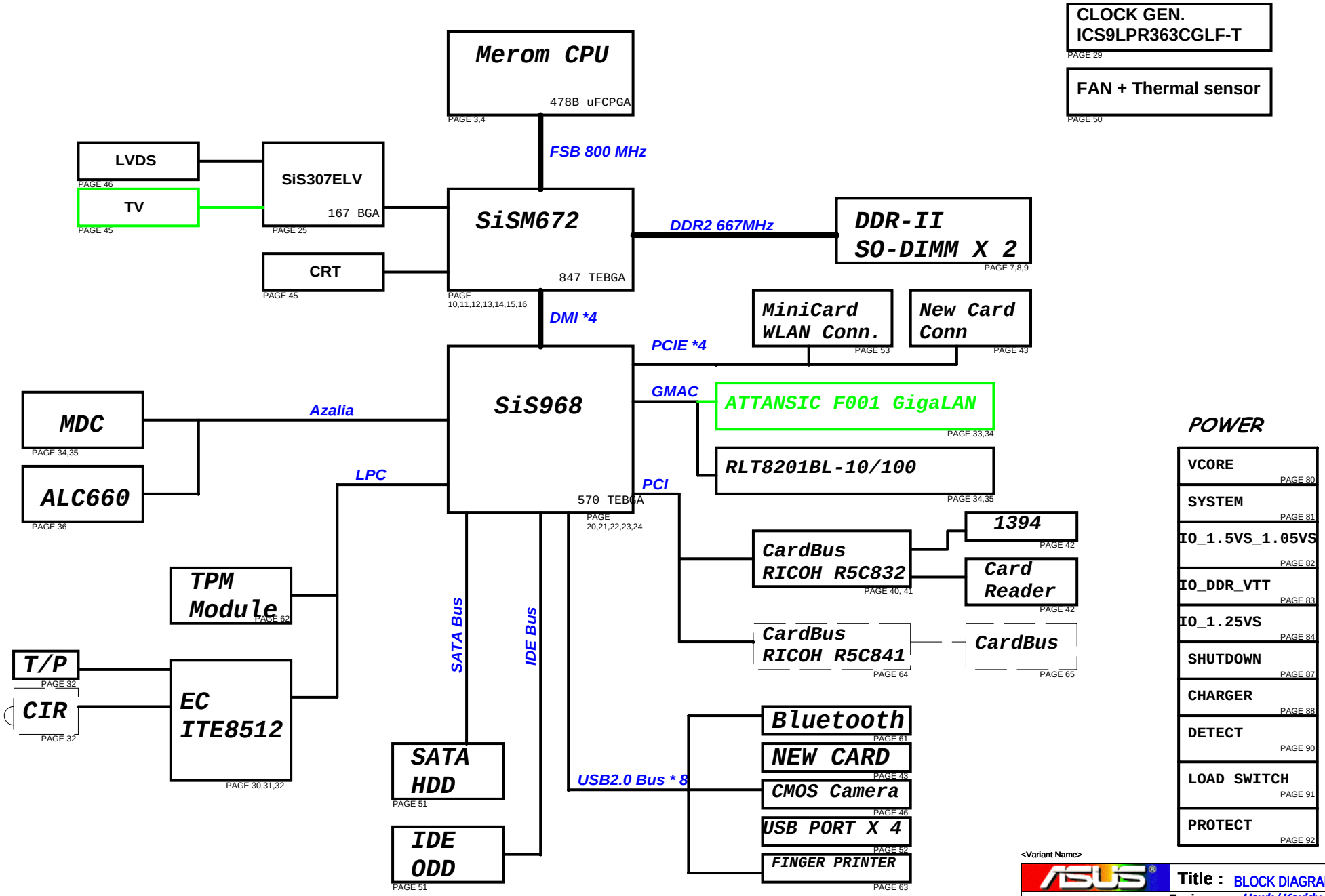
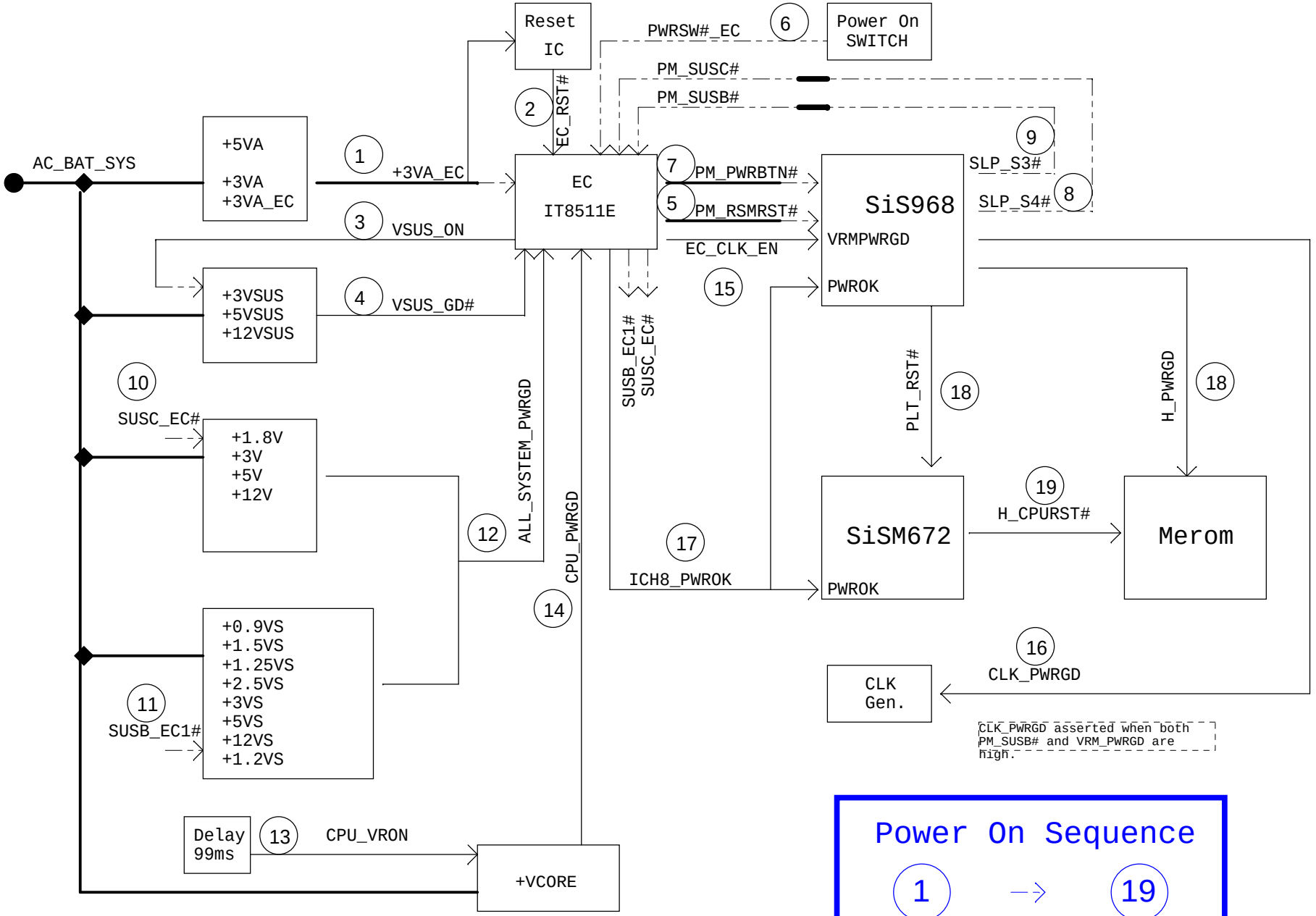
X51C Main BD. R1.0 BLOCK DIAGRAM



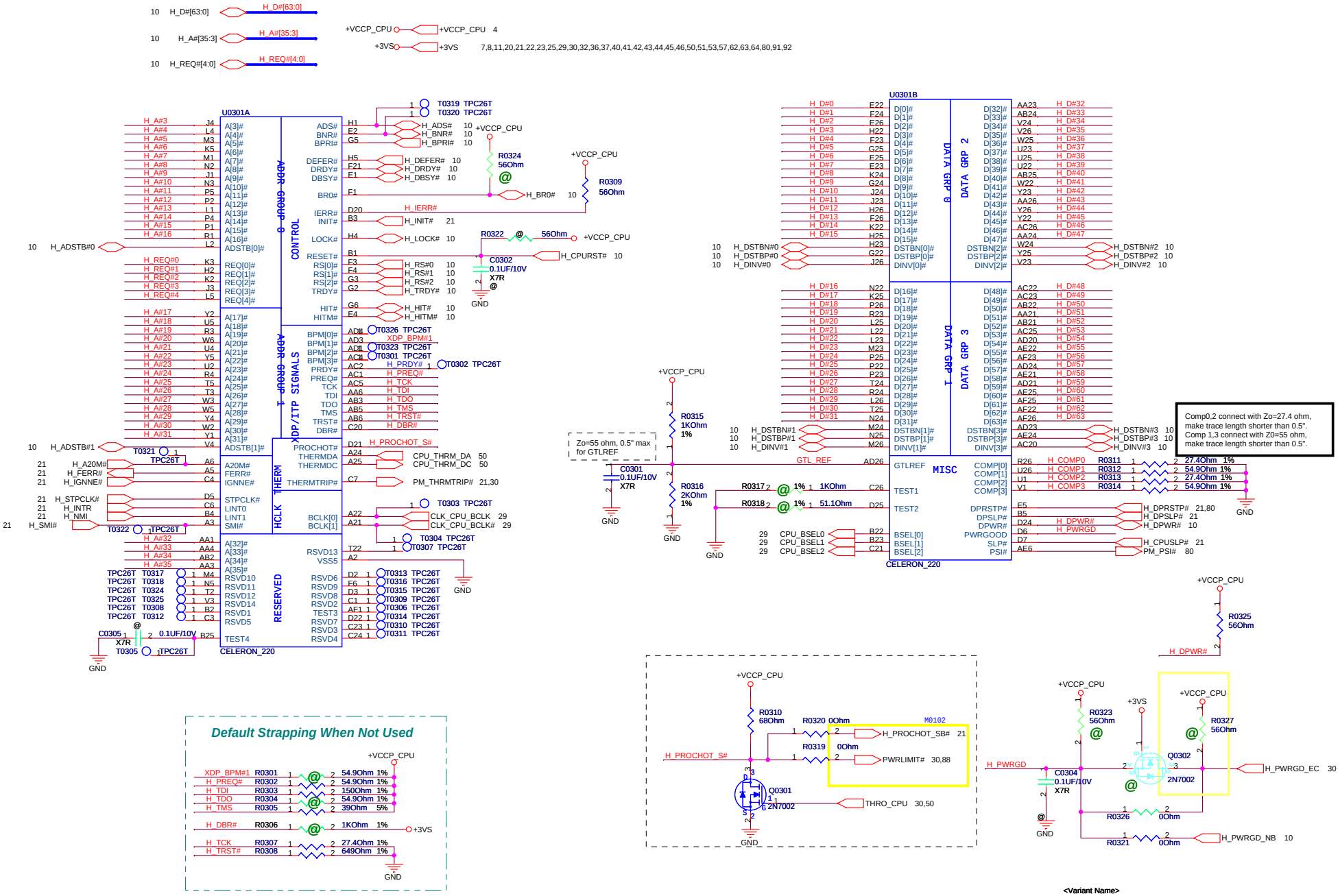
<Variant Name>

ASUSTeK COMPUTER INC	Title : BLOCK DIAGRAM	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Tuesday, March 04, 2008	Sheet 1 of 94	



<Variant Name>

ASUSTeK COMPUTER INC	Title : PowerOn sequence	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Monday, August 13, 2007	Sheet 2 of 94	



<Variant Name>

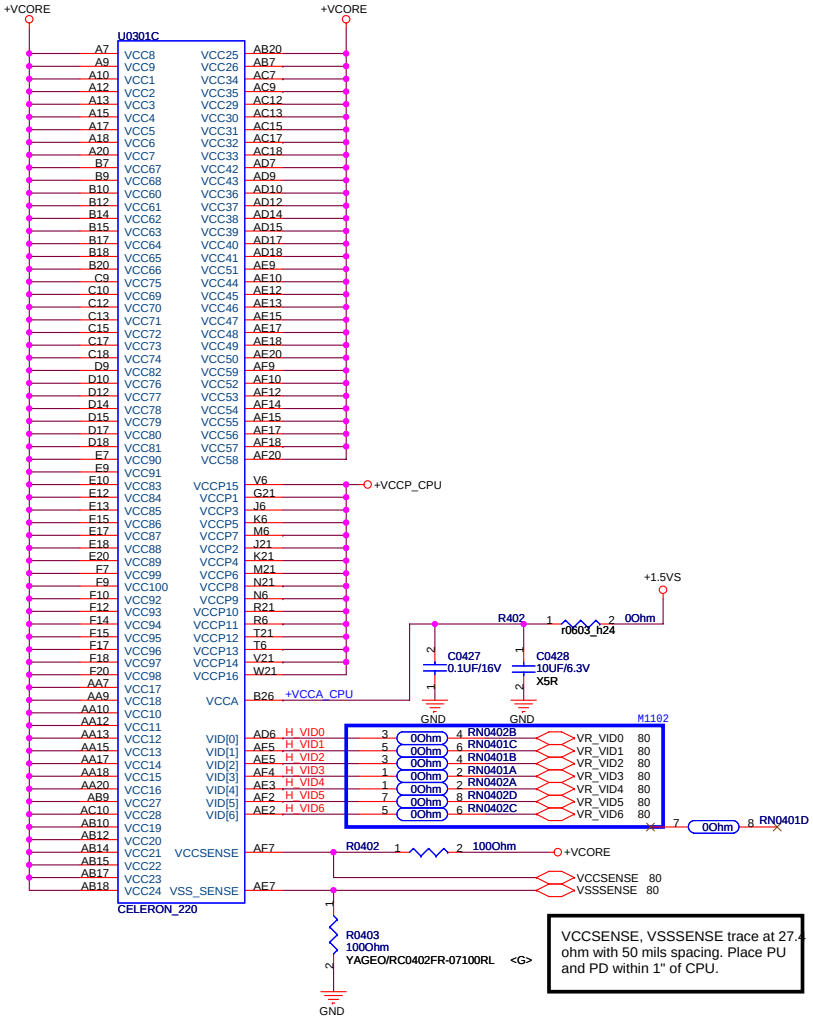
ASUSTeK COMPUTER INC

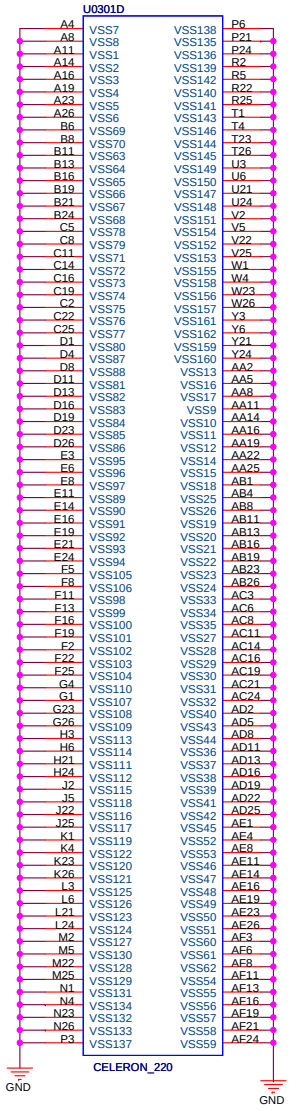
Title : MEROM CPU (1)

Engineer: Hawk / Kaxidy

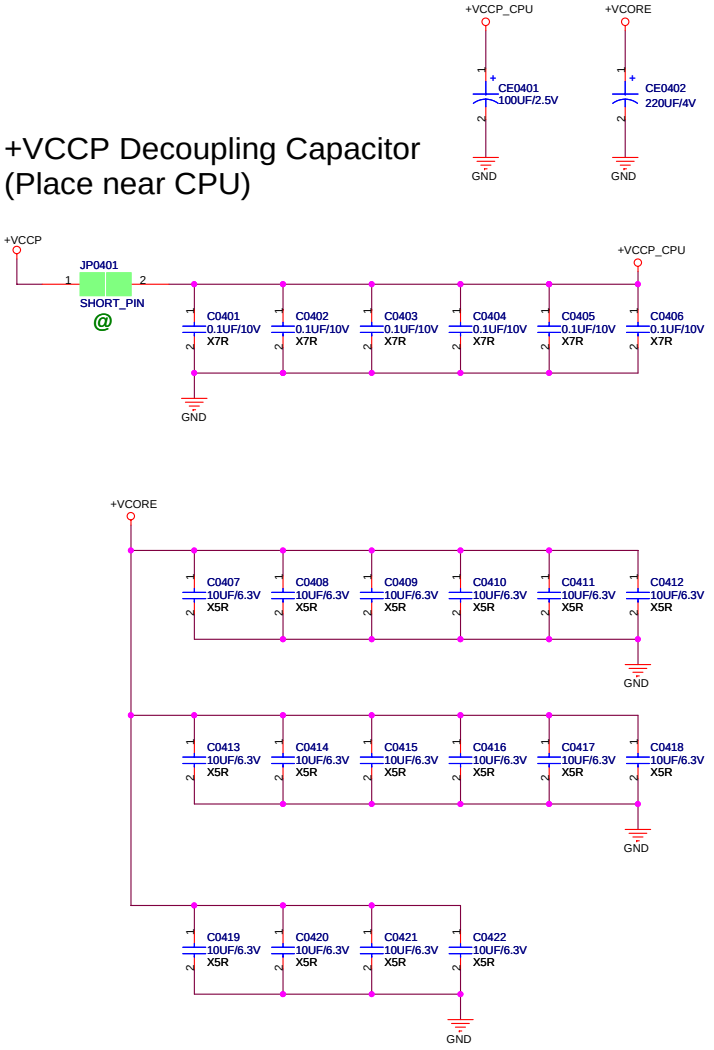
Size	Project Name	Rev
Custom	T12C	1.1

Date: Wednesday, February 27, 2008 Sheet 3 of 94





+VCCP Decoupling Capacitor (Place near CPU)



<Variant Name>

Title : MEROM CPU (2)

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Monday, March 10, 2008 Sheet 4 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 5 of 94

<Variant Name>

Title : NULL

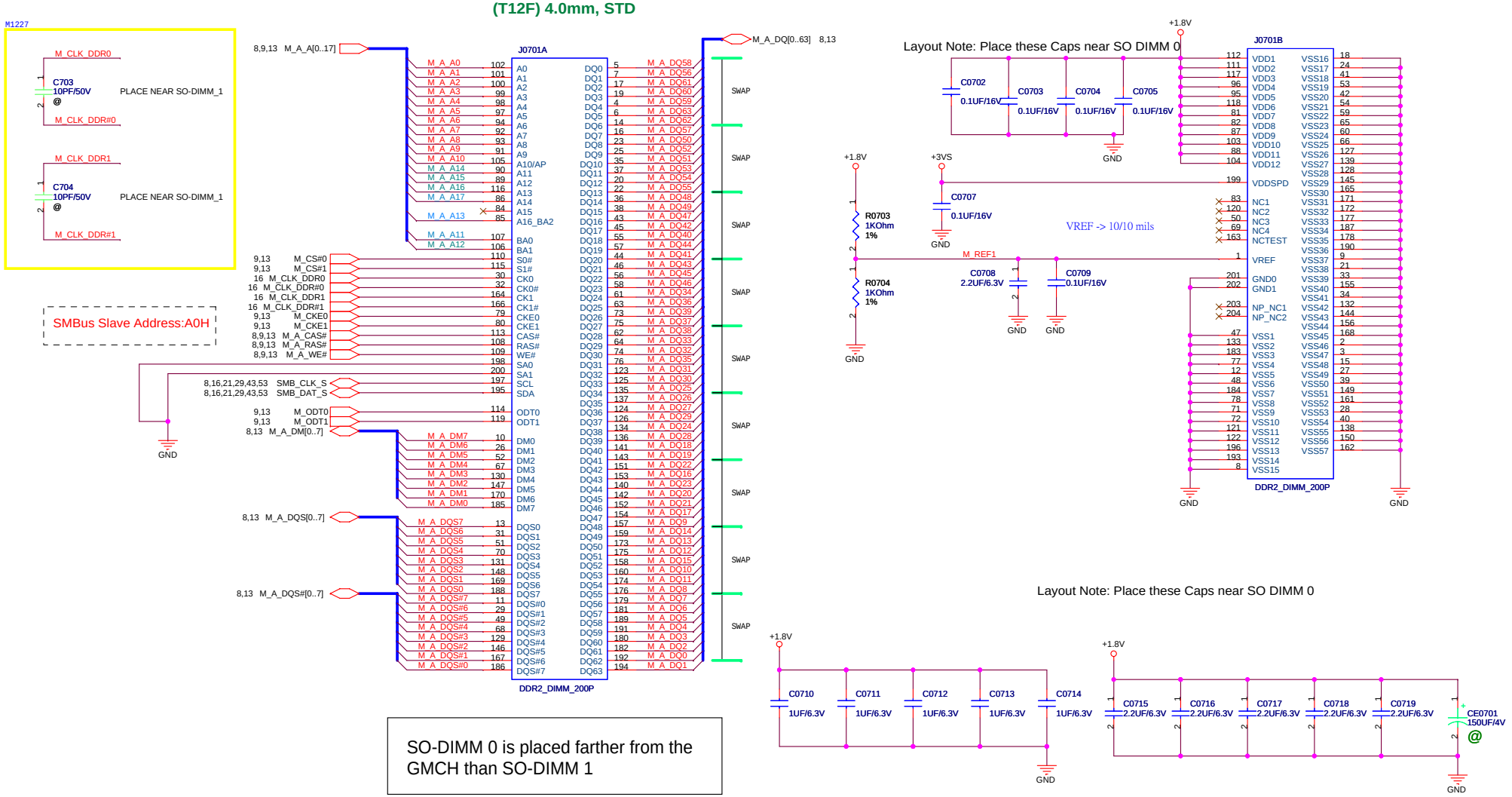
ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 6 of 94

P/N: 12G025022004
(T12F) 4.0mm, STD



<Variant Name>

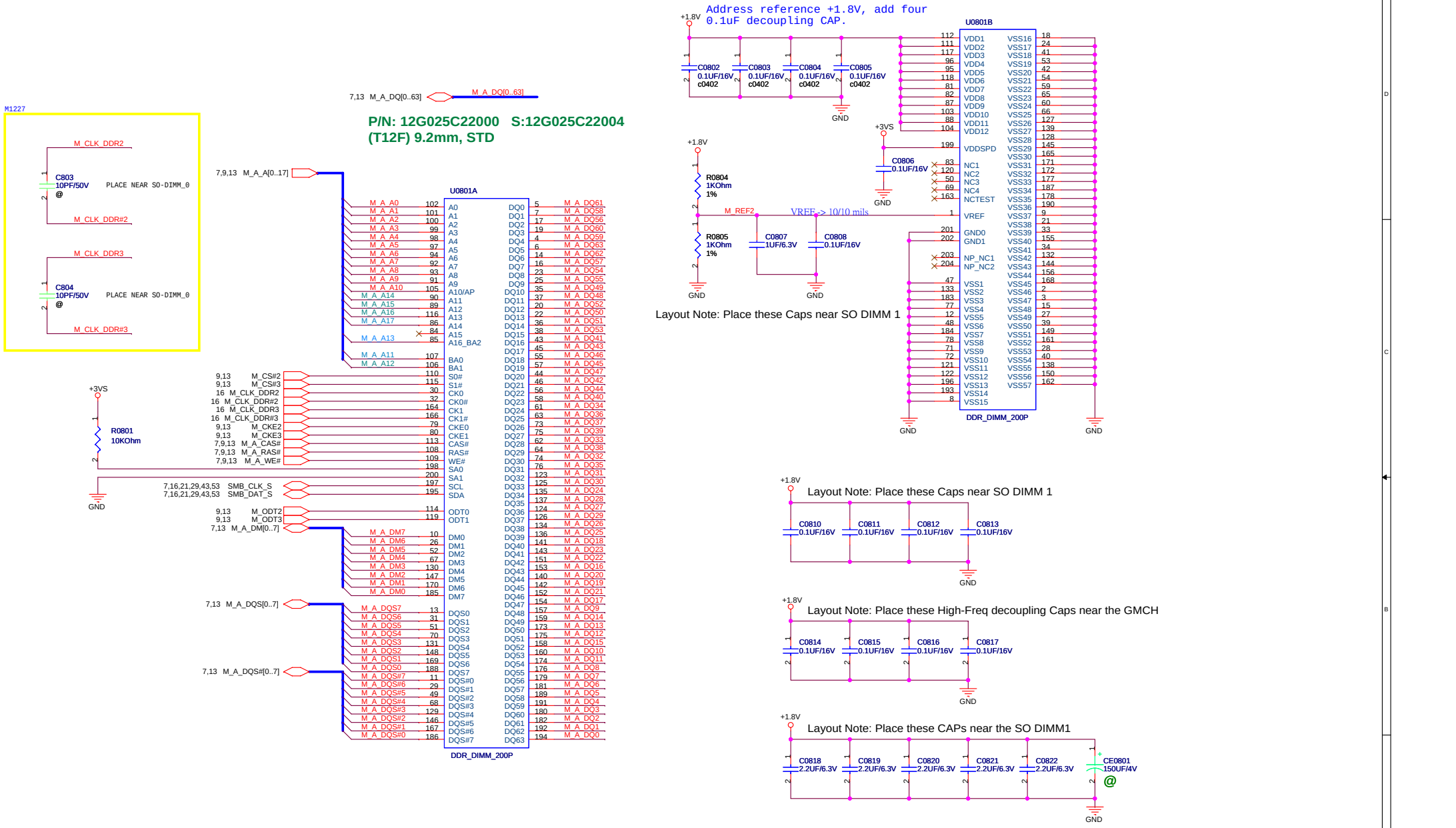
ASUSTeK COMPUTER INC

Title : DDR2 SO-DIMM_0

Engineer: Hawk / Kaxidy

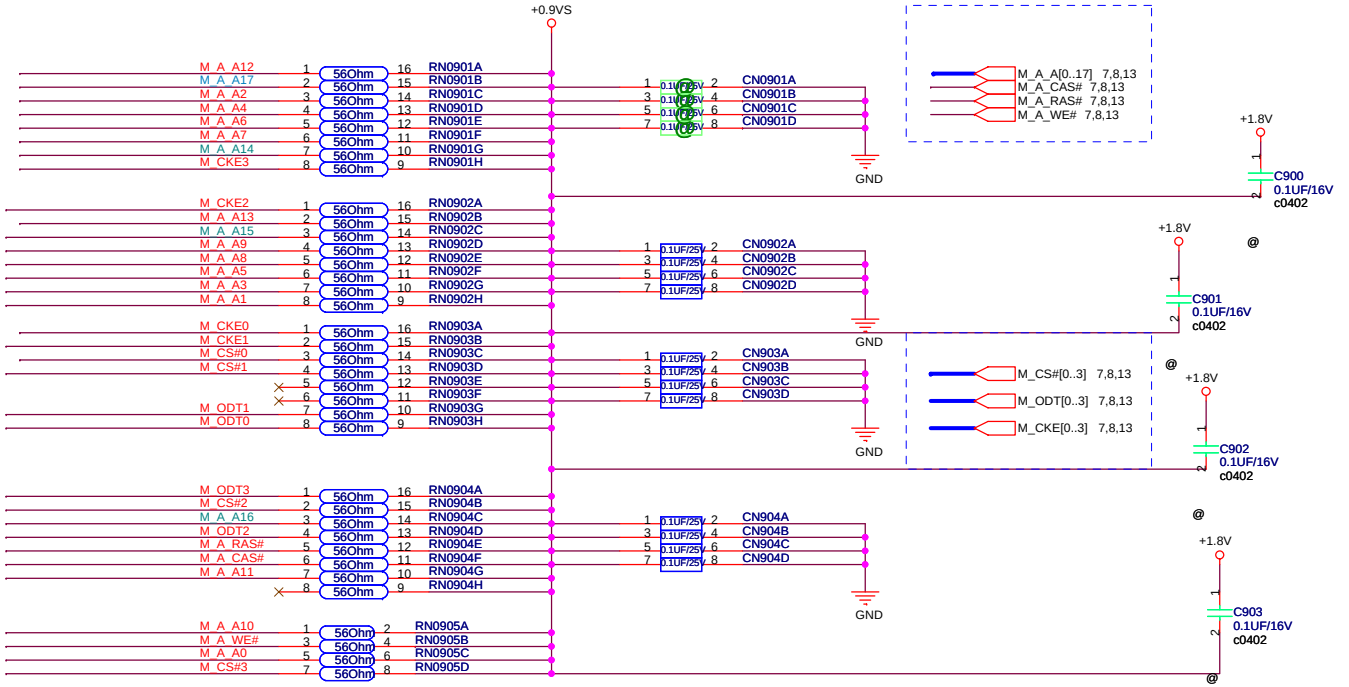
Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, February 26, 2008 Sheet 7 of 94



