338 1UF/6.3V
C2339 10UF/6.3V
C2340 0.1UF/10V
C2341 0.1UF/10V
<Variant Name>
Title : ICH8-M (1)
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Friday, November 24, 2006
Sheet 23 of 94

Check

Connect SMLINK and SMBUS
for SMBus 2.0 compliance.



<Variant Name>

ASUSTeK COMPUTER INC

Title : BLOCK DIAGRAM

Engineer:

Size	Project Name	Rev
A	A8ES	1.0

Date: Thursday, January 25, 2007 Sheet 24 of 94

ICH8-M GPIO Assignment

Name	H/W Pin Definition	Type	Tolerance	Power Wel	Default	Mux	Native Name	Real Name	Note
GPIO0	PM_BMBUSY#	I/O	3.3V	Core	GPI	Yes	BMBUSY	PM_BMBUSY#	
GPIO1	BT_DET#	I/O	3.3V	Core	GPI	No			
GPIO2	PCI_INTE#	I/OD	5V	Core	GPI	Yes	PIRQE#	PCI_INTE#	
GPIO3	PCI_INTF#	I/OD	5V	Core	GPI	Yes	PIRQF#	PCI_INTF#	
GPIO4	PCI_INTG#	I/OD	5V	Core	GPI	Yes	PIRQG#	PCI_INTG#	
GPIO5	PCI_INTH#	I/OD	5V	Core	GPI	Yes	PIRQH#	PCI_INTH#	
GPIO6	BIOS_REC	I/O	3.3V	Core	GPI	No			
GPIO7	WLAN_LED_ON	I/O	3.3V	Core	GPI	No			
GPIO8	EXT_SMI#	I/O	3.3V	Resume	GPI	No			
GPIO9	LAN_WOL_EN	I/O	3.3V	Resume	GPI	Yes	WOL_EN		
GPIO10	ME_ALERT#	I/O	3.3V	Resume	GPI	Yes	CLGPIO1		
GPIO11		I/O	3.3V	Resume	Native	Yes	SMBALERT#	pull high +3VSUS	
GPIO12	EXT_SCI#	I/O	3.3V	Resume	GPI	No			
GPIO13	ODD_DET	I/O	3.3V	Resume	Native	Yes	GLAN_DOCK#		removing from EC
GPIO14	NETDETECT	I/O	3.3V	Resume	GPI	Yes	CLGPIO2		
GPIO15	STP_PCI#	I/O	3.3V	Resume	Native	No	STP_PCI#	STP_PCI#	
GPIO16	PM_DPRSLPVR	I/O	3.3V	Core	Native	Yes	DPRSLPVR	PM_DPRSLPVR	
GPIO17	WLAN_ON#	I/O	3.3V	Core	GPI	No			
GPIO18		I/O	3.3V	Core	GPO	No			
GPIO19		I/O	3.3V	Core	GPI	Yes	SATA1GP		
GPIO20	BTLED_ON	I/O	3.3V	Core	GPO	No			
GPIO21		I/O	3.3V	Core	GPI	Yes	SATA0GP		
GPIO22		I/O	3.3V	Core	GPI	Yes	SCLOCK		
GPIO23		I/O	3.3V	Core	Native	Yes	LDRQ1#		
GPIO24	PS_CPPE#	I/O	3.3V	Resume	GPO	Yes	CLGPIO0		removing from EC; note by Alan
GPIO25	STP_CPU#	I/O	3.3V	Resume	Native	No	STP_CPU#	STP_CPU#	
GPIO26	PM_S4_STATE#	I/O	3.3V	Resume	Native	Yes	S4_STATE#		
GPIO27	BT_ON#/BT_ON	I/O	3.3V	Resume	GPO	Yes	QRT_STATE0		
GPIO28	CB_SD#	I/O	3.3V	Resume	GPO	Yes	QRT_STATE1		Cardbus_Shutdown#
GPIO29	OC5#	I/O	3.3V	Resume	Native	Yes	OC5#		OC#
GPIO30	OC6#	I/O	3.3V	Resume	Native	Yes	OC6#		OC#
GPIO31	OC7#	I/O	3.3V	Resume	Native	Yes	OC7#		OC#
GPIO32	PM_CLKRUN#	I/O	3.3V	Core	Native	No	CLKRUN#	PM_CLKRUN#	
GPIO33		I/O	3.3V	Core	GPO	Yes	HDA_DOCK_EN#		
GPIO34		I/O	3.3V	Core	GPO	Yes	HDA_DOCK_RST#		
GPIO35	SATACLKREQ#	I/O	3.3V	Core	GPO	Yes	SATACLKREQ#		
GPIO36	EMAIL_LED#	I/O	3.3V	Core	GPI	Yes	SATA2GP		
GPIO37	PCB_ID0	I/O	3.3V	Core	GPI	Yes	SATA3GP		
GPIO38	PCB_ID1	I/O	3.3V	Core	GPI	Yes	SLOAD		
GPIO39	PCB_ID2	I/O	3.3V	Core	GPI	Yes	SDATAOUT0		
GPIO40	OC4#	I/O	3.3V	Resume	Native	Yes	OC4#		OC#
GPIO41	OC3#	I/O	3.3V	Resume	Native	Yes	OC3#		OC#
GPIO42	OC2#	I/O	3.3V	Resume	Native	Yes	OC2#		OC#
GPIO43	OC1#	I/O	3.3V	Resume	Native	Yes	OC1#		OC#
GPIO44		I/O	N/A	N/A	N/A	N/A	N/A	N/A	
GPIO45		I/O	N/A	N/A	N/A	N/A	N/A	N/A	
GPIO46		I/O	N/A	N/A	N/A	N/A	N/A	N/A	
GPIO47		I/O	N/A	N/A	N/A	N/A	N/A	N/A	
GPIO48		I/O	3.3V	Core	GPI	Yes	SDATAOUT1		
GPIO49	H_PWRGD	I/O	V_CPU_IO	V_CPU_IO	Native	Yes	CPUPWRGD	H_PWRGD	
GPIO50	PCI_REQ1#	I/O	5.5V	Core	Native	Yes	REQ1#		
GPIO51	PCI_GNT1#	I/O	3.3V	Core	Native	Yes	GNT1#		
GPIO52	PCI_REQ2#	I/O	5.5V	Core	Native	Yes	REQ2#		
GPIO53	PCI_GNT2#	I/O	3.3V	Core	Native	Yes	GNT2#		
GPIO54		I/O	5.5V	Core	Native	Yes	REQ3#		reserved for GPIO
GPIO55		I/O	3.3V	Core	Native	Yes	GNT3#		reserved for GPIO

Title : BLANK

Engineer:

ASUSTeK COMPUTER INC

Size: A | Project Name: A8ES | Rev: 0

Date: Wednesday, October 11, 2006 | Sheet 25 of 94

ASUSTeK COMPUTER INC		Title : BLANK			
		Engineer:			
Size	Project Name				Rev
A	A8ES				0
Date: Wednesday, October 11, 2006		Sheet 26 of 94			

ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 27 of 94		

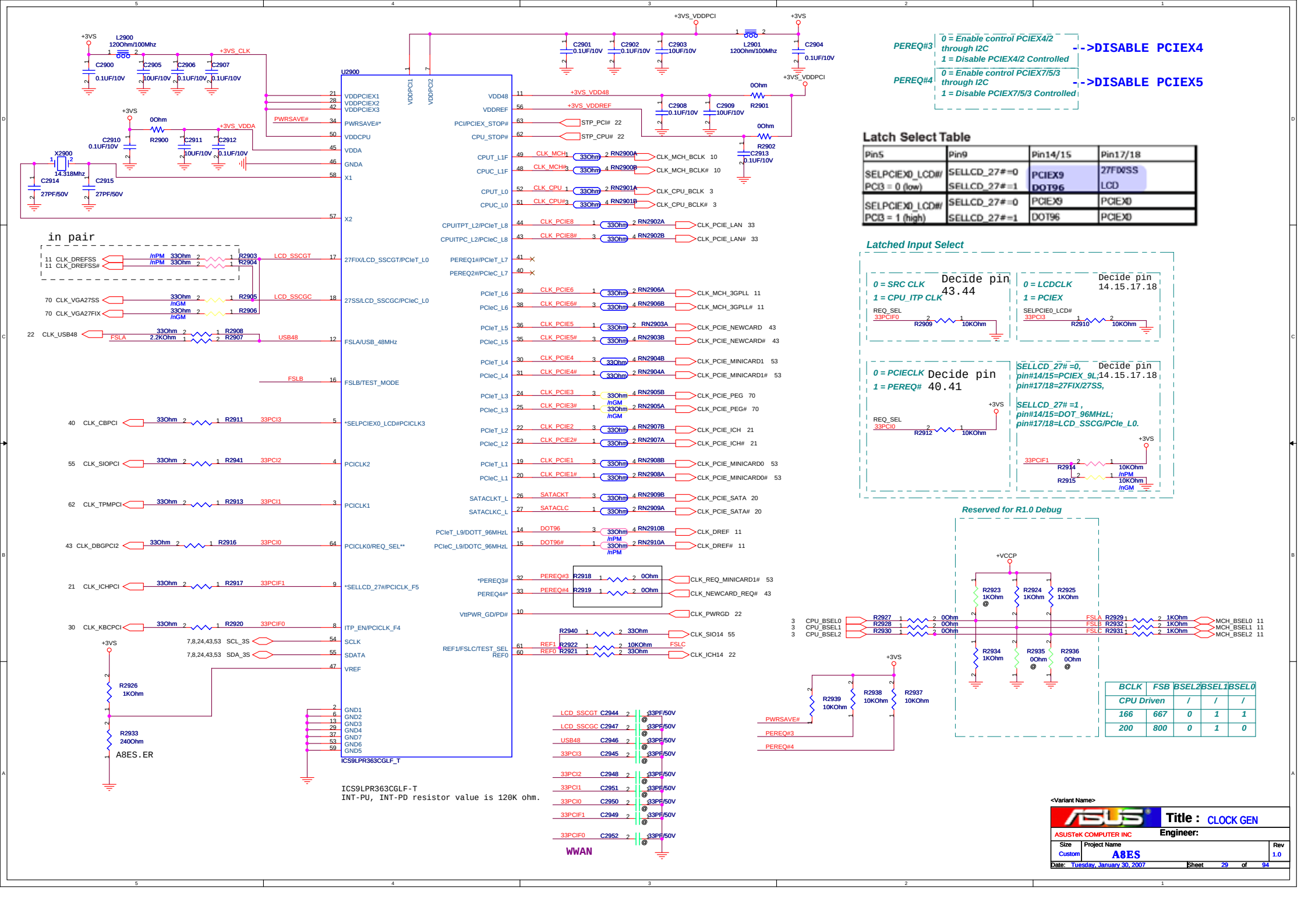
Title : BLANK

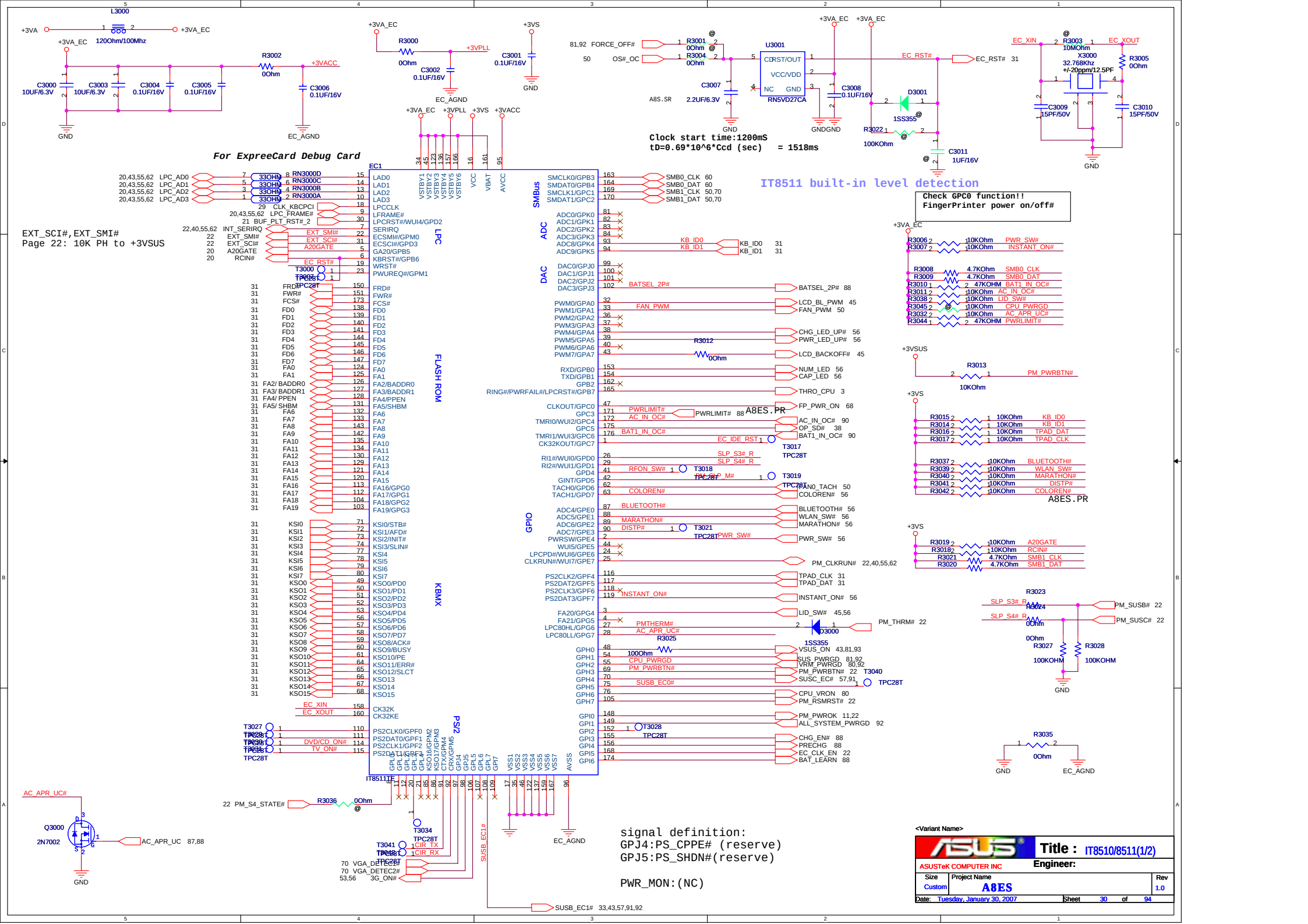
ASUSTeK COMPUTER INC

Engineer:

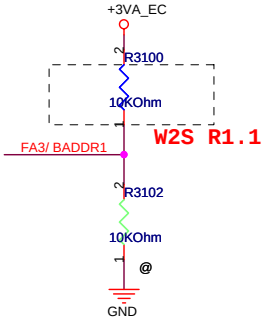
Size	Project Name	Rev
A	A8ES	0

Date: Wednesday, October 11, 2006 Sheet 28 of 94

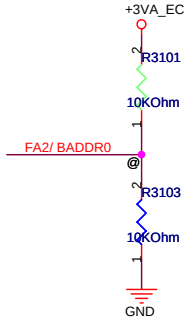

PEREQ#3
0 = Enable control PCIEX4/2 through I2C
1 = Disable PCIEX4/2 Controlled
->DISABLE PCIEX4
PEREQ#4
0 = Enable control PCIEX7/5/3 through I2C
1 = Disable PCIEX7/5/3 Controlled
->DISABLE PCIEX5
Latch Select Table
Pin5
Pin9
Pin14/15
Pin17/18
SELPCIEX0_LCD#/ PCI3 = 0 (low)
SELLCD_27#=0
SELLCD_27#=1
PCIEX9 DOT96
27FIXSS LCD
SELPCIEX0_LCD#/ PCI3 = 1 (high)
SELLCD_27#=0
SELLCD_27#=1
PCIEX9
DOT96
PCIEX0
PCIEX0
Latched Input Select
0 = SRC CLK
1 = CPU_ITP CLK
Decide pin 43.44
0 = LCDCLK
1 = PCIEX
Decide pin 14.15.17.18
0 = PCIECLK
1 = PEREQ#
Decide pin 40.41
SELLCD_27# =0, pin#14/15=PCIEX_9L;14.15.17.18 pin#17/18=27FIX/27SS,
SELLCD_27# =1 , pin#14/15=DOT_96MHzL; pin#17/18=LCD_SSCG/PCIe_L0.
Reserved for R1.0 Debug
BCLK
FSB
BSEL2
BSEL1
BSEL0
CPU Driven
/
/
/
166
667
0
1
1
200
800
0
1
0
U2900
ICS9LPR363CGLF_T
ICS9LPR363CGLF-T
INT-PU, INT-PD resistor value is 120K ohm.
WWAN
<Variant Name>
Title : CLOCK GEN
ASUSTeK COMPUTER INC
Engineer:
Size
Custom
Project Name
A8ES
Rev
1.0
Date: Tuesday, January 30, 2007
Sheet 29 of 94


L3000
120Ohm/100Mhz
+3VA
+3VA_EC
C3000 10UF/6.3V
C3003 10UF/6.3V
C3004 0.1UF/16V
C3005 0.1UF/16V
R3002 0Ohm
+3VACC
C3006 0.1UF/16V
GND
EC_AGND
R3000 0Ohm
+3VPLL
C3002 0.1UF/16V
+3VS
C3001 0.1UF/16V
EC_AGND
+3VA_EC +3VPLL +3VS +3VACC
34 45 123 135 155 166 16 161 95
VSTBY1 VSTBY2 VSTBY3 VSTBY4 VSTBY5 VSTBY6 VCC VBAT AVCC
81,92 FORCE_OFF#
50 OS#_OC
R3001 0Ohm
R3004 0Ohm
U3001
CRST/OUT
VCC/VDD
NC GND
RN5VD27CA
C3007 2.2UF/6.3V
A8S.SR
C3008 0.1UF/16V
D3001 1SS355
R3022 100KOhm
C3011 1UF/16V
EC_RST#
EC_RST# 31
EC_XIN
EC_XOUT
R3003 10MOhm
X3000 32.768Khz +/-20ppm/12.5PF
C3009 15PF/50V
C3010 15PF/50V
R3005 0Ohm
GNDGND
Clock start time:1200mS
tD=0.69*10^6*Ccd (sec) = 1518ms
For ExpreeCard Debug Card
EC1
IT8511 built-in level detection
Check GPC0 function!!
FingerPrinter power on/off#
EXT_SCI#,EXT_SMI#
Page 22: 10K PH to +3VSUS
LPC
FLASH ROM
KBMX
PS2
SMBus
ADC
DAC
GPIO
IT8511TE
LAD0 LAD1 LAD2 LAD3 LPCCLK LFRAME# LPCRST#/WUI4/GPD2 SERIRQ ECSMI#/GPM0 ECSCI#/GPD3 GA20/GPB5 KBRST#/GPB6 WRST# PWUREQ#/GPM1
FRD# FWR# FCS# FD0 FD1 FD2 FD3 FD4 FD5 FD6 FD7 FA0 FA1 FA2/BADDR0 FA3/BADDR1 FA4/PPEN FA5/SHBM FA6 FA7 FA8 FA9 FA10 FA11 FA12 FA13 FA14 FA15 FA16/GPG0 FA17/GPG1 FA18/GPG2 FA19/GPG3
KSI0/STB# KSI1/AFD# KSI2/INIT# KSI3/SLIN# KSI4 KSI5 KSI6 KSI7 KSO0/PD0 KSO1/PD1 KSO2/PD2 KSO3/PD3 KSO4/PD4 KSO5/PD5 KSO6/PD6 KSO7/PD7 KSO8/ACK# KSO9/BUSY KSO10/PE KSO11/ERR# KSO12/SLCT KSO13 KSO14 KSO15
CK32K CK32KE
PS2CLK0/GPF0 PS2DAT0/GPF1 PS2CLK1/GPF2 PS2DAT1/GPF3
SMCLK0/GPB3 SMDAT0/GPB4 SMCLK1/GPC1 SMDAT1/GPC2
ADC0/GPK0 ADC1/GPK1 ADC2/GPK2 ADC3/GPK3 ADC8/GPK4 ADC9/GPK5
DAC0/GPJ0 DAC1/GPJ1 DAC2/GPJ2 DAC3/GPJ3
PWM0/GPA0 PWM1/GPA1 PWM2/GPA2 PWM3/GPA3 PWM4/GPA4 PWM5/GPA5 PWM6/GPA6 PWM7/GPA7
RXD/GPB0 TXD/GPB1 GPB2 RING#/PWRFAIL#/LPCRST#/GPB7
CLKOUT/GPC0 GPC3 TMRI0/WUI2/GPC4 GPC5 TMRI1/WUI3/GPC6 CK32KOUT/GPC7
RI1#/WUI0/GPD0 RI2#/WUI1/GPD1 GPD4 GINT/GPD5 TACH0/GPD6 TACH1/GPD7
ADC4/GPE0 ADC5/GPE1 ADC6/GPE2 ADC7/GPE3 PWRSW/GPE4 WUI5/GPE5 LPCPD#/WUI6/GPE6 CLKRUN#/WUI7/GPE7
PS2CLK2/GPF4 PS2DAT2/GPF5 PS2CLK3/GPF6 PS2DAT3/GPF7
FA20/GPG4 FA21/GPG5 LPC80HL/GPG6 LPC80LL/GPG7
GPH0 GPH1 GPH2 GPH3 GPH4 GPH5 GPH6 GPH7
GPI0 GPI1 GPI2 GPI3 GPI4 GPI5 GPI6
VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 AVSS
SMB0_CLK 60
SMB0_DAT 60
SMB1_CLK 50,70
SMB1_DAT 50,70
KB_ID0 KB_ID1
BATSEL_2P# 88
LCD_BL_PWM 45
FAN_PWM 50
CHG_LED_UP# 56
PWR_LED_UP# 56
LCD_BACKOFF# 45
NUM_LED 56
CAP_LED 56
THRO_CPU 3
FP_PWR_ON 68
PWRLIMIT# 88
AC_IN_OC# 90
OP_SD# 38
BAT1_IN_OC# 90
SLP_S3# R
SLP_S4# R
FAN0_TACH 50
COLOREN# 56
BLUETOOTH# 56
WLAN_SW# 56
MARATHON# 56
PWR_SW# 56
PM_CLKRUN# 22,40,55,62
PS2CLK_GPF4 31
PS2DAT_GPF5 31
INSTANT_ON# 56
LID_SW# 45,56
PM_THRM# 22
VSUS_ON 43,81,93
SUS_PWRGD 81,92
VRM_PWRGD 80,92
PM_PWRBTN# 22
SUSC_EC# 57,91
CPU_VRON 80
PM_RSMRST# 22
PM_PWROK 11,22
ALL_SYSTEM_PWRGD 92
CHG_EN# 88
PRECHG 88
EC_CLK_EN 22
BAT_LEARN 88
R3006 10KOhm PWR_SW#
R3007 10KOhm INSTANT_ON#
R3008 4.7KOhm SMB0_CLK
R3009 4.7KOhm SMB0_DAT
R3010 47KOHM BAT1_IN_OC#
R3011 10KOhm AC_IN_OC#
R3038 10KOhm LID_SW#
R3045 10KOhm CPU_PWRGD
R3032 10KOhm AC_APR_UC#
R3044 47KOHM PWRLIMIT#
R3013 10KOhm PM_PWRBTN#
R3015 10KOhm KB_ID0
R3014 10KOhm KB_ID1
R3016 10KOhm TPAD_DAT
R3017 10KOhm TPAD_CLK
R3037 10KOhm BLUETOOTH#
R3039 10KOhm WLAN_SW#
R3040 10KOhm MARATHON#
R3041 10KOhm DISTP#
R3042 10KOhm COLOREN#
R3019 10KOhm A20GATE
R3018 10KOhm RCIN#
R3021 4.7KOhm SMB1_CLK
R3020 4.7KOhm SMB1_DAT
R3023 R3024 0Ohm
R3027 100KOHM
R3028 100KOHM
R3035 0Ohm
R3036 0Ohm
R3025 100Ohm
Q3000 2N7002
AC_APR_UC# 87,88
22 PM_S4_STATE#
70 VGA_DETEC1#
70 VGA_DETEC2#
53,56 3G_ON#
SUSB_EC1# 33,43,57,91,92
signal definition:
GPJ4:PS_CPPE# (reserve)
GPJ5:PS_SHDN#(reserve)
PWR_MON:(NC)
<Variant Name>
Title : IT8510/8511(1/2)
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
Sheet 30 of 94

10:Determined by EC

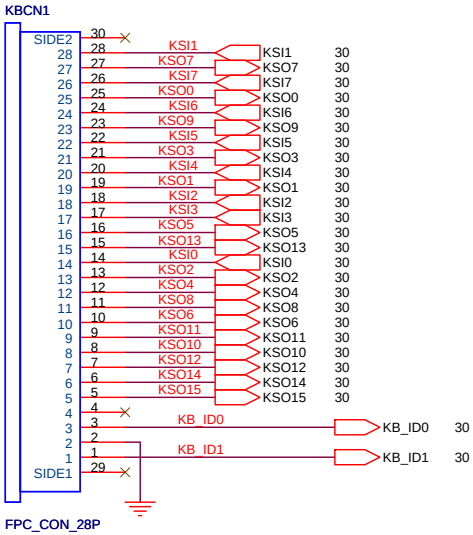


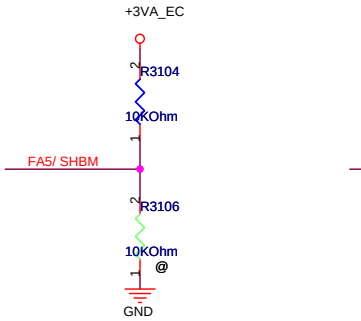
W2S R1.1

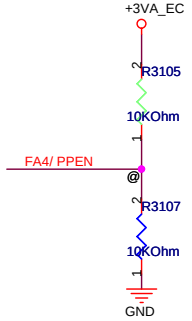


BADDR[1:0]
No pull up:
The register pair to access PNPCFG is 002Eh and 002Fh.
Ext 10K up on BADDR0:
The register pair to access PNPCFG is 004Eh and 004Fh.
Ext 10K up on BADDR1:
The register pair to access PNPCFG is determined by EC domain registers SWCBALR and SWCBAHR.