<Variant Name>

ASUSTeK COMPUTER INC	Title : DDR2 SO-DIMM_1	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Wednesday, February 27, 2008	Sheet 8 of 94	



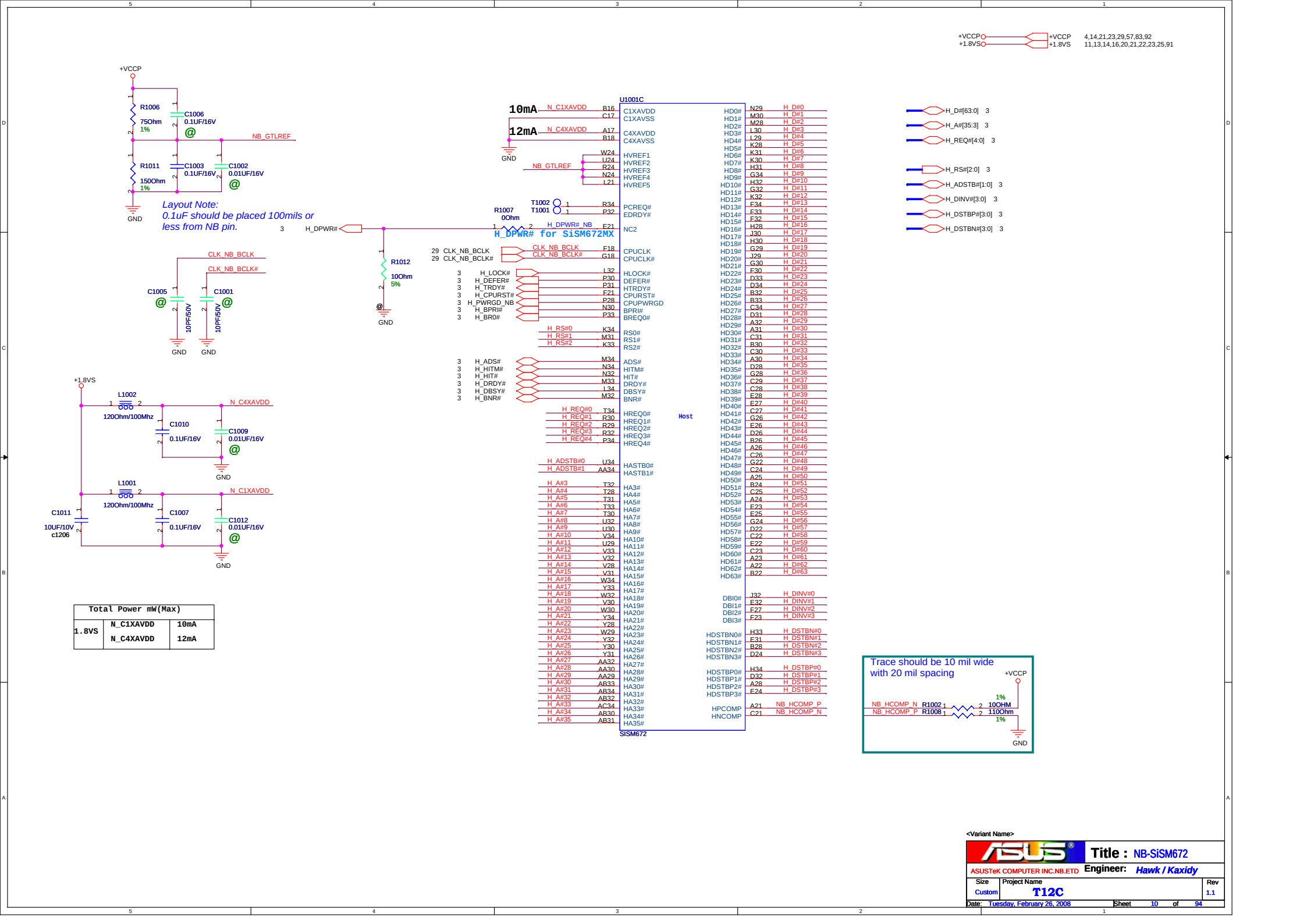
+0.9VS → +0.9VS 83,92

+1.8V → +1.8V 7,8,13,14,83,91

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

<Variant Name>

ASUSTeK COMPUTER INC ETD	Title : DDR2 TERM	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Tuesday, February 26, 2008	Sheet 9 of 94	



Total Power mW(Max)		
1.8VS	N_C1XAVDD	10mA
	N_C4XAVDD	12mA

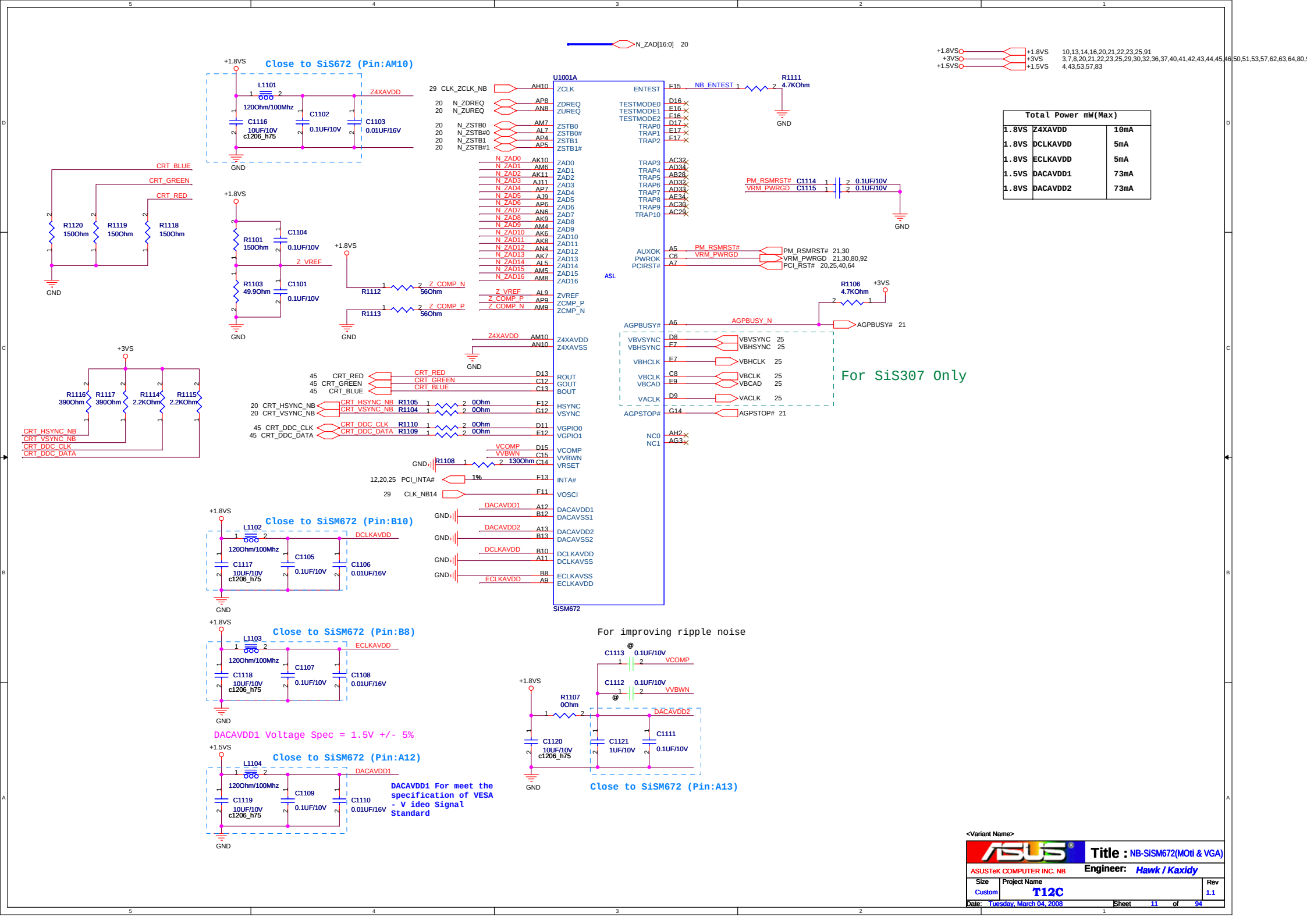
<Variant Name>

Title : NB-SiSM672

ASUSTeK COMPUTER INC.NB.ETD Engineer: Hawk / Kaxidy

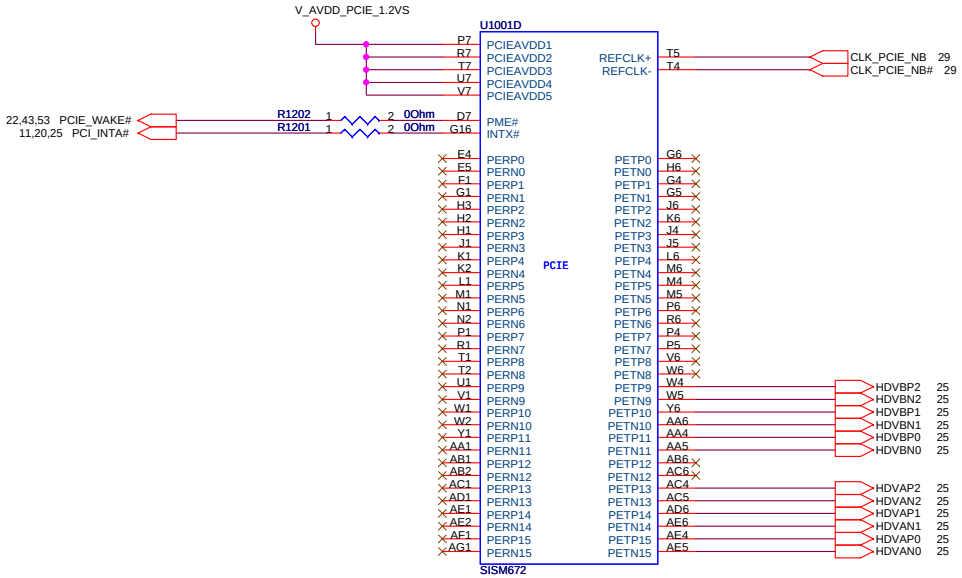
Size	Project Name	Rev
Custom	T12C	1.1

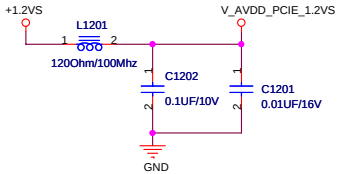
Date: Tuesday, February 26, 2008 Sheet 10 of 94


Close to SiS672 (Pin:AM10)
Close to SiSM672 (Pin:B10)
Close to SiSM672 (Pin:B8)
Close to SiSM672 (Pin:A12)
Close to SiSM672 (Pin:A13)
U1001A
SISM672
ASL
For SiS307 Only
For improving ripple noise
DACAVDD1 Voltage Spec = 1.5V +/- 5%
DACAVDD1 For meet the specification of VESA - V ideo Signal Standard
Total Power mW(Max)
1.8VS Z4XAVDD 10mA
1.8VS DCLKAVDD 5mA
1.8VS ECLKAVDD 5mA
1.5VS DACAVDD1 73mA
1.8VS DACAVDD2 73mA
Title : NB-SiSM672(MOti & VGA)
ASUSTeK COMPUTER INC. NB
Engineer: Hawk / Kaxidy
Project Name T12C
Rev 1.1
Date: Tuesday, March 04, 2008
Sheet 11 of 94

+1.2VS +1.2VS 14,83,91

Total Power mW(Max)		
1.2V	V_AVDD_PCIE_1.2V	190mA





<Variant Name>

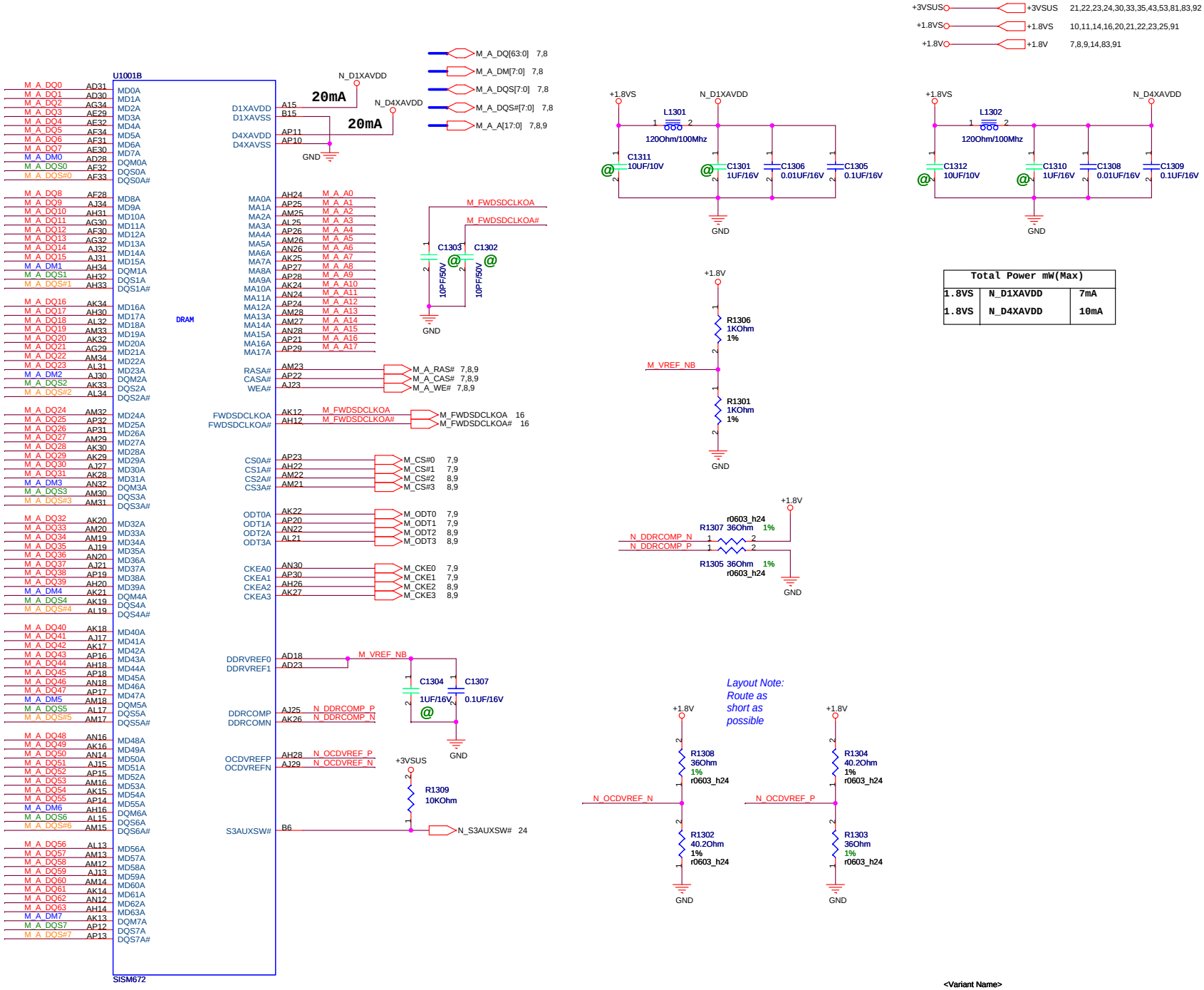
Title : NB_SiSM672(GRAPHIC)

ASUSTeK COMPUTER INC. ETD

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 Sheet 12 of 94



Total Power mW(Max)		
1.8VS	N_D1XAVDD	7mA
1.8VS	N_D4XAVDD	10mA

<Variant Name>

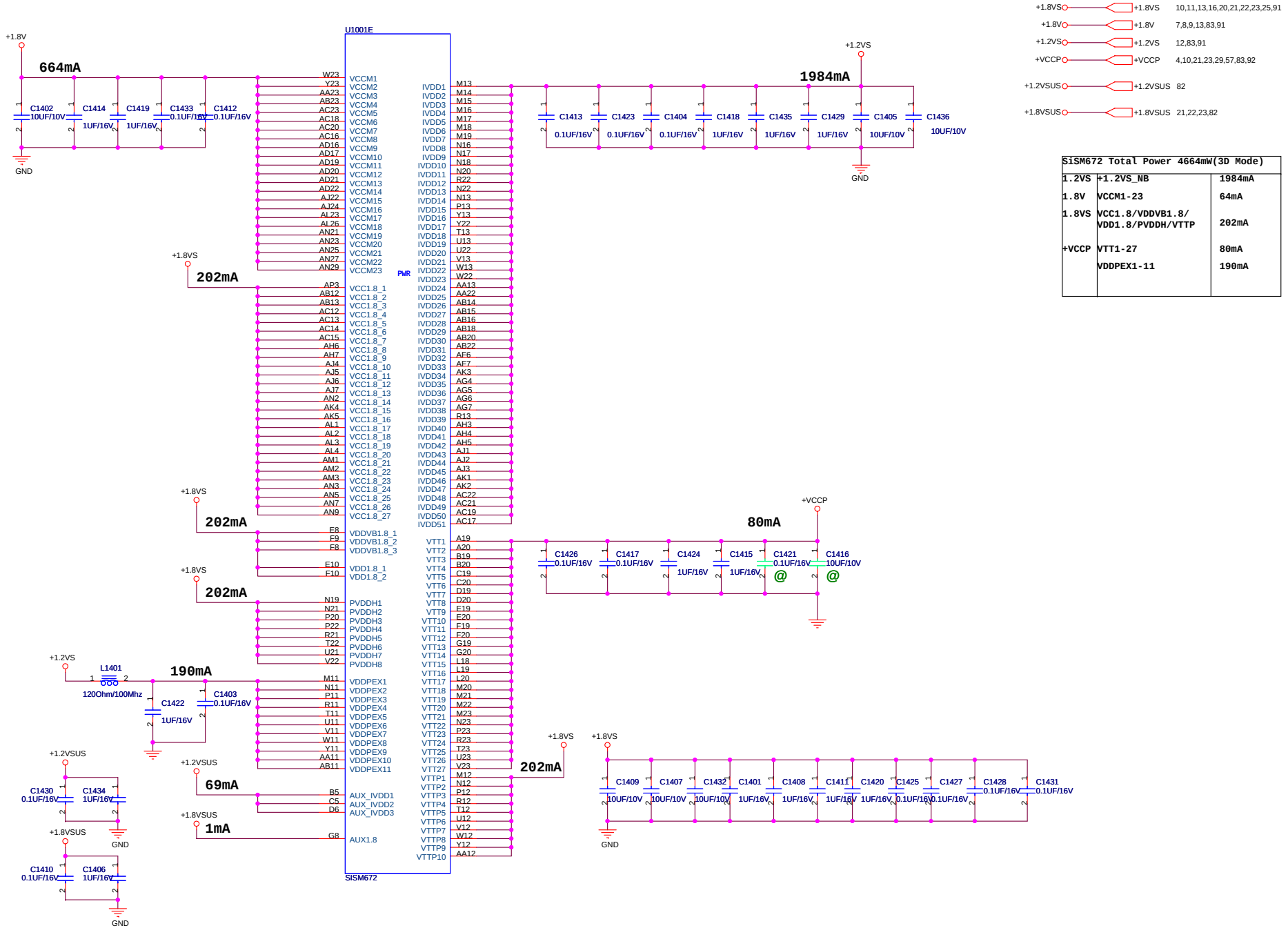
ASUSTeK COMPUTER INC. NB

Title : NB-SiSM672 (DDR2)

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 Sheet 13 of 94



+1.8VS	+1.8VS	10,11,13,16,20,21,22,23,25,91
+1.8V	+1.8V	7,8,9,13,83,91
+1.2VS	+1.2VS	12,83,91
+VCCP	+VCCP	4,10,21,23,29,57,83,92
+1.2VSUS	+1.2VSUS	82
+1.8VSUS	+1.8VSUS	21,22,23,82

SiSM672 Total Power 4664mW(3D Mode)		
1.2VS	+1.2VS_NB	1984mA
1.8V	VCCM1-23	64mA
1.8VS	VCC1.8/VDDVB1.8/ VDD1.8/PVDDH/VTTP	202mA
+VCCP	VTT1-27	80mA
	VDDPEX1-11	190mA

<Variant Name>

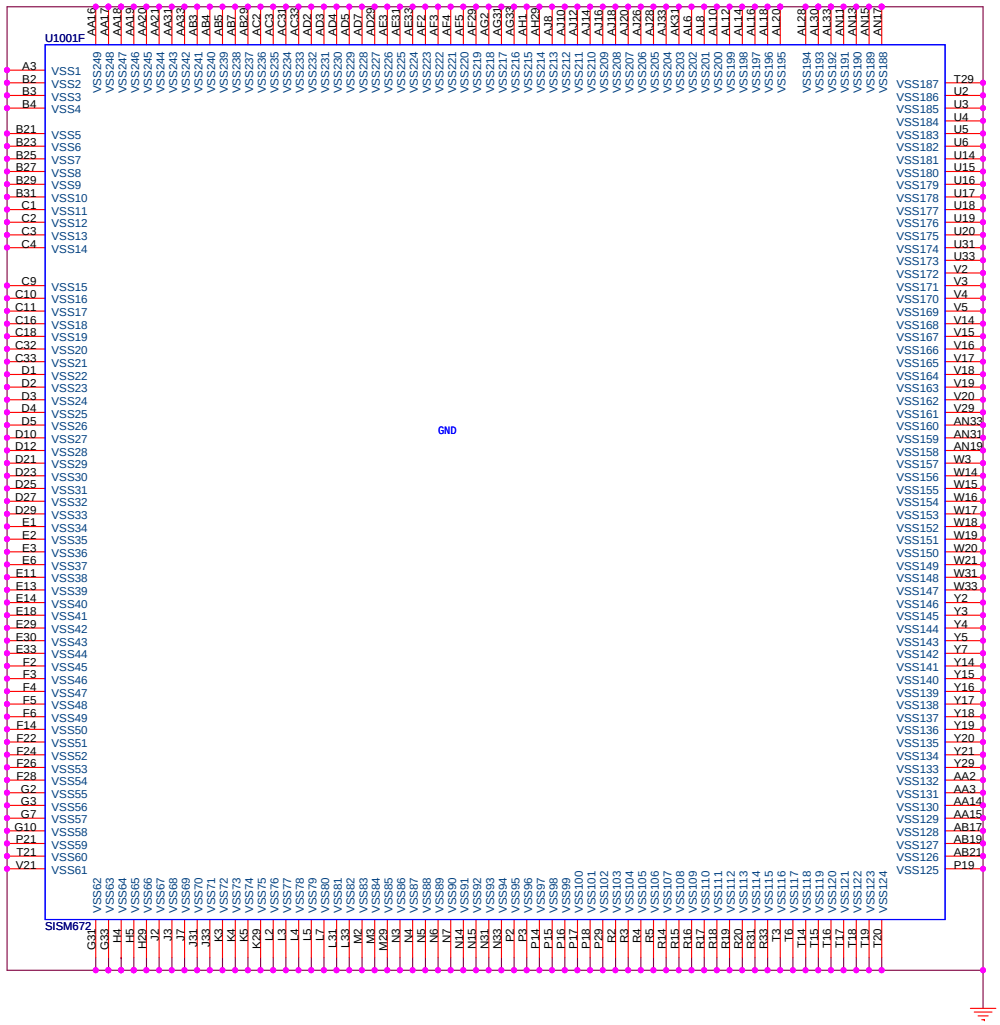
ASUSTeK COMPUTER INC. NB

Title : NB_SiS672 (PWR)

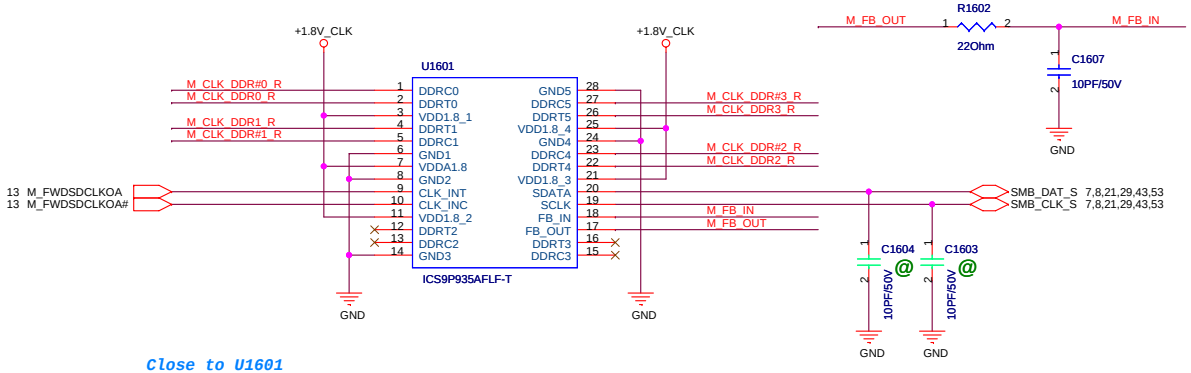
Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