KBDDT1	KBDDT0	Matrix
1	1	US
1	0	UK
0	1	JP

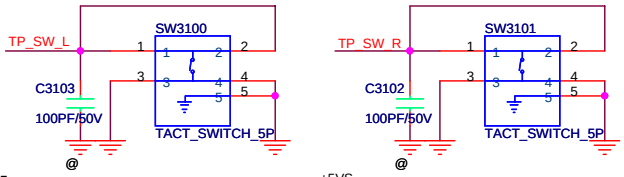




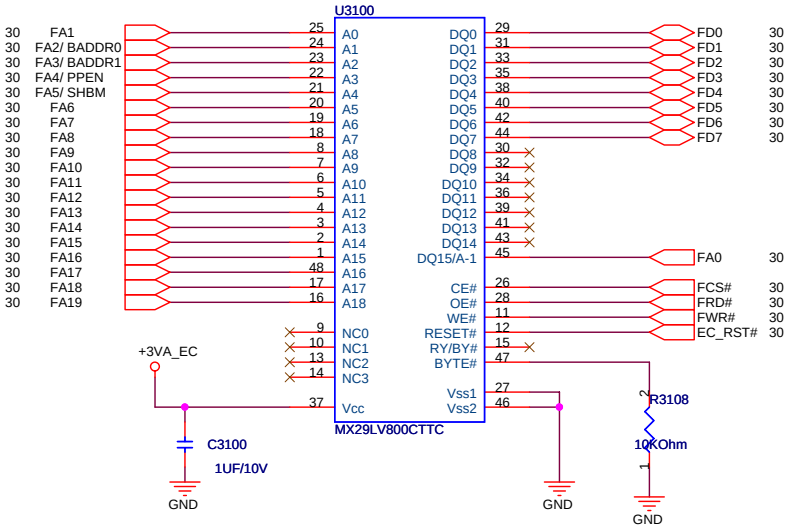


SHBM
No pull up:
disable shared memory with host BIOS
Ext 10K up:
enable shared memory with host BIOS

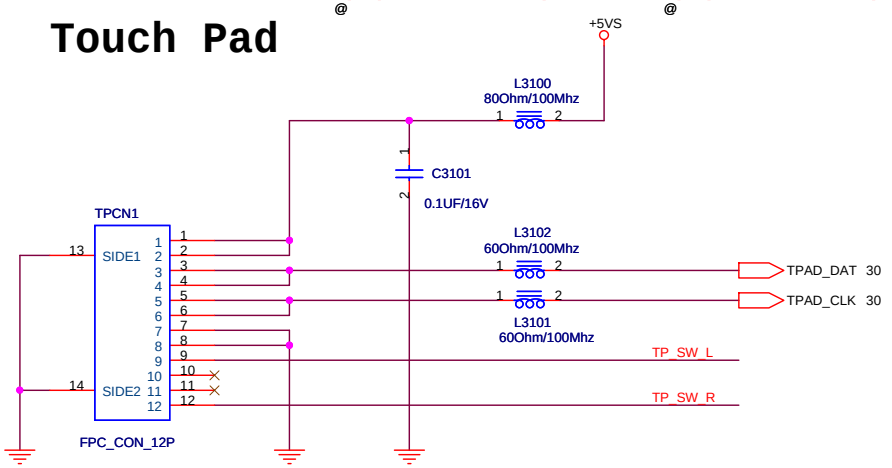
PPEN
No pull up:
Normal
Ext 10K up:
KBS interface pins are switched to parallel port interface for in-system programming.



8M TSOP



Touch Pad



12G183101205

<Variant Name>

ASUSTeK COMPUTER INC	Title : IT8510/8511(2/2)	
	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 31 of 94	

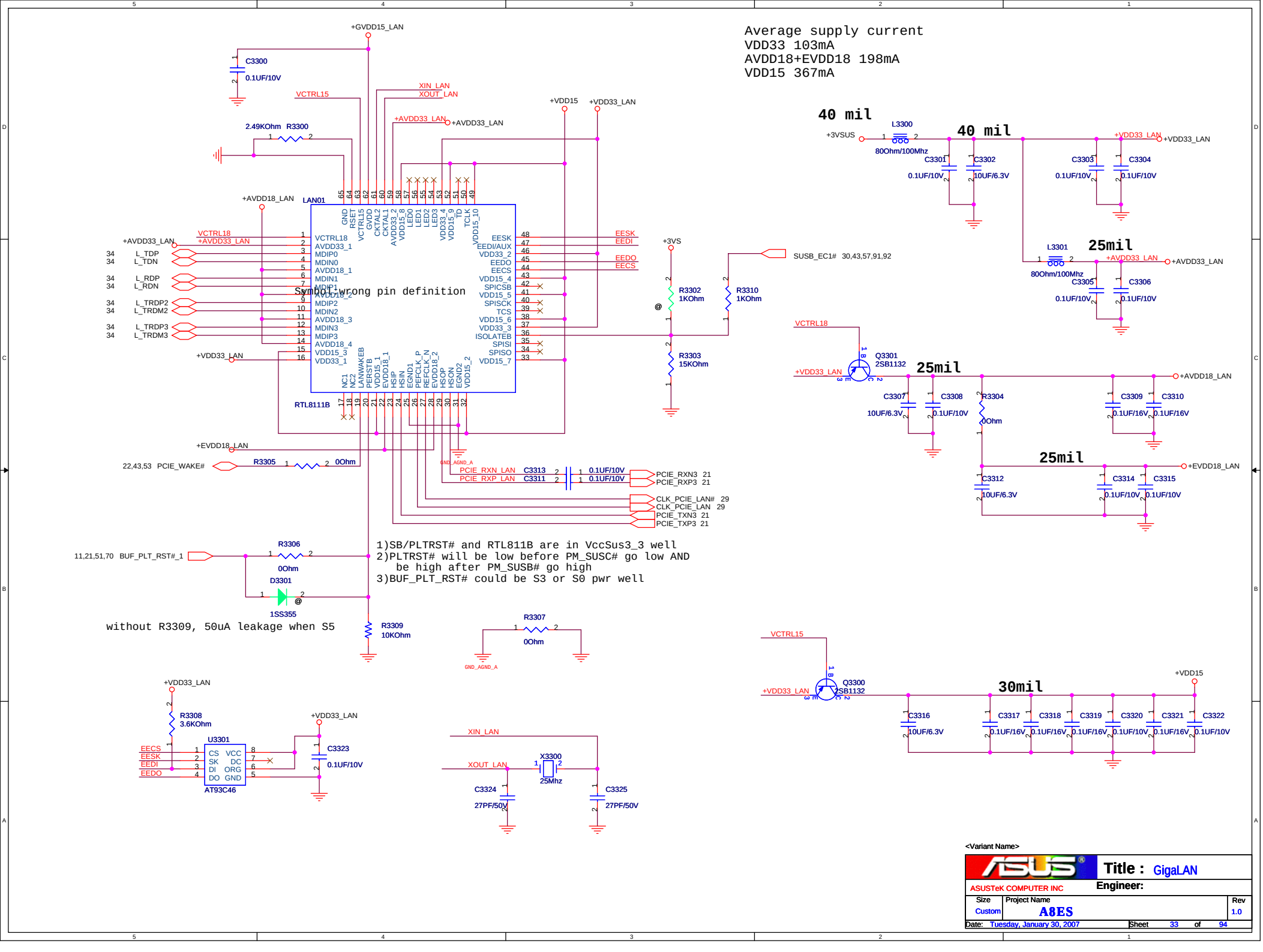
ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 32 of 94		

Average supply current
VDD33 103mA
AVDD18+EVDD18 198mA
VDD15 367mA

Symbol wrong pin definition

1)SB/PLTRST# and RTL811B are in VccSus3_3 well
2)PLTRST# will be low before PM_SUSC# go low AND
be high after PM_SUSB# go high
3)BUF_PLT_RST# could be S3 or S0 pwr well

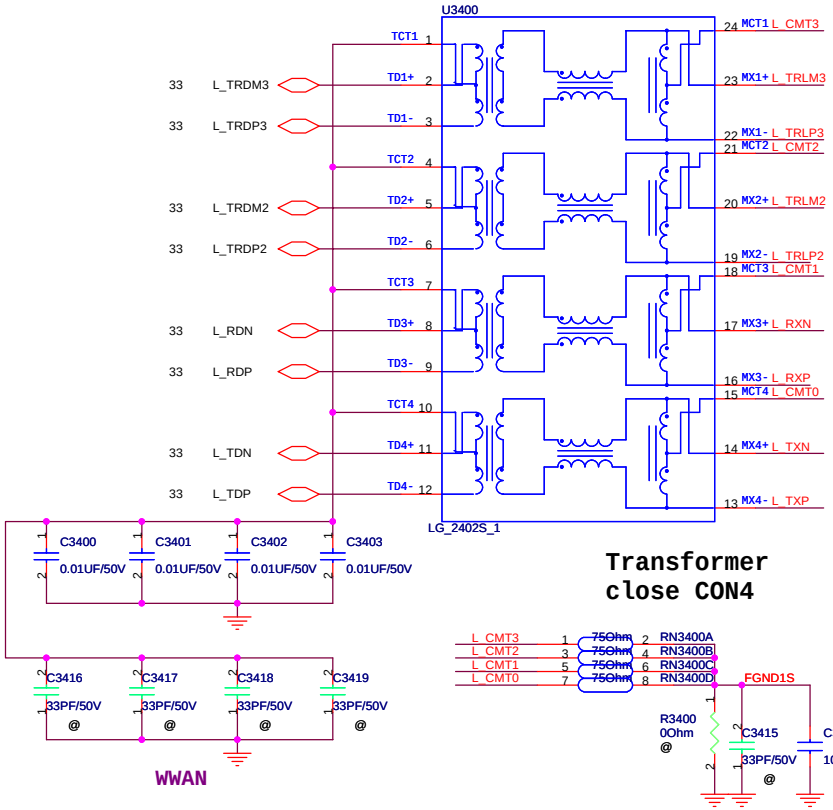
without R3309, 50uA leakage when S5



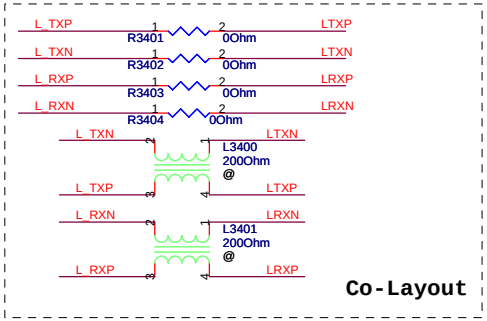
<Variant Name>

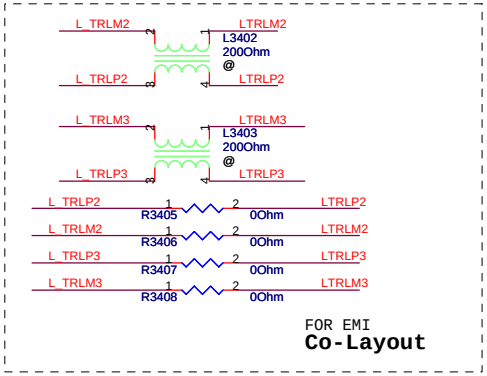
ASUSTeK COMPUTER INC	Title : GigaLAN	
	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 33 of 94	

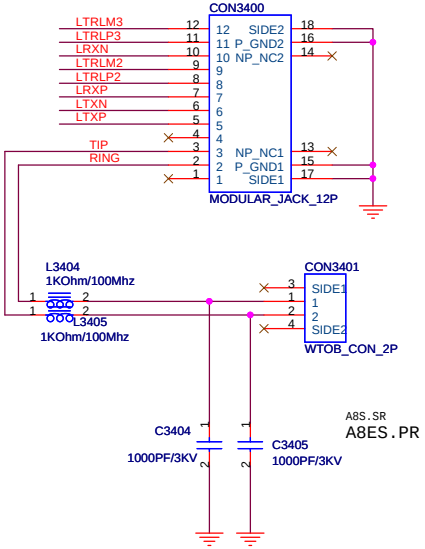
2402S have issue after IR reflow,
alternative part:LG-2410S-1



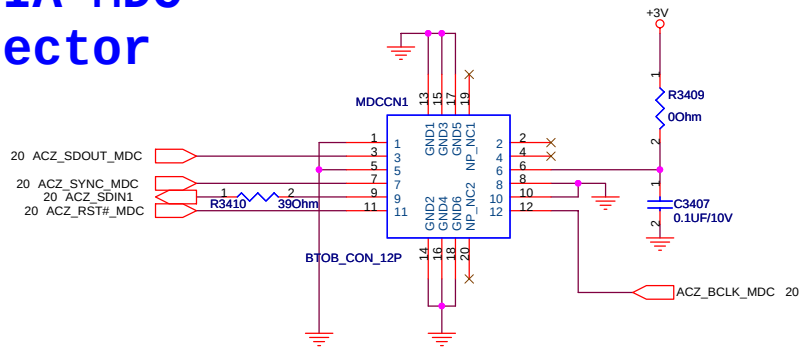
Transformer
close CON4







AZALIA MDC Connector



<Variant Name>

Title : RJ11+45 , MDC

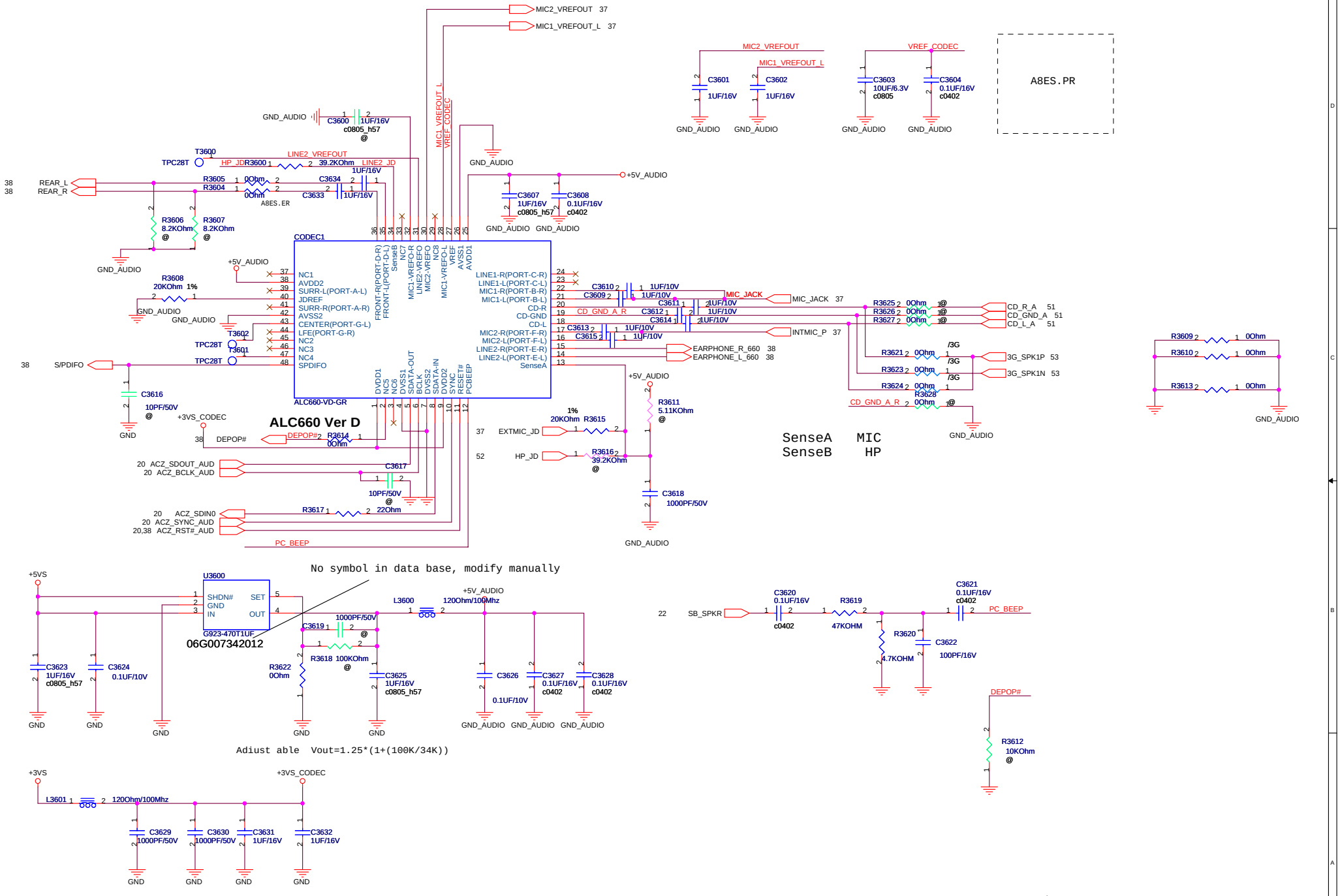
ASUSTeK COMPUTER INC

Engineer:

Size	Project Name	Rev
Custom	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 34 of 94

ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 35 of 94		


ALC660 Ver D
ALC660-VD-GR
CODEC1
No symbol in data base, modify manually
Adiust able Vout=1.25*(1+(100K/34K))
SenseA MIC
SenseB HP
A8ES.PR
MIC2_VREFOUT 37
MIC1_VREFOUT_L 37
REAR_L
REAR_R
S/PDIFO
EARPHONE_R_660 38
EARPHONE_L_660 38
MIC_JACK 37
INTMIC_P 37
EXTMIC_JD
HP_JD
DEPOP#
ACZ_SDOUT_AUD
ACZ_BCLK_AUD
ACZ_SDIN0
ACZ_SYNC_AUD
ACZ_RST#_AUD
PC_BEEP
SB_SPKR
3G_SPK1P 53
3G_SPK1N 53
CD_R_A 51
CD_GND_A 51
CD_L_A 51
U3600
SHDN#
GND
IN
SET
OUT
G923-470T1UF
06G007342012
+5VS
+3VS
+3VS_CODEC
+5V_AUDIO
GND_AUDIO
GND
LINE2_VREFOUT
LINE2_JD
HP_JD
VREF_CODEC
MIC1_VREFOUT_L
CD_GND_A_R
Title : CODEC-ALC660
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
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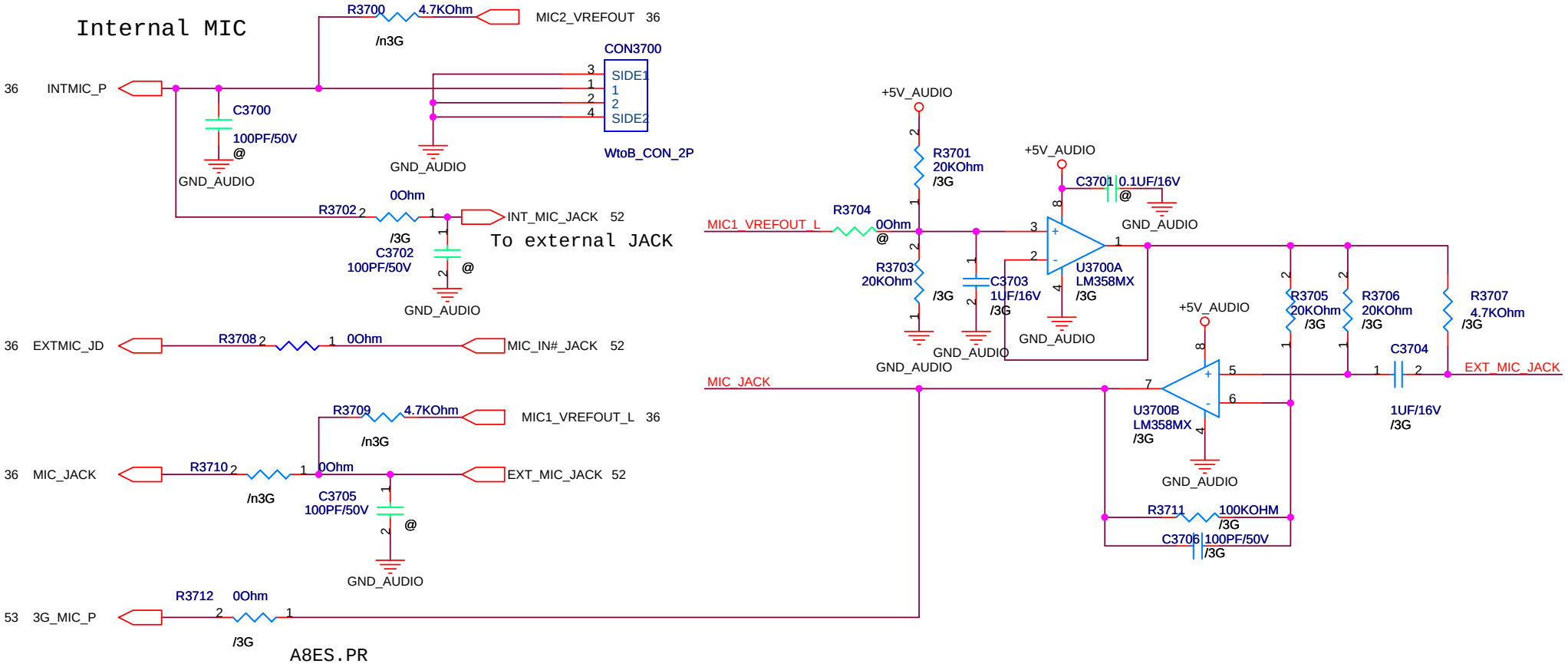
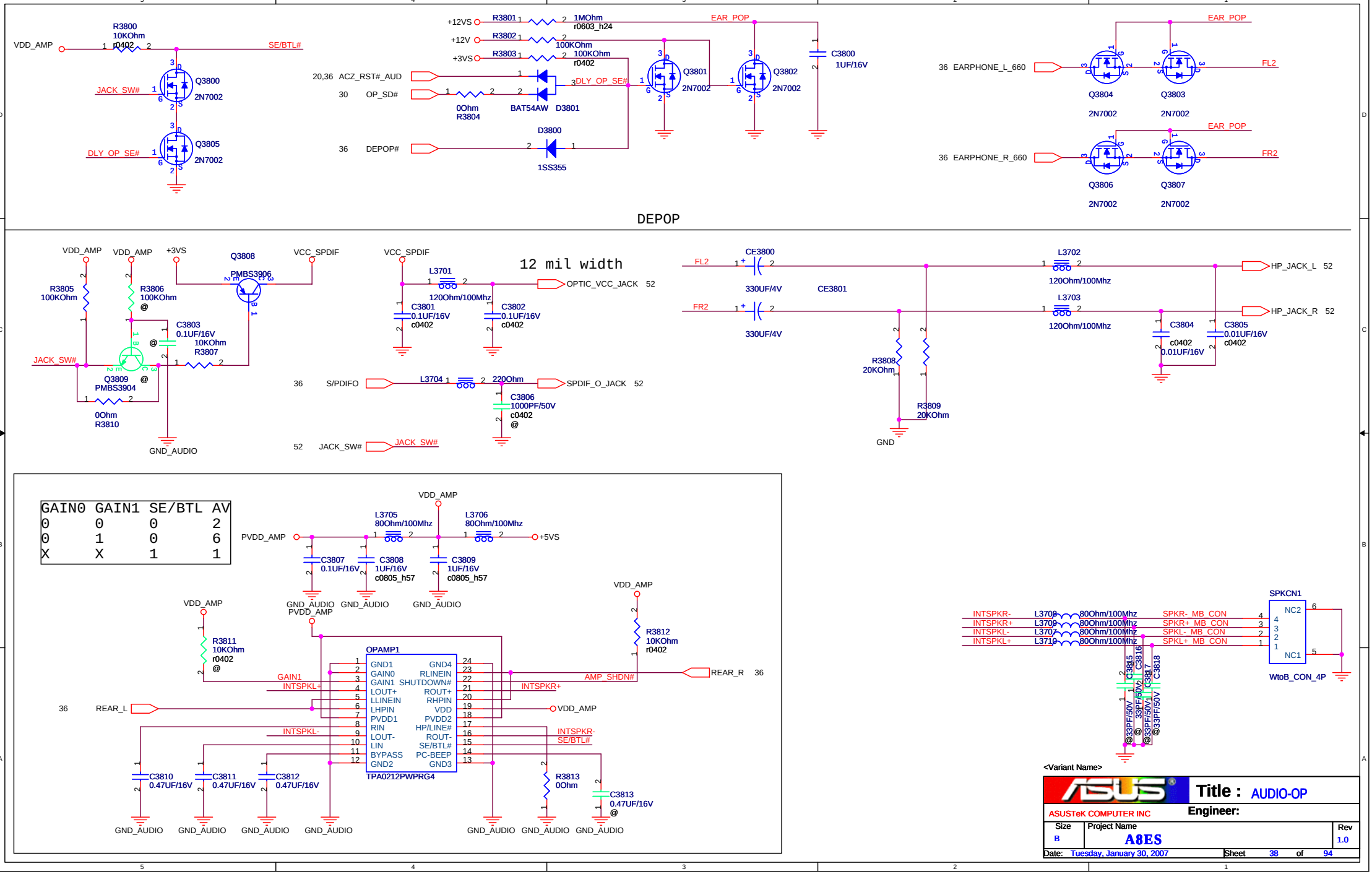


ASUSTeK COMPUTER INC	Title : AUDIO-MIC	
	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 37 of 94	



<Variant Name>

ASUSTeK COMPUTER INC

Title : AUDIO-OP

Engineer:

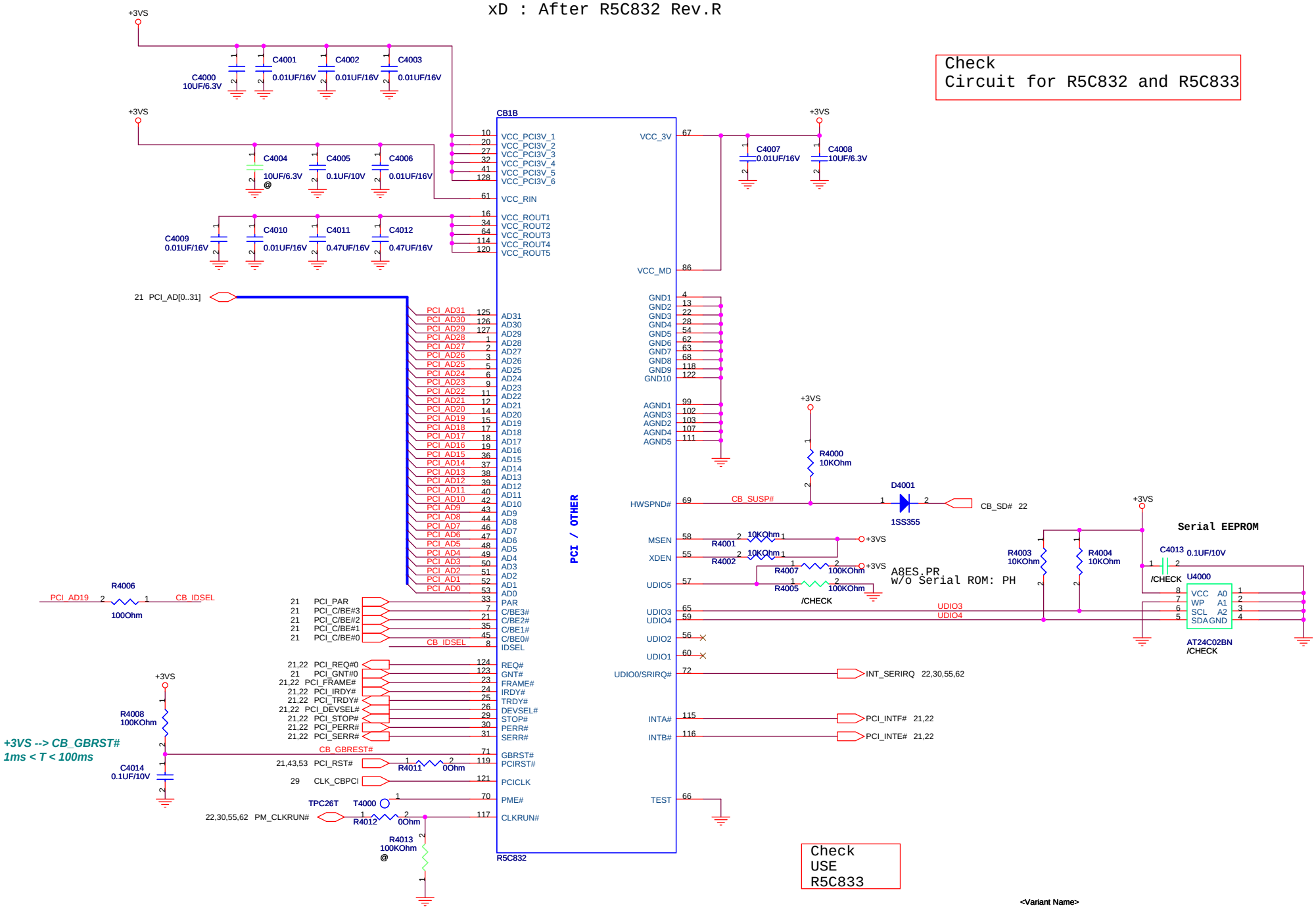
Size	Project Name	Rev
B	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 38 of 94

ASUSTeK COMPUTER INC	Title : BLANK	
	Engineer:	
Size: A	Project Name: A8ES	Rev: 0
Date: Wednesday, October 11, 2006	Sheet 39 of 94	

xD : After R5C832 Rev.R

Check
Circuit for R5C832 and R5C833



Check
USE
R5C833

<Variant Name>

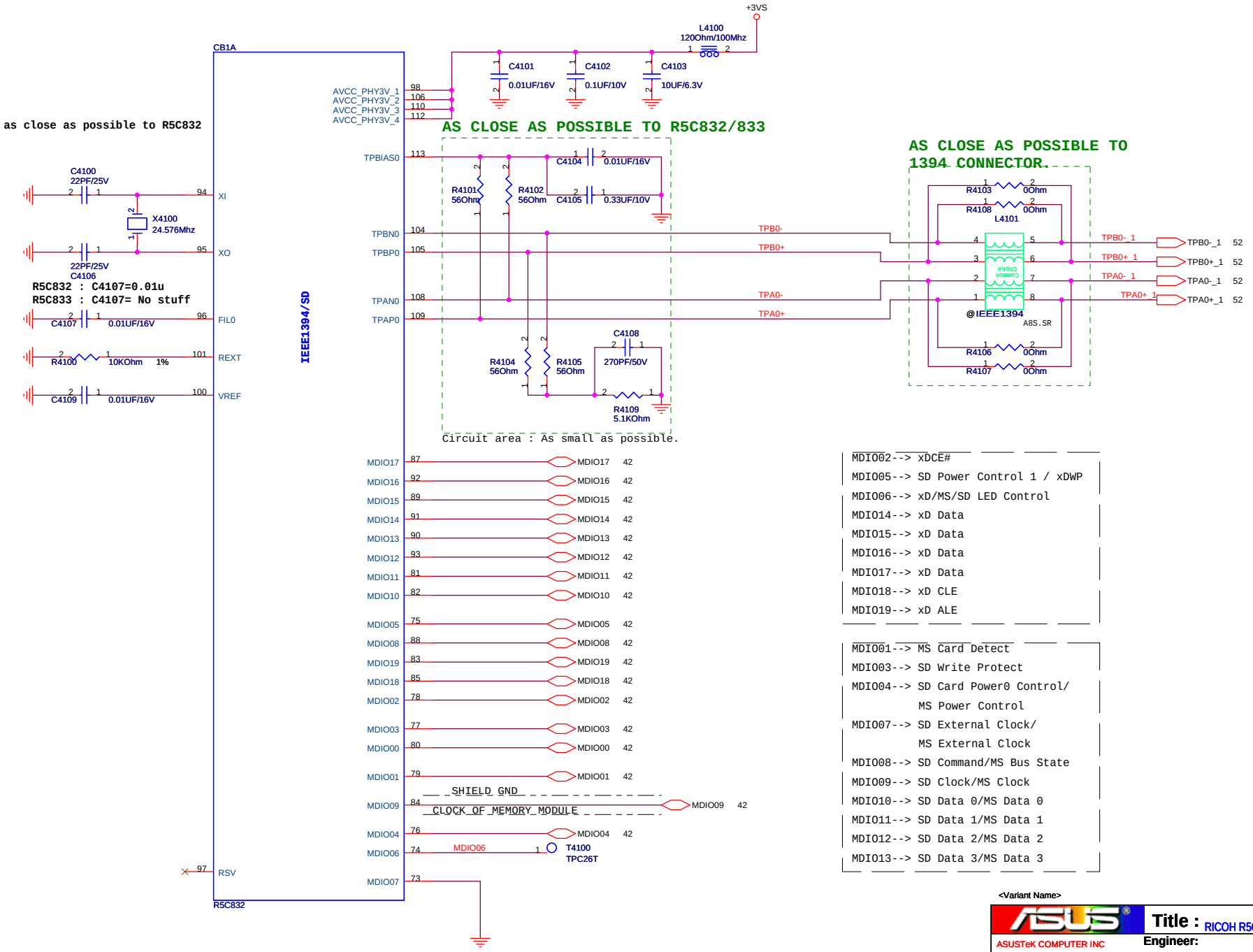
ASUSTeK COMPUTER INC

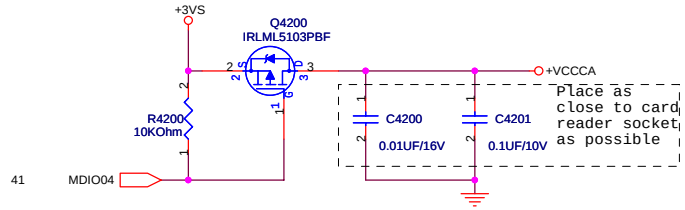
Title : RICOH R5C832/PCI_B

Engineer:

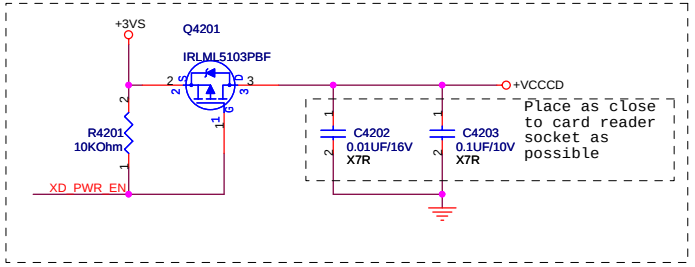
Size	Project Name	Rev
Custom	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 40 of 94

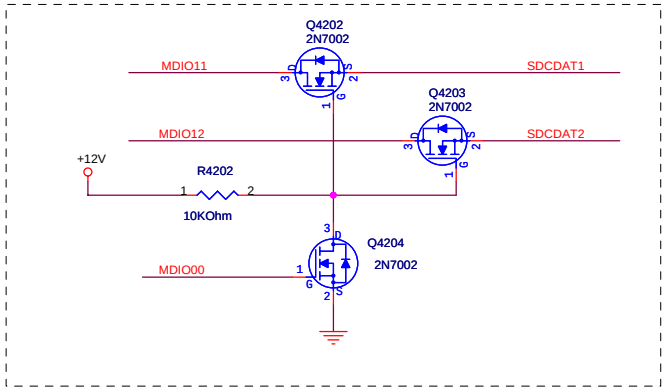

as close as possible to R5C832
CB1A
R5C832
IEEE1394/SD
C4100
22PF/25V
X4100
24.576Mhz
C4106
22PF/25V
R5C832 : C4107=0.01u
R5C833 : C4107= No stuff
C4107
0.01UF/16V
R4100
10KOhm 1%
C4109
0.01UF/16V
XI
XO
FIL0
REXT
VREF
RSV
+3VS
L4100
120Ohm/100Mhz
C4101
0.01UF/16V
C4102
0.1UF/10V
C4103
10UF/6.3V
AVCC_PHY3V_1
AVCC_PHY3V_2
AVCC_PHY3V_3
AVCC_PHY3V_4
AS CLOSE AS POSSIBLE TO R5C832/833
TPBIAS0
TPBN0
TPBP0
TPAN0
TPAP0
C4104
0.01UF/16V
C4105
0.33UF/10V
R4101
56Ohm
R4102
56Ohm
R4104
56Ohm
R4105
56Ohm
C4108
270PF/50V
R4109
5.1KOhm
Circuit area : As small as possible.
AS CLOSE AS POSSIBLE TO
1394 CONNECTOR.
R4103
0Ohm
R4108
0Ohm
L4101
R4106
0Ohm
R4107
0Ohm
@IEEE1394
A8S.SR
TPB0-
TPB0+
TPA0-
TPA0+
TPB0-_1
TPB0+_1
TPA0-_1
TPA0+_1
MDIO17
MDIO16
MDIO15
MDIO14
MDIO13
MDIO12
MDIO11
MDIO10
MDIO05
MDIO08
MDIO19
MDIO18
MDIO02
MDIO03
MDIO00
MDIO01
MDIO09
MDIO04
MDIO06
MDIO07
SHIELD GND
CLOCK OF MEMORY MODULE
T4100
TPC26T
MDIO02--> xDCE#
MDIO05--> SD Power Control 1 / xDWP
MDIO06--> xD/MS/SD LED Control
MDIO14--> xD Data
MDIO15--> xD Data
MDIO16--> xD Data
MDIO17--> xD Data
MDIO18--> xD CLE
MDIO19--> xD ALE
MDIO01--> MS Card Detect
MDIO03--> SD Write Protect
MDIO04--> SD Card Power0 Control/
MS Power Control
MDIO07--> SD External Clock/
MS External Clock
MDIO08--> SD Command/MS Bus State
MDIO09--> SD Clock/MS Clock
MDIO10--> SD Data 0/MS Data 0
MDIO11--> SD Data 1/MS Data 1
MDIO12--> SD Data 2/MS Data 2
MDIO13--> SD Data 3/MS Data 3
<Variant Name>
Title : RICOH R5C832/PCI_A
ASUSTeK COMPUTER INC
Engineer:
Size
Custom
Project Name
A8ES
Rev
1.0
Date: Tuesday, January 30, 2007
Sheet 41 of 94



To correct the problem when MS Duo adaptor is in use.



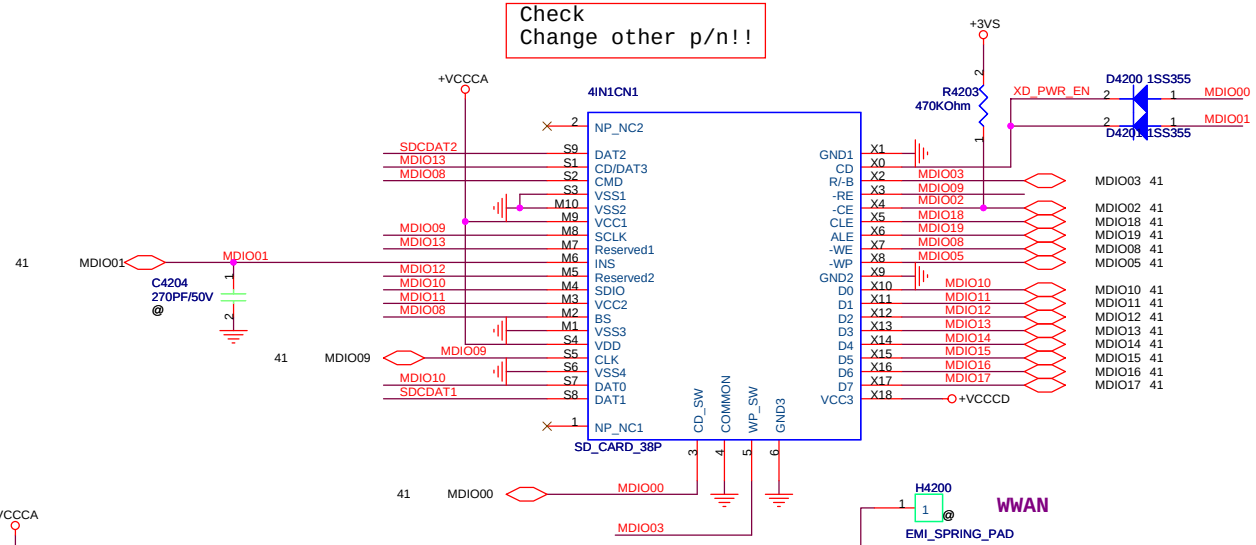
Solve MS Duo Adaptor short issue.

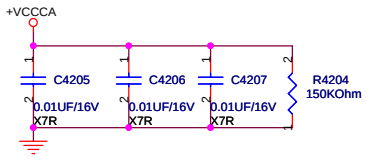


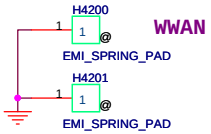

```
MDIO00--> SD Card Detect
MDIO01--> MS Card Detect
MDIO03--> SD Write Protect
MDIO04--> SD Card Power0 Control/
          MS Power Control
MDIO08--> SD Command/MS Bus State
MDIO09--> SD Clock/MS Clock
MDIO10--> SD Data 0/MS Data 0
MDIO11--> SD Data 1/MS Data 1
MDIO12--> SD Data 2/MS Data 2
MDIO13--> SD Data 3/MS Data 3
```

```
MDIO02--> xDCE#
MDIO05--> SD Power Control 1 / xDWP
MDIO06--> xD/MS/SD LED Control
MDIO14--> xD Data
MDIO15--> xD Data
MDIO16--> xD Data
MDIO17--> xD Data
MDIO18--> xD CLE
MDIO19--> xD ALE
```

Check
Change other p/n!!







<Variant Name>

ASUSTeK COMPUTER INC	Title : CardReader	
	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Thursday, January 25, 2007	Sheet 42 of 94	

Check
+3V

U4300
R5538D001
R4300 1KOhm
R4302 0Ohm
USB_OC#4 21
+1.5VS_PE
+3.3VA_PE
+3.3VS_PE
CPPE#
CPUSB#
PCI_RST#
30,33,57,91,92 SUSB_EC1#
30,81,93 VSUS_ON
21,40,53 PCI_RST#

R4301 0Ohm
R4303 0Ohm
L4300 200Ohm @
21 USB_PN4
21 USB_PP4
USBP4-
USBP4+

Block A

R4305 0Ohm
C4300 2200PF/50V
D4300 BAT54C
R4308 10KOhm
R4306 47KOHM
C4301 0.1UF/10V
R4309 47KOHM @
Q4300 PMBS3904
R4304 100KOhm
PE_DEBUGEN#
U4301 74LVC1G125GV
TPC26T T4300
R4307 0Ohm
R4310 0Ohm
LPC_FRAME# 20,30,55,62
LPC_FRAME# DBCARD

CON4300 EXPRESS_CARD_26P
USBP4-
USBP4+
CPUSB#
SMB_CLK_C
SMB_DAT_C
+1.5VS_PE
PCIE_WAKE# C
+3.3VA_PE
+3.3VS_PE
CLKREQ# C
CPPE# C
29 CLK_PCIE_NEWCARD#
29 CLK_PCIE_NEWCARD
21 PCIE_RXN5
21 PCIE_RXP5
21 PCIE_TXN5
21 PCIE_TXP5
CON4301 CARD_EJECTOR_2P

Block C

Put R4312 close to U4302

CLK_DBGPCI2_R R4312 0Ohm
R4311 0Ohm @
RN4300A RN4300B RN4300C RN4300D 0Ohm
U4302 SN74CBT3383PWR
29 CLK_DBGPCI2
20,30,55,62 LPC_AD3
20,30,55,62 LPC_AD0
20,30,55,62 LPC_AD1
20,30,55,62 LPC_AD2
29 CLK_NEWCARD_REQ#
22,33,53 PCIE_WAKE#
7,8,24,29,53 SCL_3S
7,8,24,29,53 SDA_3S
CPPE# C
CLKREQ# C
PCIE_WAKE# C
SMB_CLK_C
SMB_DAT_C
PE_DEBUGEN#
C4302 0.1UF/10V

If don't support NewCard Debug Card,Pls do
(a) DNI all components of block A
(b) Mount Block C (RN5401,R6975)

D4301 BAV99W_L @
D4302 BAV99W_L @
+3.3VA_PE
USBP4-
USBP4+

+3VS
C4303 4.7UF/10V
C4304 0.1UF/10V
3.0V~3.6V
Ave= 1000mA
Max= 1300 mA

+3V
C4305 2.2UF/6.3V
C4306 0.1UF/10V
3.0V~3.6V
Ave= 200mA
Max= 275 mA

+1.5VS
C4307 2.2UF/6.3V
C4308 0.1UF/10V
1.35V~1.65V
Ave= 500 mA
Max= 650 mA

+3.3VS_PE
C4309 4.7UF/10V
C4310 10UF/10V @
C4311 0.01UF/16V

+3.3VA_PE
C4312 4.7UF/10V
C4313 0.01UF/16V

+1.5VS_PE
C4314 4.7UF/10V
C4315 0.01UF/16V

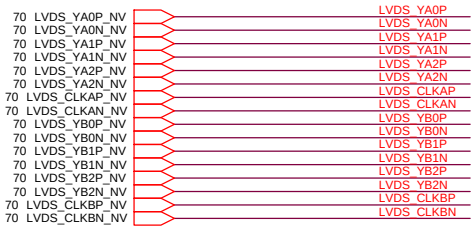
+3VS
CON4302 FPC_CON_12P
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_FRAME#
CLK_DBGPCI2_R
Bottom Contact

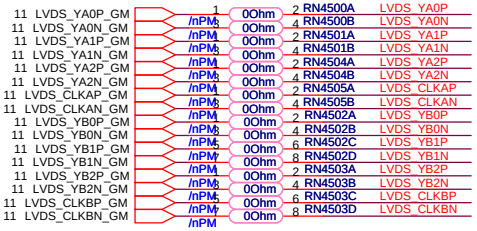
<Variant Name>

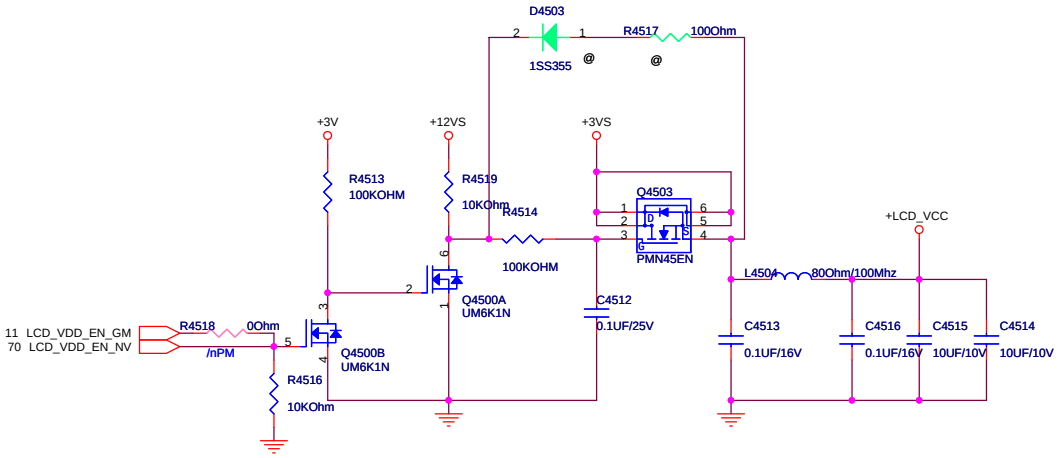
ASUSTeK COMPUTER INC
Title : Express Card
Engineer:
Size: Custom
Project Name: A8ES
Rev: 1.0
Date: Tuesday, January 30, 2007
Sheet 43 of 94

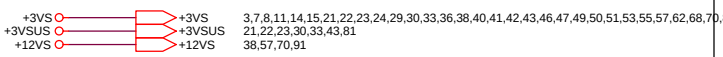
Title :	Blank
ASUSTeK COMPUTER INC	Engineer:
Size: A	Project Name: A8ES	Rev: 1.0
Date: Wednesday, October 11, 2006	Sheet 44 of 94