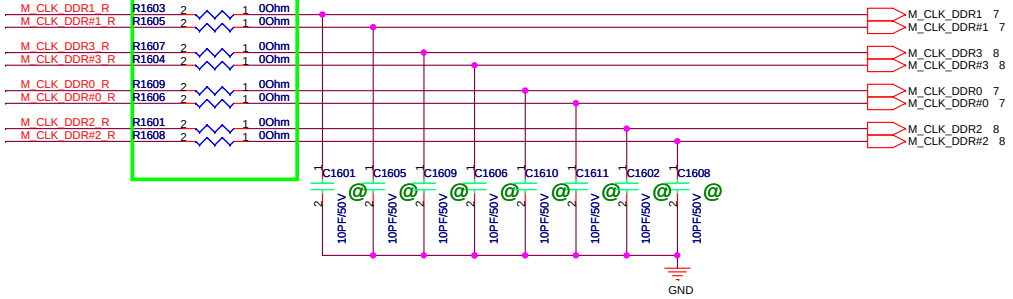
Date: Friday, August 17, 2007 Sheet 14 of 94

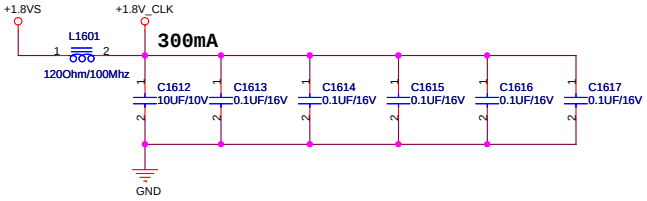

U1001F
SISM672
GND
A3 VSS1
B2 VSS2
B3 VSS3
B4 VSS4
B21 VSS5
B23 VSS6
B25 VSS7
B27 VSS8
B29 VSS9
B31 VSS10
C1 VSS11
C2 VSS12
C3 VSS13
C4 VSS14
C9 VSS15
C10 VSS16
C11 VSS17
C16 VSS18
C18 VSS19
C32 VSS20
C33 VSS21
D1 VSS22
D2 VSS23
D3 VSS24
D4 VSS25
D5 VSS26
D10 VSS27
D12 VSS28
D21 VSS29
D23 VSS30
D25 VSS31
D27 VSS32
D29 VSS33
E1 VSS34
E2 VSS35
E3 VSS36
E6 VSS37
E11 VSS38
E13 VSS39
E14 VSS40
E18 VSS41
E29 VSS42
E30 VSS43
E33 VSS44
F2 VSS45
F3 VSS46
F4 VSS47
F5 VSS48
F6 VSS49
F14 VSS50
F22 VSS51
F24 VSS52
F26 VSS53
F28 VSS54
G2 VSS55
G3 VSS56
G7 VSS57
G10 VSS58
P21 VSS59
T21 VSS60
V21 VSS61
VSS62 G31
VSS63 G33
VSS64 H4
VSS65 H5
VSS66 H23
VSS67 J2
VSS68 J3
VSS69 J7
VSS70 J31
VSS71 J33
VSS72 K3
VSS73 K4
VSS74 K5
VSS75 K29
VSS76 L2
VSS77 L3
VSS78 L4
VSS79 L5
VSS80 L7
VSS81 L31
VSS82 L33
VSS83 M2
VSS84 M3
VSS85 M29
VSS86 N3
VSS87 N4
VSS88 N5
VSS89 N6
VSS90 N7
VSS91 N14
VSS92 N15
VSS93 N31
VSS94 N33
VSS95 P2
VSS96 P3
VSS97 P14
VSS98 P15
VSS99 P16
VSS100 P17
VSS101 P18
VSS102 P29
VSS103 R2
VSS104 R3
VSS105 R4
VSS106 R5
VSS107 R14
VSS108 R15
VSS109 R16
VSS110 R17
VSS111 R18
VSS112 R19
VSS113 R20
VSS114 R31
VSS115 R33
VSS116 T3
VSS117 T6
VSS118 T14
VSS119 T15
VSS120 T16
VSS121 T17
VSS122 T18
VSS123 T19
VSS124 T20
VSS125 P19
VSS126 AB21
VSS127 AB19
VSS128 AB17
VSS129 AA15
VSS130 AA14
VSS131 AA3
VSS132 AA2
VSS133 Y29
VSS134 Y21
VSS135 Y20
VSS136 Y19
VSS137 Y18
VSS138 Y17
VSS139 Y16
VSS140 Y15
VSS141 Y14
VSS142 Y7
VSS143 Y5
VSS144 Y4
VSS145 Y3
VSS146 Y2
VSS147 W33
VSS148 W31
VSS149 W21
VSS150 W20
VSS151 W19
VSS152 W18
VSS153 W17
VSS154 W16
VSS155 W15
VSS156 W14
VSS157 W3
VSS158 AN19
VSS159 AN31
VSS160 AN33
VSS161 V29
VSS162 V20
VSS163 V19
VSS164 V18
VSS165 V17
VSS166 V16
VSS167 V15
VSS168 V14
VSS169 V5
VSS170 V4
VSS171 V3
VSS172 V2
VSS173 U33
VSS174 U31
VSS175 U20
VSS176 U19
VSS177 U18
VSS178 U17
VSS179 U16
VSS180 U15
VSS181 U14
VSS182 U6
VSS183 U5
VSS184 U4
VSS185 U3
VSS186 U2
VSS187 T29
VSS188 AN17
VSS189 AN15
VSS190 AN13
VSS191 AN11
VSS192 AL13
VSS193 AL30
VSS194 AL28
VSS195 AL20
VSS196 AL18
VSS197 AL16
VSS198 AL14
VSS199 AL12
VSS200 AL10
VSS201 AL8
VSS202 AL6
VSS203 AK31
VSS204 AJ33
VSS205 AJ28
VSS206 AJ26
VSS207 AJ20
VSS208 AJ18
VSS209 AJ16
VSS210 AJ14
VSS211 AJ12
VSS212 AJ10
VSS213 AJ8
VSS214 AJ6
VSS215 AH29
VSS216 AH1
VSS217 AG33
VSS218 AG31
VSS219 AG2
VSS220 AF29
VSS221 AF5
VSS222 AF4
VSS223 AF3
VSS224 AE31
VSS225 AE33
VSS226 AE3
VSS227 AD29
VSS228 AD7
VSS229 AD6
VSS230 AD5
VSS231 AD4
VSS232 AD3
VSS233 AC33
VSS234 AC31
VSS235 AC3
VSS236 AC2
VSS237 AB29
VSS238 AB7
VSS239 AB6
VSS240 AB5
VSS241 AB4
VSS242 AB3
VSS243 AA33
VSS244 AA31
VSS245 AA21
VSS246 AA20
VSS247 AA19
VSS248 AA18
VSS249 AA17
AA16

+1.8VS +1.8VS 10,11,13,14,20,21,22,23,25,91



Close to U1601





<Variant Name>

Title : CLK_DDR-BUFFER

ASUSTeK COMPUTER INC. NB

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 Sheet 16 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC.NB

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
B	T12C	1.1

Date: Monday, August 13, 2007

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC .NB

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 18 of 94

<Variant Name>

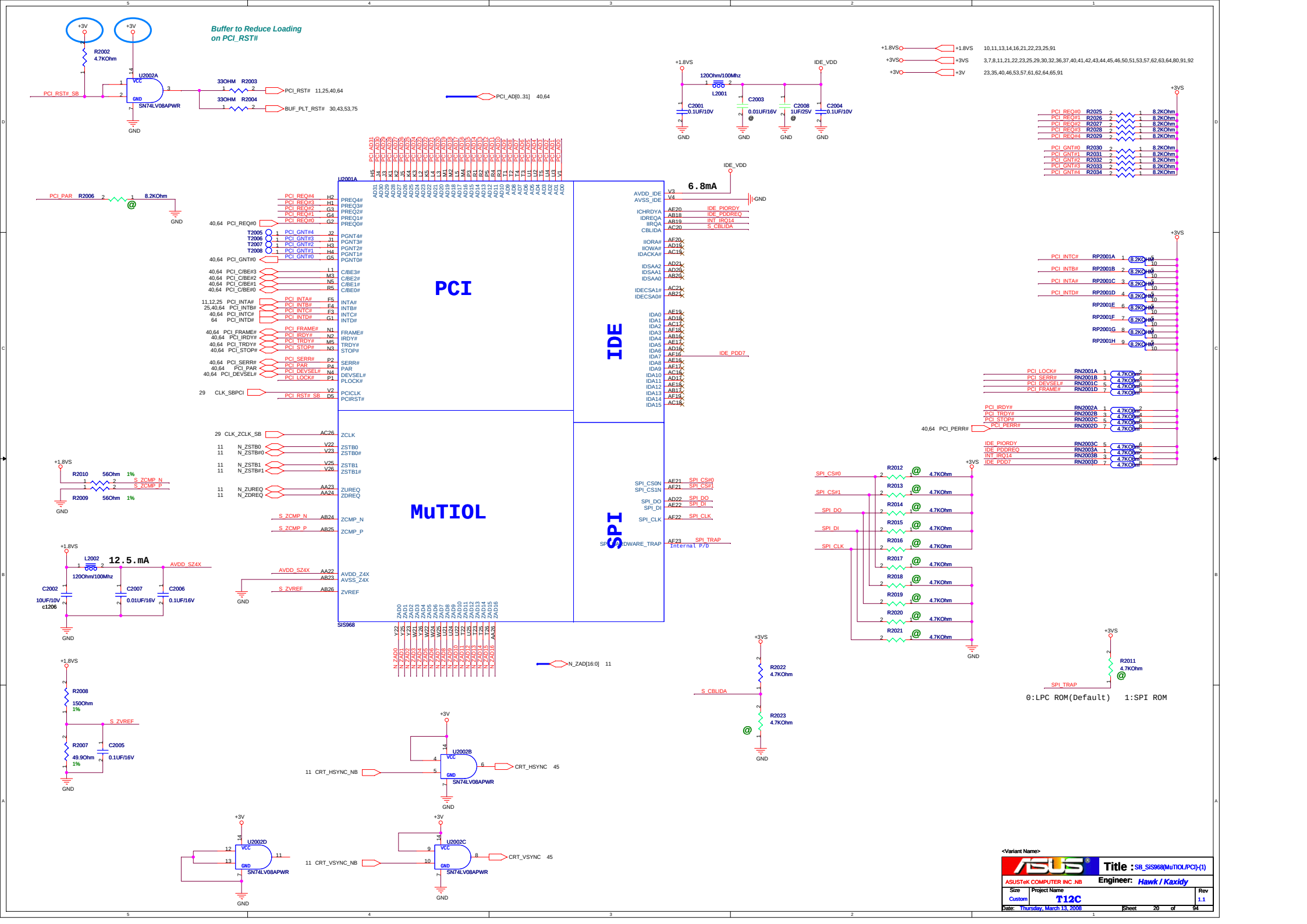
Title : NULL

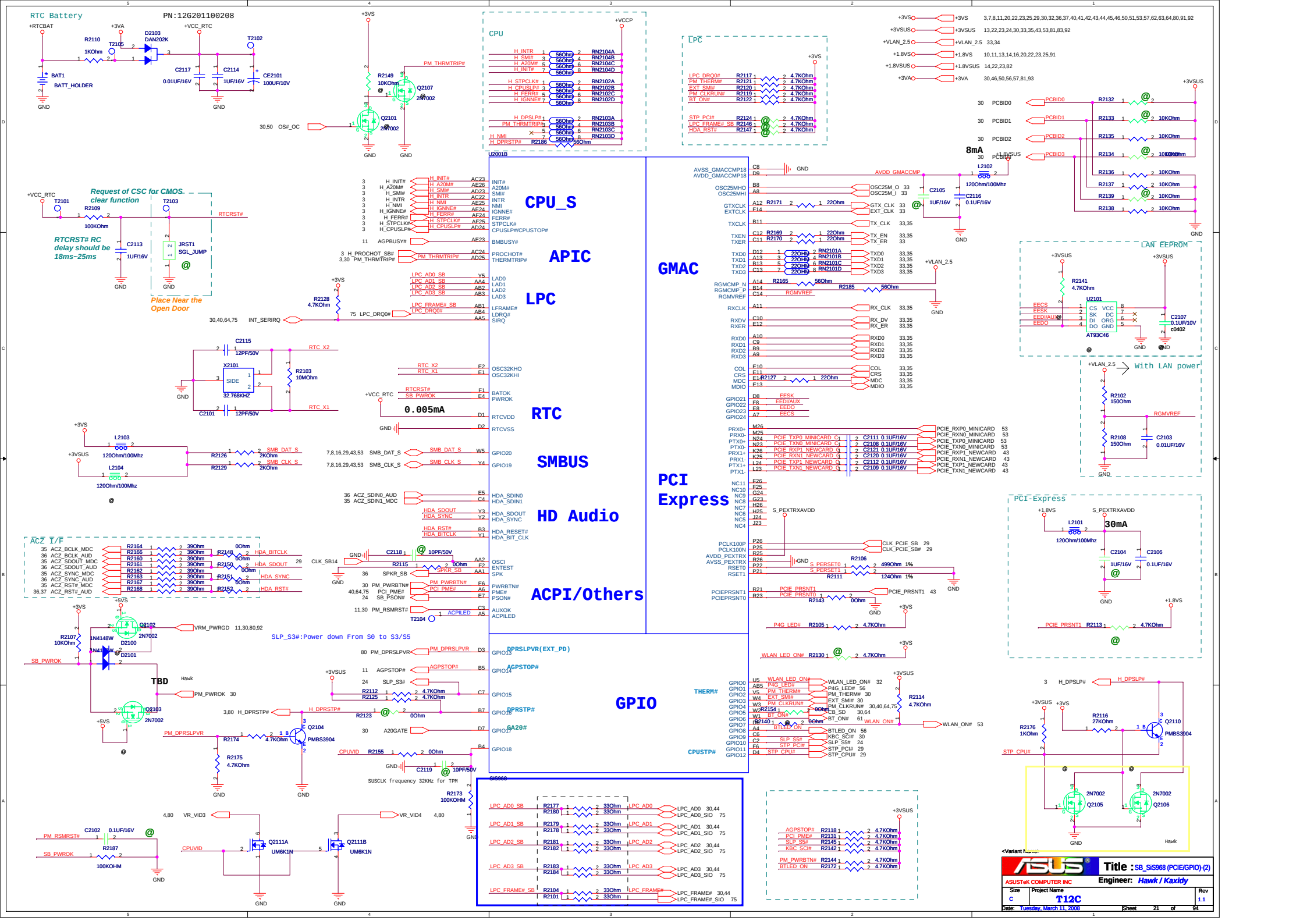
ASUSTeK COMPUTER INC .NB

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 19 of 94


Buffer to Reduce Loading on PCI_RST#
PCI
IDE
SPI
MuTIOL
SiS968
U2001A
6.8mA
12.5.mA
0:LPC ROM(Default) 1:SPI ROM
<Variant Name>
Title : SB_SiS968(MuTIOL/PCI)-(1)
ASUSTeK COMPUTER INC .NB
Engineer: Hawk / Kaxidy
Size: Custom
Project Name: T12C
Rev: 1.1
Date: Thursday, March 13, 2008
Sheet 20 of 94


RTC Battery
PN:12G201100208
CPU
LPC
CPU_S
APIC
LPC
GMAC
RTC
SMBUS
PCI Express
HD Audio
ACPI/Others
GPIO
SIS968
ACZ I/F
LAN EEPROM
With LAN power
PCI-Express
Request of CSC for CMOS clear function
RTCRST# RC delay should be 18ms~25ms
Place Near the Open Door
SLP_S3#:Power down From S0 to S3/S5
TBD
Hawk
0.005mA
8mA
30mA
SUSCLK frequency 32Khz for TPM
Title : SB_SiS968 (PCIE/GPIO)-(2)
ASUSTeK COMPUTER INC.
Engineer: Hawk / Kaxidy
Size C
Project Name T12C
Rev 1.1
Date: Tuesday, March 11, 2008
Sheet 21 of 94

USB 0	CCD
USB 1	Finger Printer
USB 2	USB Conn.
USB 3	USB Conn.
USB 4	USB Conn.
USB 5	Bluetooth
USB 6	Newcard
USB 7	USB Conn.

U2001C

USB

SATA

SIS968

+3VSUS 13,21,23,24,30,33,35,43,53,81,83,92

+3VS 3,7,8,11,20,21,23,25,29,30,32,36,37,40,41,42,43,44,45,46,50,51,53,57,62,63,64,80,91,92

+1.8VS 10,11,13,14,16,20,21,23,25,91

+1.8VSUS 14,21,23,82

placed near SB

<Variant Name>

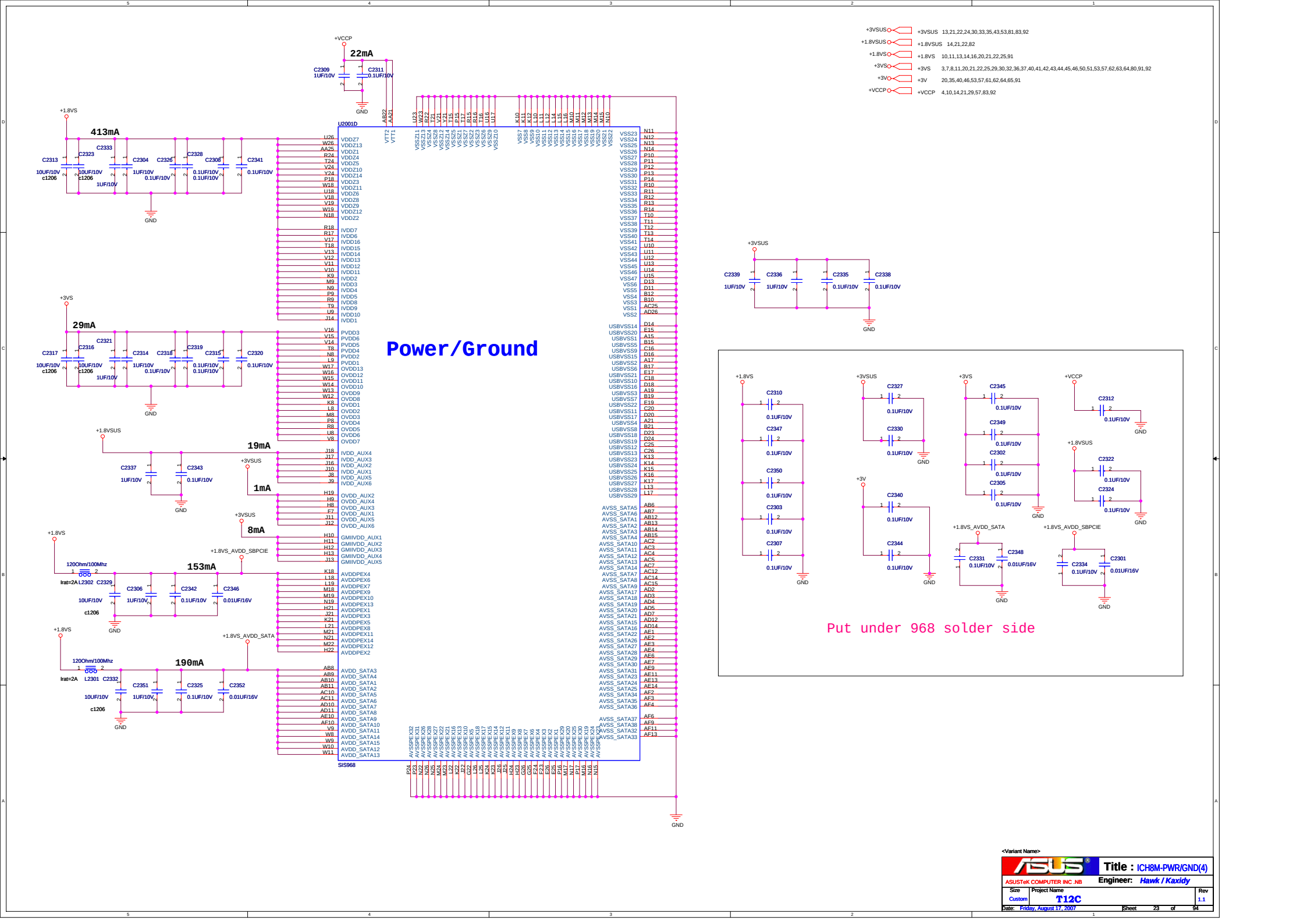
Title : SiS968(SATA/USB)

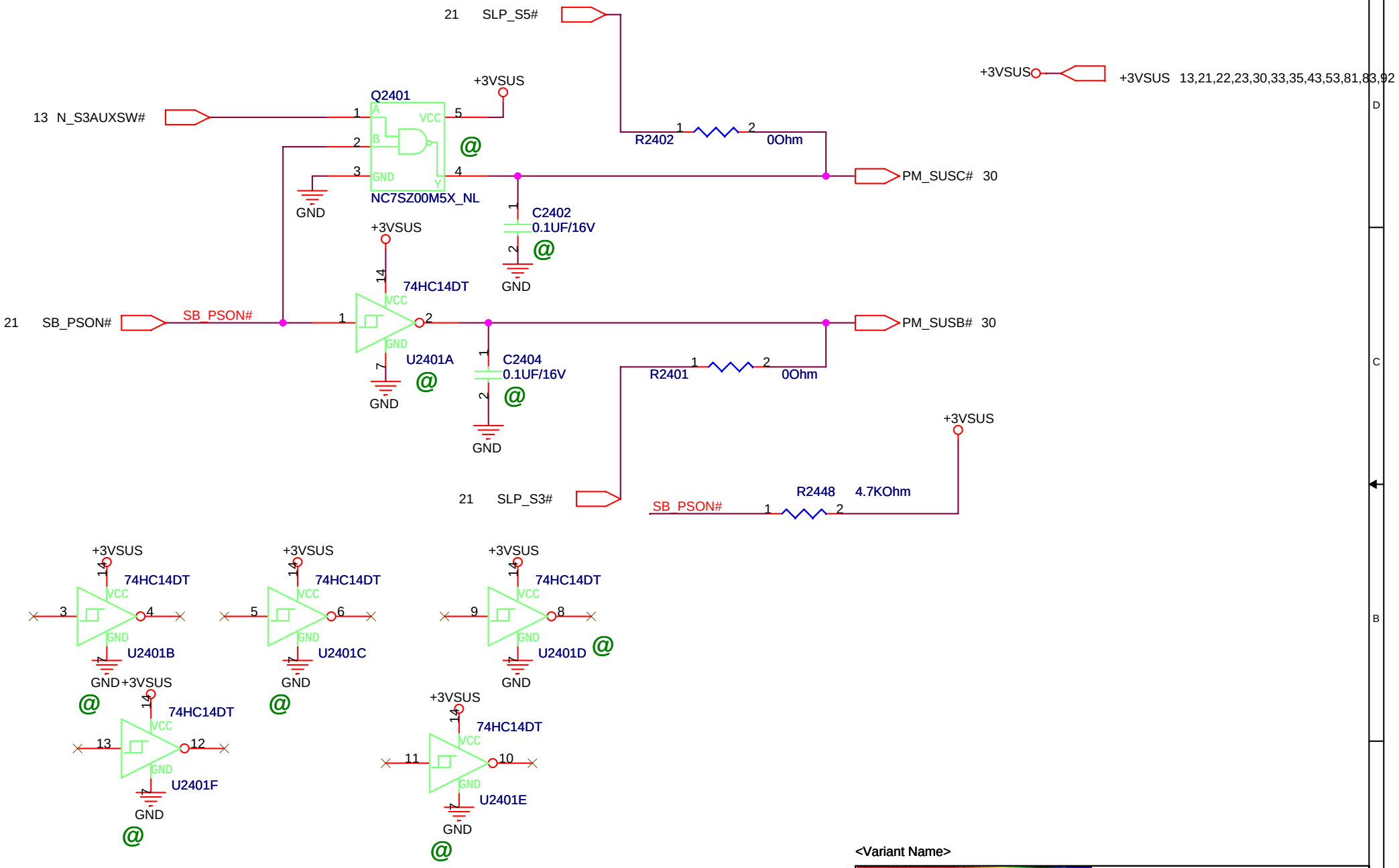
ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size: Custom | Project Name: T12C | Rev: 1.1

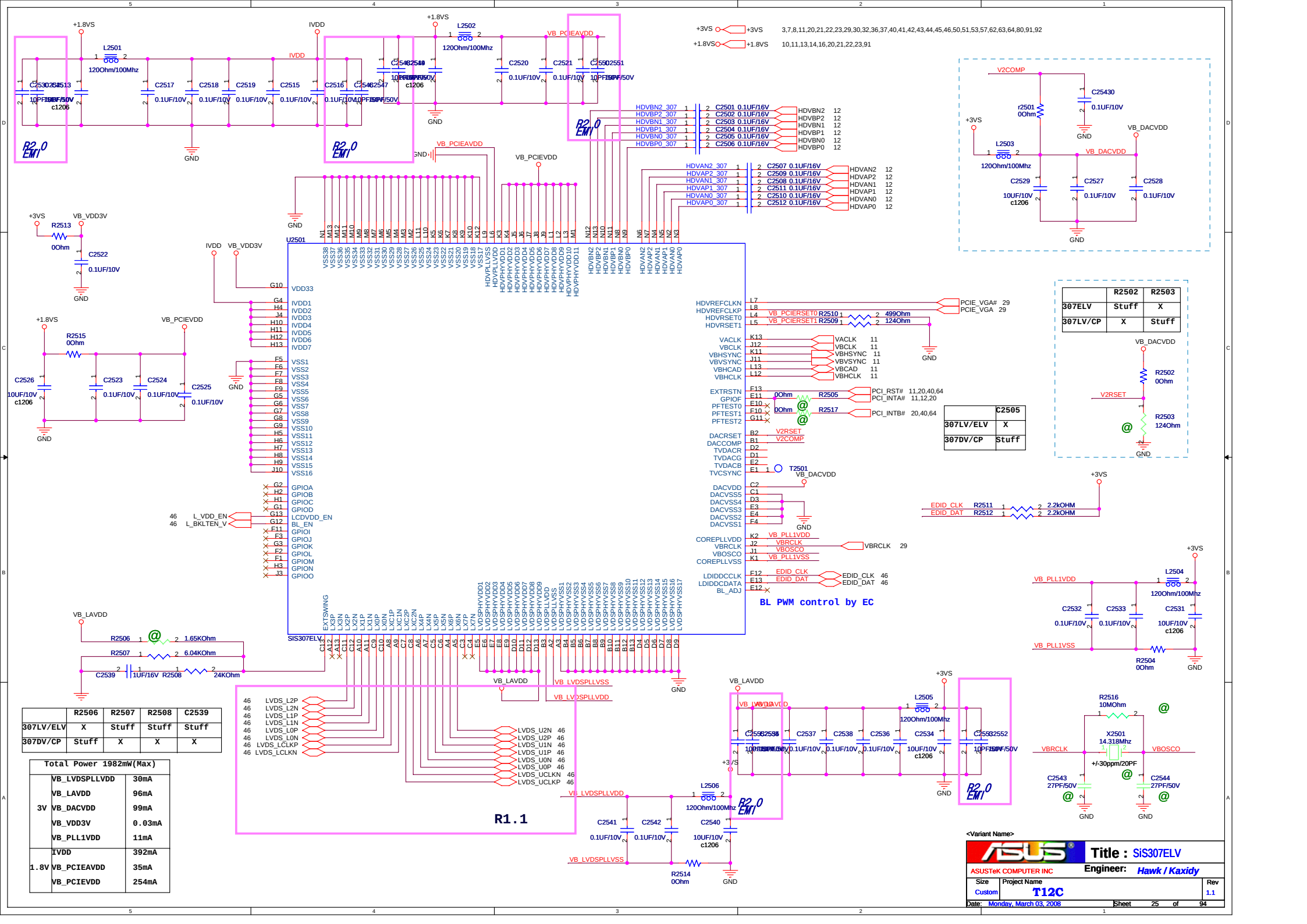
Date: Monday, March 03, 2008 | Sheet 22 of 94