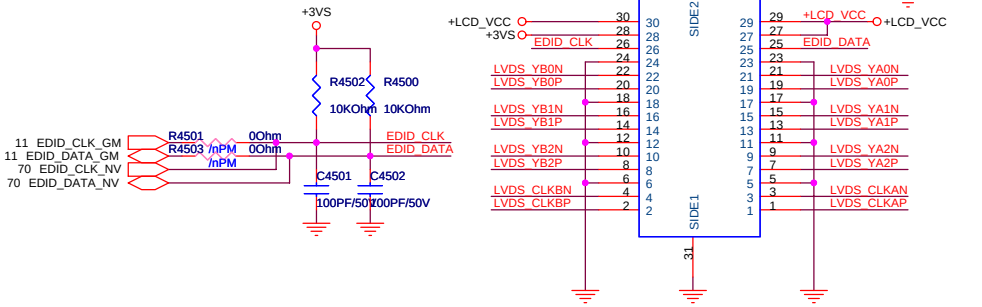
Check stub

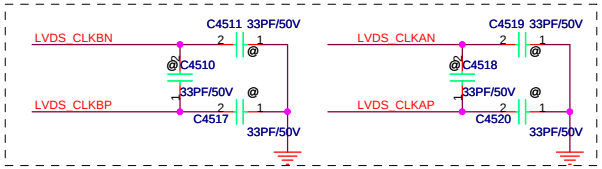






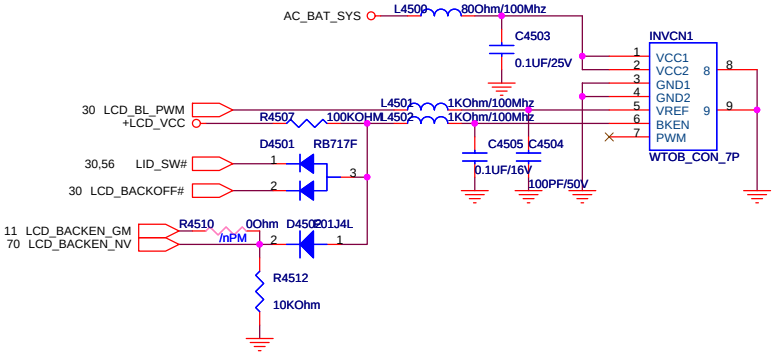






WWAN

INVERTOR CNT



<Variant Name>

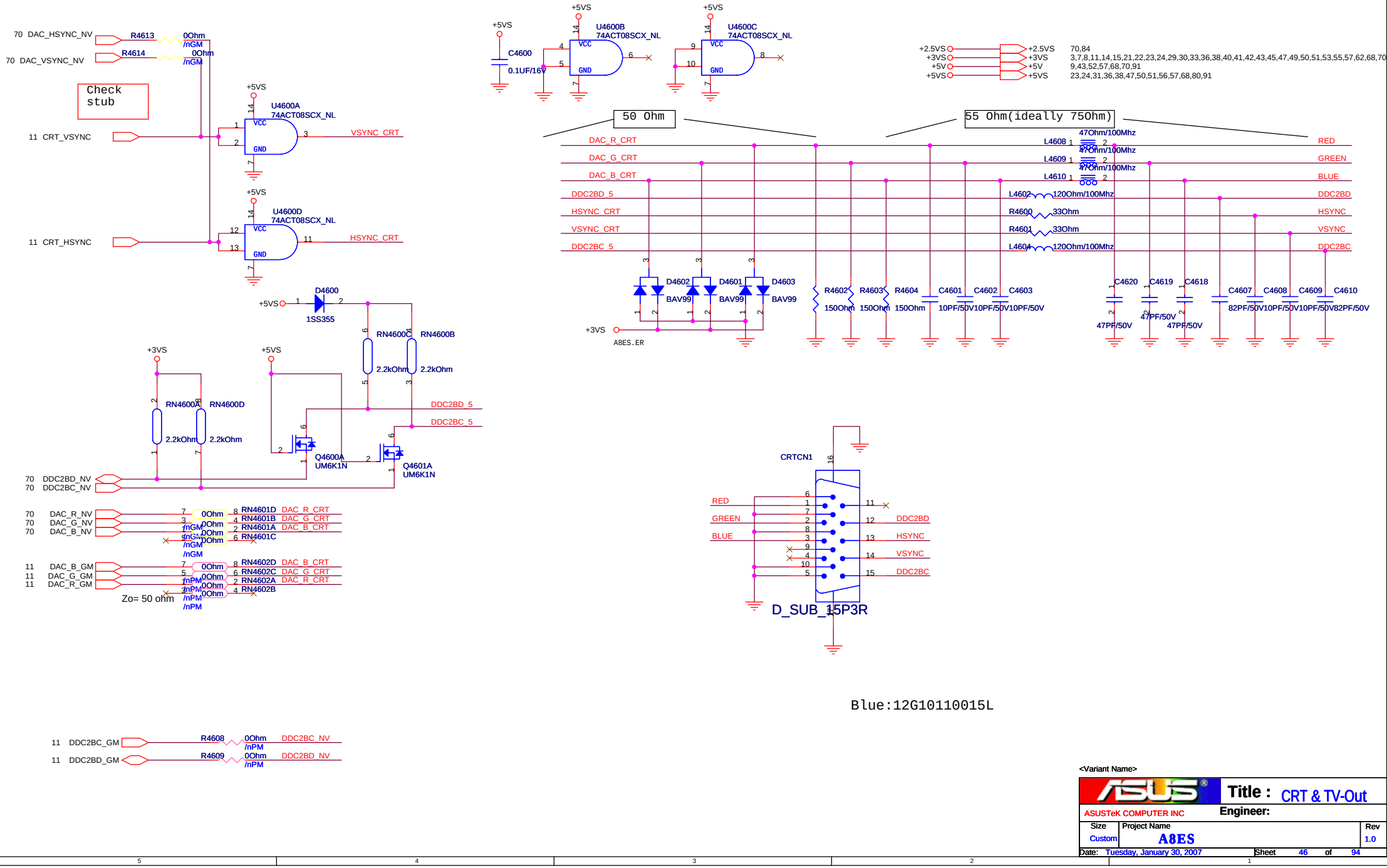
ASUSTeK COMPUTER INC

Title : LVDS & Inverter

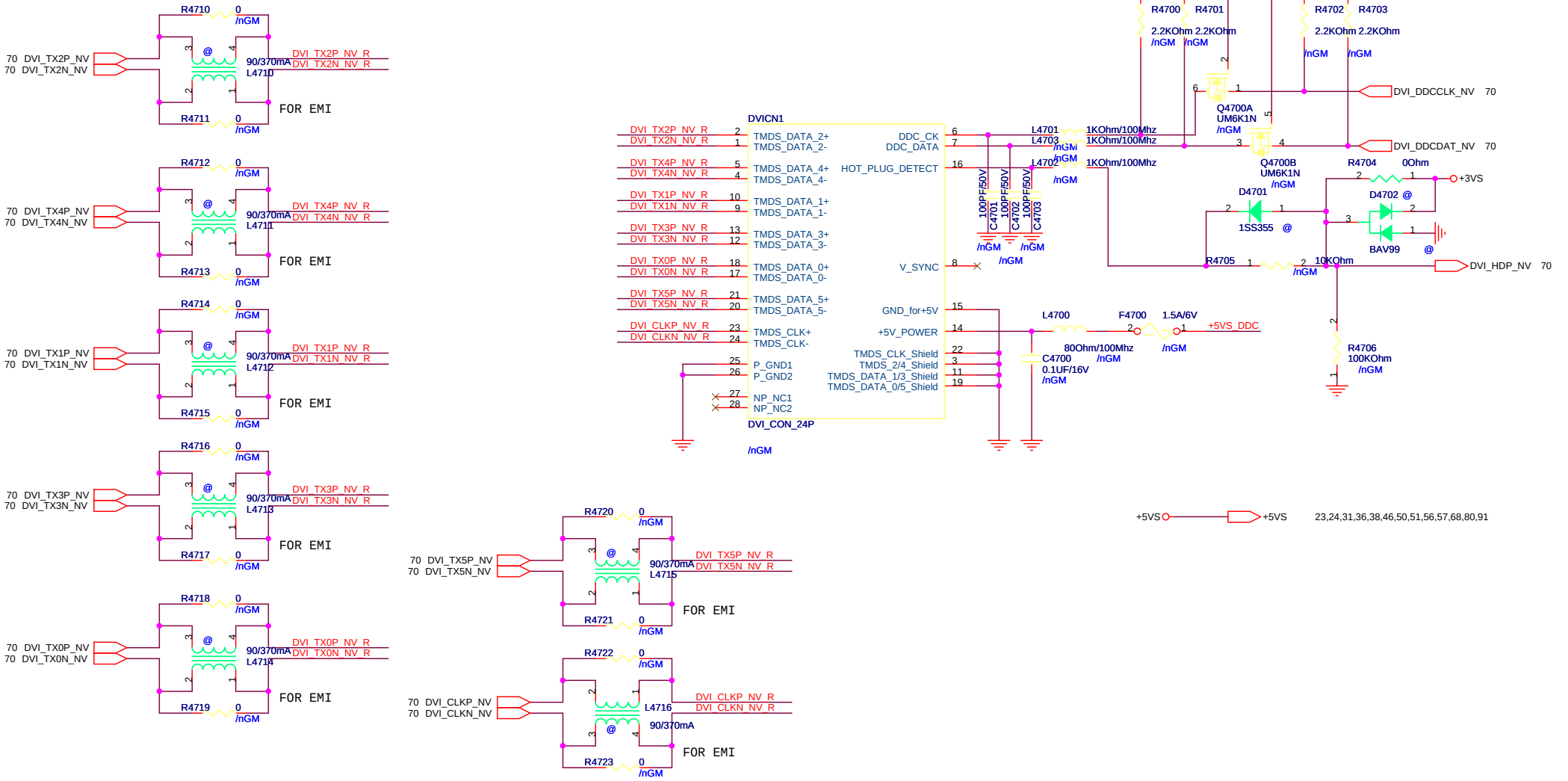
Engineer:

Size	Project Name	Rev
Custom	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 45 of 94


70 DAC_HSYNC_NV
R4613 0Ohm /nGM
70 DAC_VSYNC_NV
R4614 0Ohm /nGM
Check stub
11 CRT_VSYNC
U4600A 74ACT08SCX_NL
VSYNC_CRT
11 CRT_HSYNC
U4600D 74ACT08SCX_NL
HSYNC_CRT
+5VS
+3VS
D4600 1SS355
RN4600C RN4600B 2.2kOhm
RN4600A RN4600D 2.2kOhm
Q4600A UM6K1N
Q4601A UM6K1N
DDC2BD_5
DDC2BC_5
70 DDC2BD_NV
70 DDC2BC_NV
70 DAC_R_NV
70 DAC_G_NV
70 DAC_B_NV
RN4601D DAC_R_CRT
RN4601B DAC_G_CRT
RN4601A DAC_B_CRT
RN4601C
11 DAC_B_GM
11 DAC_G_GM
11 DAC_R_GM
RN4602D DAC_B_CRT
RN4602C DAC_G_CRT
RN4602A DAC_R_CRT
RN4602B
Zo= 50 ohm
11 DDC2BC_GM
R4608 0Ohm /nPM DDC2BC_NV
11 DDC2BD_GM
R4609 0Ohm /nPM DDC2BD_NV
C4600 0.1UF/16V
U4600B 74ACT08SCX_NL
U4600C 74ACT08SCX_NL
+2.5VS 70,84
+3VS 3,7,8,11,14,15,21,22,23,24,29,30,33,36,38,40,41,42,43,45,47,49,50,51,53,55,57,62,68,70,80
+5V 9,43,52,57,68,70,91
+5VS 23,24,31,36,38,47,50,51,56,57,68,80,91
50 Ohm
55 Ohm(ideally 75Ohm)
DAC_R_CRT
DAC_G_CRT
DAC_B_CRT
DDC2BD_5
HSYNC_CRT
VSYNC_CRT
DDC2BC_5
D4602 D4601 D4603 BAV99
A8ES.ER
L4608 L4609 L4610 47Ohm/100Mhz
L4602 120Ohm/100Mhz
L4604 120Ohm/100Mhz
R4600 33Ohm
R4601 33Ohm
R4602 R4603 R4604 150Ohm
C4601 C4602 C4603 10PF/50V10PF/50V10PF/50V
C4620 C4619 C4618 47PF/50V
C4607 C4608 C4609 C4610 82PF/50V10PF/50V10PF/50V82PF/50V
RED
GREEN
BLUE
DDC2BD
HSYNC
VSYNC
DDC2BC
CRTCN1
D_SUB_15P3R
Blue:12G10110015L
<Variant Name>
Title : CRT & TV-Out
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
Sheet 46 of 94

Add DVI Choke 09G092145000 for EMI



ASUSTeK COMPUTER INC	Title : DVI	
	Engineer:	
Size: B	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 47 of 94	

ASUSTeK COMPUTER INC	Title : BLANK		
	Engineer:		
Size: A	Project Name: A8ES		Rev: 0
Date: Wednesday, October 11, 2006	Sheet 48 of 94		

50 Ohm

55 Ohm(ideally 75Ohm)

+3VS

D4609 BAV99

D4608 BAV99

D4607 BAV99

TV_C

TV_Y

TV_CVBS

120Ohm/100Mhz

L4611

L4612

L4613

R4611 150Ohm

R4612 150Ohm

R4610 150Ohm

C4617 5.6PF/50V

C4623 5.6PF/50V

C4625 5.6PF/50V

C4621 5.6PF/50V

C4622 5.6PF/50V

C4624 5.6PF/50V

70 HDTV_EN#

C_CON

Y_CON

CVBS_CON

12-14101107Z

TVSCN1

MINI_DIN_7P

12G141011077

GND1 GND0 NC C Y CVBS2 CVBS1 HC1 HC2

70 TV_CVBS_NV
70 TV_Y_NV
70 TV_C_NV

0Ohm RN4900A TV_CVBS
0Ohm RN4900B TV_Y
0Ohm RN4900C TV_C
0Ohm RN4900D
/nGM

11 TVDAC_C_GM
11 TVDAC_B_GM
11 TVDAC_A_GM

0Ohm RN4901A TV_C
0Ohm RN4901B TV_Y
0Ohm RN4901C TV_CVBS
0Ohm RN4901D
/nPM

Zo= 50 ohm

ASUSTeK COMPUTER INC

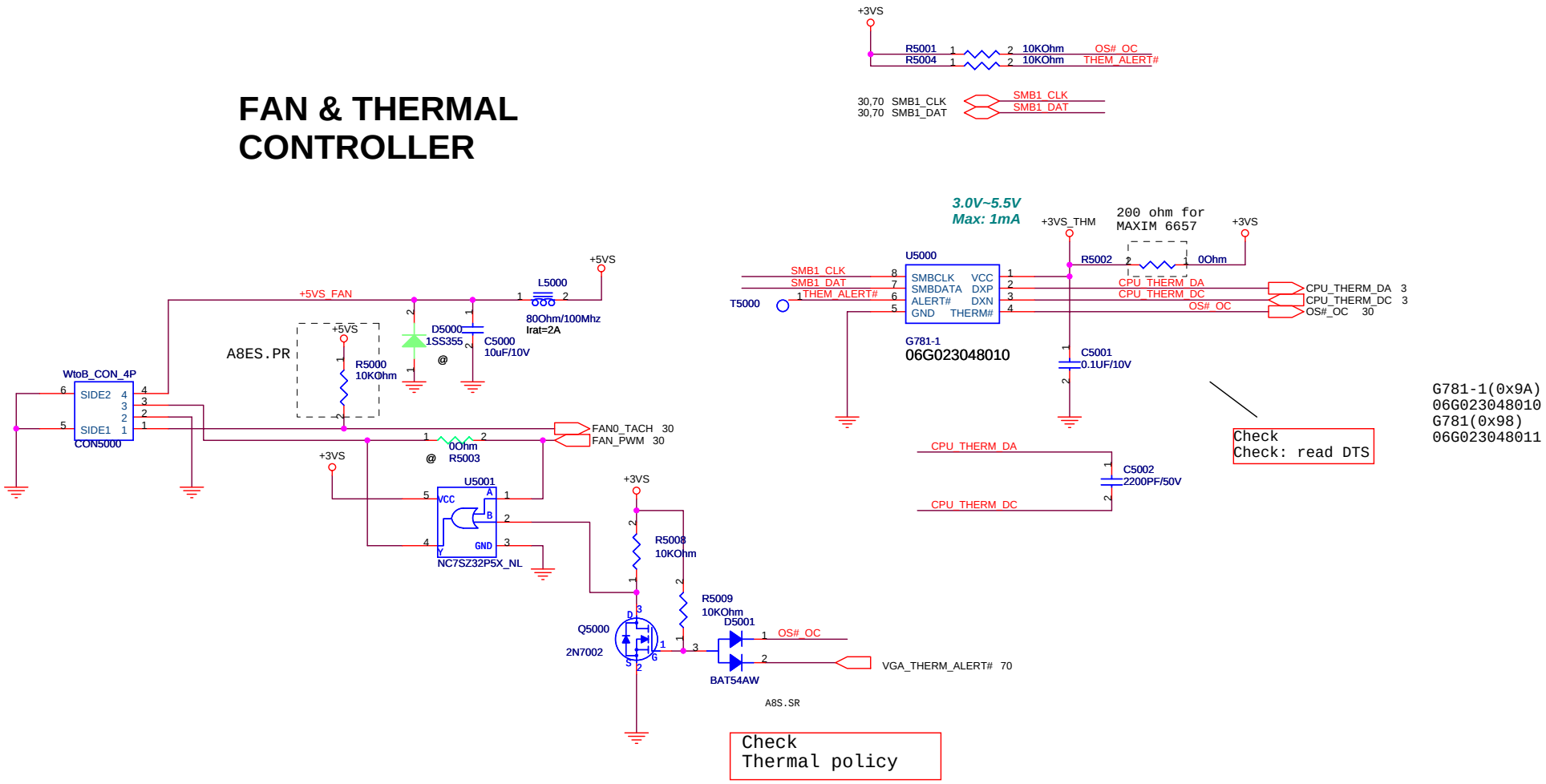
Title : TV

Engineer:

Size	Project Name	Rev
A	A8ES	1.0

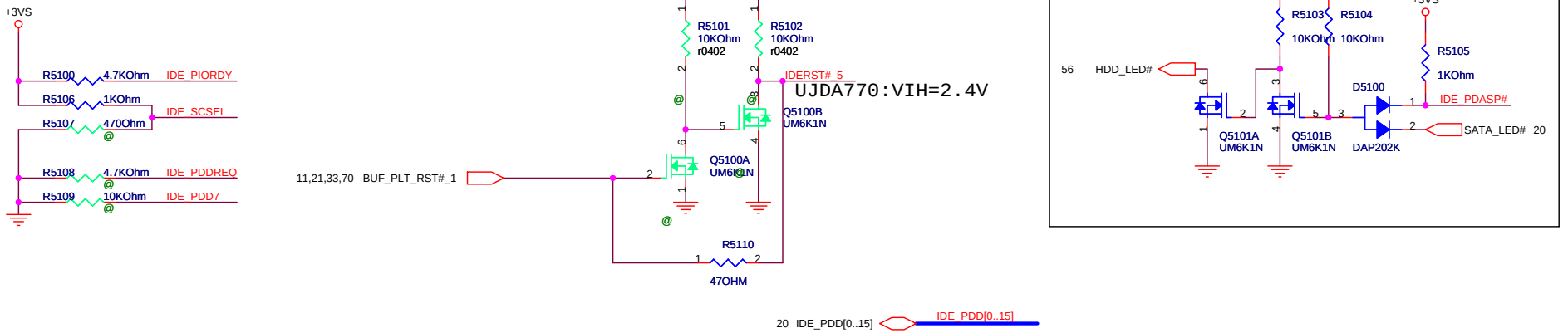
Date: Tuesday, January 30, 2007 Sheet 49 of 94

FAN & THERMAL CONTROLLER



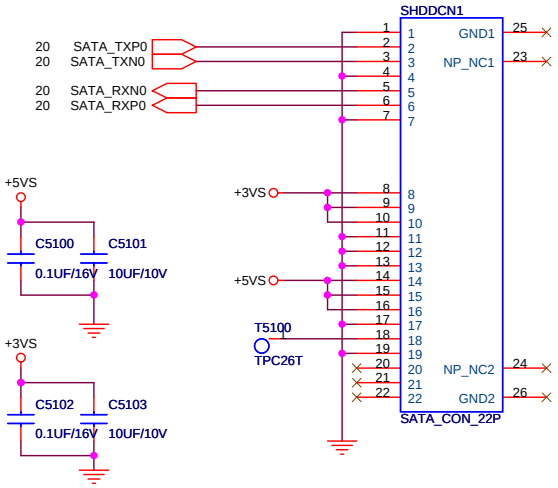
<Variant Name>

ASUSTeK COMPUTER INC	Title : FAN & THERMAL	
	Engineer:	
Size: B	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 50 of 94	

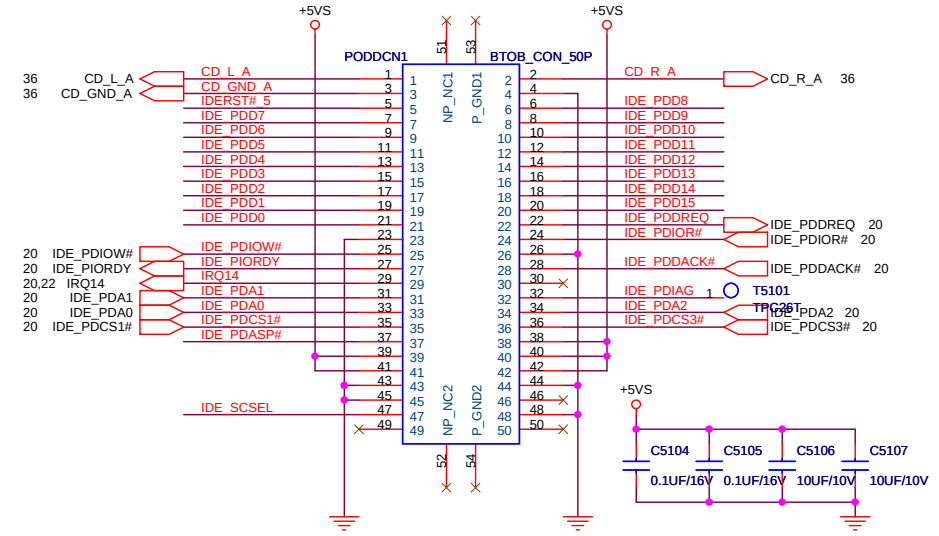


20 IDE_PDD[0..15] IDE_PDD[0..15]

SATA HDD CON



PATA CD-ROM CON



+3VS	+3VS	3,7,8,11,14,15,21,22,23,24,29,30,33,36,38,40,41,42,43,45,46,47,49,50,53,55,57,62,68,70,80,91,92
+5VS	+5VS	23,24,31,36,38,46,47,50,56,57,68,80,91
+5V	+5V	9,43,52,57,68,70,91

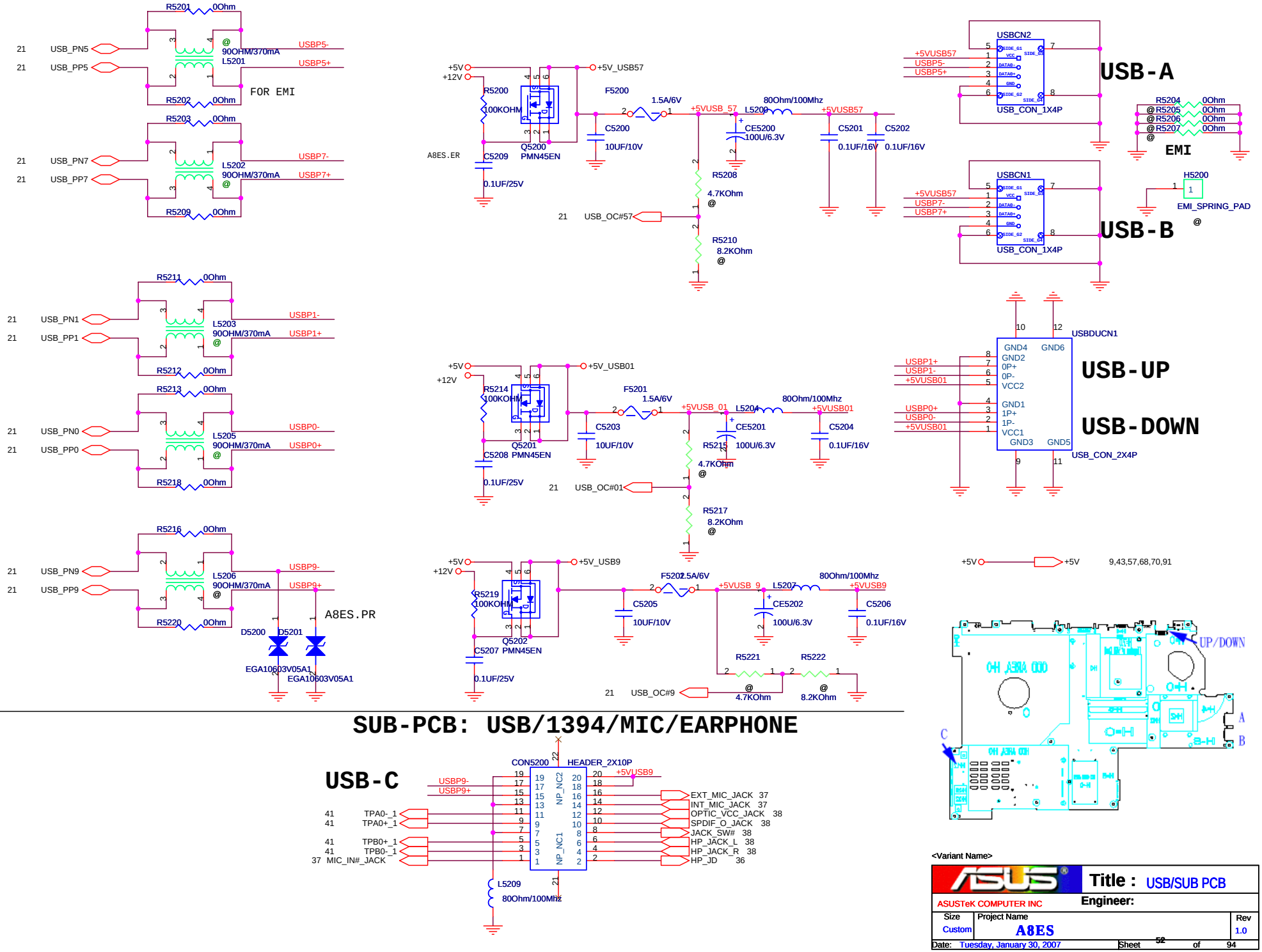
ASUSTeK COMPUTER INC

Title : HDD & ODD

Engineer:

Size	Project Name	Rev
B	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 51 of 94


R5201 0Ohm
21 USB_PN5
21 USB_PP5
@ 90OHM/370mA L5201
USBP5-
USBP5+
FOR EMI
R5202 0Ohm
R5203 0Ohm
21 USB_PN7
21 USB_PP7
L5202 90OHM/370mA @
USBP7-
USBP7+
R5209 0Ohm
+5V
+12V
+5V_USB57
R5200 100KOHM
F5200 1.5A/6V
+5VUSB_57
L5200 80Ohm/100Mhz
+5VUSB57
C5200 10UF/10V
CE5200 100U/6.3V
C5201 0.1UF/16V
C5202 0.1UF/16V
Q5200 PMN45EN
A8ES.ER
C5209 0.1UF/25V
R5208 4.7KOhm @
21 USB_OC#57
R5210 8.2KOhm @
USBCN2
+5VUSB57
USBP5-
USBP5+
USB_CON_1X4P
USB-A
R5204 0Ohm
@R5205 0Ohm
@R5206 0Ohm
@R5207 0Ohm
@
EMI
H5200
EMI_SPRING_PAD
@
USBCN1
+5VUSB57
USBP7-
USBP7+
USB_CON_1X4P
USB-B
R5211 0Ohm
21 USB_PN1
21 USB_PP1
L5203 90OHM/370mA @
USBP1-
USBP1+
R5212 0Ohm
R5213 0Ohm
21 USB_PN0
21 USB_PP0
L5205 90OHM/370mA @
USBP0-
USBP0+
R5218 0Ohm
+5V
+12V
+5V_USB01
R5214 100KOHM
F5201 1.5A/6V
+5VUSB_01
L5204 80Ohm/100Mhz
+5VUSB01
C5203 10UF/10V
CE5201 100U/6.3V
C5204 0.1UF/16V
Q5201 PMN45EN
C5208 0.1UF/25V
R5215 4.7KOhm @
21 USB_OC#01
R5217 8.2KOhm @
USBDUCN1
USBP1+
USBP1-
+5VUSB01
USBP0+
USBP0-
+5VUSB01
GND4 GND6
GND2
0P+
0P-
VCC2
GND1
1P+
1P-
VCC1
GND3 GND5
USB_CON_2X4P
USB-UP
USB-DOWN
R5216 0Ohm
21 USB_PN9
21 USB_PP9
L5206 90OHM/370mA @
USBP9-
USBP9+
R5220 0Ohm
A8ES.PR
D5200 D5201
EGA10603V05A1
EGA10603V05A1
+5V
+12V
+5V_USB9
R5219 100KOHM
F5202 2.5A/6V
+5VUSB_9
L5207 80Ohm/100Mhz
+5VUSB9
C5205 10UF/10V
CE5202 100U/6.3V
C5206 0.1UF/16V
Q5202
C5207 PMN45EN
0.1UF/25V
R5221 @ 4.7KOhm
R5222 @ 8.2KOhm
21 USB_OC#9
+5V
+5V
9,43,57,68,70,91
UP/DOWN
SUB-PCB: USB/1394/MIC/EARPHONE
USB-C
CON5200
HEADER_2X10P
USBP9-
USBP9+
+5VUSB9
NP_NC2
NP_NC1
EXT_MIC_JACK 37
INT_MIC_JACK 37
OPTIC_VCC_JACK 38
SPDIF_O_JACK 38
JACK_SW# 38
HP_JACK_L 38
HP_JACK_R 38
HP_JD 36
41 TPA0-_1
41 TPA0+_1
41 TPB0+_1
41 TPB0-_1
37 MIC_IN#_JACK
L5209 80Ohm/100Mhz
<Variant Name>
Title : USB/SUB PCB
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
Sheet 52 of 94

Kedron Rev 0.5
1)Pin 20: Kedron internal pull high~110K
2)Pin 37,43: GND at Kedron
3)pin 40: NC at Kedron