+3VSUS +3VSUS 13,21,22,24,30,33,35,43,53,81,83,92
+1.8VSUS +1.8VSUS 14,21,22,82
+1.8VS +1.8VS 10,11,13,14,16,20,21,22,25,91
+3VS +3VS 3,7,8,11,20,21,22,25,29,30,32,36,37,40,41,42,43,44,45,46,50,51,53,57,62,63,64,80,91,92
+3V +3V 20,35,40,46,53,57,61,62,64,65,91
+VCCP +VCCP 4,10,14,21,29,57,83,92
+VCCP
22mA
C2309 1UF/10V
C2311 0.1UF/10V
GND
U2001D
+1.8VS
413mA
C2313 10UF/10V c1206
C2323 10UF/10V c1206
C2333 1UF/10V
C2304 1UF/10V
C2326 0.1UF/10V
C2328 0.1UF/10V
C2308 0.1UF/10V
C2341 0.1UF/10V
GND
+3VS
29mA
C2317 10UF/10V c1206
C2316 10UF/10V c1206
C2321 1UF/10V
C2314 1UF/10V
C2318 0.1UF/10V
C2319 0.1UF/10V
C2315 0.1UF/10V
C2320 0.1UF/10V
GND
+1.8VSUS
19mA
C2337 1UF/10V
C2343 0.1UF/10V
GND
+3VSUS
1mA
+3VSUS
8mA
+1.8VS
120Ohm/100Mhz
Irat=2A L2302
153mA
C2329
C2306 10UF/10V c1206
C2342 1UF/10V
C2346 0.1UF/10V
0.01UF/16V
GND
+1.8VS_AVDD_SBPCIE
+1.8VS
120Ohm/100Mhz
Irat=2A L2301
190mA
C2332
C2351 10UF/10V c1206
C2325 1UF/10V
C2352 0.1UF/10V
0.01UF/16V
GND
+1.8VS_AVDD_SATA
Power/Ground
SIS968
+3VSUS
C2339 1UF/10V
C2336 1UF/10V
C2335 0.1UF/10V
C2338 0.1UF/10V
GND
+1.8VS
C2310 0.1UF/10V
C2347 0.1UF/10V
C2350 0.1UF/10V
C2303 0.1UF/10V
C2307 0.1UF/10V
GND
+3VSUS
C2327 0.1UF/10V
C2330 0.1UF/10V
GND
+3V
C2340 0.1UF/10V
C2344 0.1UF/10V
GND
+3VS
C2345 0.1UF/10V
C2349 0.1UF/10V
C2302 0.1UF/10V
C2305 0.1UF/10V
GND
+1.8VS_AVDD_SATA
C2331 0.1UF/10V
C2348 0.01UF/16V
GND
+VCCP
C2312 0.1UF/10V
GND
+1.8VSUS
C2322 0.1UF/10V
C2324 0.1UF/10V
GND
+1.8VS_AVDD_SBPCIE
C2334 0.1UF/10V
C2301 0.01UF/16V
GND
Put under 968 solder side
<Variant Name>
Title : ICH8M-PWR/GND(4)
ASUSTeK COMPUTER INC.,NB
Engineer: Hawk / Kaxidy
Size Custom
Project Name T12C
Rev 1.1
Date: Friday, August 17, 2007
Sheet 23 of 94



<Variant Name>

ASUSTeK COMPUTER INC	Title : SiS968 (STRAPING)	
	Engineer: Hawk / Kaxidy	
Size: A	Project Name: T12C	Rev: 1.1
Date: Friday, August 17, 2007	Sheet 24 of 94	


+1.8VS
IVDD
L2501
120Ohm/100Mhz
L2502
VB_PCIEAVDD
+3VS
+1.8VS
3,7,8,11,20,21,22,23,29,30,32,36,37,40,41,42,43,44,45,46,50,51,53,57,62,63,64,80,91,92
10,11,13,14,16,20,21,22,23,91
V2COMP
C25430
0.1UF/10V
r2501
0Ohm
L2503
120Ohm/100Mhz
VB_DACVDD
C2529
C2527
C2528
10UF/10V
c1206
0.1UF/10V
GND
HDVBN2_307
HDVBP2_307
HDVBN1_307
HDVBP1_307
HDVBN0_307
HDVBP0_307
C2501 0.1UF/16V
C2502 0.1UF/16V
C2503 0.1UF/16V
C2504 0.1UF/16V
C2505 0.1UF/16V
C2506 0.1UF/16V
HDVBN2
HDVBP2
HDVBN1
HDVBP1
HDVBN0
HDVBP0
HDVAN2_307
HDVAP2_307
HDVAN1_307
HDVAP1_307
HDVAN0_307
HDVAP0_307
C2507 0.1UF/16V
C2509 0.1UF/16V
C2508 0.1UF/16V
C2511 0.1UF/16V
C2510 0.1UF/16V
C2512 0.1UF/16V
HDVAN2
HDVAP2
HDVAN1
HDVAP1
HDVAN0
HDVAP0
VB_PCIEVDD
VB_VDD3V
R2513
0Ohm
C2522
0.1UF/10V
U2501
VDD33
IVDD1
IVDD2
IVDD3
IVDD4
IVDD5
IVDD6
IVDD7
VSS1
VSS2
VSS3
VSS4
VSS5
VSS6
VSS7
VSS8
VSS9
VSS10
VSS11
VSS12
VSS13
VSS14
VSS15
VSS16
GPIOA
GPIOB
GPIOC
GPIOD
LCDVDD_EN
BL_EN
GPIOI
GPIOJ
GPIOK
GPIOL
GPIOM
GPION
GPIOO
L_VDD_EN
L_BKLTEN_V
SIS307ELV
R2515
0Ohm
C2526
C2523
C2524
C2525
10UF/10V
c1206
0.1UF/10V
HDVREFCLKN
HDVREFCLKP
HDVRSET0
HDVRSET1
R2510 499Ohm
R2509 124Ohm
PCIE_VGA# 29
PCIE_VGA 29
VACLK
VBCLK
VBHSYNC
VBVSYNC
VBHCAD
VBHCLK
EXTRSTN
GPIOF
PFTEST0
PFTEST1
PFTEST2
R2505 0Ohm
R2517 0Ohm
PCI_RST# 11,20,40,64
PCI_INTA# 11,12,20
PCI_INTB# 20,40,64
DACRSET
DACCOMP
TVDACR
TVDACG
TVDACB
TVCSYNC
V2RSET
V2COMP
T2501
DACVDD
DACVSS5
DACVSS4
DACVSS3
DACVSS2
DACVSS1
COREPLLVDD
VBRCLK
VBOSCO
COREPLLVSS
VB_PLL1VDD
VB_PLL1VSS
LDIDDCCLK
LDIDDCDATA
BL_ADJ
EDID_CLK
EDID_DAT
EDID_CLK 46
EDID_DAT 46
VBRCLK 29
BL PWM control by EC
R2502 0Ohm
R2503 124Ohm
C2505
307LV/ELV X
307DV/CP Stuff
R2502 R2503
307ELV Stuff X
307LV/CP X Stuff
R2511 2.2kOHM
R2512 2.2kOHM
EDID_CLK
EDID_DAT
VB_LAVDD
R2506 1.65KOhm
R2507 6.04KOhm
C2539 1UF/16V
R2508 24KOhm
EXTSWING
LVDS_L2P
LVDS_L2N
LVDS_L1P
LVDS_L1N
LVDS_L0P
LVDS_L0N
LVDS_LCLKP
LVDS_LCLKN
LVDS_U2N
LVDS_U2P
LVDS_U1N
LVDS_U1P
LVDS_U0N
LVDS_U0P
LVDS_UCLKN
LVDS_UCLKP
VB_LVDSPLLVSS
VB_LVDSPLLVDD
R1.1
L2504
120Ohm/100Mhz
C2532
C2533
C2531
R2504 0Ohm
L2505
120Ohm/100Mhz
C2537
C2538
C2536
C2534
L2506
120Ohm/100Mhz
C2541
C2542
C2540
R2514 0Ohm
R2516 10MOhm
X2501 14.318Mhz
+/-30ppm/20PF
VBRCLK
VBOSCO
C2543 27PF/50V
C2544 27PF/50V
R2506 R2507 R2508 C2539
307LV/ELV X Stuff Stuff Stuff
307DV/CP Stuff X X X
Total Power 1982mW(Max)
3V VB_LVDSPLLVDD 30mA
VB_LAVDD 96mA
VB_DACVDD 99mA
VB_VDD3V 0.03mA
VB_PLL1VDD 11mA
1.8V IVDD 392mA
VB_PCIEAVDD 35mA
VB_PCIEVDD 254mA
<Variant Name>
ASUSTeK COMPUTER INC
Title : SiS307ELV
Engineer: Hawk / Kaxidy
Size Custom
Project Name T12C
Rev 1.1
Date: Monday, March 03, 2008
Sheet 25 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC .NB

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 26 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 27 of 94

<Variant Name>

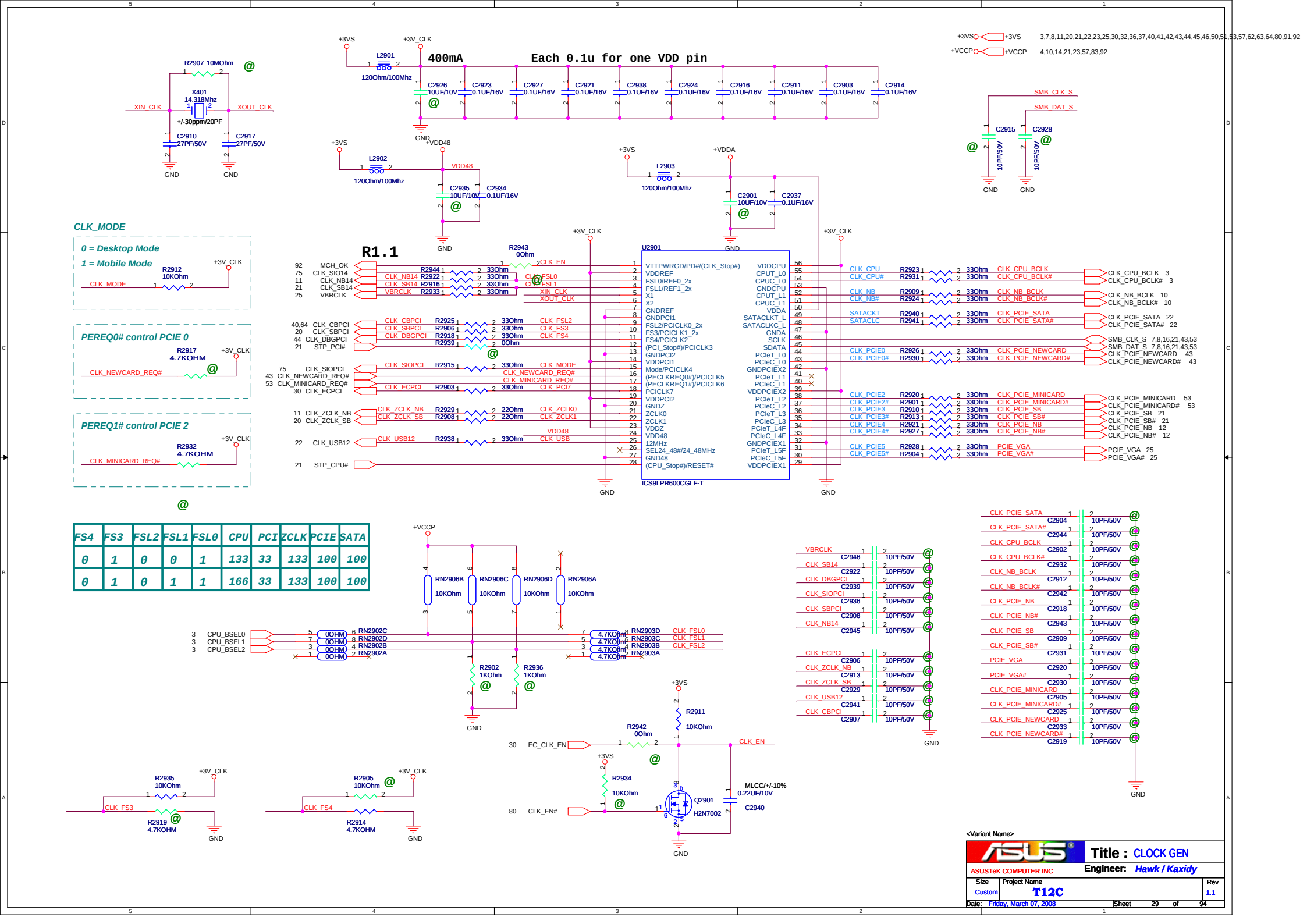
Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

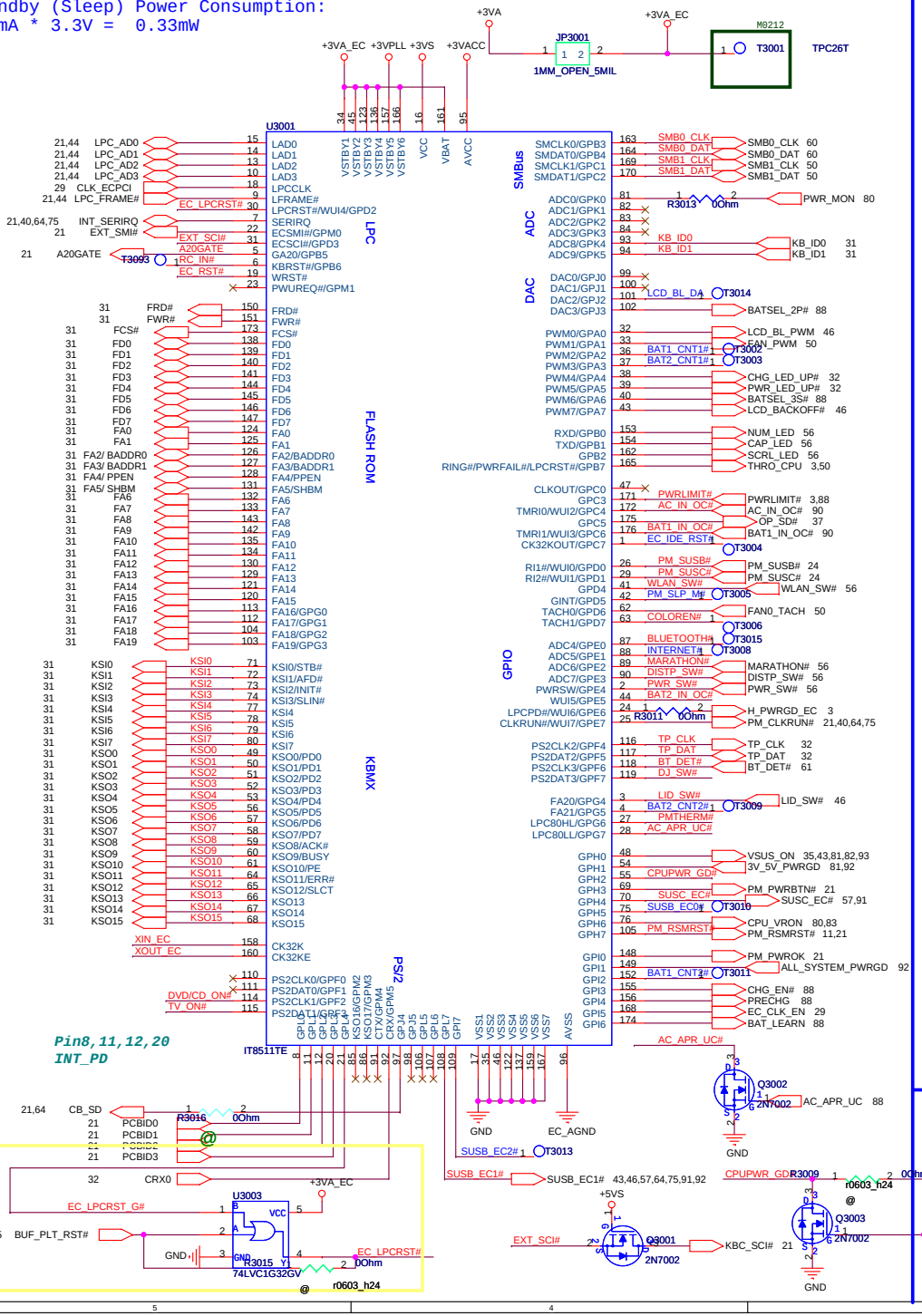
Size	Project Name	Rev
Custom	T12C	1.1

Date: Monday, August 13, 2007 Sheet 28 of 94

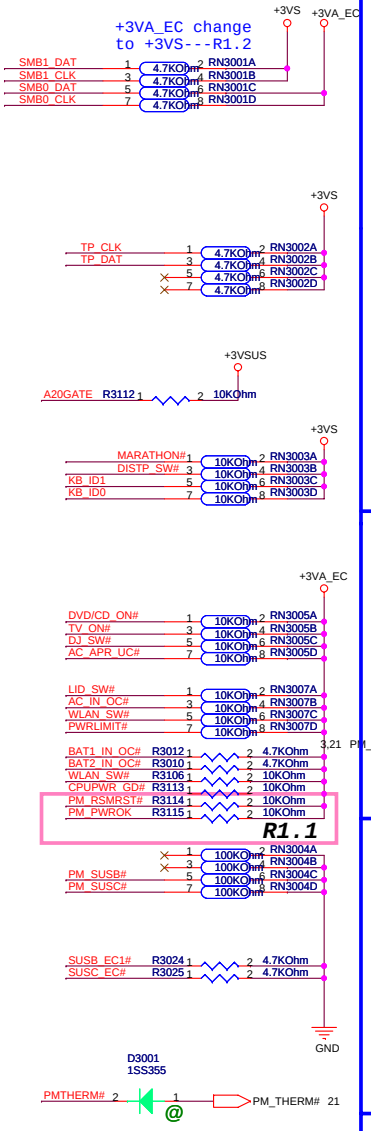

R1.1
400mA
Each 0.1u for one VDD pin
+3VS 3,7,8,11,20,21,22,23,25,30,32,36,37,40,41,42,43,44,45,46,50,51,53,57,62,63,64,80,91,92
+VCCP 4,10,14,21,23,57,83,92
CLK_MODE
0 = Desktop Mode
1 = Mobile Mode
PEREQ0# control PCIE 0
PEREQ1# control PCIE 2
U2901
ICS9LPR600CGLF-T
R2907 10MOhm
X401 14.318Mhz
+/-30ppm/20PF
XIN_CLK
XOUT_CLK
C2910 27PF/50V
C2917 27PF/50V
L2901 120Ohm/100Mhz
L2902 120Ohm/100Mhz
L2903 120Ohm/100Mhz
C2926 10UF/10V
C2923 0.1UF/16V
C2927 0.1UF/16V
C2921 0.1UF/16V
C2938 0.1UF/16V
C2924 0.1UF/16V
C2916 0.1UF/16V
C2911 0.1UF/16V
C2903 0.1UF/16V
C2914 0.1UF/16V
C2935 10UF/10V
C2934 0.1UF/16V
C2901 10UF/10V
C2937 0.1UF/16V
C2915 10PF/50V
C2928 10PF/50V
SMB_CLK_S
SMB_DAT_S
R2912 10KOhm
R2917 4.7KOHM
R2932 4.7KOHM
R2943 0Ohm
CLK_EN
MCH_OK
CLK_SIO14
CLK_NB14
CLK_SB14
VBRCLK
CLK_CBPCI
CLK_SBPCI
CLK_DBGPCI
STP_PCI#
CLK_SIOPCI
CLK_NEWCARD_REQ#
CLK_MINICARD_REQ#
CLK_ECPCI
CLK_ZCLK_NB
CLK_ZCLK_SB
CLK_USB12
STP_CPU#
CLK_CPU
CLK_NB
SATACKT
SATACLC
CLK_PCIE0
CLK_PCIE2
CLK_PCIE3
CLK_PCIE4
CLK_PCIE5
CLK_FSL0
CLK_FSL1
CLK_FSL2
CLK_MODE
CLK_PCI7
CLK_USB
R2902 1KOhm
R2936 1KOhm
RN2906B 10KOhm
RN2906C 10KOhm
RN2906D 10KOhm
RN2906A 10KOhm
RN2902C 0OHM
RN2902D 0OHM
RN2902B 0OHM
RN2902A 0OHM
RN2903D 4.7KOhm
RN2903C 4.7KOhm
RN2903B 4.7KOhm
RN2903A 4.7KOhm
CPU_BSEL0
CPU_BSEL1
CPU_BSEL2
R2911 10KOhm
R2942 0Ohm
EC_CLK_EN
R2934 10KOhm
Q2901 H2N7002
MLCC/+/-10% 0.22UF/10V
C2940
CLK_EN#
R2935 10KOhm
R2919 4.7KOHM
CLK_FS3
R2905 10KOhm
R2914 4.7KOHM
CLK_FS4
FS4 FS3 FSL2 FSL1 FSL0 CPU PCI ZCLK PCIE SATA
0 1 0 0 1 133 33 133 100 100
0 1 0 1 1 166 33 133 100 100
<Variant Name>
Title : CLOCK GEN
ASUSTeK COMPUTER INC
Engineer: Hawk / Kaxidy
Size Custom
Project Name T12C
Rev 1.1
Date: Friday, March 07, 2008
Sheet 29 of 94

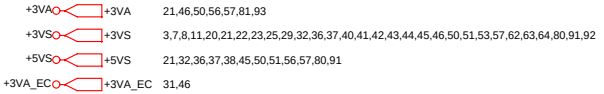
For IT8511 Core IC

Standby (Sleep) Power Consumption:
0.1mA * 3.3V = 0.33mW

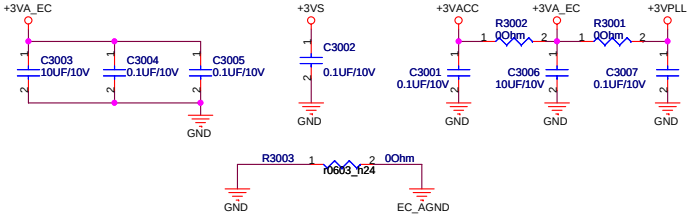


For Pull-up/Pull-down

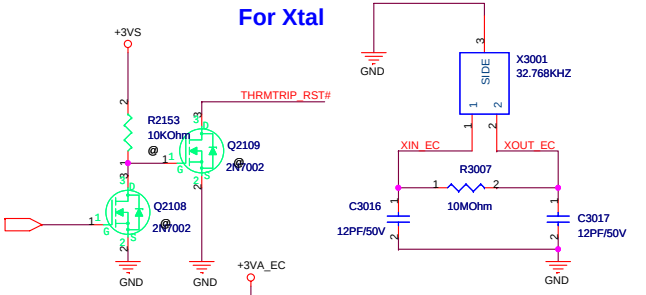




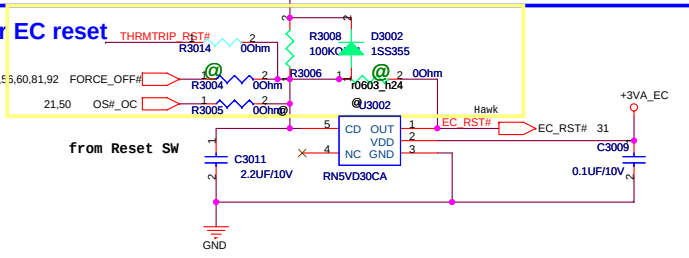
For IT8511 Power



For Xtal



For EC reset



For EC Hardware Strap

I/O Base Address	Share Memory	PP Enable
Note:	Note:	Note:
It can be programmable by EC fireware	It can be programmable by EC fireware	Default Internal Pull-Low

<Variant Name>

ASUSTeK COMPUTER INC	Title : EC-ITE8511 (2)	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Friday, March 07, 2008	Sheet 30 of 94	

EC Hardware Strap

Strap value sampled after VSTBY power up reset

+3VA_EC — +3VA_EC 30,46

PNPCFG base address set by SWCBAHR/SWCBALR

+3VA_EC
R3101 10KOhm r0402 @ — FA2/ BADDR0 — R3104 10KOhm r0402 — GND

+3VA_EC
R3108 10KOhm r0402 — FA3/ BADDR1 — R3102 10KOhm r0402 @ — GND

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.*

KSO7 C3112 … KSO15 C3119 — 33pF/50V — GND

+3VA_EC

Share Memory

R3109 10KOhm r0402 — FA5/ SHBM — R3110 10KOhm r0402 @ — GND

SHBM

No pull up:	*Disable shared memory with host BIOS*
Ext 10K up:	*Enable shared memory with host BIOS*

+3VA_EC
R3105 10KOhm r0402 @ — FA4/ PPEN — R3103 10KOhm r0402 — GND

PPEN

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

Keyboard Conn.

P/N: 12G182402806 (T12F)

J3101 — FPC_CON_28P

SIDE1 29 … SIDE2 30

KSO7 KSO0 KSI1 KSI7 KSO9 KSI6 KSI5 KSO3 KSI4 KSI2 KSO1 KSI3 KSI0 KSO13 KSO5 KSO2 KSO4 KSO8 KSO6 KSO11 KSO10 KSO12 KSO14 KSO15

KB_ID0 — KB_ID0 30

KB_ID1 — KB_ID1 30

C3110 33pF/50V — C3111 33pF/50V — GND

GND

For 8M bits SPI ROM

8M TSOP

U3102 — MX29LV800CTTC

FA1 FA2/ BADDR0 FA3/ BADDR1 FA4/ PPEN FA5/ SHBM FA6 FA7 FA8 FA9 FA10 FA11 FA12 FA13 FA14 FA15 FA16 FA17 FA18 FA19

DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15/A-1

FD0 FD1 FD2 FD3 FD4 FD5 FD6 FD7

FA0

CE# OE# WE# RESET# RY/BY# BYTE#

FCS# FRD# FWR# EC_RST#

NC0 NC1 NC2 NC3

Vcc Vss1 Vss2

+3VA_EC — C3109 1UF/10V — GND

R3111 10KOhm — GND

<Variant Name>

ASUSTeK COMPUTER INC ETD

Title : EC-ITE8511(2)

Engineer: *Hawk / Kaxidy*

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 — Sheet 31 of 94

Touchpad

+5VSUS +5VSUS 33,81

+5VS +5VS 21,30,36,37,38,45,50,51,56,57,80,91
+3VS +3VS 3,7,8,11,20,21,22,23,25,29,30,36,37,40,41,42,43,44,45,46,50,51,53,57,62,63,64,80,91,92
+5V +5V 37,46,52,56,57,65,91

12G183101506
T12

HDD LED

+3VS
R3206 10KOhm
22 SATA_LED#
D3204
DAP202K
HDD_LED#

CHARGE LED

C3202 220PF/50V
R3215 10KOhm
FOR EMI
R2.0
TPC26T
T3201
+5VSUS
CHG_LED#_R
Q3201B UM6K1N
Q3201A UM6K1N
30 CHG_LED_UP#
GND

Touchpad I/F

+5VS
+5VS_TP
+5VSUS
+5V
L3201
80Ohm/100Mhz
C3203 0.01UF/25V
C3205 0.1UF/10V
C3201 0.1UF/10V
HDD_LED#
802_LED#_R
CHG_LED#_R
PWR_LED#_R
30 CRX0
30 TP_DAT
30 TP_CLK
FPC_CON_15P
J3201
SIDE1
SIDE2

WLAN LED

+5VS
R3212 10KOhm
Q3203B UM6K1N
Q3203A UM6K1N
802_LED#_R
802_LED#_R 56
@
53 WLAN_LED#
21 WLAN_LED_ON#
0Ohm
R3202
R3217

POWER LED

+5V
R3203 10KOhm
Q3202B UM6K1N
Q3202A UM6K1N
M0212
TPC26T
T3202
30 PWR_LED_UP#
PWR_LED#_R
PWR_LED#_R 56

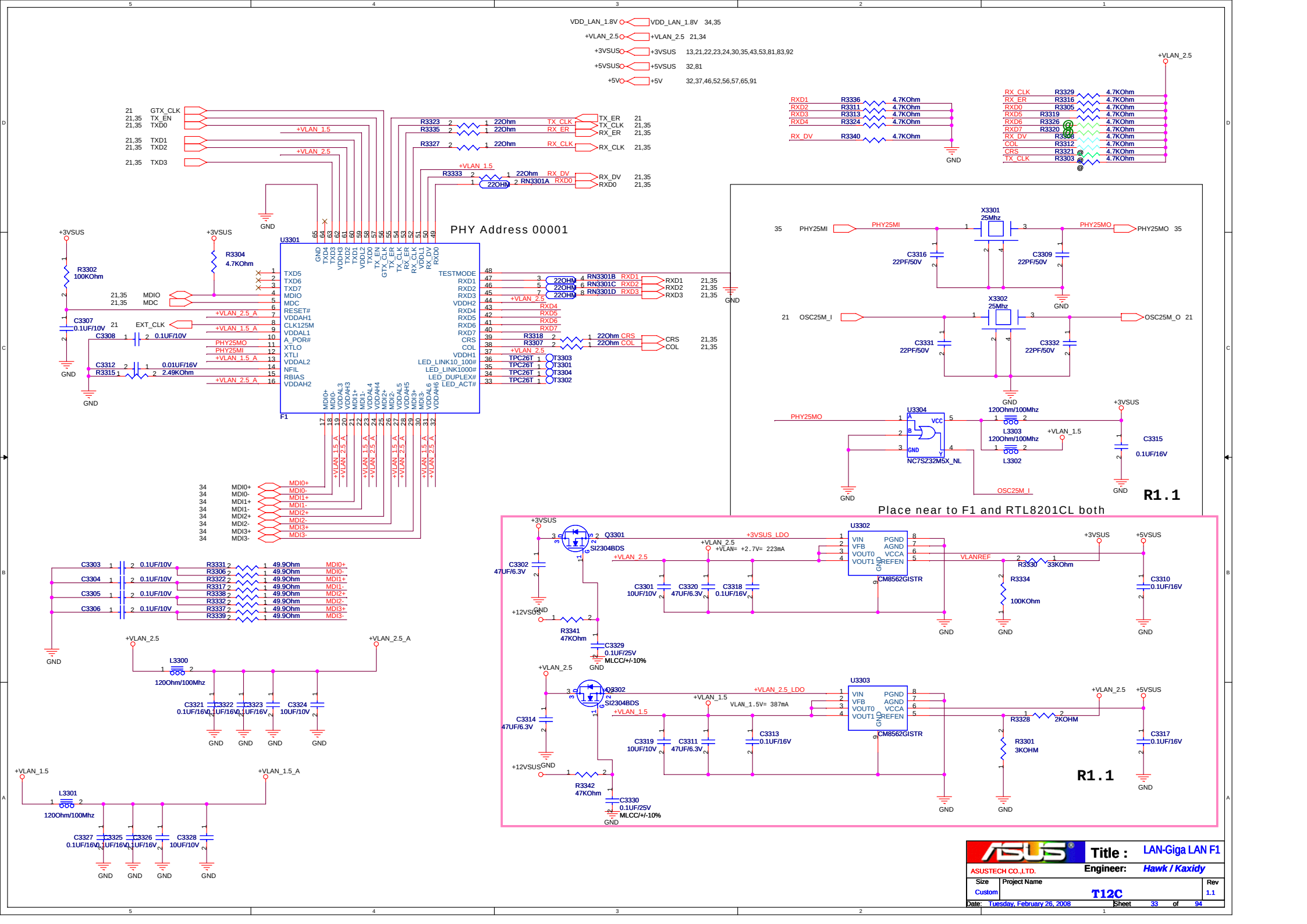
<Variant Name>

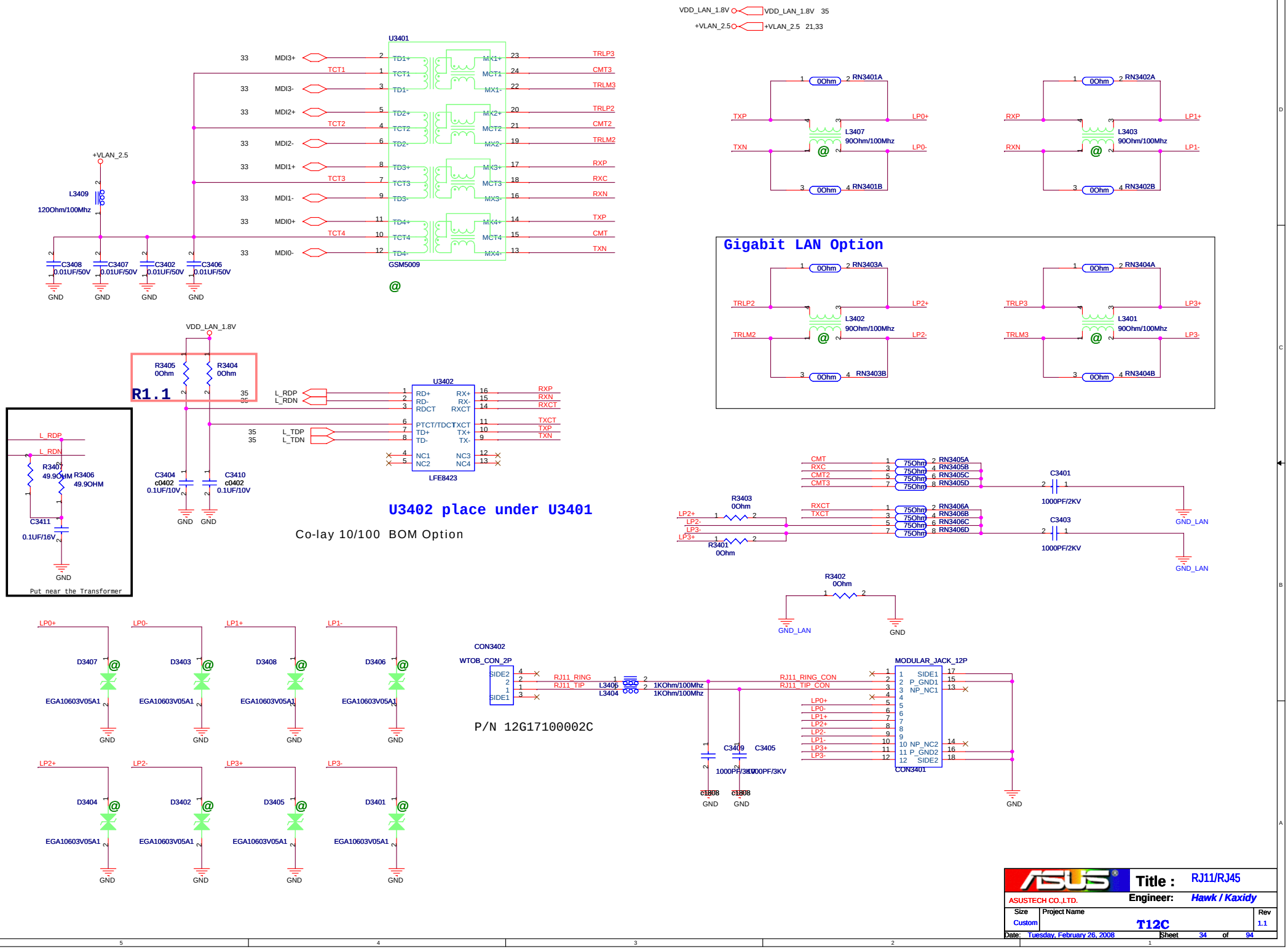
ASUSTeK COMPUTER INC

Title : TouchPad
Engineer: Hawk / Kaxidy

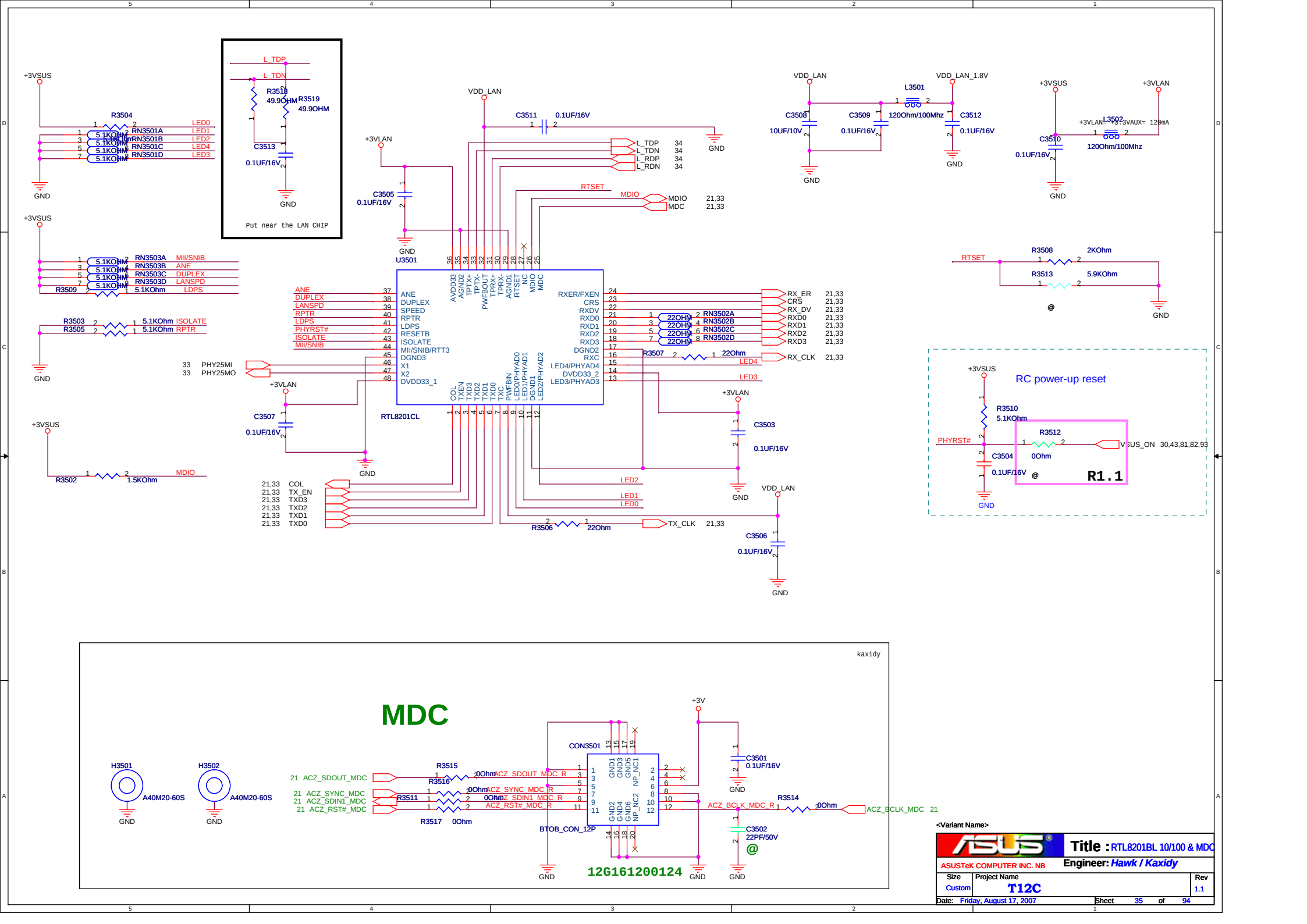
Size	Project Name	Rev
Custom	T12C	1.1

Date: Tuesday, March 04, 2008 Sheet 32 of 94


VDD_LAN_1.8V VDD_LAN_1.8V 34,35
+VLAN_2.5 +VLAN_2.5 21,34
+3VSUS +3VSUS 13,21,22,23,24,30,35,43,53,81,83,92
+5VSUS +5VSUS 32,81
+5V +5V 32,37,46,52,56,57,65,91
PHY Address 00001
U3301
F1
X3301 25Mhz
X3302 25Mhz
U3304
NC7SZ32M5X_NL
L3303 120Ohm/100Mhz
L3302
Place near to F1 and RTL8201CL both
Q3301 SI2304BDS
Q3302 SI2304BDS
U3302
U3303
CM8562GISTR
R1.1
Title : LAN-Giga LAN F1
ASUSTECH CO.,LTD.
Engineer: Hawk / Kaxidy
Size Custom
Project Name T12C
Rev 1.1
Date: Tuesday, February 26, 2008
Sheet 33 of 94



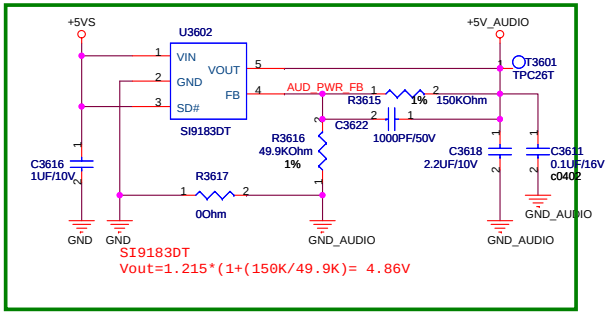
ASUSTECH CO.,LTD.	Title :	RJ11/RJ45	
	Engineer:	Hawk / Kaxidy	
Size: Custom	Project Name: T12C		Rev: 1.1
Date: Tuesday, February 26, 2008	Sheet 34 of 94		


R3504
LED0
LED1
LED2
LED4
LED3
RN3501A
RN3501B
RN3501C
RN3501D
5.1KOHM
GND
+3VSUS
L_TDP
L_TDN
R3518
R3519
49.9OHM
C3513
0.1UF/16V
Put near the LAN CHIP
VDD_LAN
C3511
0.1UF/16V
+3VLAN
C3505
0.1UF/16V
U3501
RTL8201CL
RTSET
MDIO
MDC
L_TDP 34
L_TDN 34
L_RDP 34
L_RDN 34
MDIO 21,33
MDC 21,33
ANE
DUPLEX
SPEED
RPTR
LDPS
RESETB
ISOLATE
MII/SNIB/RTT3
DGND3
X1
X2
DVDD33_1
RXER/FXEN
CRS
RXDV
RXD0
RXD1
RXD2
RXD3
DGND2
RXC
LED4/PHYAD4
DVDD33_2
LED3/PHYAD3
RX_ER 21,33
CRS 21,33
RX_DV 21,33
RXD0 21,33
RXD1 21,33
RXD2 21,33
RXD3 21,33
RX_CLK 21,33
RN3502A
RN3502B
RN3502C
RN3502D
22OHM
R3507
22Ohm
LED4
LED3
LED2
LED1
LED0
COL
TXEN
TXD3
TXD2
TXD1
TXD0
TXC
PWFBIN
LED0/PHYAD0
LED1/PHYAD1
DGND1
LED2/PHYAD2
AVDD33
AGND2
TPTX+
TPTX-
PWFBOUT
TPRX+
TPRX-
AGND1
RTSET
NC
MDIO
MDC
C3507
0.1UF/16V
C3503
0.1UF/16V
C3506
0.1UF/16V
R3506
22Ohm
TX_CLK 21,33
21,33 COL
21,33 TX_EN
21,33 TXD3
21,33 TXD2
21,33 TXD1
21,33 TXD0
33 PHY25MI
33 PHY25MO
R3509
5.1KOhm
LDPS
RN3503A
RN3503B
RN3503C
RN3503D
MII/SNIB
ANE
DUPLEX
LANSPD
R3503
R3505
ISOLATE
RPTR
R3502
1.5KOHM
VDD_LAN
VDD_LAN_1.8V
L3501
C3508
10UF/10V
C3509
0.1UF/16V
120Ohm/100Mhz
C3512
0.1UF/16V
+3VLAN
+3VSUS
L3502
+3VLAN=+3.3VAUX= 120mA
C3510
0.1UF/16V
120Ohm/100Mhz
R3508
2KOhm
R3513
5.9KOhm
@
RC power-up reset
R3510
5.1KOhm
R3512
0Ohm
PHYRST#
C3504
0.1UF/16V
@
R1.1
VSUS_ON 30,43,81,82,93
kaxidy
MDC
H3501
H3502
A40M20-60S
21 ACZ_SDOUT_MDC
21 ACZ_SYNC_MDC
21 ACZ_SDIN1_MDC
21 ACZ_RST#_MDC
R3515
R3516
R3511
R3517
0Ohm
ACZ_SDOUT_MDC_R
ACZ_SYNC_MDC_R
ACZ_SDIN1_MDC_R
ACZ_RST#_MDC_R
CON3501
BTOB_CON_12P
+3V
C3501
0.1UF/16V
C3502
22PF/50V
@
R3514
ACZ_BCLK_MDC_R
ACZ_BCLK_MDC 21
12G161200124
<Variant Name>
Title : RTL8201BL 10/100 & MDC
ASUSTeK COMPUTER INC. NB
Engineer: Hawk / Kaxidy
Size Custom
Project Name T12C
Rev 1.1
Date: Friday, August 17, 2007
Sheet 35 of 94

CODEC ALC660 REV:D

AUDIO POWER

M0207



+5VS +5VS 21,30,32,37,38,45,50,51,56,57,80,91

+5V_AUDIO +5V_AUDIO 38

Realtek Recommand for vista classic driver pop

Digital

EAPD 37

ACZ_BCLK_AUD

C3601 22PF/50V c0603 YAGEO/CC0603JRNPO9BN220 <G>

GND

+3VS

L3601 120Ohm/100Mhz

C3602 0.1UF/16V c0402

C3603 0.1UF/16V c0402

C3604 10UF/10V c0805

+3VS_CODEC

GND_AUDIO

R3601 20KOhm 1%

C3605 10UF/6.3V c0805

C3606 0.1UF/16V c0402

JDVREF

FROM SiS963

37 660_D_MUTE# 660_D_MUTE#

21 ACZ_SDOUT_AUD ACZ_SDOUT_AUD

21 ACZ_BCLK_AUD ACZ_BCLK_AUD

R3633 0Ohm ACZ_SDOUT_AUD_R

R3634 0Ohm ACZ_BCLK_AUD_R

21 ACZ_SDIN0_AUD R3608 33Ohm ACZ_SDIN0_R

21 ACZ_SYNC_AUD ACZ_SYNC_AUD

21,37 ACZ_RST#_AUD ACZ_RST#_AUD

R3635 0Ohm ACZ_SYNC_AUD_R

R3636 0Ohm ACZ_RST#_AUD_R

PC_BEEP

GND

DVDD1 GPIO0 GPIO1 DVSS1 SDATA-OUT BCLK DVSS2 SDATA-IN DVDD_IO SYNC RESET# PCBEEP

SPDIFO EAPD NC3 NC2 LFE(PORT-G-L) CENTER(PORT-G-R) AVSS2 JDREF SURR-R(PORT-A-R) SURR-L(PORT-A-L) AVDD2 NC1

FRONT-R(PORT-D-R) FRONT-L(PORT-D-L) SenseB NC4 MIC1-VREFO-R LINE2-VREFO MIC2-VREFO NC5 MIC1-VREFO-L VREF AVSS1 AVDD1

SenseA LINE2-L(PORT-E-L) LINE2-R(PORT-E-R) MIC2-L(PORT-F-L) MIC2-R(PORT-F-R) CD-L CD-GND CD-R MIC1-L(PORT-B-L) MIC1-R(PORT-B-R) LINE1-L(PORT-C-L) LINE1-R(PORT-C-R)

ALC660-VD-GR U3603

FRONT_R FRONT_OUT_R C3607 0.47UF/16V R3627 0Ohm AC_OUT_R C3630 0.47UF/16V AC_OUTA_R AC_OUTA_R 37,39

FRONT_L FRONT_OUT_L C3608 0.47UF/16V R3628 0Ohm AC_OUT_L C3631 0.47UF/16V AC_OUTA_L AC_OUTA_L 37,39

FOR DE-POP

R3629 10KOhm C3632 100PF/50V FOR GAIN.

THE VALUE DEPEND ON C3607/C3608 TO MEET THE RECOMMENDATION VALUE(0.47UF).

R3630 10KOhm C3633 100PF/50V FOR FILTER.

GND_AUDIO

Sense_B R3606 39.2KOhm 1% LINE2_JD LINE2_JD 37

MIC2_VREFOUT MIC2_VREFOUT 38

MIC1_VREFOUT MIC1_VREFOUT 38

VREF_CODEC

+5V_AUDIO

C3609 10UF/6.3V c0805

C3610 0.1UF/16V c0402

GND_AUDIO

M0207

PC BEEP

Reserve for Cardbus controllor that has PCMCIA function.

FROM PCMCIA

64 SPKR_CB SPKR_CB

C3619 0.1UF/16V

IF NO PCMCIA,UNMOUNT.