Windigo spec Rev 1.1
1)utilize USB 2.0 interface (12Mb/S) only
2)pin 39,41 :+3.3V at Windigo
3)pin 1,7,11,13,22,23,25,30,31,32,33,: NC at Windigo
4)Windigo dont use +1.5V
5)pin 24: +3.3V at Windigo

ROBSON Rev 0.9
1)Pin 1,24,30,32,36,38: NC at Robson

Support voice phone card MC8775V
Signal)pin#
MIC1P 1
MIC1N 3
SPK1P 5
SPK1N 7

11G08D233752DE: H=2.8mm

WWAN

WWAN

+1.5VS	+1.5VS	4,14,20,21,23,43,57,70,82
+3V	+3V	21,34,43,45,56,57,61,62,91
+3VS	+3VS	3,7,8,11,14,15,21,22,23,24,29,30,33,36,38,40,41,42,43,45,46,47,49,50,51,55,57,62,68,70,80,91,92

Title : MINI CARD			
ASUSTeK COMPUTER INC	Engineer:		
Size: B	Project Name: A8ES		Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 53	of 94	

Title : BLANK

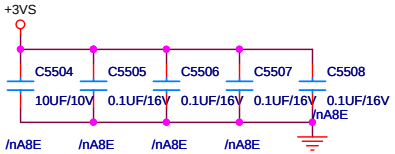
ASUSTeK COMPUTER INC

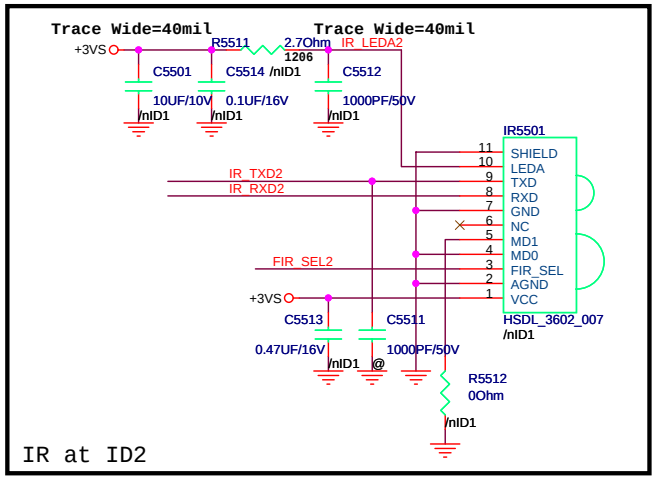
Engineer:

Size	Project Name	Rev
Custom	A8ES	0

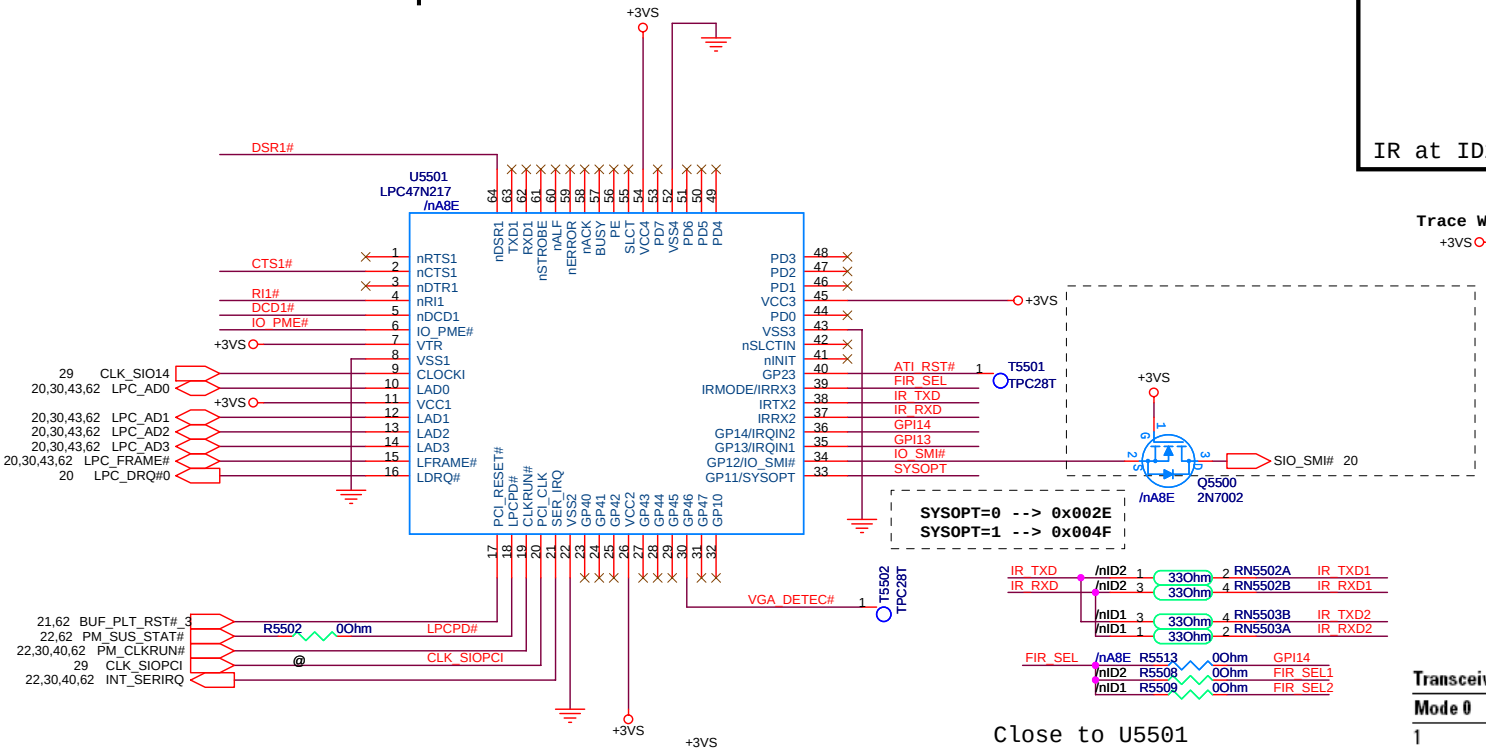
Date: Wednesday, October 11, 2006 Sheet 54 of 94

CIR
04G231020500
TSOP6238TR

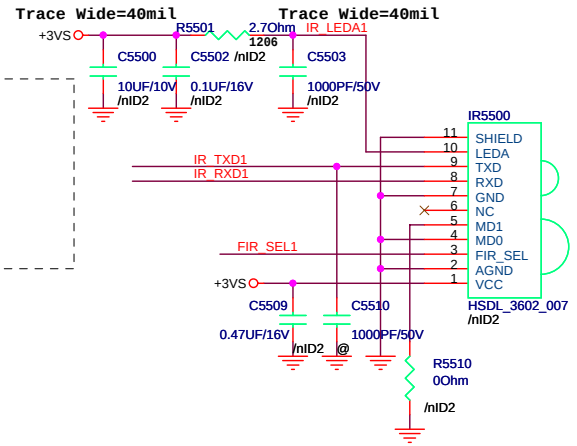




Super I/O



Close to U5501



Transceiver Control Truth Table

Mode 0	Mode 1	FIR_SEL	RX Function	TX Function
1	0	X	Shutdown	Shutdown
0	0	0	SIR	Full Distance Power
0	1	0	SIR	2/3 Distance Power
1	1	0	SIR	1/3 Distance Power
0	0	1	MIR/FIR	Full Distance Power
0	1	1	MIR/FIR	2/3 Distance Power
1	1	1	MIR/FIR	1/3 Distance Power

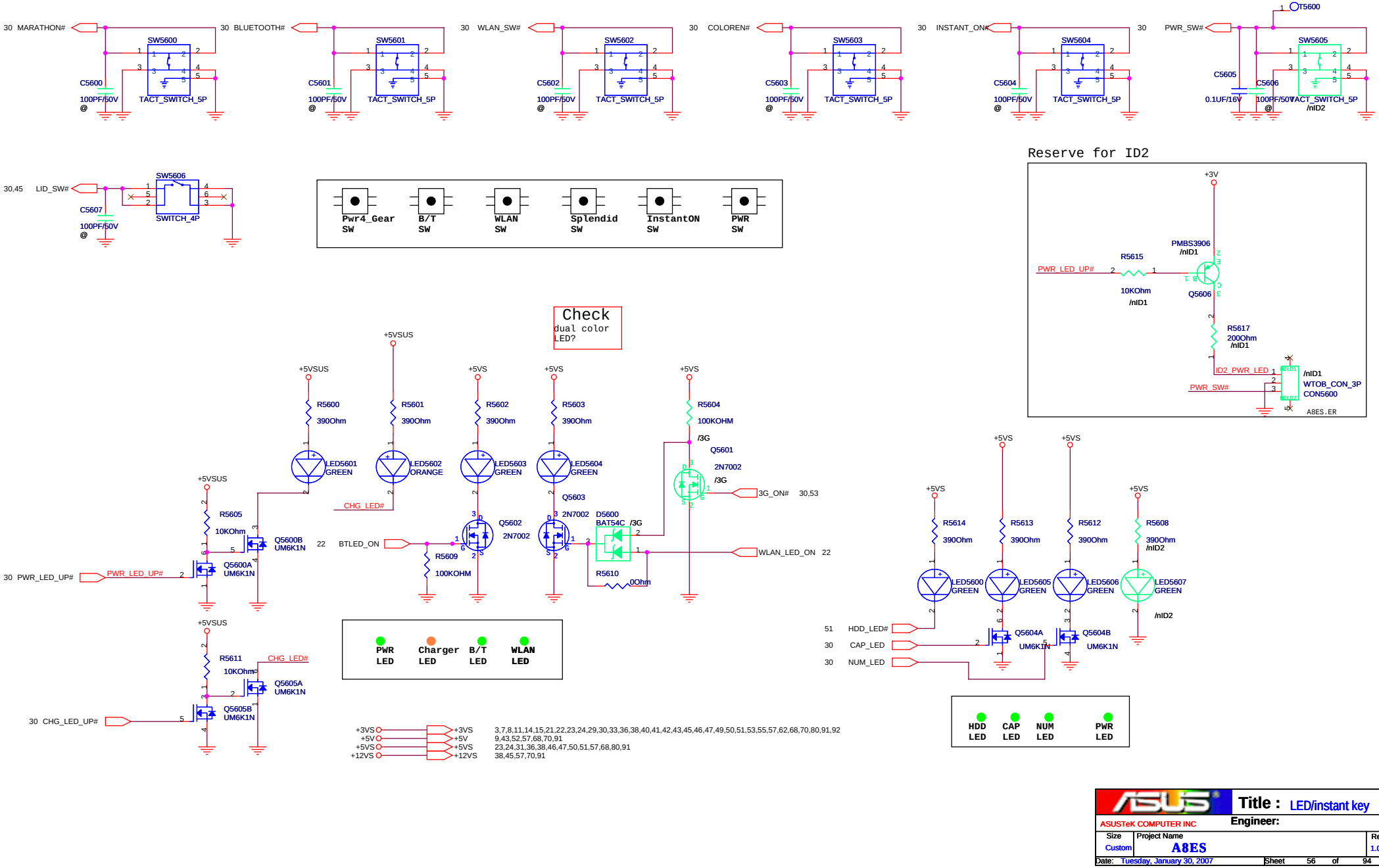
ASUSTeK COMPUTER INC

Title : IrDA

Engineer:

Size	Project Name	Rev
B	A8ES	2.0

Date: Tuesday, January 30, 2007 Sheet 55 of 94



ASUSTeK COMPUTER INC

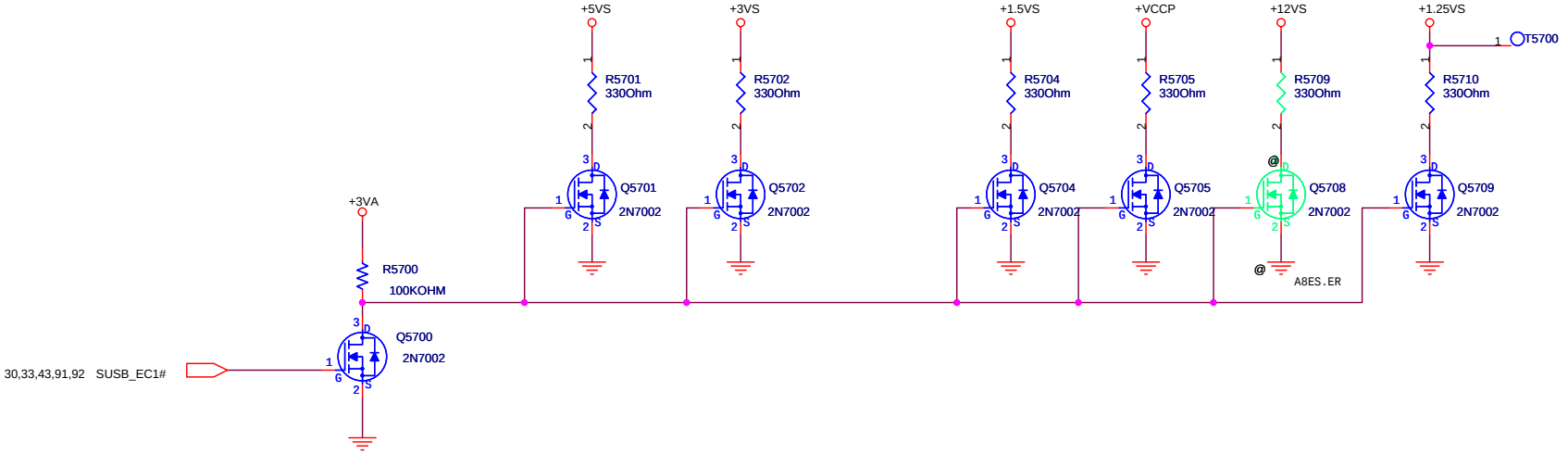
Title : LED/instant key

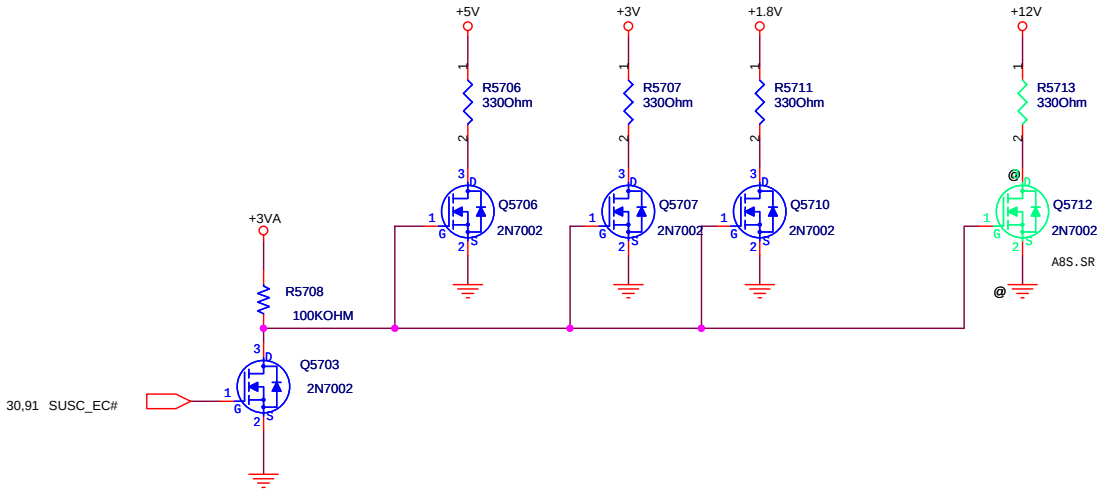
Engineer:

Size	Project Name	Rev
Custom	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 56 of 94

Discharge Circuit





<Variant Name>

ASUSTeK COMPUTER INC

Title : Discharge

Engineer:

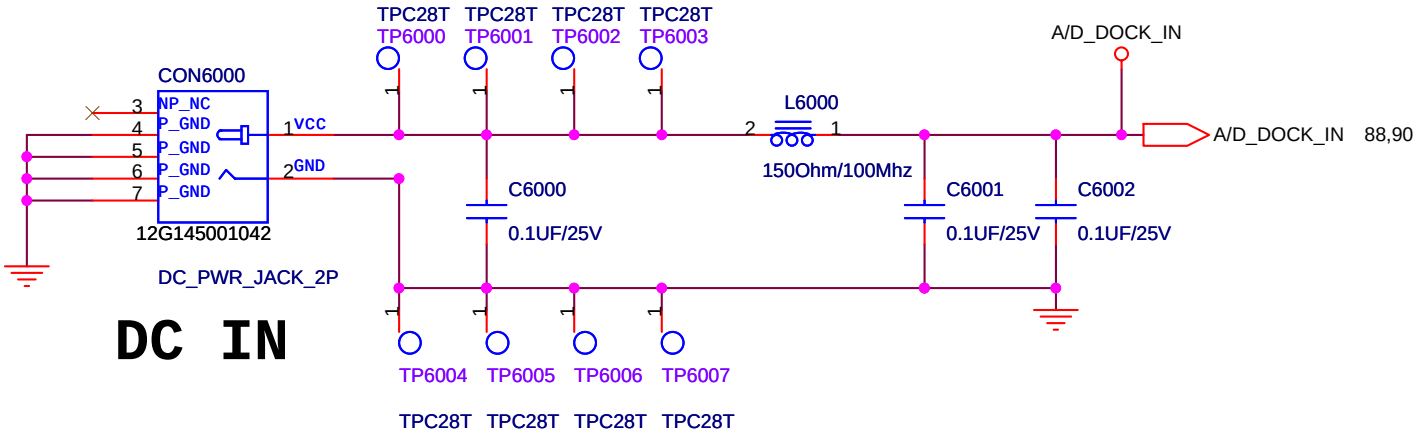
Size	Project Name	Rev
B	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 57 of 94

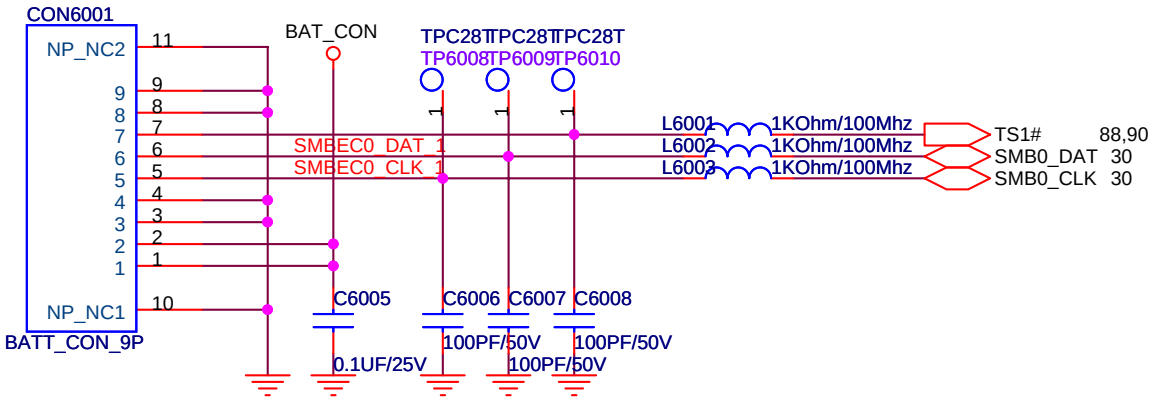
<Variant Name>

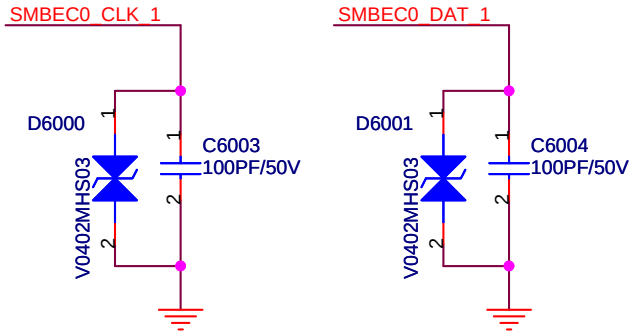
ASUSTeK COMPUTER INC	Title :	
	Engineer:	
Size: A	Project Name: A8ES	Rev: 1.0
Date: Wednesday, October 11, 2006	Sheet of 94	

Title	<Title>
Size: A	Document Number: W2S
Rev: 1.1	
Date: Wednesday, October 11, 2006	Sheet 59 of 94



DC IN

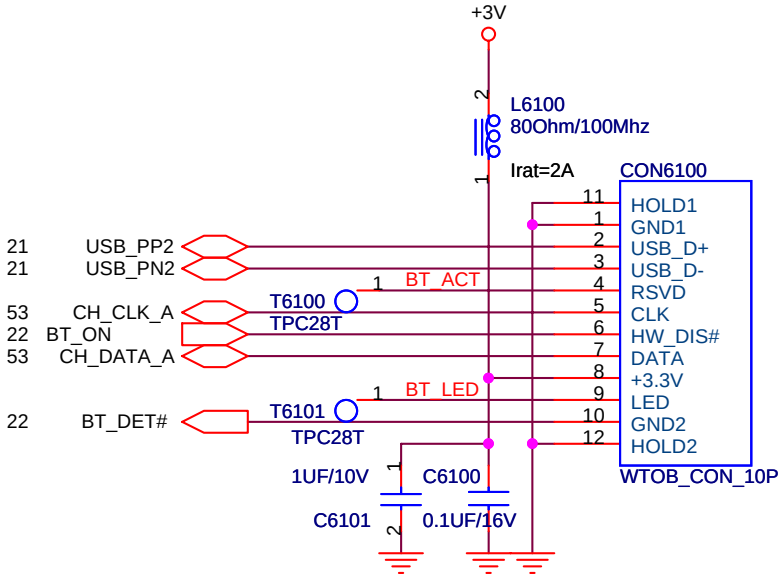




Battery Connector

<Variant Name>

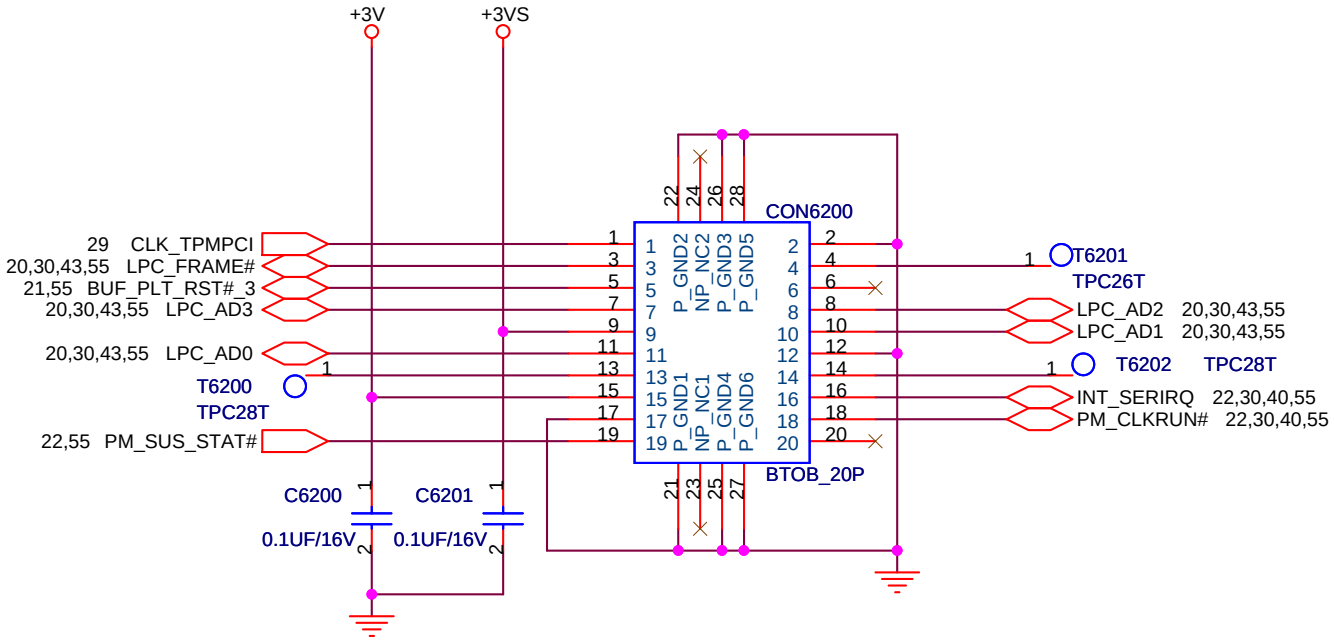
ASUSTeK COMPUTER INC	Title : DC IN / BAT	
	Engineer:	
Size: A	Project Name: A8ES	Rev: 1.0
Date: Tuesday, January 30, 2007	Sheet 60 of 94	



Bluetooth Module CON

ASUSTeK COMPUTER INC	Title : BT/CAMERA	
	Engineer:	
Size: A	Project Name: A8ES	Rev: 1.0
Date: Thursday, January 25, 2007	Sheet 61 of 94	

TPM 1.2 Module



<Variant Name>

ASUSTeK COMPUTER INC

Title : TPM

Engineer:

Size	Project Name	Rev
A	A8ES	1.0

Date: Thursday, January 25, 2007 Sheet 62 of 94

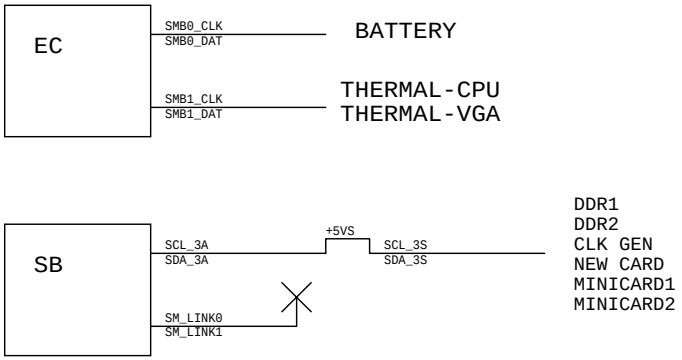
ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 63 of 94		

PCI Device	IDSEL#	REQ/GNT#	Interrupts
Chipset (Host to PCI)	AD30 (Internal)		
CARDBUS	AD19	0	F,E