21 SPKR_SB SPKR_SB

C3620 0.1UF/16V

D3601 1N4148W

PC_BEEP_RC PC_BEEP_C

C3621 0.1UF/16V PC_BEEP

FROM SiS968

R3619 20KOhm 1%

R3620 20KOhm 1%

C3634 100PF/50V

GND

LINE2_JD R3607 39.2KOhm 1%

38 MIC1_JD MIC1_JD R3610 20KOhm 1% Sense_A

37 AC_HP_L AC_HP_L R3631 0Ohm

37 AC_HP_R AC_HP_R R3632 0Ohm

M0213

38 MIC_IN_AC_I MIC_IN_AC_I

C3623 1UF/10V MIC_IN_AC_I_L

C3624 1UF/10V MIC_IN_AC_I_R

VREF_CODEC C3613 10UF/10V c0805

MIC2_VREFOUT MIC1_VREFOUT C3614 10UF/10V c0805 C3615 10UF/10V c0805

GND_AUDIO GND_AUDIO GND_AUDIO

For EMI

R3614 0Ohm

L3602 120Ohm/100Mhz

GND GND_AUDIO

38 MIC_IN_AC_E MIC_IN_AC_E

C3628 1UF/10V MIC_IN_AC_E_L

C3629 1UF/10V MIC_IN_AC_E_R

Input impedence:64K ohm(Typical)

<Variant Name>

ASUSTeK COMPUTER INC. NB1

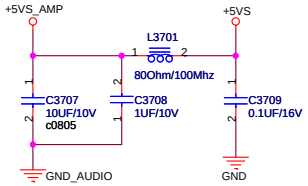
Title : AUD_Codec ALC660(D)

Engineer: Hawk / Kaxidy

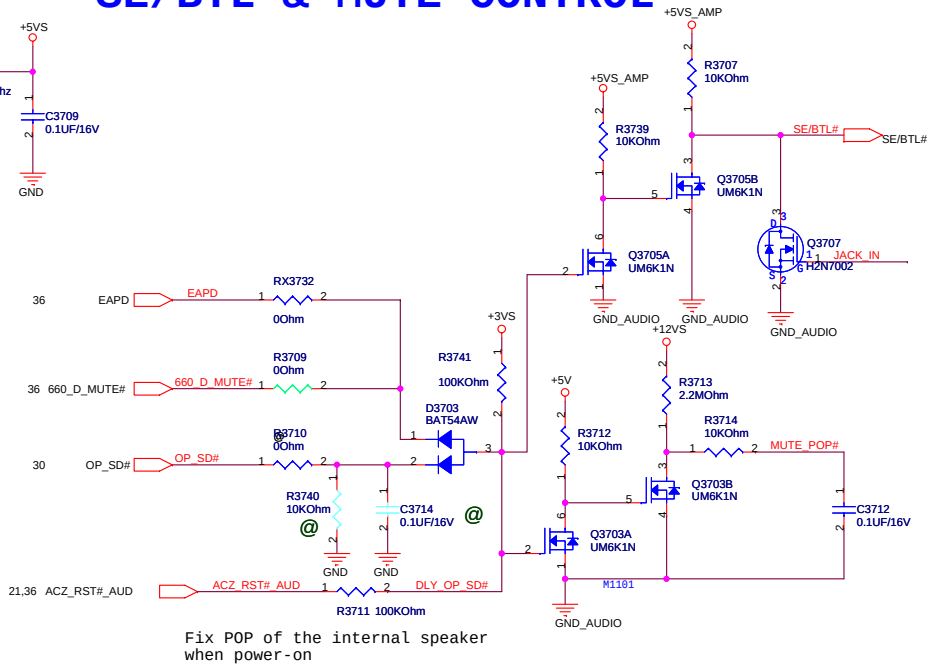
Size	Project Name	Rev
Custom	T12C	1.1

Date: Tuesday, March 04, 2008 Sheet 36 of 94

AMP POWER



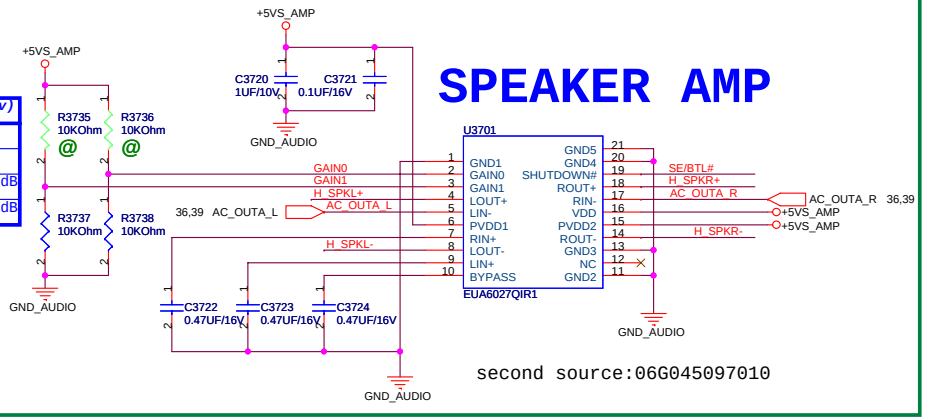
SE/BTL & MUTE CONTROL



Fix POP of the internal speaker when power-on

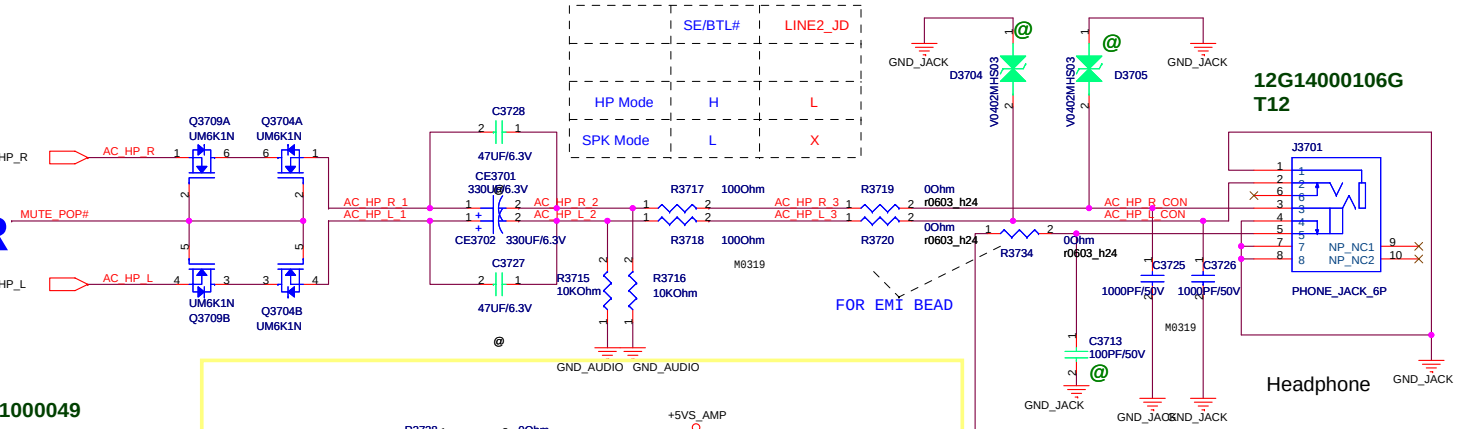
SPEAKER AMP

GAIN0	GAIN1	Av(inv)
0	0	6 dB
0	1	10 dB
1	0	15.6 dB
1	1	21.6 dB

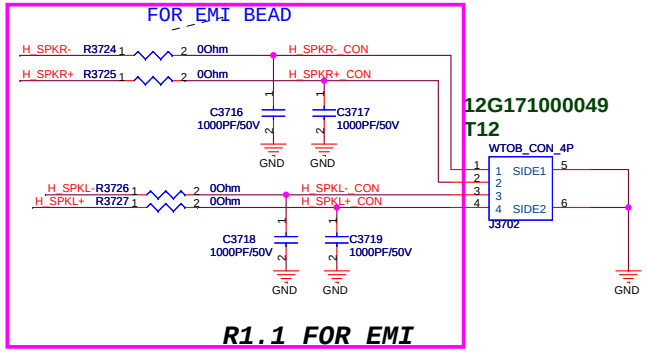


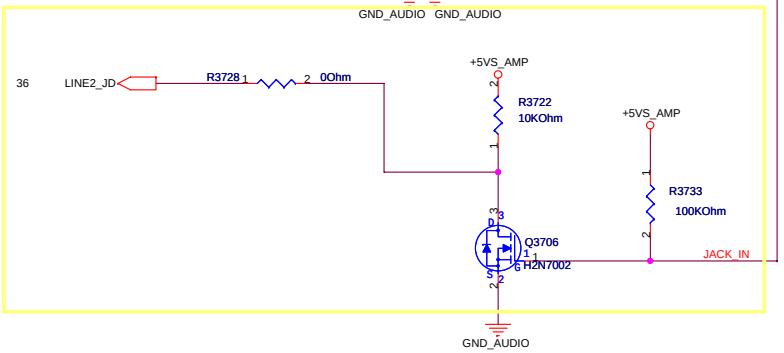
second source:06G045097010

HP CONN

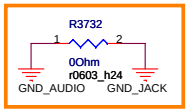


SPEAKER CONNECTOR

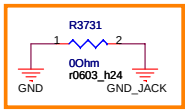




EMI Request



EMI Request



<Variant Name>

ASUSTeK COMPUTER INC. NB1

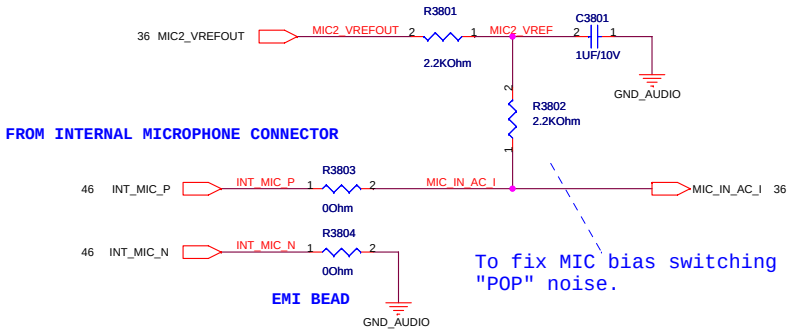
Title : AUDIO AMP

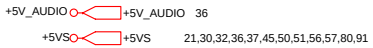
Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

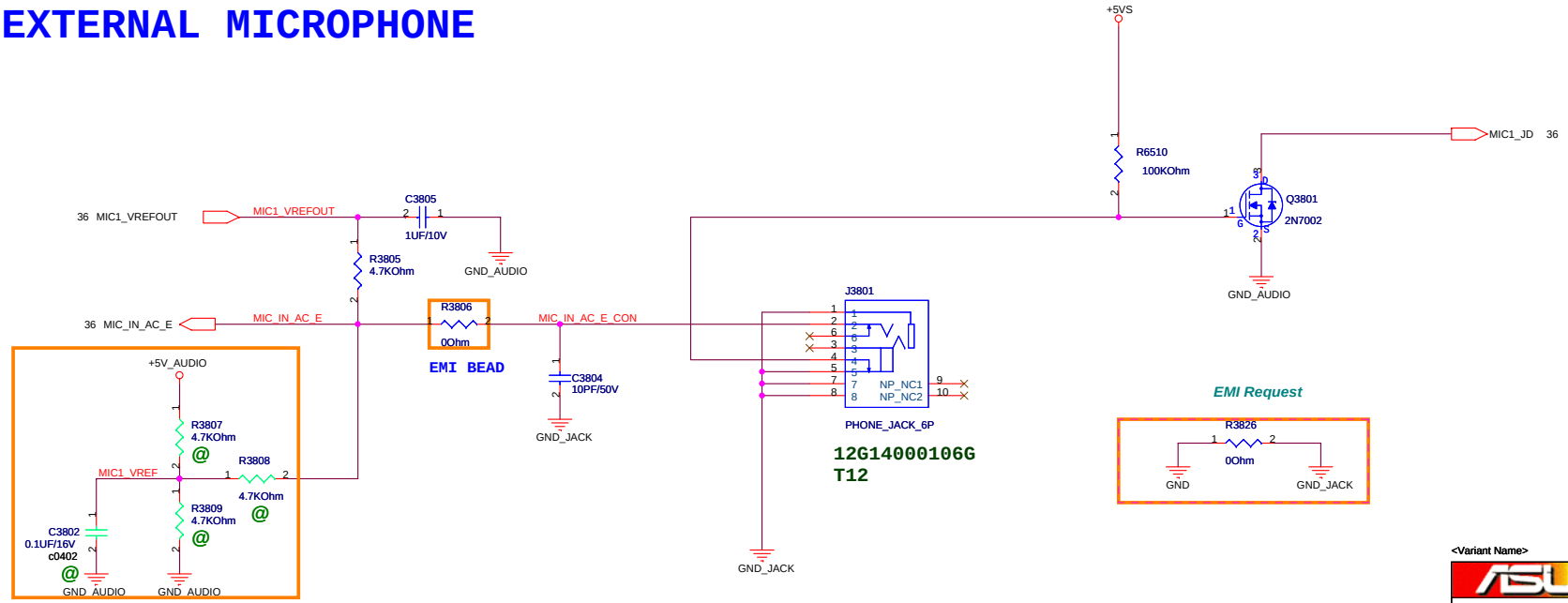
Date: Tuesday, August 21, 2007 Sheet 37 of 94

INTERNAL MICROPHONE





EXTERNAL MICROPHONE



<Variant Name>

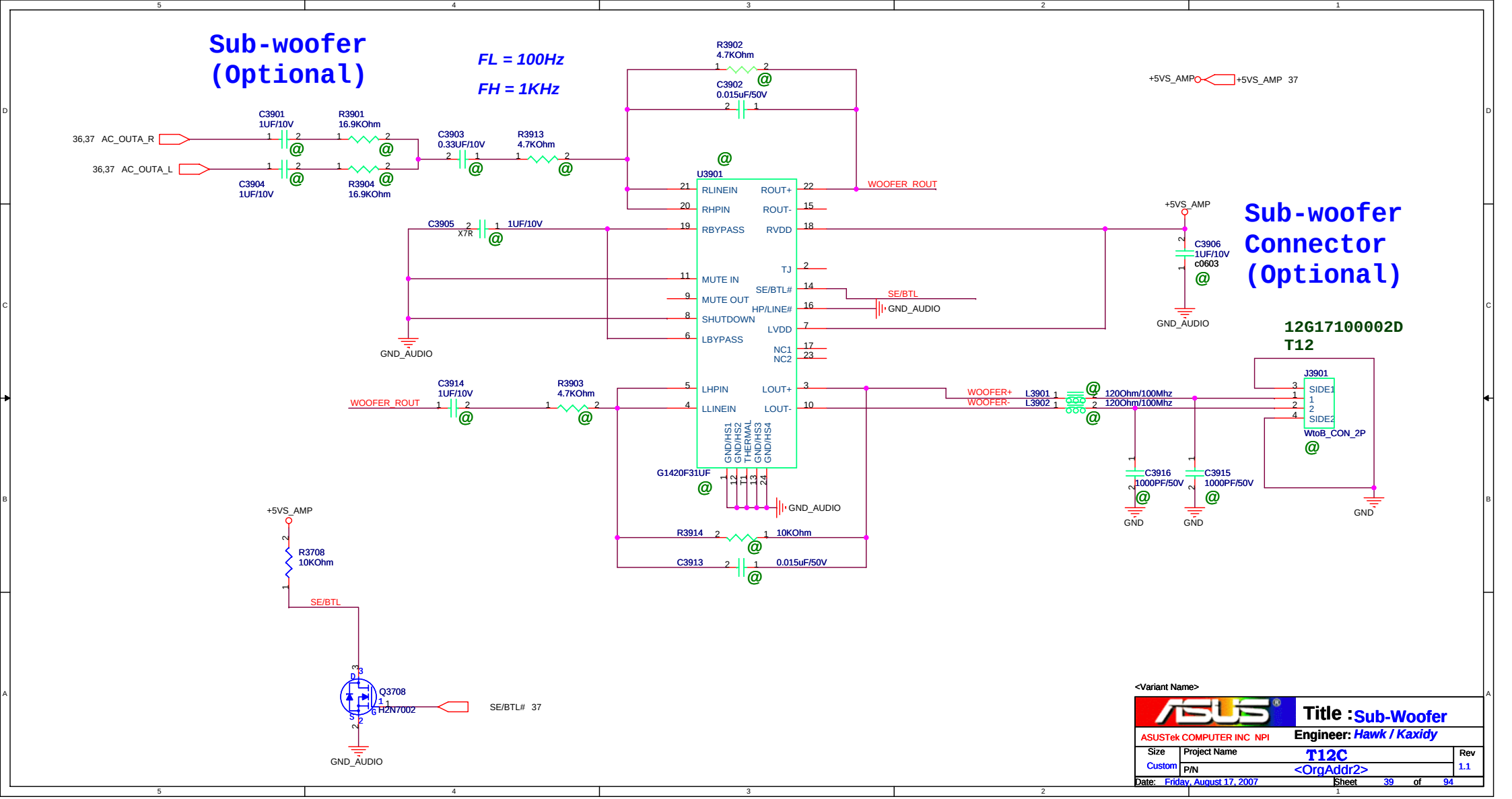
Title : MICROPHONE

ASUSTeK COMPUTER INC. NB1

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 Sheet 38 of 94



<Variant Name>

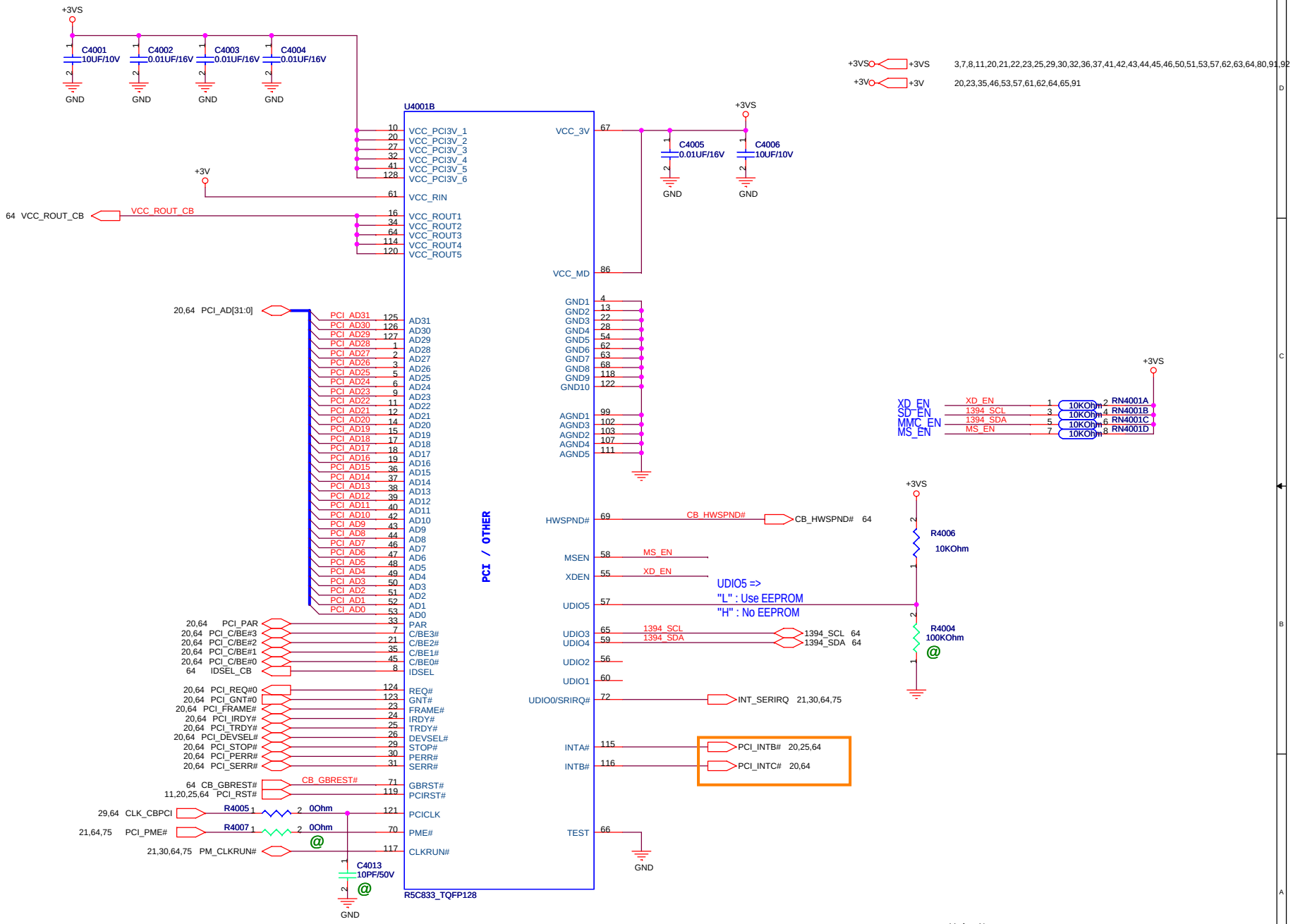
ASUSTek COMPUTER INC NPI

Title : Sub-Woofer

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1
	P/N <OrgAddr2>	

Date: Friday, August 17, 2007 Sheet 39 of 94



<Variant Name>

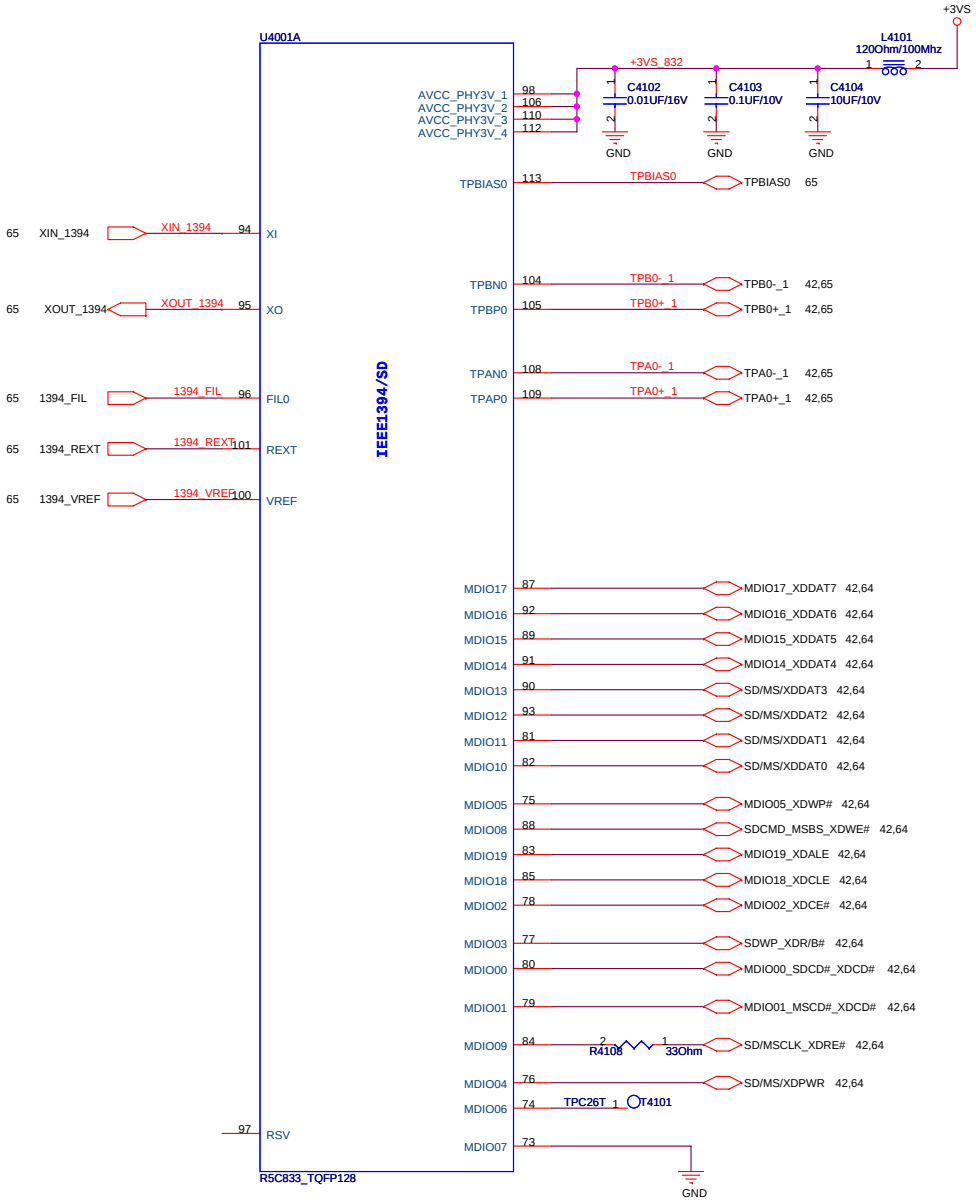
ASUSTeK COMPUTER INC

Title : CARDBUS R5C832 (1)

Engineer: Arthur & Bruce

Size	Project Name	Rev
Custom	T12C	1.1

Date: Tuesday, March 04, 2008 Sheet 40 of 94



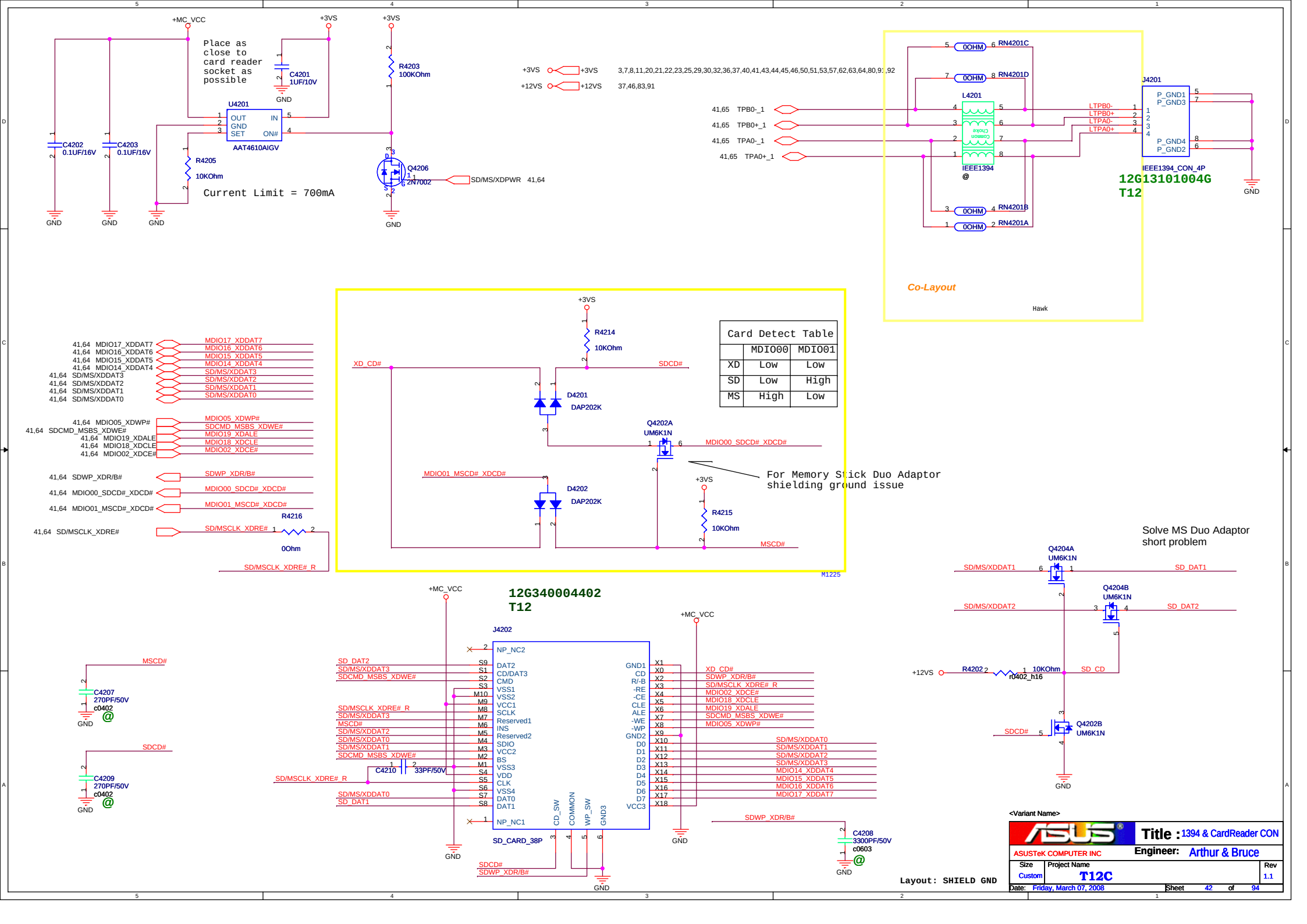
+3VS ⟶ +3VS 3,7,8,11,20,21,22,23,25,29,30,32,36,37,40,42,43,44,45,46,50,51,53,57,62,63,64,80,91,92