SM-Bus Device	SM-Bus Address
Clock Generator	1101001x (D2)
SO-DIMM 0 (low)	
SPD/TS	A0/30
SO-DIMM 1(high)	
SPD/TS	A4/34
G781-1	9A
G781(VGA board)	98

Thermal Sensor (CPU)

SM-Bus Mapping 1001100



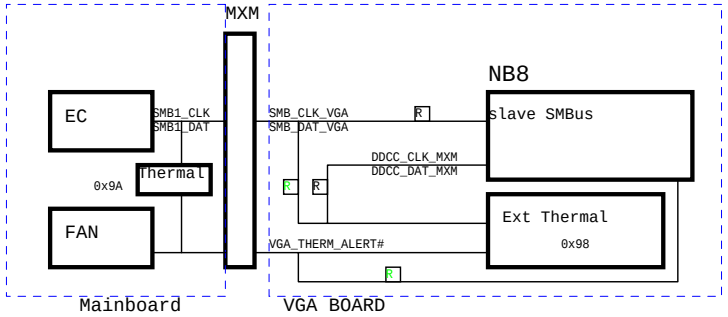
BOM option

```
nGM:yellow
nPM:light red
========================
@ : no stuff for all
nGM :no stuff for A8E
nPM :no stuff for A8S
nGM1:no stuff for A8E, A8E/SR mount for debuging A8S in advance
3G :for Windigo, SR mount for debuging
SR  :for SR debuging, should be removed or no stuff @ ER
```

Support ID2:

```
Support ID2:
page 68,Finger print
page 55,IR
Page 56,pwr switch and LED
```

Thermal block diagram



<Variant Name>

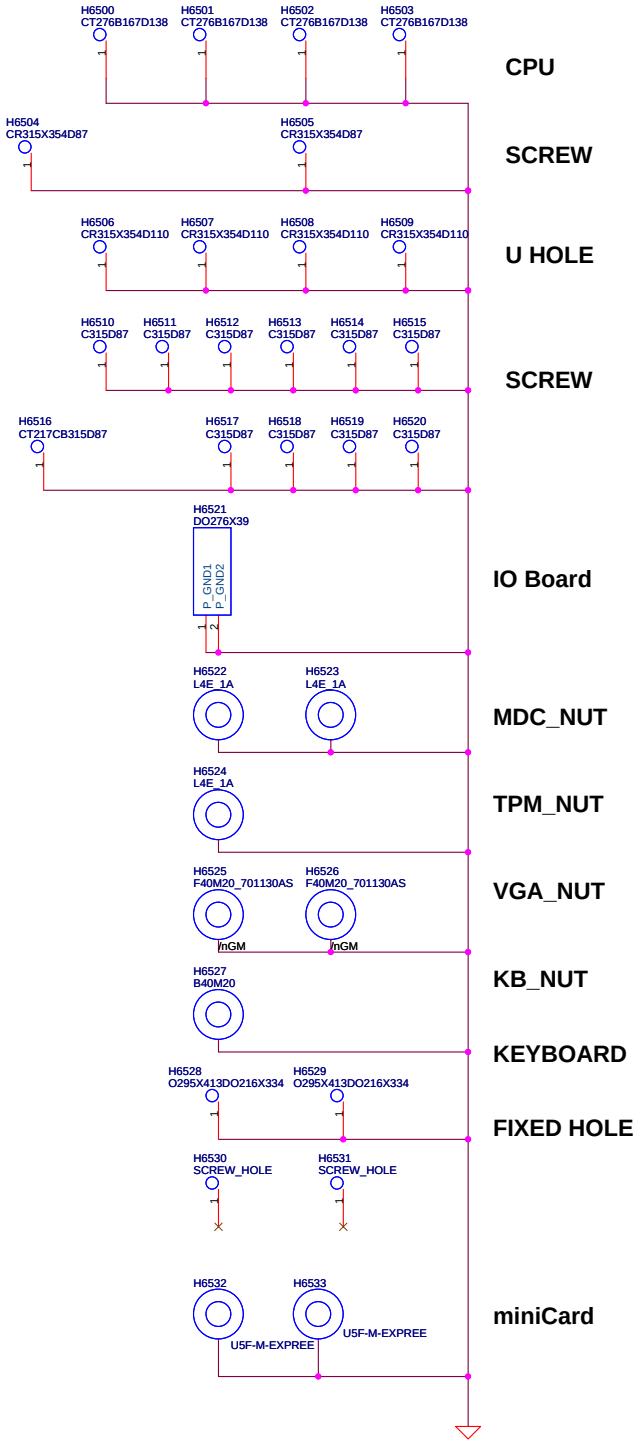
ASUSTeK COMPUTER INC

Title :

Engineer:

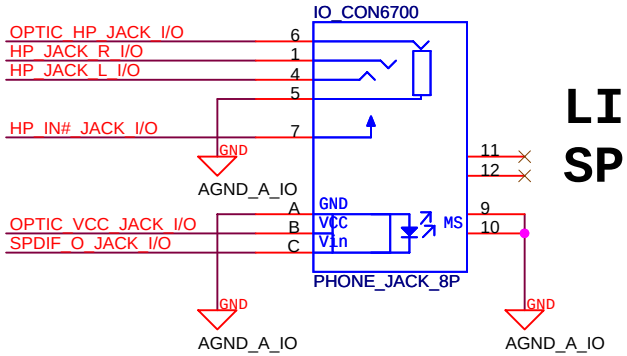
Size	Project Name	Rev
B	A8ES	1.0

Date: Monday, December 04, 2006 Sheet 64 of 94

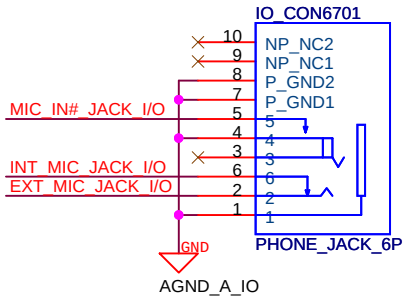


Title	<Title>	
Size: Custom	Document Number: W2S	Rev: 1.1
Date: Tuesday, December 26, 2006	Sheet 65 of 94	

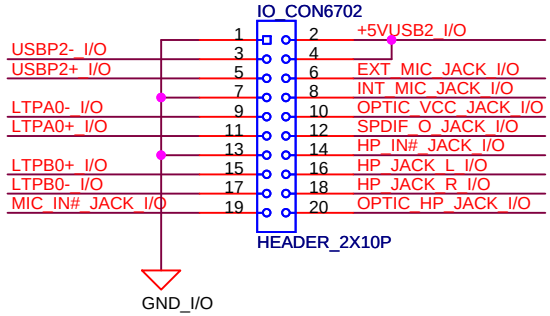
	Title : BLANK			
ASUSTeK COMPUTER INC	Engineer:			
Size: B	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006		Sheet 66 of 94		

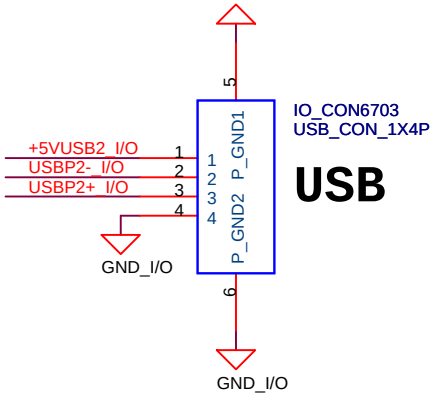


LINE_OUT
SPDIF



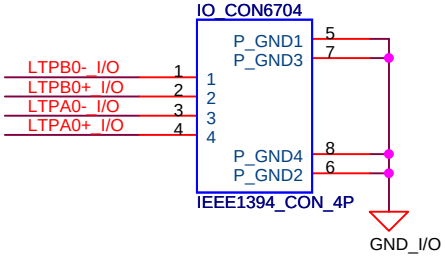
MIC

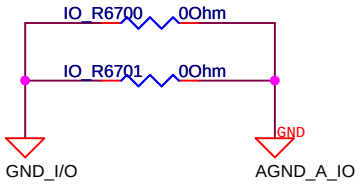


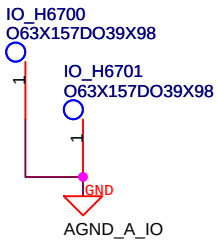


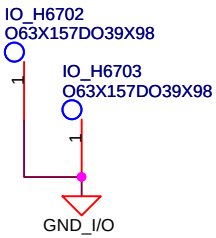
USB

1394A









<Variant Name>

ASUSTeK COMPUTER INC

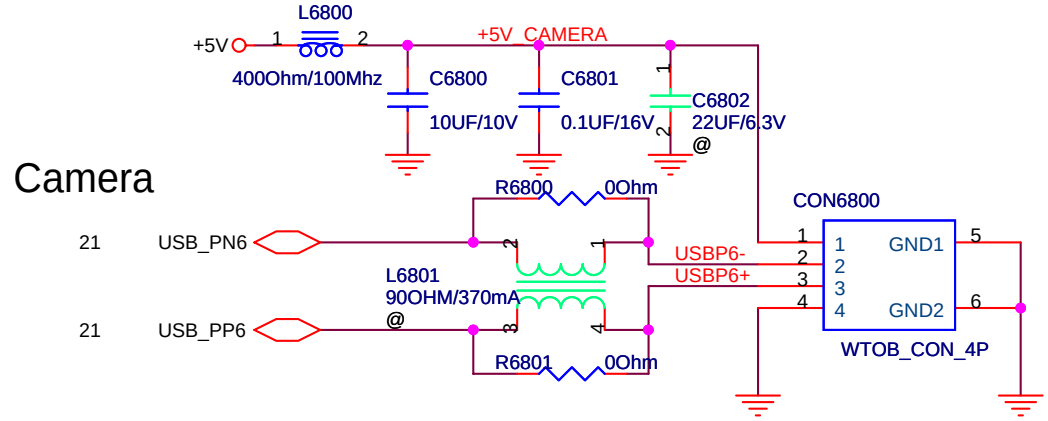
Title : SUB_PCB

Engineer:

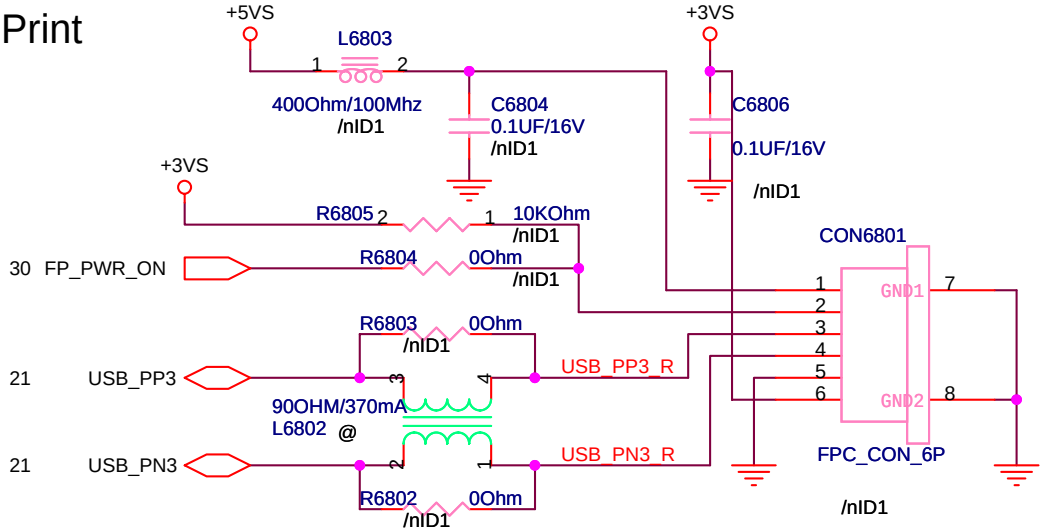
Size	Project Name	Rev
A4	A8ES	1.0

Date: Tuesday, January 30, 2007 Sheet 67 of 94

Camera



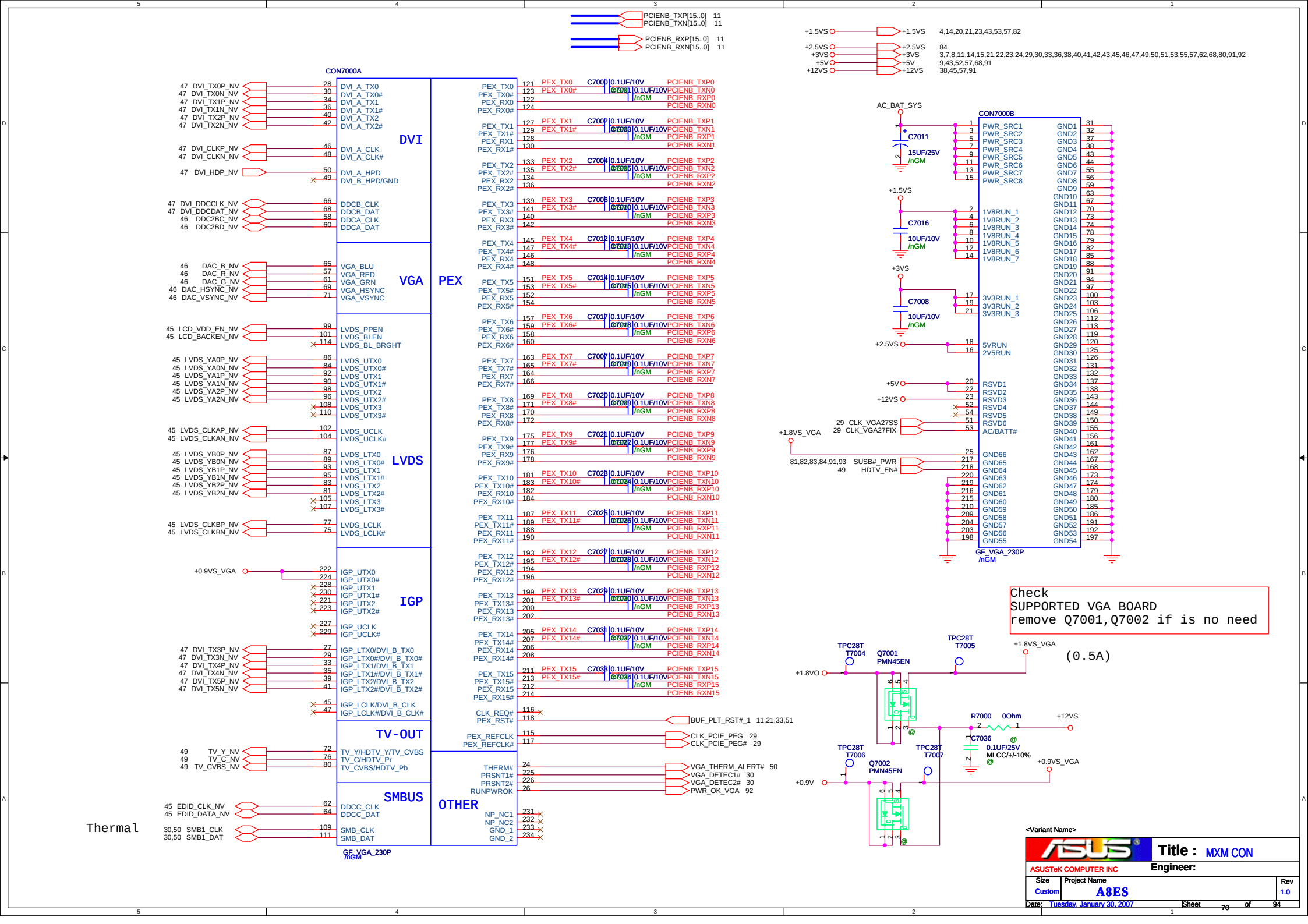
Finger Print



<Variant Name>

ASUSTeK COMPUTER INC	Title : CAMERA/FingerPrinter	
	Engineer:	
Size: A	Project Name: A8ES	Rev: 1.0
Date: Thursday, January 25, 2007	Sheet 68 of 94	

ASUSTeK COMPUTER INC	Title : BLANK			
	Engineer:			
Size: A	Project Name: A8ES			Rev: 0
Date: Wednesday, October 11, 2006	Sheet 69 of 94			


CON7000A
DVI
VGA
LVDS
IGP
TV-OUT
SMBUS
PEX
OTHER
GF_VGA_230P
/nGM
PCIENB_TXP[15..0] 11
PCIENB_TXN[15..0] 11
PCIENB_RXP[15..0] 11
PCIENB_RXN[15..0] 11
+1.5VS +1.5VS 4,14,20,21,23,43,53,57,82
+2.5VS +2.5VS 84
+3VS +3VS 3,7,8,11,14,15,21,22,23,24,29,30,33,36,38,40,41,42,43,45,46,47,49,50,51,53,55,57,62,68,80,91,92
+5V +5V 9,43,52,57,68,91
+12VS +12VS 38,45,57,91
AC_BAT_SYS
CON7000B
C7011
15UF/25V
/nGM
C7016
10UF/10V
/nGM
C7008
10UF/10V
/nGM
PWR_SRC1
PWR_SRC2
PWR_SRC3
PWR_SRC4
PWR_SRC5
PWR_SRC6
PWR_SRC7
PWR_SRC8
1V8RUN_1
1V8RUN_2
1V8RUN_3
1V8RUN_4
1V8RUN_5
1V8RUN_6
1V8RUN_7
3V3RUN_1
3V3RUN_2
3V3RUN_3
5VRUN
2V5RUN
RSVD1
RSVD2
RSVD3
RSVD4
RSVD5
RSVD6
AC/BATT#
GND66
GND65
GND64
GND63
GND62
GND61
GND60
GND59
GND58
GND57
GND56
GND55
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10
GND11
GND12
GND13
GND14
GND15
GND16
GND17
GND18
GND19
GND20
GND21
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GND38
GND39
GND40
GND41
GND42
GND43
GND44
GND45
GND46
GND47
GND48
GND49
GND50
GND51
GND52
GND53
GND54
GF_VGA_230P
/nGM
+1.8VS_VGA
29 CLK_VGA27SS
29 CLK_VGA27FIX
81,82,83,84,91,93 SUSB#_PWR
49 HDTV_EN#
Check
SUPPORTED VGA BOARD
remove Q7001,Q7002 if is no need
TPC28T T7004
Q7001 PMN45EN
TPC28T T7005
+1.8VS_VGA
(0.5A)
+1.8VO
R7000 0Ohm
+12VS
C7036
0.1UF/25V
MLCC/+/-10%
TPC28T T7006
Q7002 PMN45EN
TPC28T T7007
+0.9VS_VGA
+0.9V
Thermal
<Variant Name>
Title : MXM CON
ASUSTeK COMPUTER INC
Engineer:
Size Custom
Project Name A8ES
Rev 1.0
Date: Tuesday, January 30, 2007
Sheet 70 of 94

Title	TITLE			
Size A3	Document Number <Doc>			Rev 1.0
Date: Wednesday, October 11, 2006	Sheet 71 of 94			

Title	TITLE			
Size A3	Document Number <Doc>			Rev 1.0
Date: Wednesday, October 11, 2006		Sheet 72 of 94		

Title	TITLE			
Size A3	Document Number <Doc>			Rev 1.0
Date: Wednesday, October 11, 2006	Sheet 73 of 94			

Title	TITLE
Size: A3	Document Number: <Doc>
Rev	1.0
Date:	Wednesday, October 11, 2006
Sheet	74 of 94

Title	TITLE
Size: A3	Document Number: <Doc>
Rev	1.0
Date:	Wednesday, October 11, 2006
Sheet	75 of 94

Title	TITLE
Size A3	Document Number <Doc>
Rev	1.0
Date:	Wednesday, October 11, 2006
Sheet	76 of 94

Title	TITLE			
Size A3	Document Number <Doc>			Rev 1.0
Date: Wednesday, October 11, 2006		Sheet 77 of 94		

ASUSTeK COMPUTER INC	Title : BLANK	
	Engineer:	
Size: B	Project Name: A8ES	Rev: 0
Date: Wednesday, October 11, 2006	Sheet 78 of 94	

W2S

Change Note:

EE :

1. 965PM pin defined modification, C48/D47/BJ29/BE24 from RSVD pin to LVDSA_DATA#_3 / LVDSA_DATA_3 / SA_MA_14 / SB_MA_14
2. CE46 / CE25 --> 11G08D210791
3. Rst button circuit
4. BT_SW pull-high to different plane issue.
5. Remove RN3104
6. VTT_REF reserve in S3.
7. VTT stop in S3.
8. CIR PME# function.

Layout :

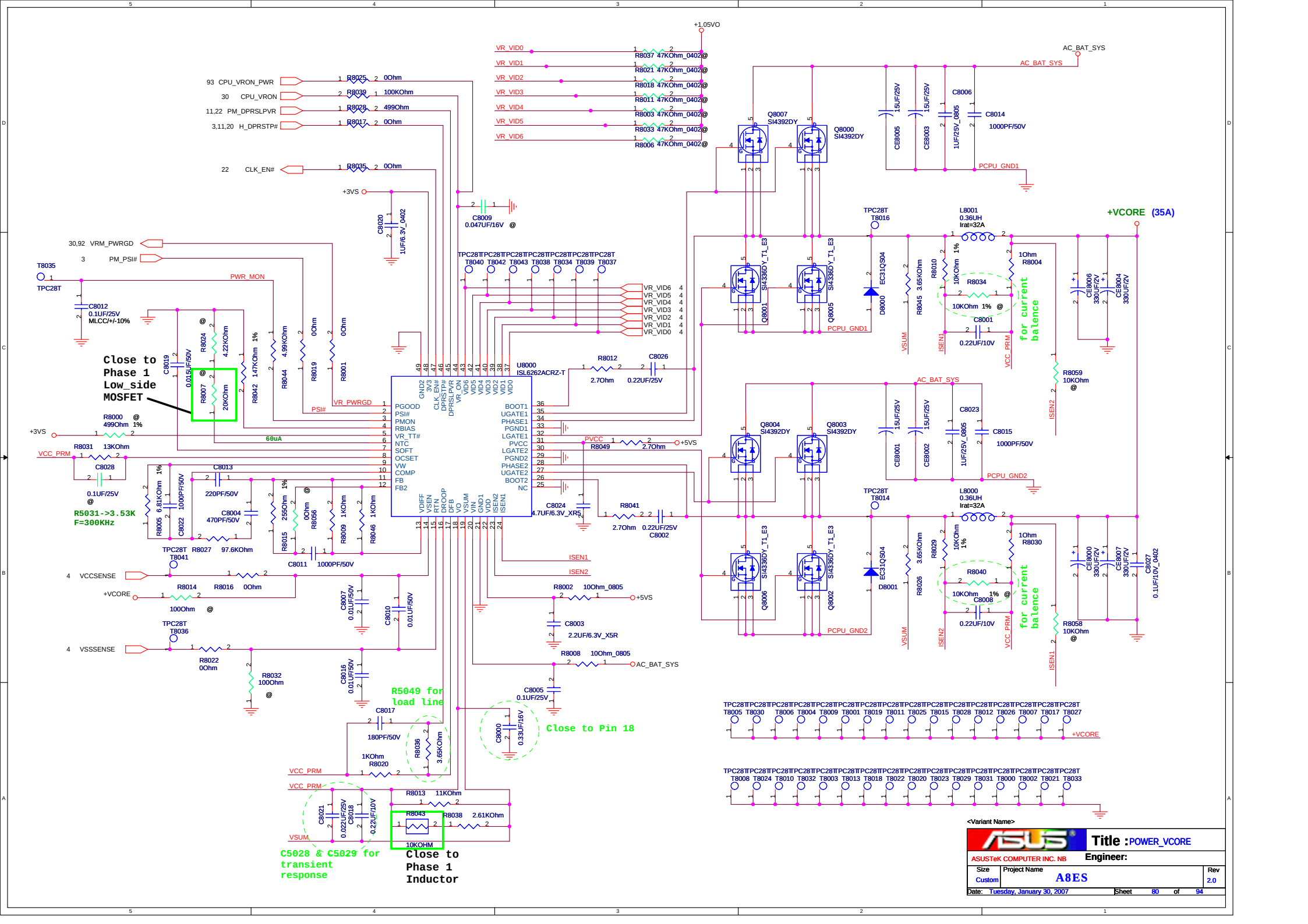
1. CPU side, per GND pin within per Via, don't share vias.
2. 0.9V_VTT_REF trace width.
3. single end trace width more than 3.5mil

SMT :

1. 開鋼板JP1, JP2

<Variant Name>

ASUSTeK COMPUTER INC	Title : History Engineer:	
Size: Custom	Project Name: A8ES	Rev: 1.0
Date: Wednesday, October 11, 2006	Sheet 79 of 94	