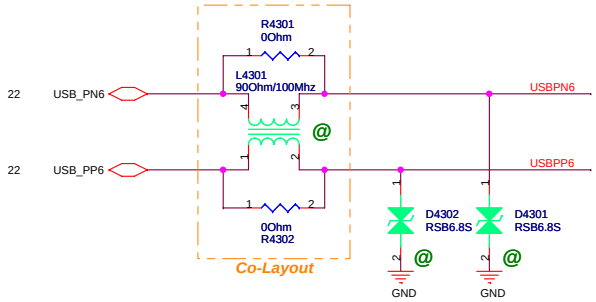
```
MDIO00--> SD Card Detect
MDIO01--> MS Card Detect
MDIO03--> SD Write Protect
MDIO04--> SD Card Power0 Control/
          MS Power Control
MDIO08--> SD Command/MS Bus State
MDIO09--> SD Clock/MS Clock
MDIO10--> SD Data 0/MS Data 0
MDIO11--> SD Data 1/MS Data 1
MDIO12--> SD Data 2/MS Data 2
MDIO13-->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

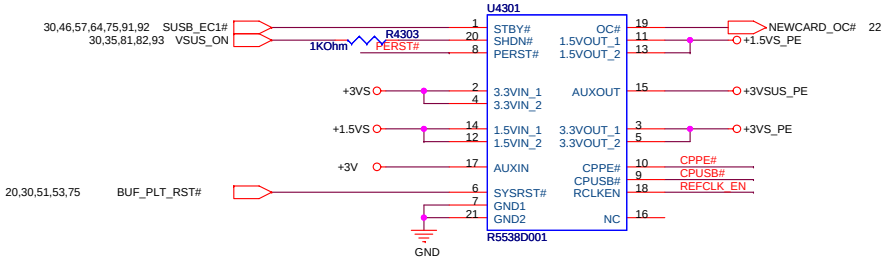
```
MDIO02--> xDCE#
MDIO05--> SD Power Control 1 / xDWP
MDIO06--> xD/MS/SD LED Control
MDIO14--> xD Data
MDIO15--> xD Data
MDIO16--> xD Data
MDIO17--> xD Data
MDIO18--> xD CLE
MDIO19--> xD ALE
```

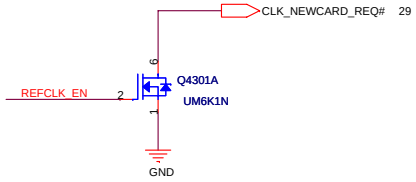
<Variant Name>

ASUSTeK COMPUTER INC	Title : CARDBUS R5C832 (2)	
	Engineer: Arthur & Bruce	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Friday, August 17, 2007	Sheet 41 of 94	


Place as close to card reader socket as possible
Current Limit = 700mA
U4201
AAT4610AIGV
C4201 1UF/10V
C4202 0.1UF/16V
C4203 0.1UF/16V
R4203 100KOhm
R4205 10KOhm
Q4206 2N7002
SD/MS/XDPWR 41,64
+MC_VCC
+3VS
GND
+3VS 3,7,8,11,20,21,22,23,25,29,30,32,36,37,40,41,43,44,45,46,50,51,53,57,62,63,64,80,91,92
+12VS 37,46,83,91
41,65 TPB0-_1
41,65 TPB0+_1
41,65 TPA0-_1
41,65 TPA0+_1
RN4201C
RN4201D
RN4201B
RN4201A
0OHM
L4201
IEEE1394
J4201
P_GND1
P_GND3
P_GND4
P_GND2
LTPB0-
LTPB0+
LTPA0-
LTPA0+
IEEE1394_CON_4P
12G13101004G
T12
Co-Layout
Hawk
41,64 MDIO17_XDDAT7
41,64 MDIO16_XDDAT6
41,64 MDIO15_XDDAT5
41,64 MDIO14_XDDAT4
41,64 SD/MS/XDDAT3
41,64 SD/MS/XDDAT2
41,64 SD/MS/XDDAT1
41,64 SD/MS/XDDAT0
41,64 MDIO05_XDWP#
41,64 SDCMD_MSBS_XDWE#
41,64 MDIO19_XDALE
41,64 MDIO18_XDCLE
41,64 MDIO02_XDCE#
41,64 SDWP_XDR/B#
41,64 MDIO00_SDCD#_XDCD#
41,64 MDIO01_MSCD#_XDCD#
41,64 SD/MSCLK_XDRE#
R4216
0Ohm
SD/MSCLK_XDRE#_R
R4214 10KOhm
XD_CD#
SDCD#
D4201 DAP202K
D4202 DAP202K
Q4202A UM6K1N
MDIO00_SDCD#_XDCD#
MDIO01_MSCD#_XDCD#
R4215 10KOhm
MSCD#
For Memory Stick Duo Adaptor shielding ground issue
M1225
Card Detect Table
MDIO00 MDIO01
XD Low Low
SD Low High
MS High Low
12G340004402
T12
J4202
SD_CARD_38P
NP_NC2
NP_NC1
SD_DAT2
SDCMD_MSBS_XDWE#
SD/MSCLK_XDRE#_R
SD/MS/XDDAT3
MSCD#
SD/MS/XDDAT2
SD/MS/XDDAT0
SD/MS/XDDAT1
C4210 33PF/50V
SD_DAT1
SDWP_XDR/B#
MDIO02_XDCE#
MDIO19_XDALE
MDIO18_XDCLE
MDIO05_XDWP#
MDIO14_XDDAT4
MDIO15_XDDAT5
MDIO16_XDDAT6
MDIO17_XDDAT7
C4207 270PF/50V c0402
C4209 270PF/50V c0402
C4208 3300PF/50V c0603
Solve MS Duo Adaptor short problem
Q4204A UM6K1N
Q4204B UM6K1N
Q4202B UM6K1N
SD_DAT1
SD_DAT2
SD_CD
R4202 10KOhm r0402_h16
Layout: SHIELD GND
<Variant Name>
Title : 1394 & CardReader CON
ASUSTeK COMPUTER INC
Engineer: Arthur & Bruce
Size Custom
Project Name T12C
Rev 1.1
Date: Friday, March 07, 2008
Sheet 42 of 94

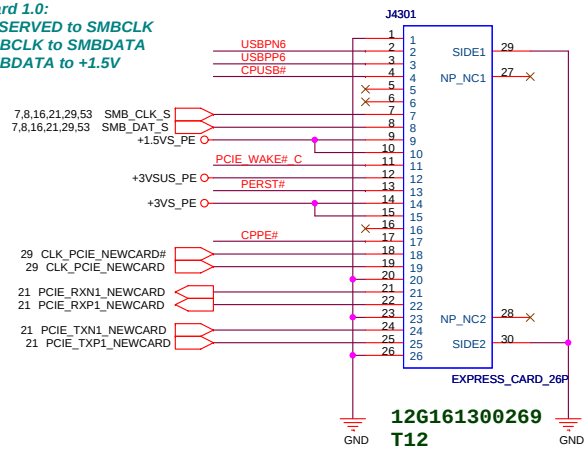


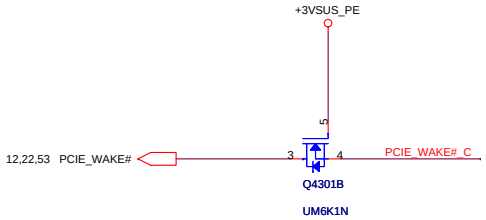


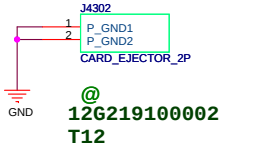


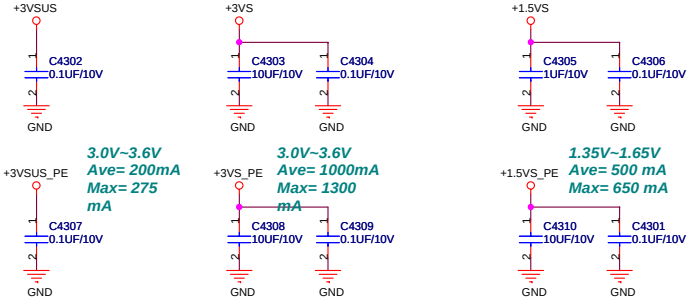
!! ExpressCard Standard 1.0:
Change Pin7 from RESERVED to SMBCLK
Change Pin8 from SMBCLK to SMBDATA
Change Pin9 from SMBDATA to +1.5V

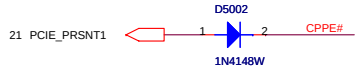
NewCard Header





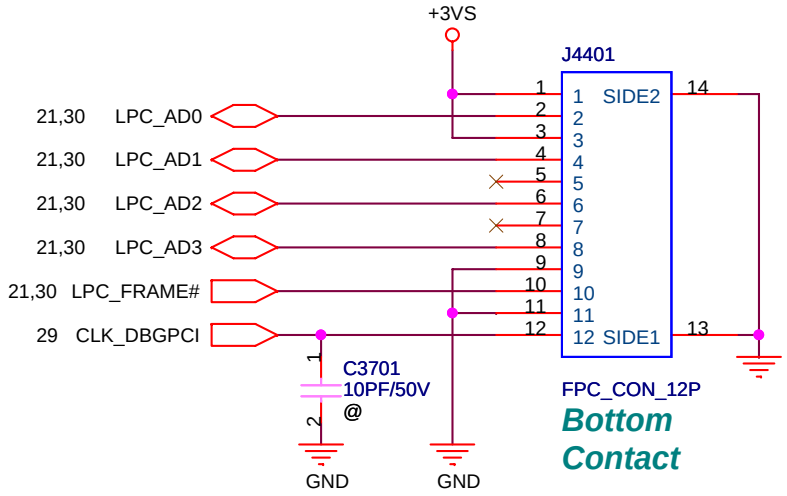






<Variant Name>

ASUSTeK COMPUTER INC. ETD	Title : NEWCARD	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Tuesday, March 11, 2008	Sheet 43 of 94	



<Variant Name>

ASUSTeK COMPUTER INC. NB

Title : DEBUG

Engineer: Hawk / Kaxidy

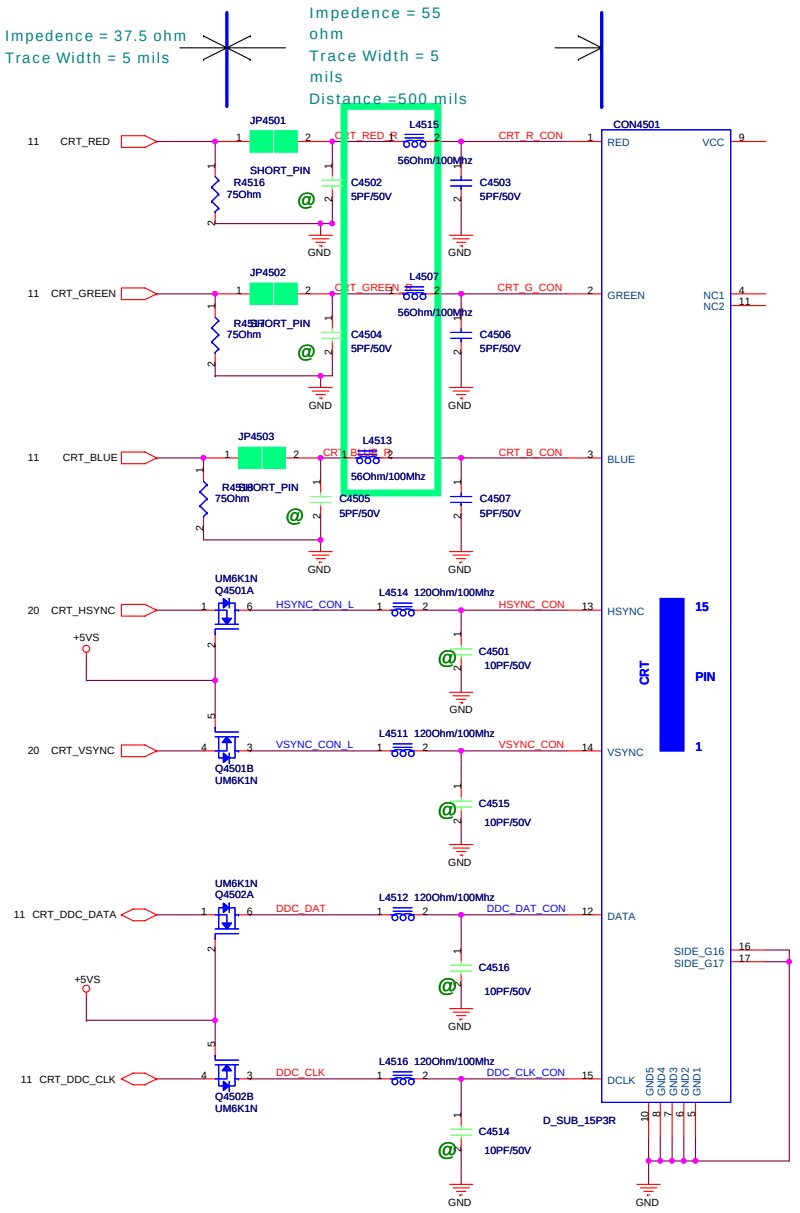
Size	Project Name	Rev
A	T12C	1.1

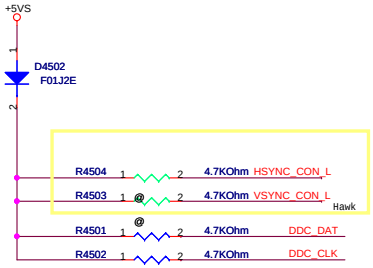
Date: Tuesday, February 26, 2008 Sheet 44 of 94

+5VS +5VS 21,30,32,36,37,38,50,51,56,57,80,91

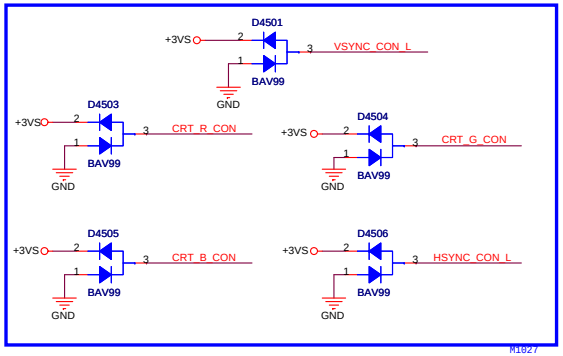
+3VS +3VS 3,7,8,11,20,21,22,23,25,29,30,32,36,37,40,41,42,43,44,46,50,51,53,57,62,63,64,80,91,92

CRT Connector

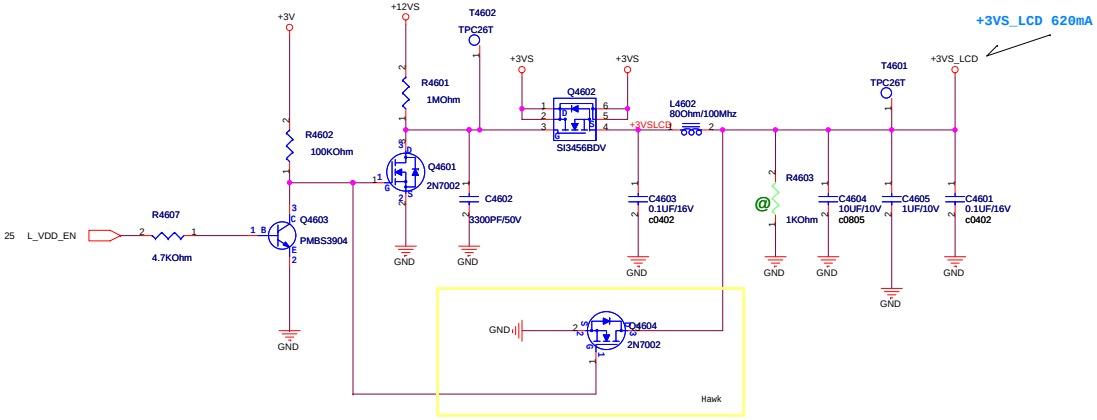


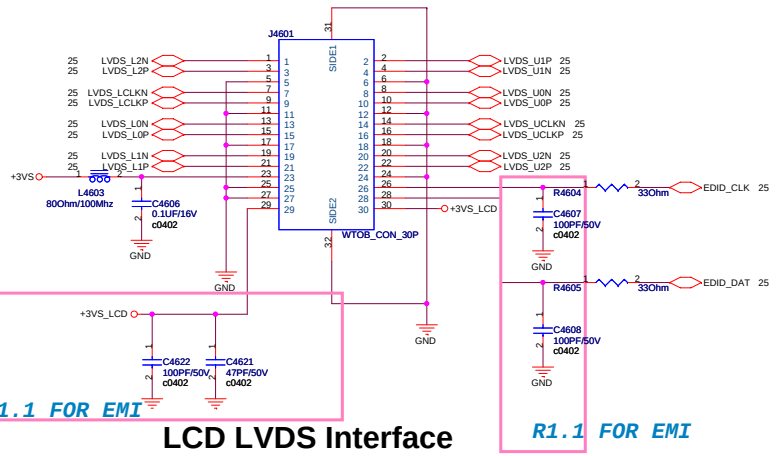


Place near to CRT Port

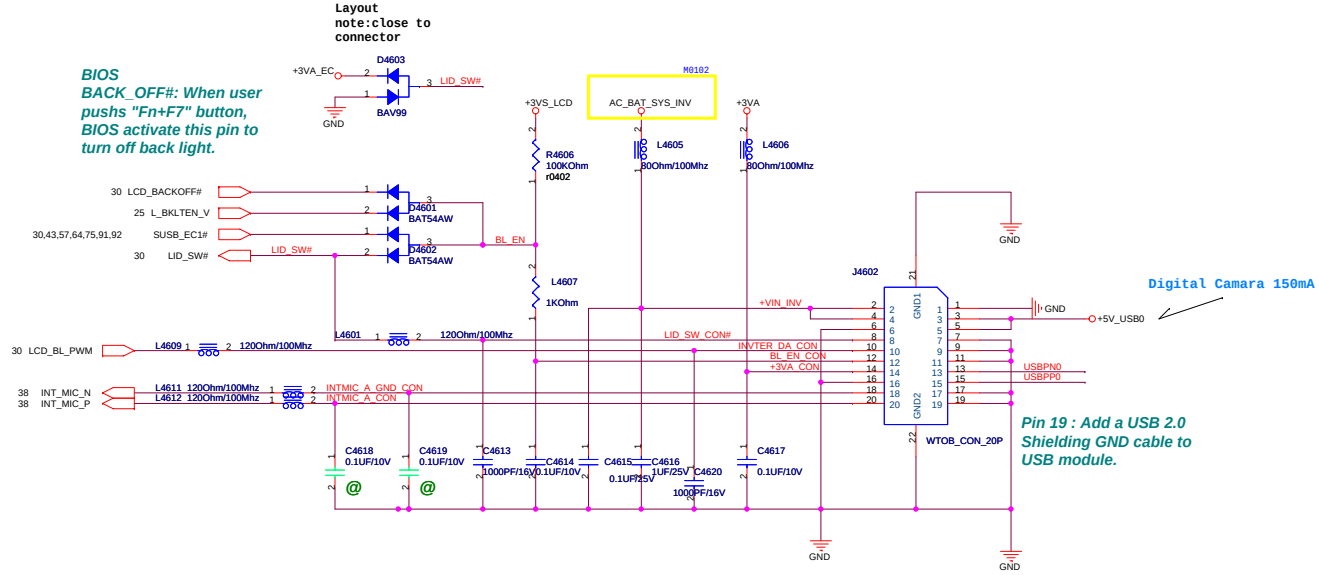


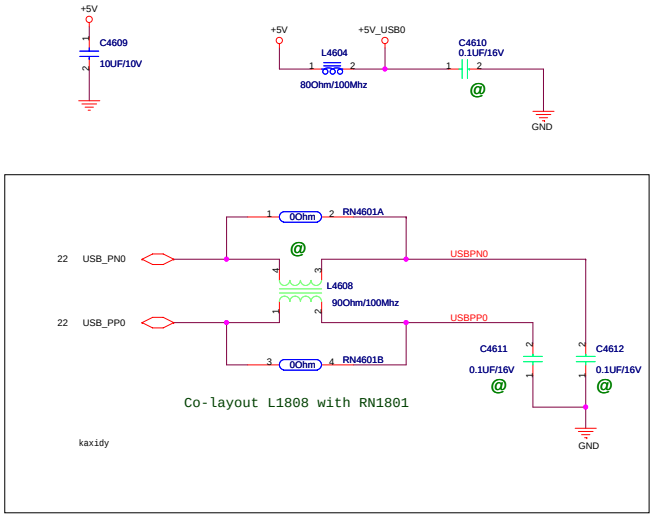
ASUSTeK COMPUTER INC	Title : CRT & TV Conn.		
	Engineer: Hawk / Kaxidy		
Size: Custom	Project Name: T12C		Rev: 1.1
Date: Monday, March 03, 2008	Sheet 45 of 94		





LCD LVDS Interface





ASUSTeK COMPUTER INC	Title : LVDS & Inverter Conn.		