+1.05VO
VR_VID0
VR_VID1
VR_VID2
VR_VID3
VR_VID4
VR_VID5
VR_VID6
R8037 47KOhm_0402@
R8021 47KOhm_0402@
R8018 47KOhm_0402@
R8011 47KOhm_0402@
R8003 47KOhm_0402@
R8033 47KOhm_0402@
R8006 47KOhm_0402@
AC_BAT_SYS
93 CPU_VRON_PWR
30 CPU_VRON
11,22 PM_DPRSLPVR
3,11,20 H_DPRSTP#
22 CLK_EN#
R8025 0Ohm
R8039 100KOhm
R8029 499Ohm
R8017 0Ohm
R8035 0Ohm
+3VS
C8020 1UF/6.3V_0402
C8009 0.047UF/16V @
30,92 VRM_PWRGD
3 PM_PSI#
T8035 TPC28T
PWR_MON
C8012 0.1UF/25V MLCC/+/-10%
Close to Phase 1 Low_side MOSFET
R8024 4.22KOhm
R8044 4.99KOhm
R8019 0Ohm
R8001 0Ohm
R8042 147KOhm 1%
R8007 20KOhm
C8019 0.015UF/50V
R8000 @ 499Ohm 1%
60uA
R8031 13KOhm
C8028 0.1UF/25V @
R5031->3.53K F=300KHz
R8005 6.81KOhm 1%
C8022 1000PF/50V
C8013 220PF/50V
C8004 470PF/50V
R8027 97.6KOhm
R8015 255Ohm 1%
R8056 0Ohm @
R8009 1KOhm
R8046 1KOhm
C8011 1000PF/50V
TPC28T T8041
4 VCCSENSE
R8014
R8016 0Ohm
+VCORE
100Ohm @
C8007 0.01UF/50V
C8010 0.01UF/50V
TPC28T T8036
4 VSSSENSE
R8022 0Ohm
R8032 100Ohm @
C8016 0.01UF/50V
R5049 for load line
C8017 180PF/50V
R8036 3.65KOhm
1KOhm R8020
VCC_PRM
C8021 0.022UF/25V
C8018 0.22UF/10V
R8013 11KOhm
R8043
R8038 2.61KOhm
10KOHM
VSUM
C5028 & C5029 for transient response
Close to Phase 1 Inductor
TPC28T T8040 T8042 T8043 T8038 T8034 T8039 T8037
VR_VID6 4
VR_VID5 4
VR_VID4 4
VR_VID3 4
VR_VID2 4
VR_VID1 4
VR_VID0 4
U8000 ISL6262ACRZ-T
GND2 3V3 CLK_EN# DPRSTP# DPRSLPVR VR_ON VID6 VID5 VID4 VID3 VID2 VID1 VID0
PGOOD PSI# PMON RBIAS VR_TT# NTC SOFT OCSET VW COMP FB FB2
BOOT1 UGATE1 PHASE1 PGND1 LGATE1 PVCC LGATE2 PGND2 PHASE2 UGATE2 BOOT2 NC
VDIFF VSEN RTN DROOP DFB VO VSUM VIN CCM1 VDD ISEN2 ISEN1
R8012 2.7Ohm
C8026 0.22UF/25V
PVCC
R8049 2.7Ohm
+5VS
C8024 4.7UF/6.3V_XR5
R8041 2.7Ohm
C8002 0.22UF/25V
ISEN1
ISEN2
R8002 10Ohm_0805
C8003 2.2UF/6.3V_X5R
R8008 10Ohm_0805
C8005 0.1UF/25V
C8000 0.33UF/16V
Close to Pin 18
Q8007 SI4392DY
Q8000 SI4392DY
CE8005 15UF/25V
CE8003 15UF/25V
C8006 1UF/25V_0805
C8014 1000PF/50V
PCPU_GND1
TPC28T T8016
L8001 0.36UH Irat=32A
+VCORE (35A)
Q8001 SI4336DY_T1_E3
Q8005 SI4336DY_T1_E3
D8000 EC31QS04
R8045 3.65KOhm
R8010 10KOhm 1%
R8034
10KOhm 1% @
C8001 0.22UF/10V
VSUM
ISEN1
VCC_PRM
for current balence
1Ohm R8004
CE8006 330UF/2V
CE8004 330UF/2V
R8059 10KOhm @
Q8004 SI4392DY
Q8003 SI4392DY
CE8001 15UF/25V
CE8002 15UF/25V
C8023 1UF/25V_0805
C8015 1000PF/50V
PCPU_GND2
TPC28T T8014
L8000 0.36UH Irat=32A
Q8006 SI4336DY_T1_E3
Q8002 SI4336DY_T1_E3
D8001 EC31QS04
R8026 3.65KOhm
R8029 10KOhm 1%
R8040
10KOhm 1% @
C8008 0.22UF/10V
R8030 1Ohm
CE8000 330UF/2V
CE8007 330UF/2V
C8027 0.1UF/10V_0402
R8058 10KOhm @
TPC28T T8005 T8030 T8006 T8004 T8009 T8001 T8019 T8011 T8025 T8015 T8028 T8012 T8026 T8007 T8017 T8027
TPC28T T8008 T8024 T8010 T8032 T8003 T8013 T8018 T8022 T8020 T8023 T8029 T8031 T8000 T8002 T8021 T8033
<Variant Name>
Title : POWER_VCORE
ASUSTeK COMPUTER INC. NB
Engineer:
Size Custom
Project Name A8ES
Rev 2.0
Date: Tuesday, January 30, 2007
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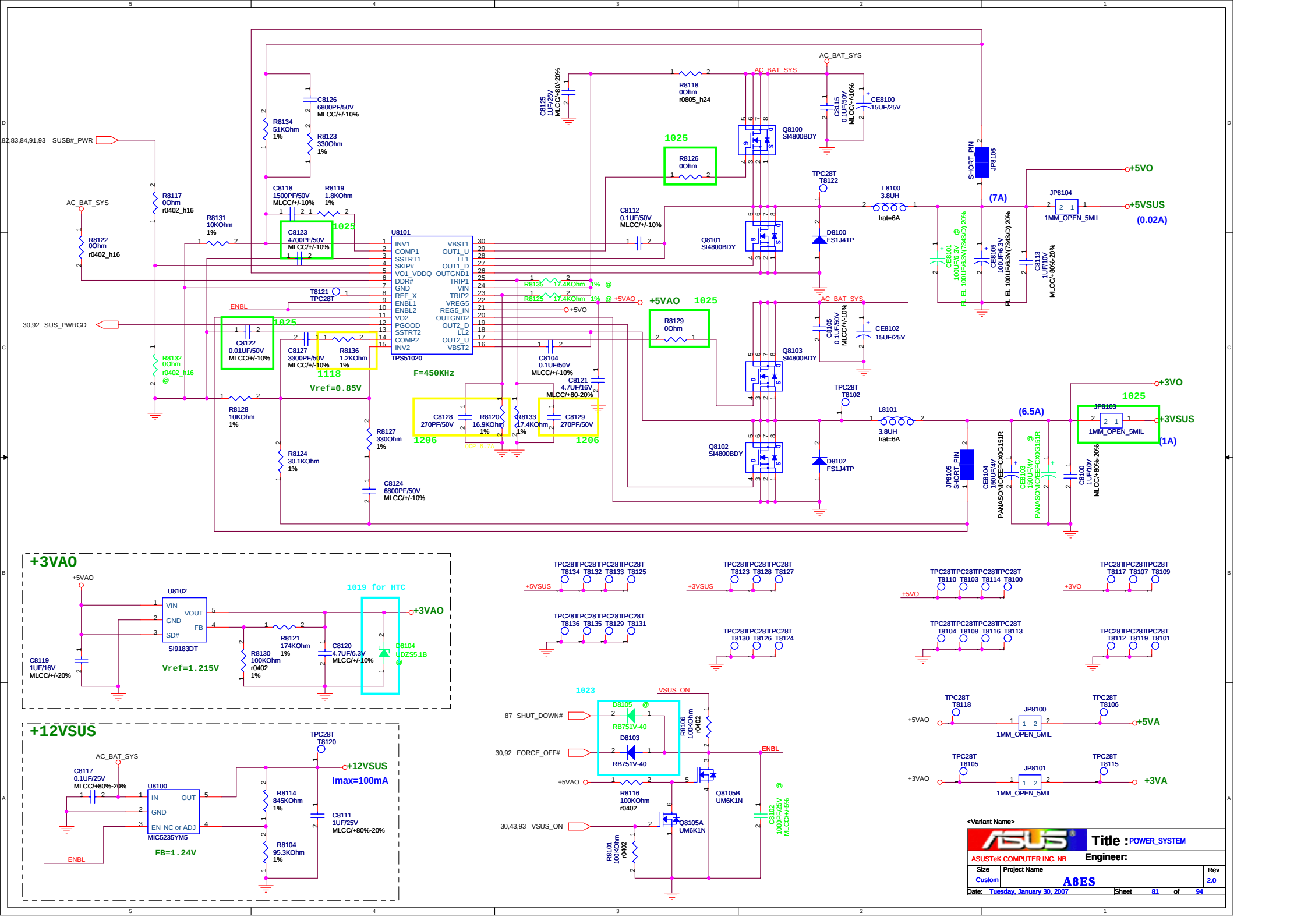
+3VA0
+12VSUS
U8101
TPS51020
F=450KHz
Vref=0.85V
U8102
SI9183DT
Vref=1.215V
1019 for HTC
U8100
MIC5235YM5
FB=1.24V
Imax=100mA
AC_BAT_SYS
SUSB#_PWR
SUS_PWRGD
ENBL
+5VAO
+5VO
+5VSUS
+3VO
+3VSUS
VSUS_ON
SHUT_DOWN#
FORCE_OFF#
VSUS_ON
Q8100 SI4800BDY
Q8101 SI4800BDY
Q8103 SI4800BDY
Q8102 SI4800BDY
D8100 FS1J4TP
D8102 FS1J4TP
L8100 3.8UH Irat=6A
L8101 3.8UH Irat=6A
D8104 UDZS5.1B
D8105 RB751V-40
D8103 RB751V-40
Q8105B UM6K1N
Q8105A UM6K1N
JP8104 1MM_OPEN_5MIL
JP8103 1MM_OPEN_5MIL
JP8100 1MM_OPEN_5MIL
JP8101 1MM_OPEN_5MIL
JP8106 SHORT PIN
JP8105 SHORT PIN
(7A)
(6.5A)
(0.02A)
(1A)
+5VA
Title : POWER_SYSTEM
ASUSTeK COMPUTER INC. NB
Engineer:
Project Name A8ES
Rev 2.0
Date: Tuesday, January 30, 2007
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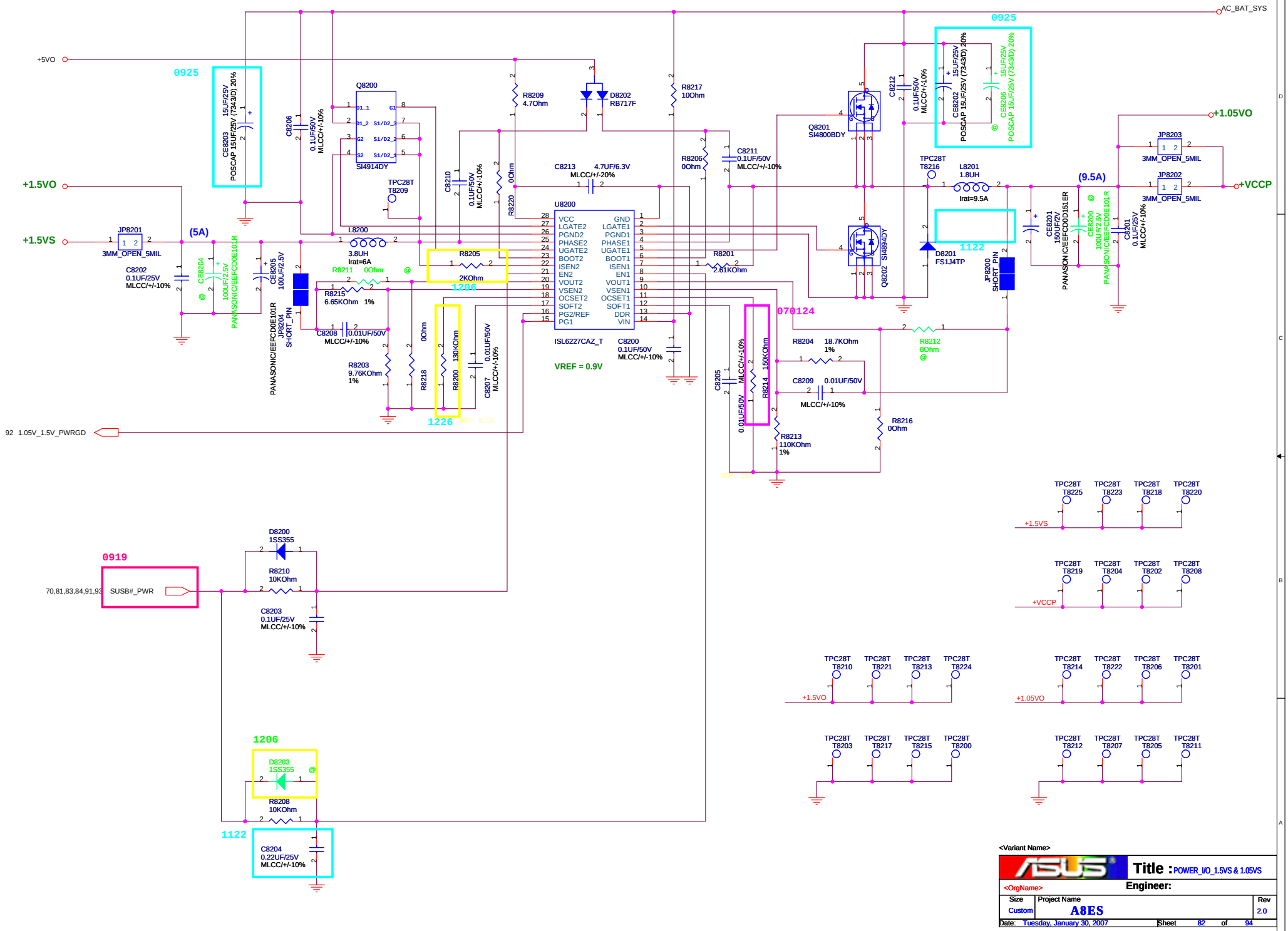
AC_BAT_SYS
+5VO
+1.5VO
+1.5VS
+1.05VO
+VCCP
0925
0925
(5A)
(9.5A)
JP8201
3MM_OPEN_5MIL
JP8203
3MM_OPEN_5MIL
JP8202
3MM_OPEN_5MIL
CE8203
15UF/25V
POSCAP 15UF/25V (7343/D) 20%
Q8200
SI4914DY
C8206
0.1UF/50V
MLCC/+/-10%
R8209
4.7Ohm
D8202
RB717F
R8217
10Ohm
C8212
0.1UF/50V
MLCC/+/-10%
CE8202
15UF/25V
POSCAP 15UF/25V (7343/D) 20%
CE8208
15UF/25V
POSCAP 15UF/25V (7343/D) 20%
Q8201
SI4800BDY
TPC28T
T8216
L8201
1.8UH
Irat=9.5A
C8210
0.1UF/50V
MLCC/+/-10%
R8220
0Ohm
C8213
4.7UF/6.3V
MLCC/+/-20%
R8206
0Ohm
C8211
0.1UF/50V
MLCC/+/-10%
TPC28T
T8209
U8200
VCC
LGATE2
PGND2
PHASE2
UGATE2
BOOT2
ISEN2
EN2
VOUT2
VSEN2
OCSET2
SOFT2
PG2/REF
PG1
GND
LGATE1
PGND1
PHASE1
UGATE1
BOOT1
ISEN1
EN1
VOUT1
VSEN1
OCSET1
SOFT1
DDR
VIN
ISL6227CAZ_T
VREF = 0.9V
C8200
0.1UF/50V
MLCC/+/-10%
Q8202
SI4894DY
D8201
FS1J4TP
1122
JP8200
SHORT_PIN
CE8201
150UF/2V
PANASONIC/EEFCD0D151ER
CE8200
100UF/2.5V
PANASONIC/EEFCD0E101R
C8201
0.1UF/25V
MLCC/+/-10%
L8200
3.8UH
Irat=6A
R8205
2KOhm
1206
R8201
2.61KOhm
C8202
0.1UF/25V
MLCC/+/-10%
CE8204
100UF/2.5V
PANASONIC/EEFCD0E101R
CE8205
100UF/2.5V
PANASONIC/EEFCD0E101R
JP8204
SHORT_PIN
R8211
0Ohm
R8215
6.65KOhm
1%
C8208
0.01UF/50V
MLCC/+/-10%
R8203
9.76KOhm
1%
R8218
0Ohm
R8200
130KOhm
C8207
0.01UF/50V
MLCC/+/-10%
1226
OCP: 5.2A
070124
R8204
18.7KOhm
1%
R8212
0Ohm
C8209
0.01UF/50V
MLCC/+/-10%
C8205
MLCC/+/-10%
0.01UF/50V
R8214
150KOhm
R8213
110KOhm
1%
R8216
0Ohm
OCP: 10A
92 1.05V_1.5V_PWRGD
0919
70,81,83,84,91,93 SUSB#_PWR
D8200
1SS355
R8210
10KOhm
C8203
0.1UF/25V
MLCC/+/-10%
1206
D8203
1SS355
R8208
10KOhm
1122
C8204
0.22UF/25V
MLCC/+/-10%
TPC28T T8225 TPC28T T8223 TPC28T T8218 TPC28T T8220
+1.5VS
TPC28T T8219 TPC28T T8204 TPC28T T8202 TPC28T T8208
+VCCP
TPC28T T8210 TPC28T T8221 TPC28T T8213 TPC28T T8224
+1.5VO
TPC28T T8214 TPC28T T8222 TPC28T T8206 TPC28T T8201
+1.05VO
TPC28T T8203 TPC28T T8217 TPC28T T8215 TPC28T T8200
TPC28T T8212 TPC28T T8207 TPC28T T8205 TPC28T T8211
<Variant Name>
Title : POWER_I/O_1.5VS & 1.05VS
<OrgName>
Engineer:
Size
Custom
Project Name
A8ES
Rev
2.0
Date: Tuesday, January 30, 2007
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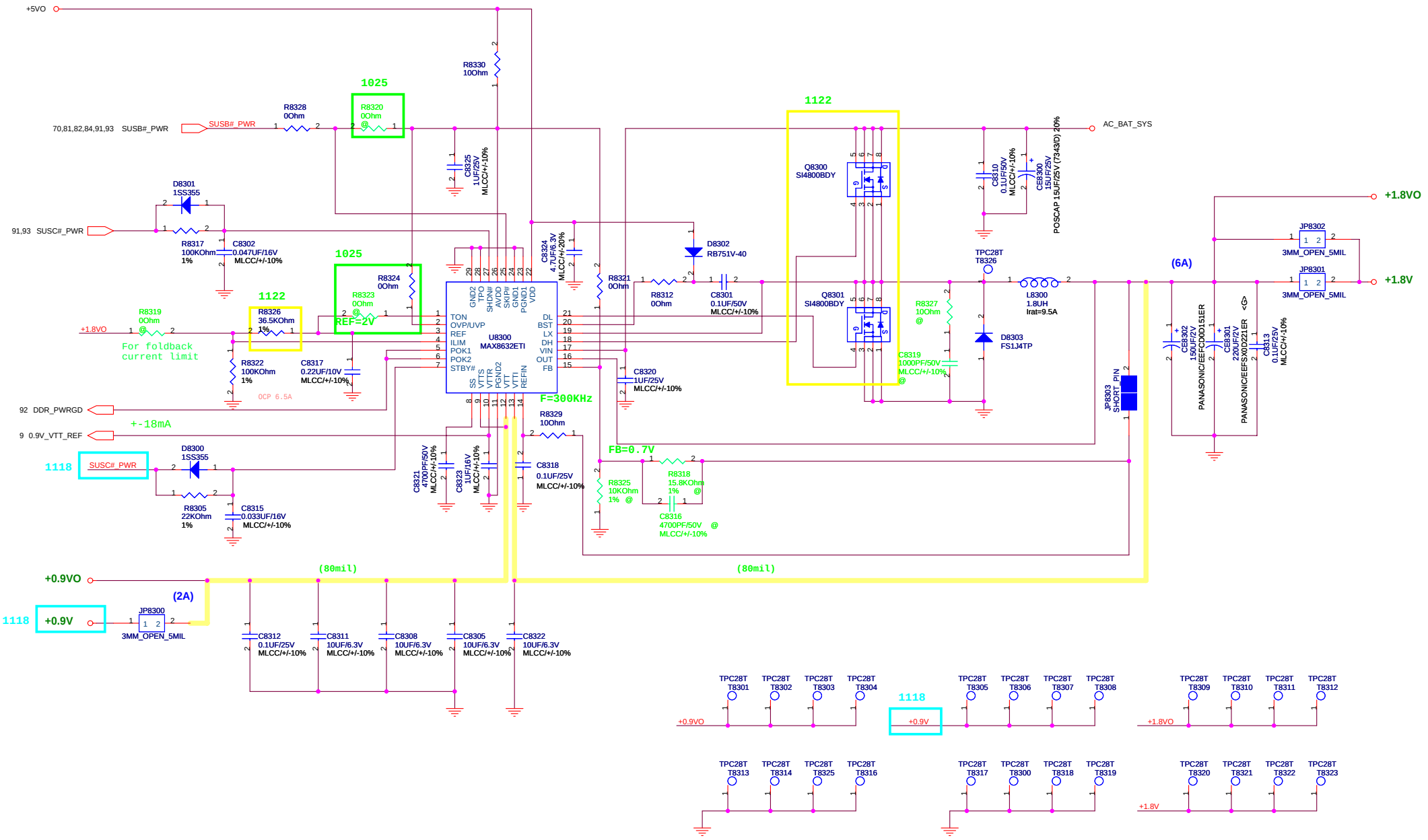
+5VO
R8330 10Ohm
1025
R8320 0Ohm @
R8328 0Ohm
70,81,82,84,91,93 SUSB#_PWR
SUSB#_PWR
C8325 1UF/25V MLCC/+/-10%
1122
Q8300 SI4800BDY
Q8301 SI4800BDY
C8310 0.1UF/50V MLCC/+/-10%
CE8300 15UF/25V POSCAP 15UF/25V (7343/D) 20%
AC_BAT_SYS
D8301 1SS355
91,93 SUSC#_PWR
R8317 100KOhm 1%
C8302 0.047UF/16V MLCC/+/-10%
1025
R8324 0Ohm
R8323 0Ohm
REF=2V
C8324 4.7UF/6.3V MLCC/+/-20%
D8302 RB751V-40
R8321 0Ohm
R8312 0Ohm
C8301 0.1UF/50V MLCC/+/-10%
TPC28T T8326
L8300 1.8UH Irat=9.5A
(6A)
+1.8VO
JP8302 3MM_OPEN_5MIL
JP8301 3MM_OPEN_5MIL
+1.8V
R8319 0Ohm @
+1.8VO
1122
R8326 36.5KOhm 1%
For foldback current limit
R8322 100KOhm 1%
C8317 0.22UF/10V MLCC/+/-10%
OCP 6.5A
U8300 MAX8632ETI
TON
OVP/UVP
REF
ILIM
POK1
POK2
STBY#
GND2
DPO
SHDN#
AVDD
SKIP#
GND1
PGND1
VDD
DL
BST
LX
DH
VIN
OUT
FB
SS
VTTS
VTTR
PGND2
VTTI
VTTI
REFIN
R8327 10Ohm @
C8319 1000PF/50V MLCC/+/-10% @
D8303 FS1J4TP
C8320 1UF/25V MLCC/+/-10%
JP8303 SHORT_PIN
CE8302 150UF/2V PANASONIC/EEFCD0D151ER
CE8301 220UF/2V PANASONIC/EEFSX0D221ER
C8313 0.1UF/25V MLCC/+/-10%
92 DDR_PWRGD
+-18mA
9 0.9V_VTT_REF
F=300KHz
R8329 10Ohm
FB=0.7V
D8300 1SS355
1118
SUSC#_PWR
C8321 4700PF/50V MLCC/+/-10%
C8323 1UF/16V MLCC/+/-10%
C8318 0.1UF/25V MLCC/+/-10%
R8325 10KOhm 1% @
R8318 15.8KOhm 1% @
C8316 4700PF/50V @ MLCC/+/-10%
R8305 22KOhm 1%
C8315 0.033UF/16V MLCC/+/-10%
+0.9VO
(80mil)
(80mil)
(2A)
1118
+0.9V
JP8300 3MM_OPEN_5MIL
C8312 0.1UF/25V MLCC/+/-10%
C8311 10UF/6.3V MLCC/+/-10%
C8308 10UF/6.3V MLCC/+/-10%
C8305 10UF/6.3V MLCC/+/-10%
C8322 10UF/6.3V MLCC/+/-10%
TPC28T T8301
TPC28T T8302
TPC28T T8303
TPC28T T8304
TPC28T T8305
TPC28T T8306
TPC28T T8307
TPC28T T8308
TPC28T T8309
TPC28T T8310
TPC28T T8311
TPC28T T8312
TPC28T T8313
TPC28T T8314
TPC28T T8325
TPC28T T8316
TPC28T T8317
TPC28T T8300
TPC28T T8318
TPC28T T8319
TPC28T T8320
TPC28T T8321
TPC28T T8322
TPC28T T8323
+1.8VO
+1.8V
<Variant Name>
Title : POWER_I/O_DDR & VTT
ASUSTeK COMPUTER INC. NB
Engineer:
Size Custom
Project Name A8ES
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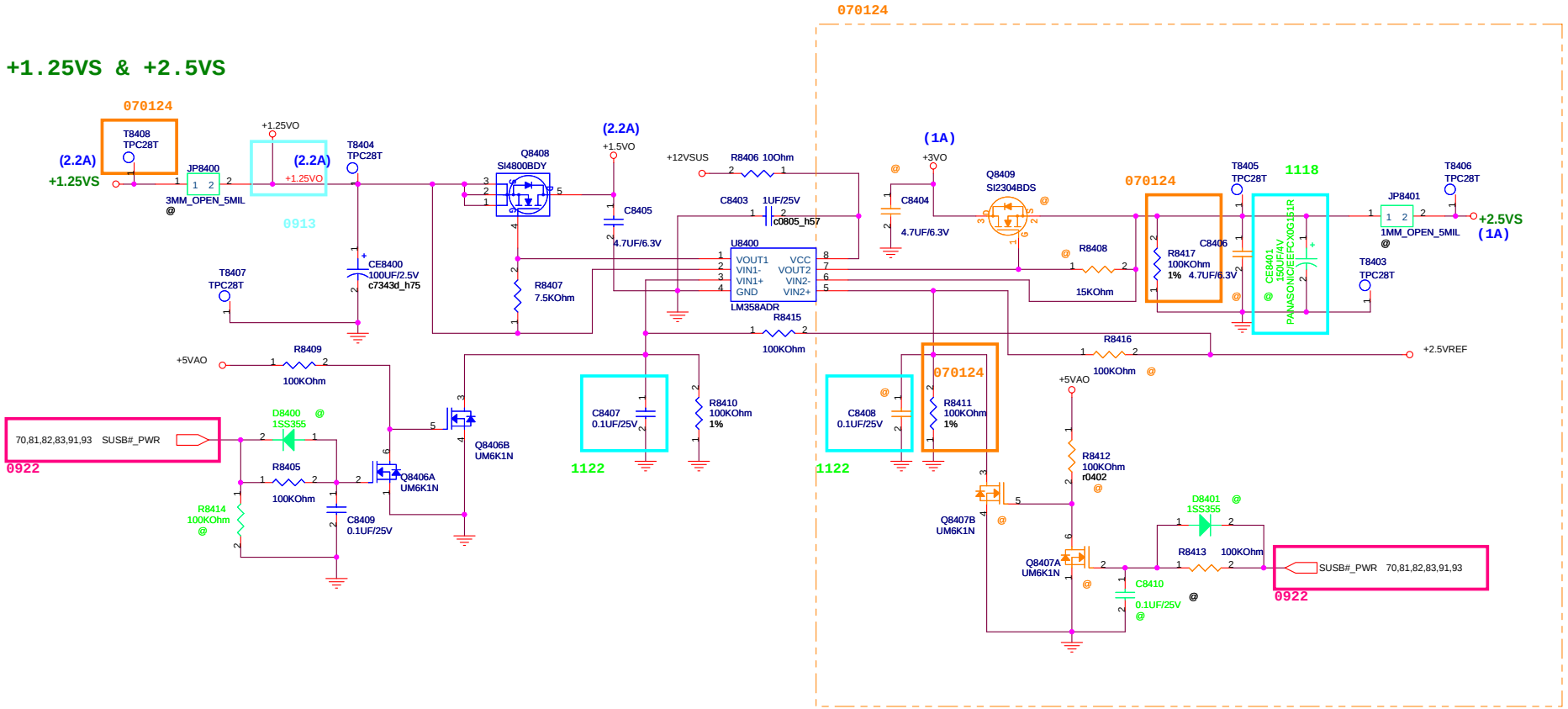
+1.25VS & +2.5VS



<Variant Name>

ASUS	Title : POWER_I/O_+3VA & +2.5V	
<OrgName>	Engineer:	
Size: Custom	Project Name: A8ES	Rev: 2.0
Date: Tuesday, January 30, 2007	Sheet 84 of 94	

<Variant Name>

Title : POWER_VGA_CORE & RAM

<OrgName>

Engineer:

Size	Project Name	Rev
C	ROSA	1.1

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<Variant Name>

Title : N/A

<OrgName>

Engineer:

Size	Project Name	Rev
B	ROSA	1.1

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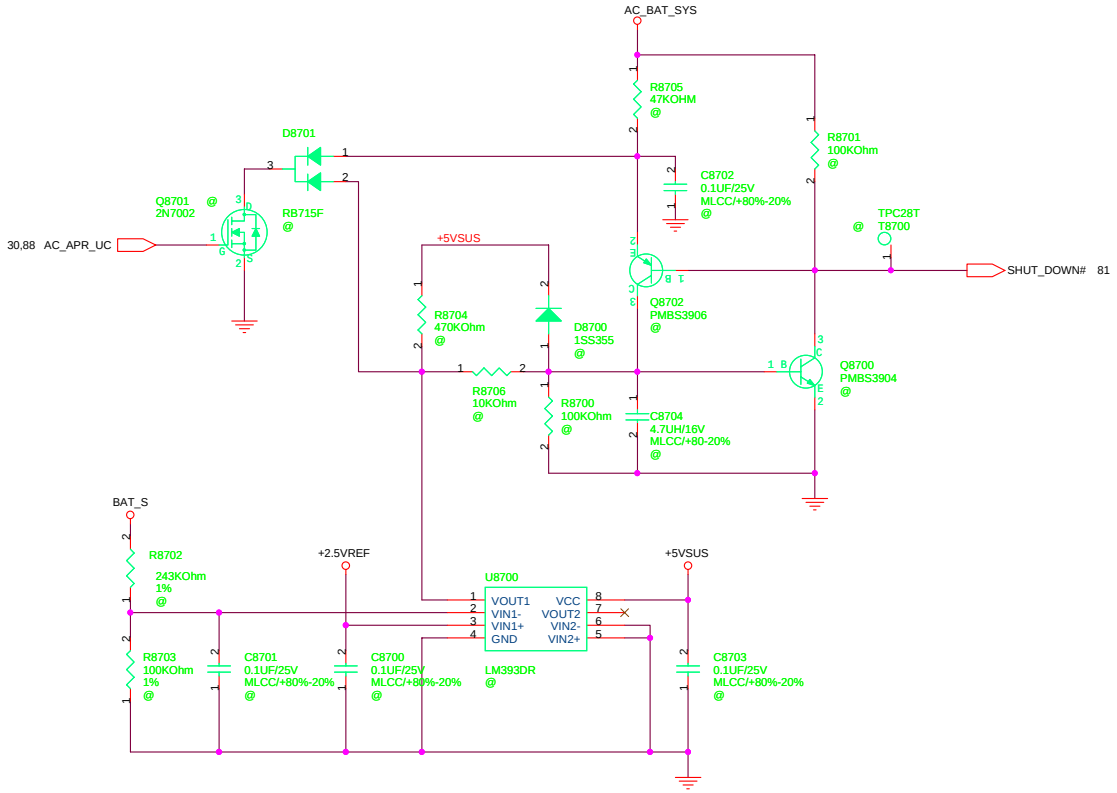
PIC only



<Variant Name>

Title : POWER_SHUTDOWN#

<OrgName>

Engineer:

Size	Project Name	Rev
Custom	A8ES	2.0

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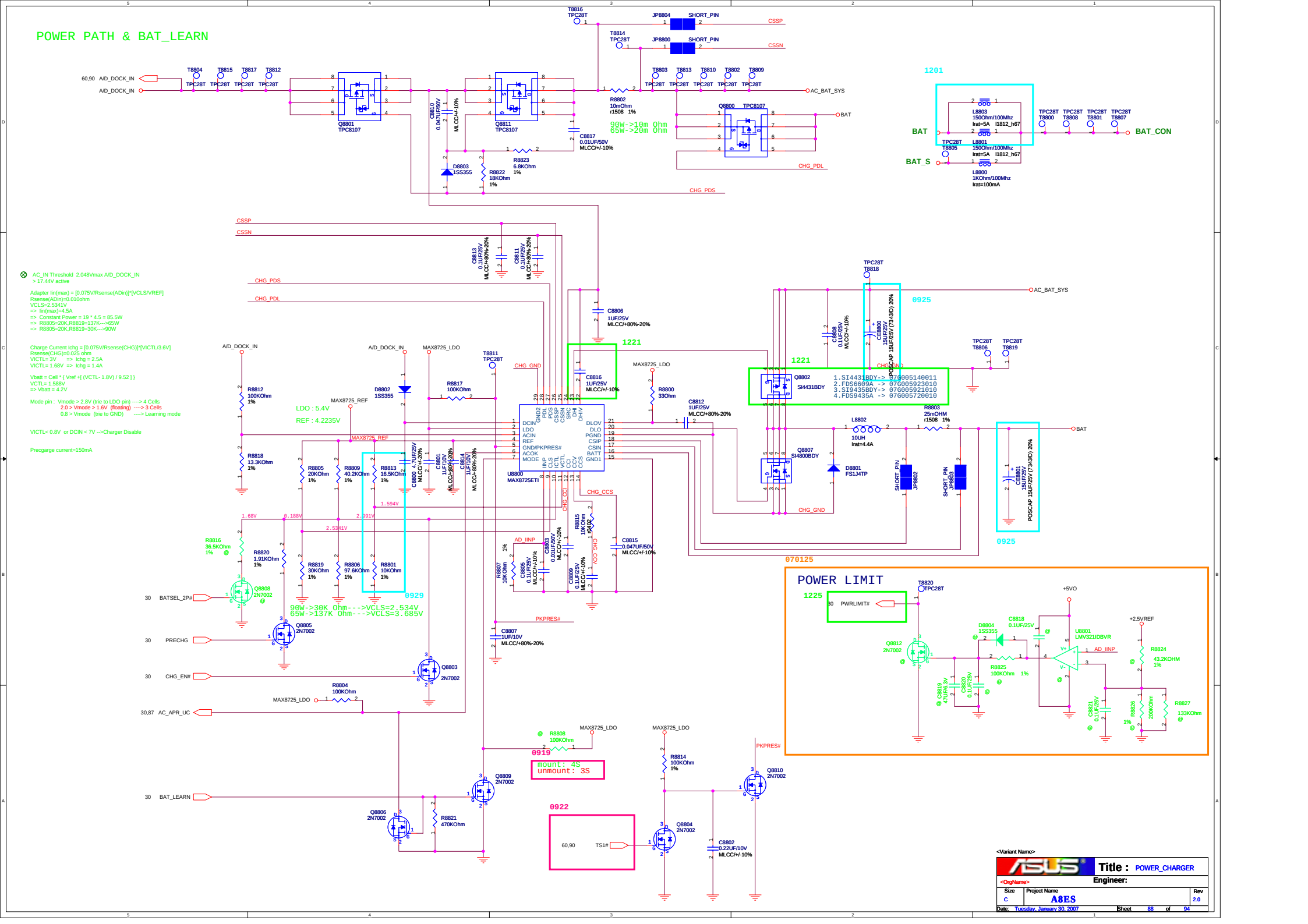
POWER PATH & BAT_LEARN



Variant Name	
Title	POWER_CHARGER
Org Name	
Engineer	
Size	C
Project Name	A8ES
Rev	2.0
Date	Tuesday, January 30, 2007
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<Variant Name>

Title : N/A

<OrgName>

Engineer:

Size	Project Name	Rev
Custom	ROSA	1.1

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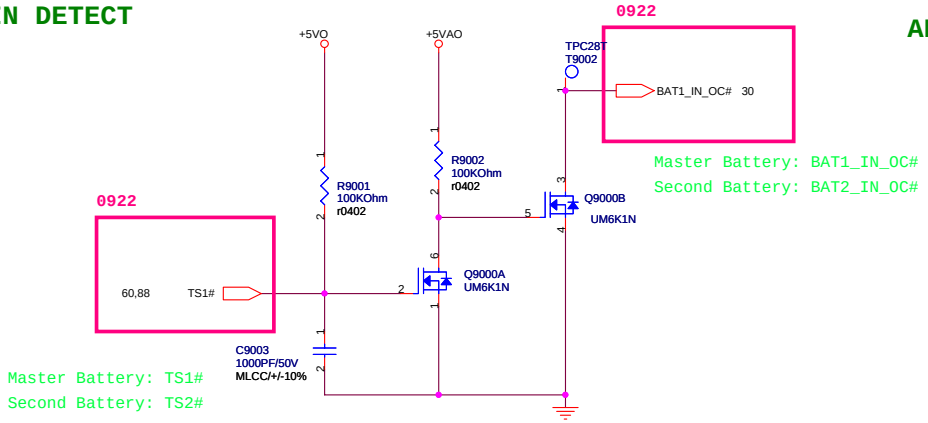
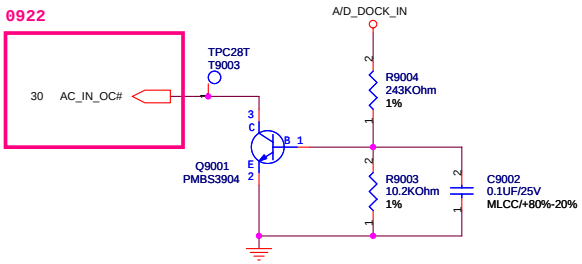
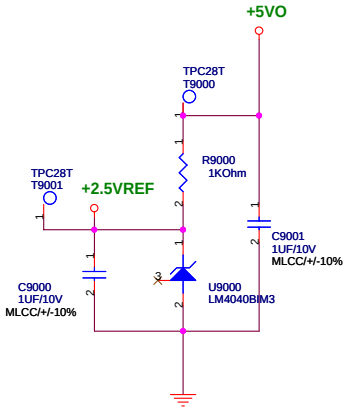
BATTERY IN DETECT



ADAPTER IN DETECT



+2.5VREF



<Variant Name>

Title : POWER_DETECT

<OrgName>

Engineer:

Size	Project Name	Rev
Custom	A8ES	2.0

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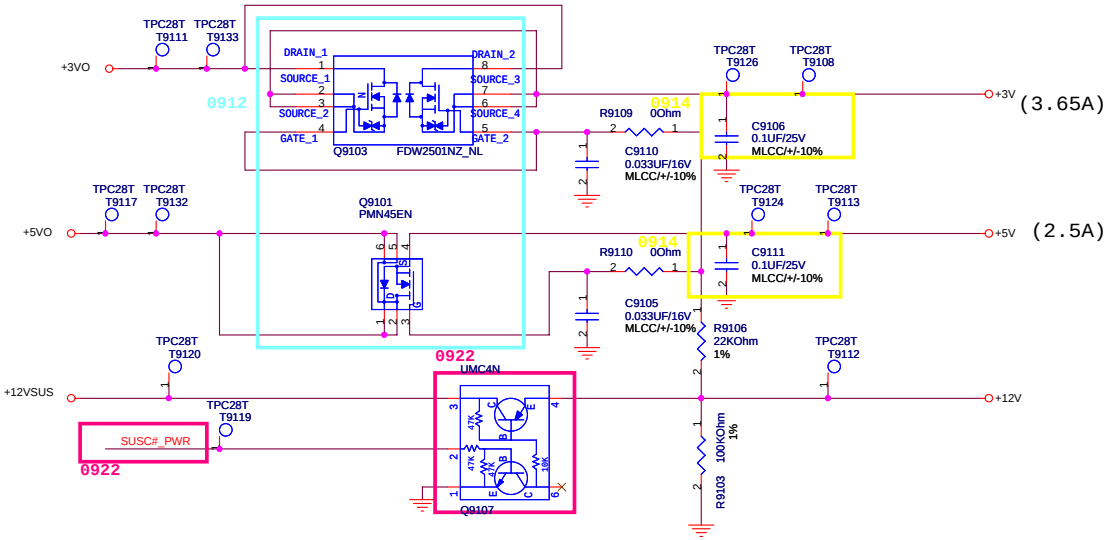
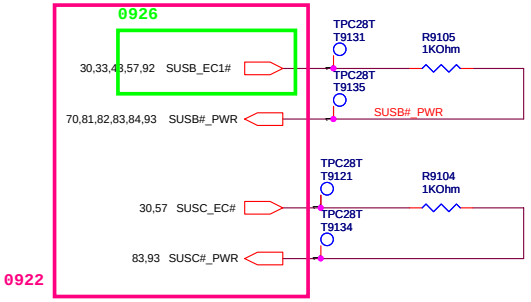
SUSC#_PWR POWER

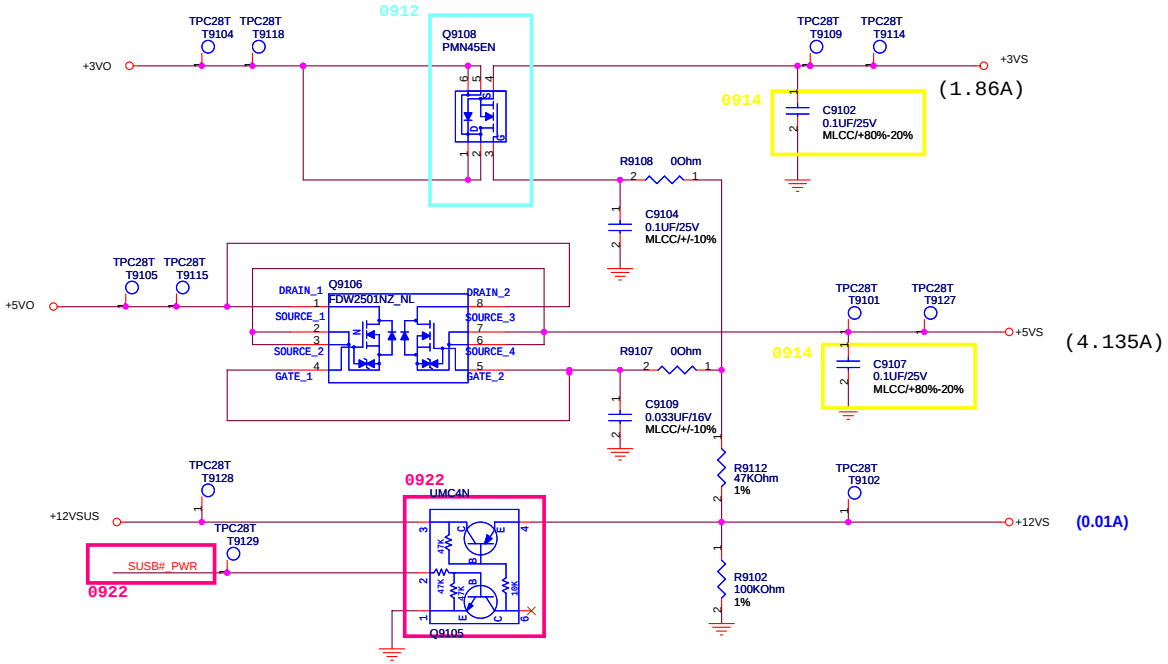
0922





SUSB#_PWR POWER

0922



<Variant Name>

Title : POWER_LOAD SWITCH

<OrgName>

Engineer:

Size	Project Name	Rev
Custom	A8ES	2.0

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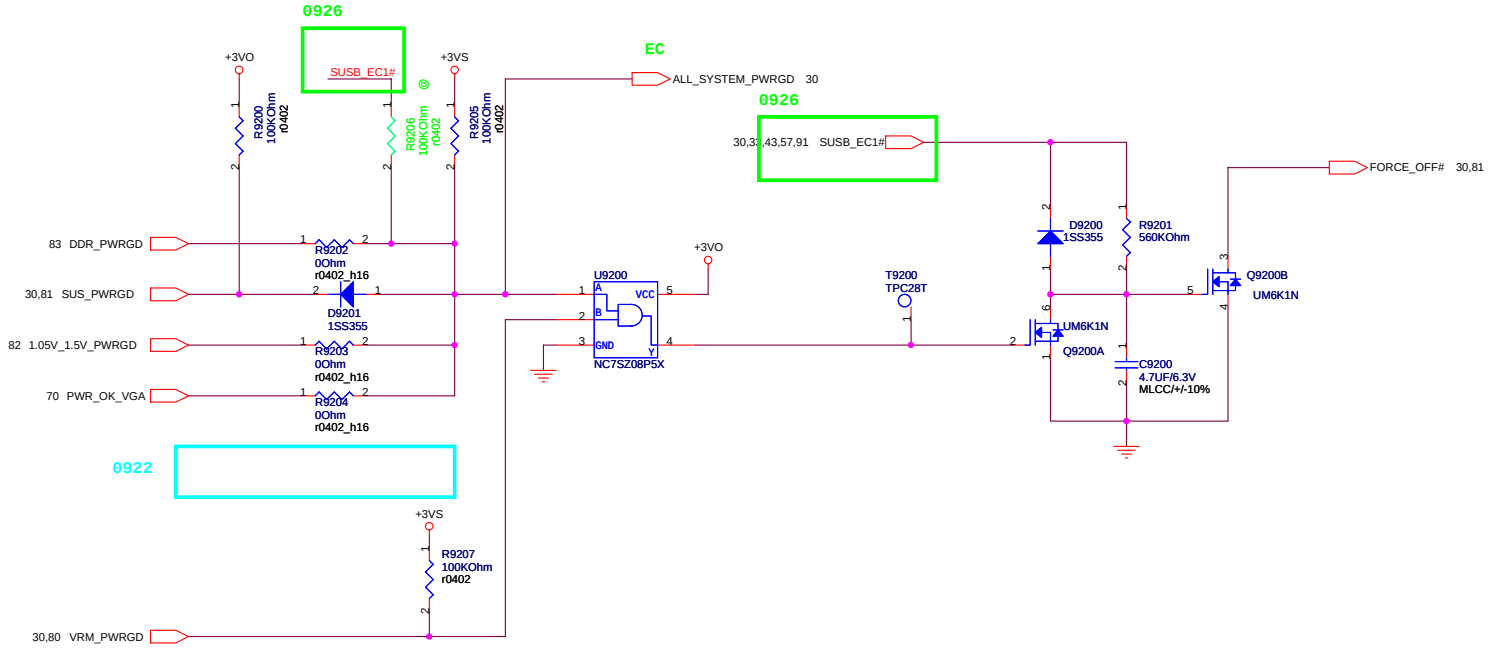
POWER GOOD DETECTER



<Variant Name>

Title : POWER_PROTECT

<OrgName> Engineer:

Size	Project Name	Rev
Custom	A8ES	2.0

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AC_BAT_SYS → AC_BAT_SYS 45,70,80,81,82,83,87,88

BAT → BAT 88

BAT_CON → BAT_CON 60,88

+2.5VREF → +2.5VREF 84,87,88,90

+3VA → +3VA 20,22,30,57,81

0922

+5VAO → +5VAO 81,84,90

+5VO → +5VO 81,82,83,88,90,91

+5VSUS → +5VSUS 23,56,81,87

+5V → +5V 9,43,52,57,68,70,91

+5VS → +5VS 23,24,31,36,38,46,47,50,51,56,57,68,80,91

+3VO → +3VO 81,84,91,92

+3VSUS → +3VSUS 21,22,23,30,33,43,81

+3V → +3V 21,34,43,45,53,56,57,61,62,91

+3VS → +3VS 3,7,8,11,14,15,21,22,23,24,29,30,33,36,38,40,41,42,43,45,46,47,49,50,51,53,55,57,62,68,70,80,91,92

+12VSUS → +12VSUS 81,84,91

+12V → +12V 38,42,52,57,91

+12VS → +12VS 38,45,57,70,91

+1.8VO → +1.8VO 70,83

+1.8V → +1.8V 7,8,9,11,13,14,57,83

+1.8VS → +1.8VS

+0.9VS → +0.9VS

0922

+0.9VO → +0.9VO 83

0922

+1.05VO → +1.05VO 80,82

+VCCP → +VCCP 5,10,11,13,14,23,29,57,82

0922

+1.5VO → +1.5VO 82,84

+1.5VS → +1.5VS 4,14,20,21,23,43,53,57,70,82

+2.5VO → +2.5VO

+2.5VS → +2.5VS 70,84

+VCORE → +VCORE 4,5,80

+VRAM → +VRAM

+1.2VSP → +1.2VSP

+1.25VS → +1.25VS 11,14,23,57,84

FOR POWER TEST

+3VA

JP9300 SGL_JUMP (1 2) → CPU_VRON_PWR 80

0922

JP9301 SGL_JUMP (1 2) → SUSB#_PWR → SUSB#_PWR 70,81,82,83,84,91

JP9302 SGL_JUMP (1 2) → SUSC#_PWR → SUSC#_PWR 83,91

JP9303 SGL_JUMP (1 2) → VSUS_ON → VSUS_ON 30,43,81

<Variant Name>

Title : POWER_SIGNAL

<OrgName> Engineer: <OrgAddr1>

Size	Project Name	Rev
Custom	A8ES	2.0

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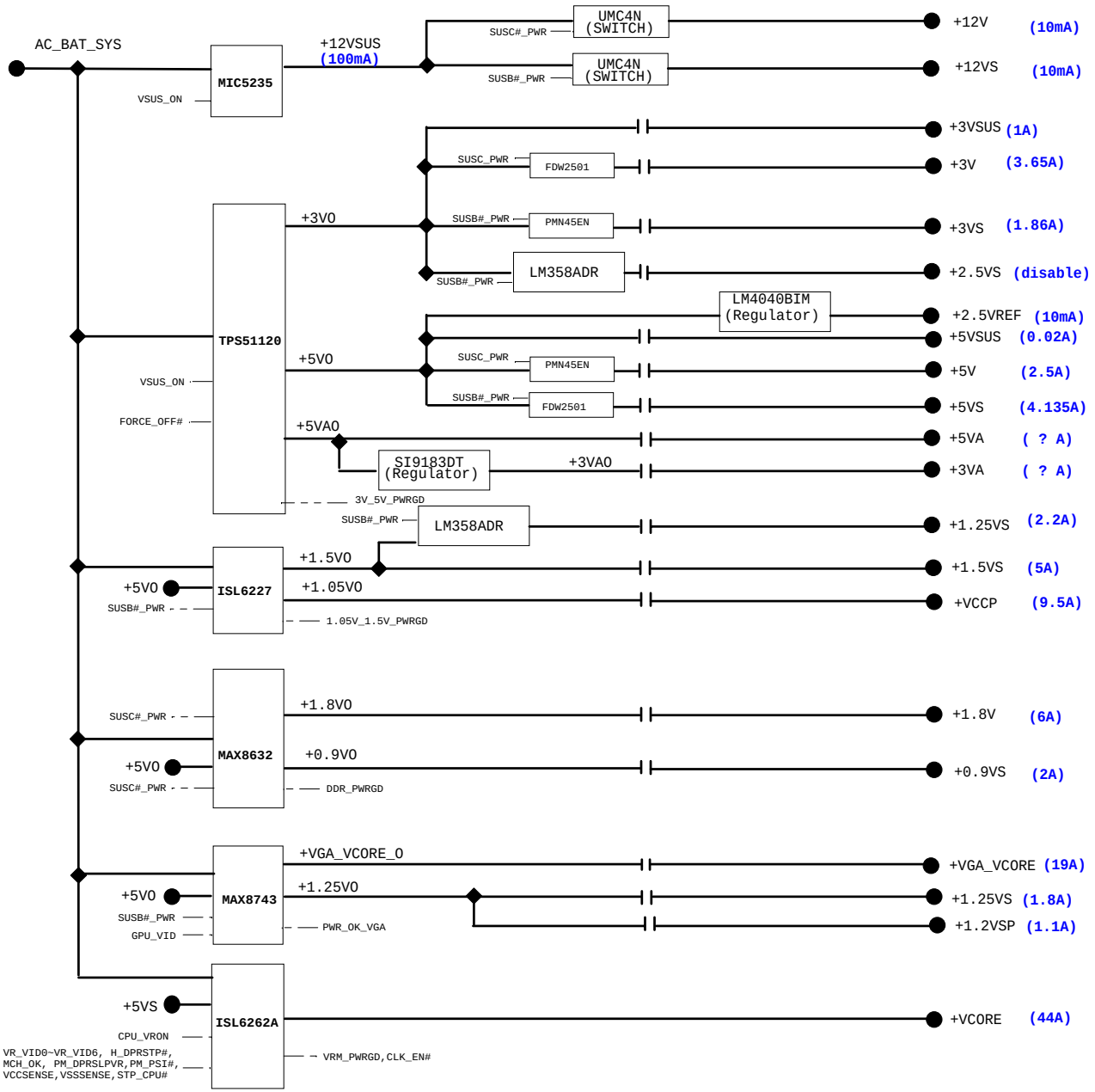

<Variant Name>

Title : POWER_VCORE

<OrgName>

Engineer:

Size	Project Name	Rev
Custom	A8ES	2.0

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