	Engineer: Hawk / Kaxidy		
Size: Custom	Project Name: T12C		Rev: 1.1
Date: Tuesday, March 04, 2008	Sheet 46 of 94		

<Variant Name>

Title : NULL

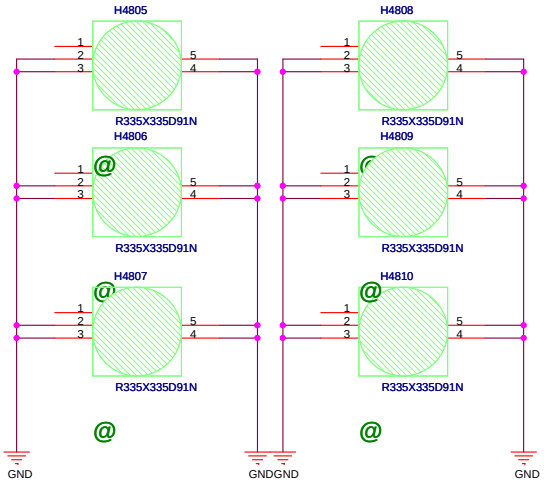
ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

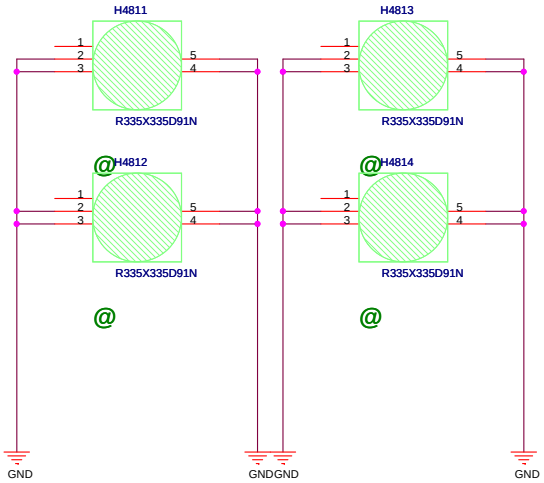
Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 47 of 94

A Hole / TOP Side



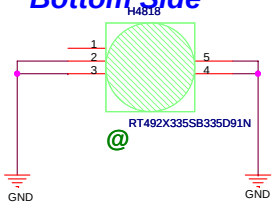
A Hole / Bottom Side



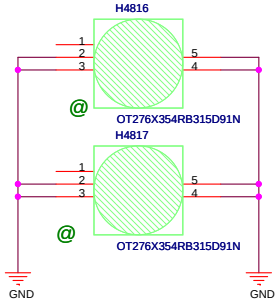
Drill Hole for Fix

圓孔　　橢圓孔

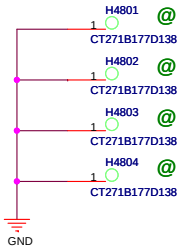
A Hole Special / Bottom Side



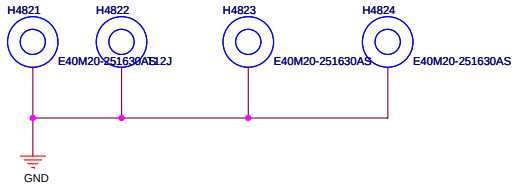
E Hole for Main board fix



F Hole for CPU



銅柱 Hole for VGA 13GNJ510M170-1



ASUSTek COMPUTER INC NPI	Title : SREW HOLE		
	Engineer: Hawk / Kaxidy		
Size: Custom	Project Name: T12C		Rev: 1.1
	P/N: <OrgAddr2>		
Date: Monday, August 13, 2007	Sheet 48 of 94		

<Variant Name>

Title : NULL

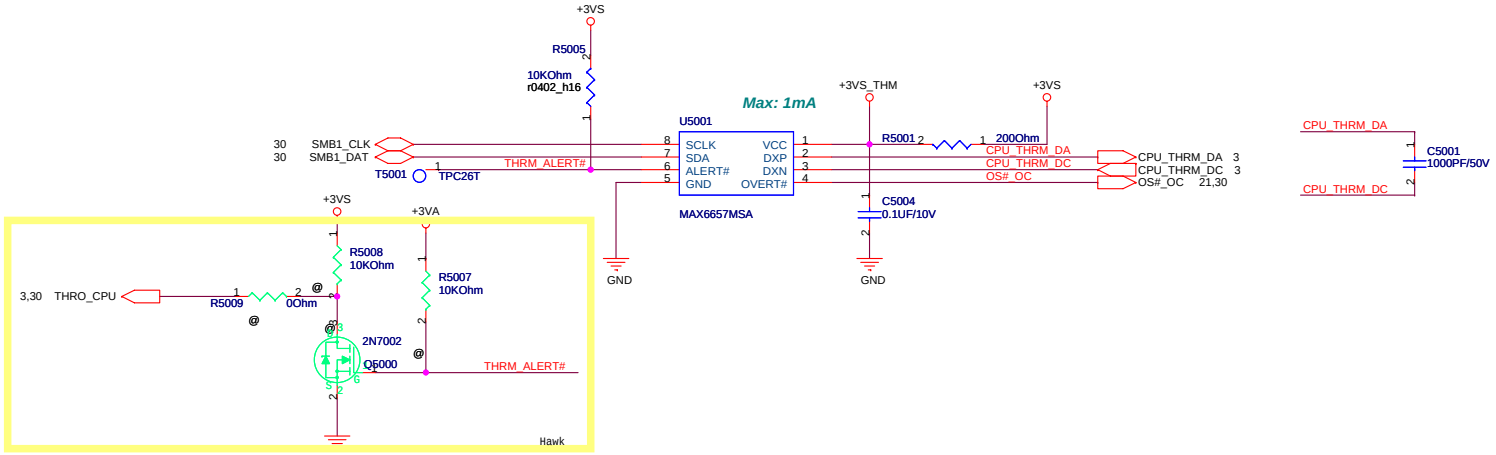
ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

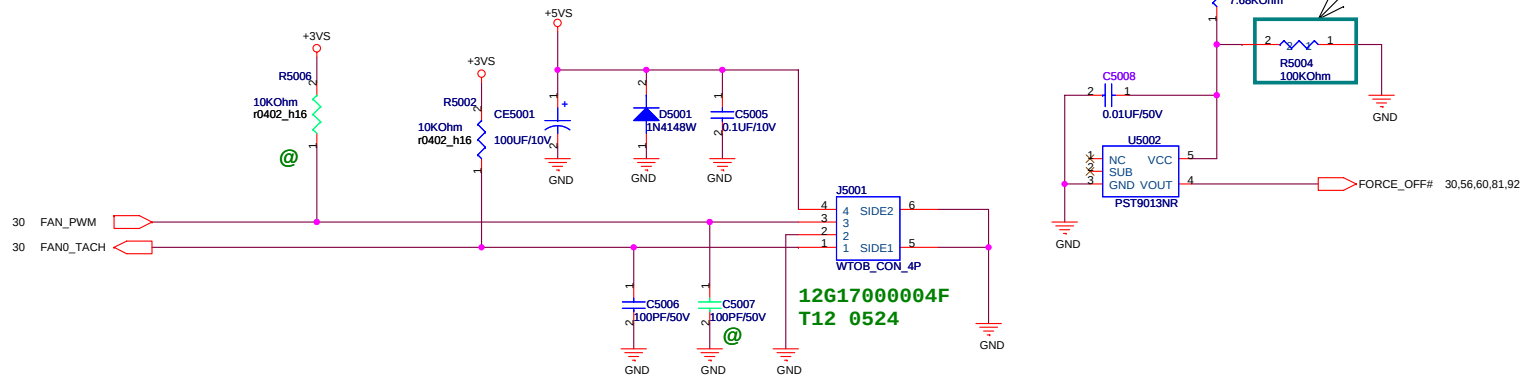
Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 49 of 94

Thermal Sensor



DC FAN Control



<Variant Name>

ASUSTeK COMPUTER INC. NB

Title : FAN

Engineer: Hawk / Kaxidy

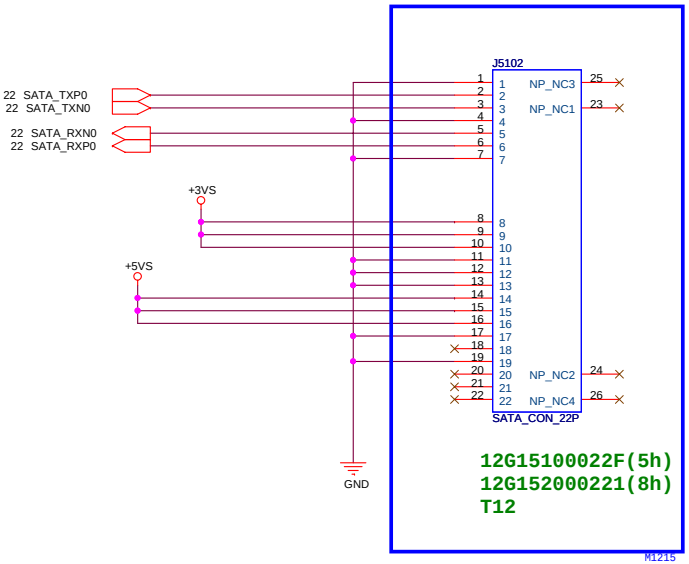
Size	Project Name	Rev
Custom	T12C	1.1

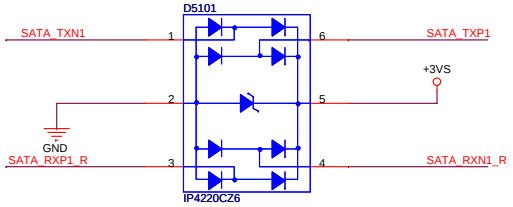
Date: Friday, August 17, 2007 Sheet 50 of 94

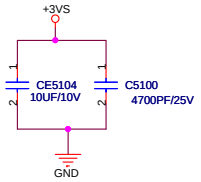
SATA HDD

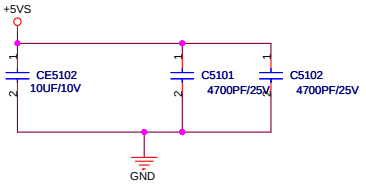
+3VS +3VS 3,7,8,11,20,21,22,23,25,29,30,32,36,37,40,41,42,43,44,45,46,50,53,57,62,63,64,80,91,92

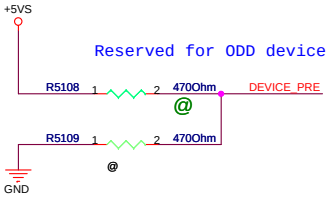
+5VS +5VS 21,30,32,36,37,38,45,50,56,57,80,91

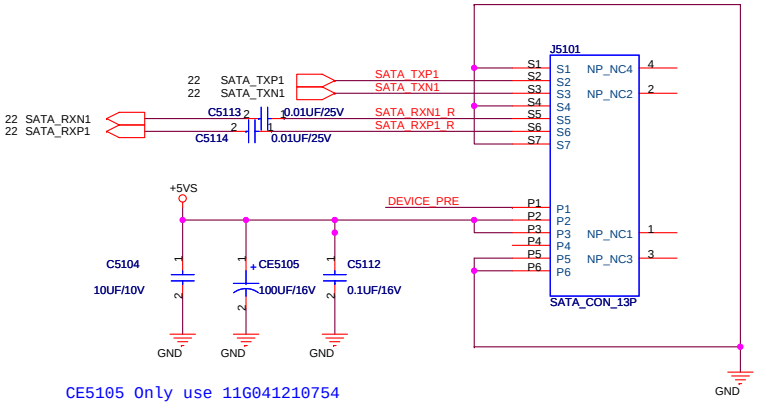








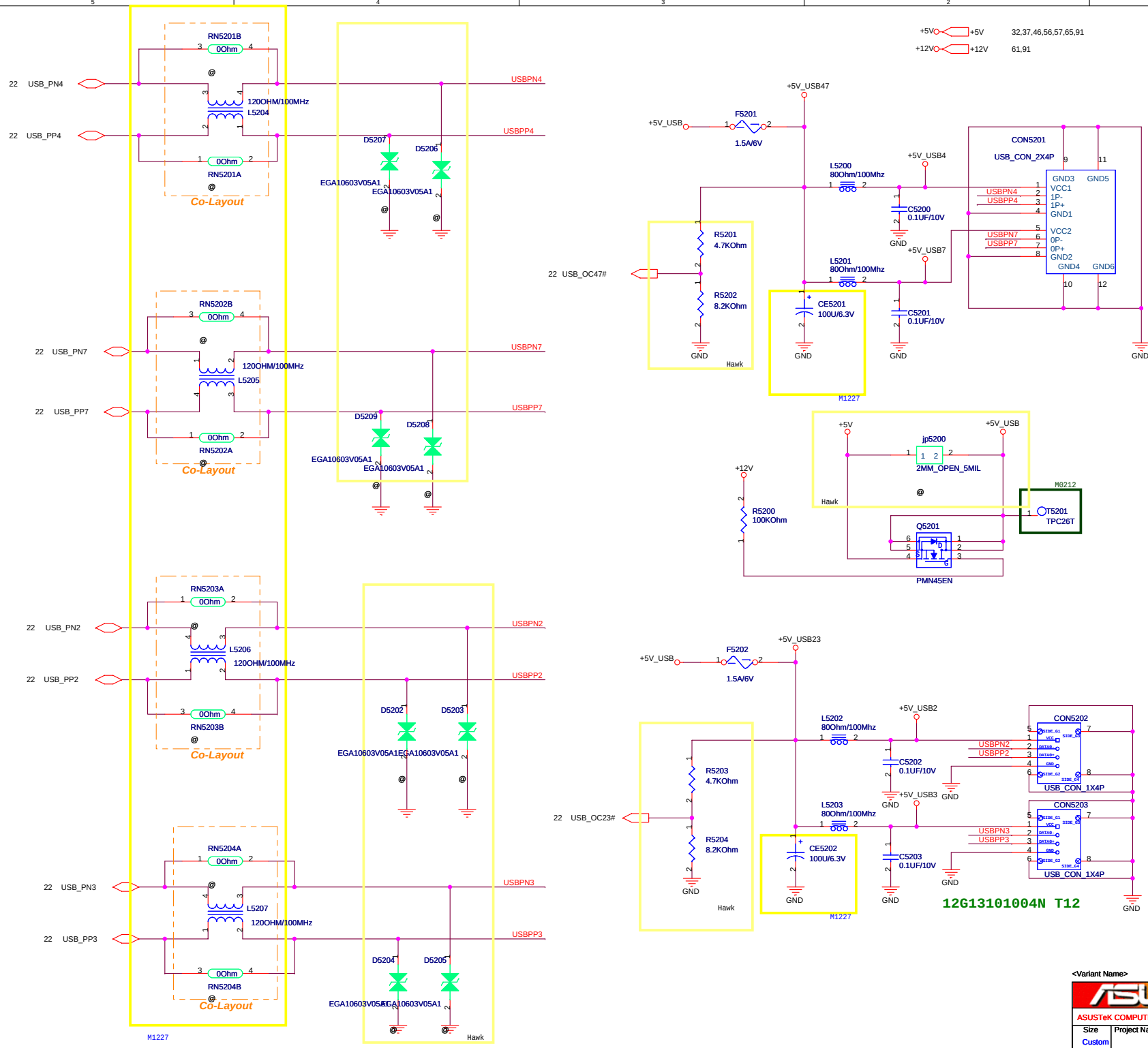




CE5105 Only use 11G041210754

<Variant Name>

ASUSTeK COMPUTER INC	Title : HDD & CDROM	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Wednesday, March 12, 2008	Sheet 51 of 94	



<Variant Name>

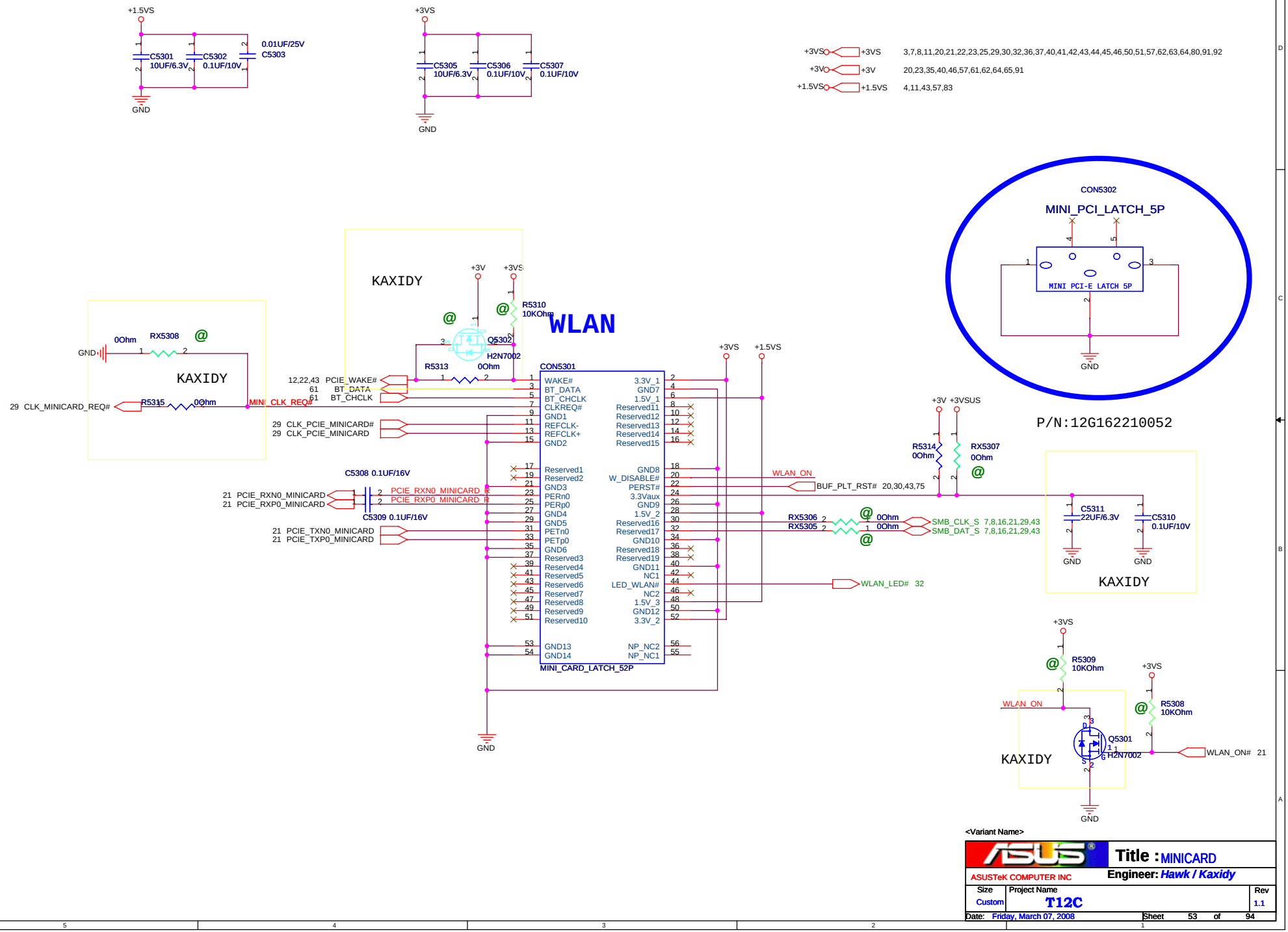
ASUSTeK COMPUTER INC. NB

Title : USB CONN X 4

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 Sheet 52 of 94



<Variant Name>

ASUSTeK COMPUTER INC

Title : MINICARD

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, March 07, 2008 Sheet 53 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 54 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

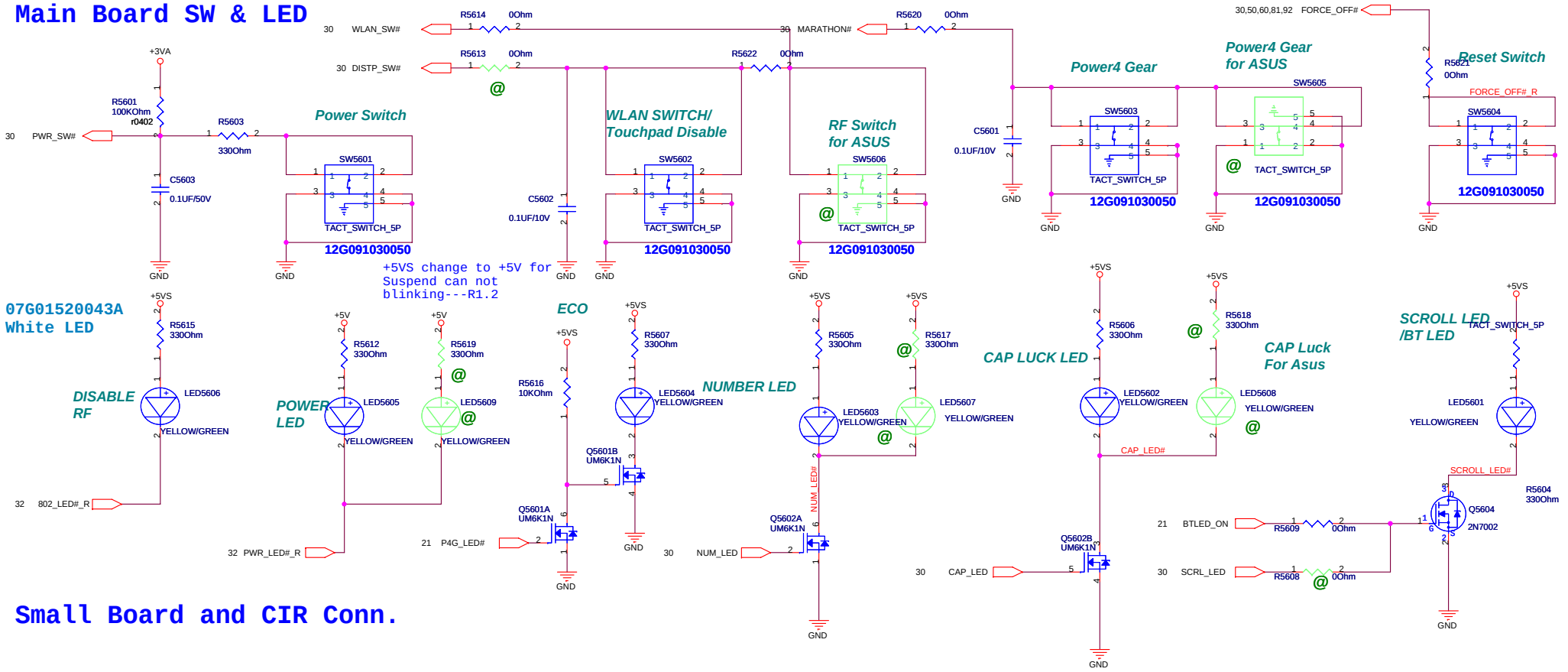
Date: Monday, August 13, 2007 Sheet 55 of 94

+5V +5V 32,37,46,52,57,65,91

+5VS +5VS 21,30,32,36,37,38,45,50,51,57,80,91

+3VA +3VA 21,30,46,50,57,81,93

Main Board SW & LED



Small Board and CIR Conn.

<Variant Name>

ASUSTeK COMPUTER INC

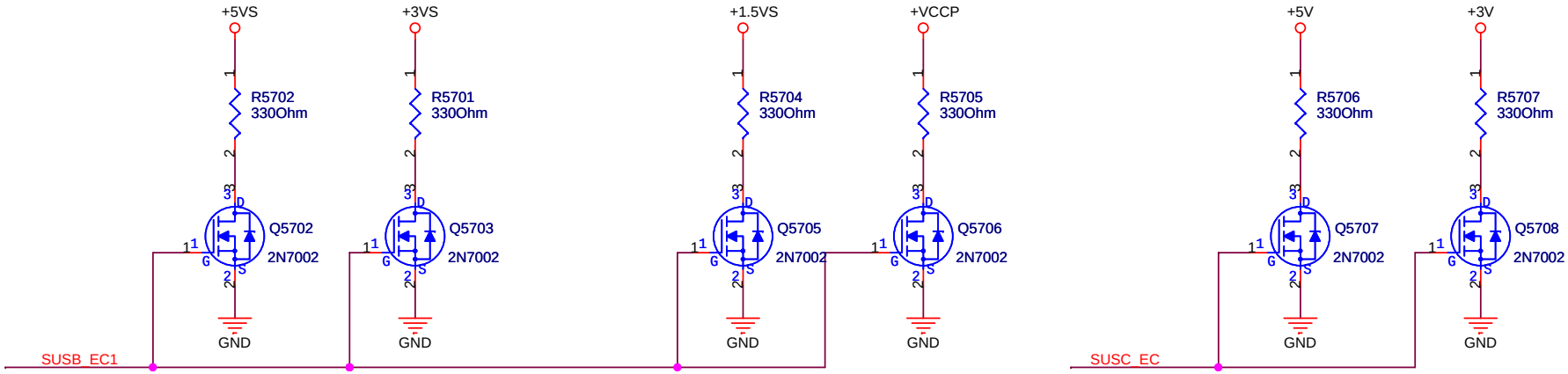
Title : LED/SWITCH

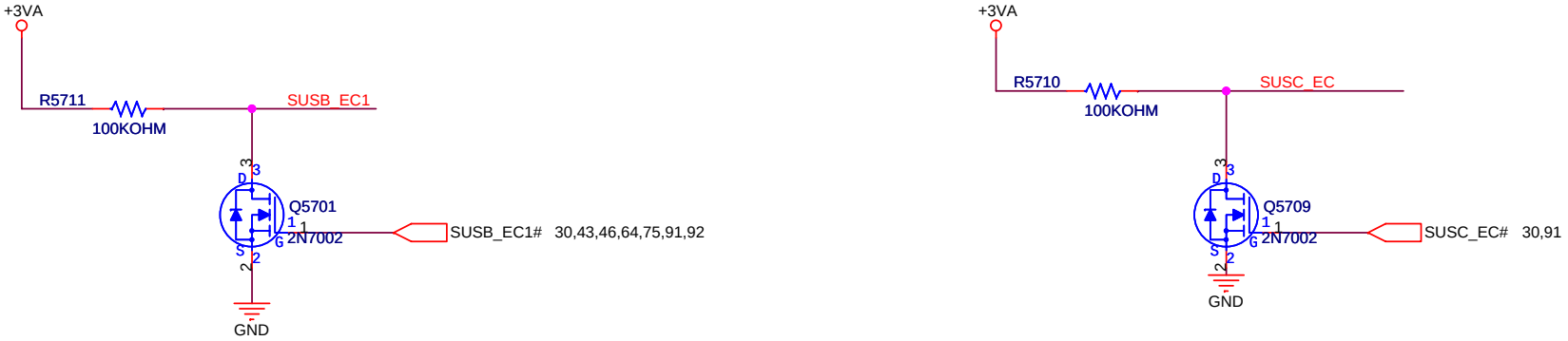
Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, March 07, 2008 Sheet 56 of 94

+3V	+3V	20,23,35,40,46,53,61,62,64,65,91
+5V	+5V	32,37,46,52,56,65,91
+VCCP	+VCCP	4,10,14,21,23,29,83,92
+1.5VS	+1.5VS	4,11,43,53,83
+3VS	+3VS	3,7,8,11,20,21,22,23,25,29,30,32,36,37,40,41,42,43,44,45,46,50,51,53,62,63,64,80,91,92
+5VS	+5VS	21,30,32,36,37,38,45,50,51,56,80,91





ASUSTeK COMPUTER INC. NB

Title : DISCHARGE

Engineer: *Hawk / Kaxidy*

Size	Project Name	Rev
Custom	T12C	1.1

Date: Tuesday, March 04, 2008 Sheet 57 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 58 of 94

<Variant Name>

Title : NULL

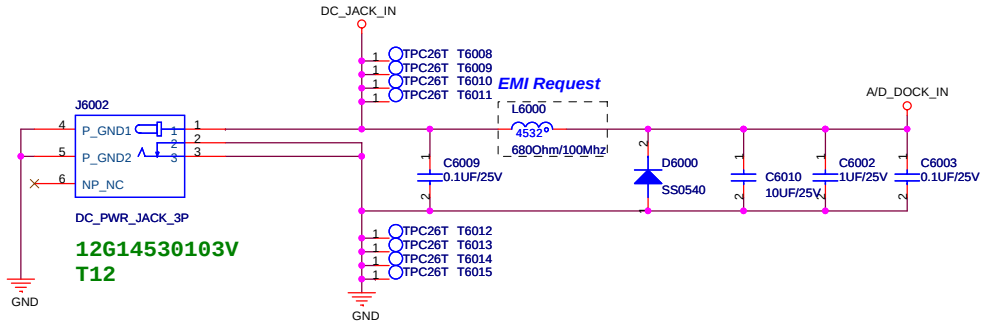
ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

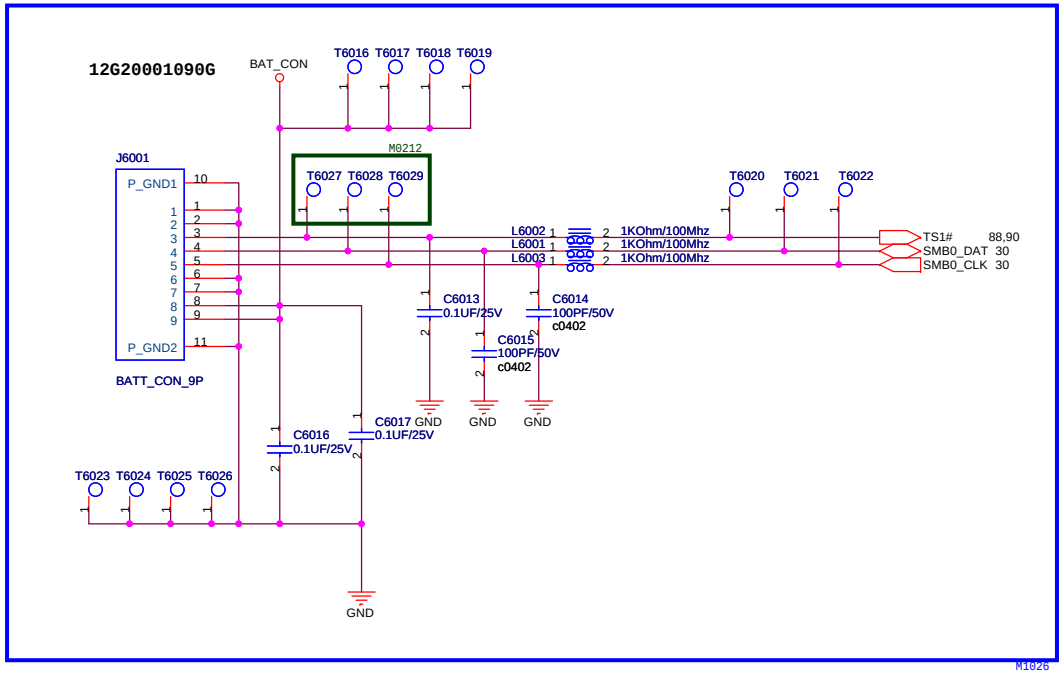
Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 59 of 94

DC-IN



Battery Connector



AC_BAT_SYS — AC_BAT_SYS 80,81,82,88

BAT_CON — BAT_CON 88

A/D_DOCK_IN — A/D_DOCK_IN 88,90

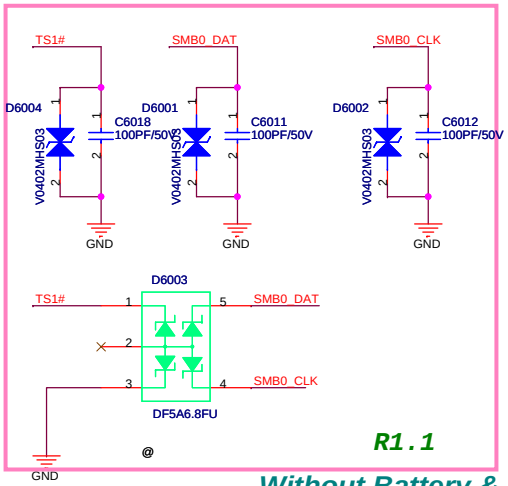
For Battery

Single Battery

BAT1_CNT1#, BAT1_CNT2#, BAT2_CNT1#, BAT2_CNT2# don't connect to Battery Connector.

Dual Battery

BAT1_CNT1#, BAT1_CNT2#, BAT2_CNT1#, BAT2_CNT2# must connect to Battery Connector.

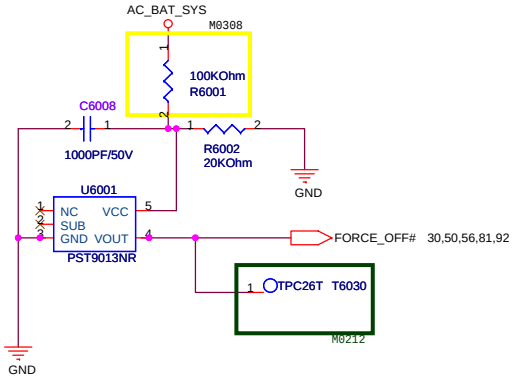


Note:

When we plug in or plug out the battery, it may cause a spike to damage the EC and gas gauge. It needed to add these varistors to protect those pins.

close to connector

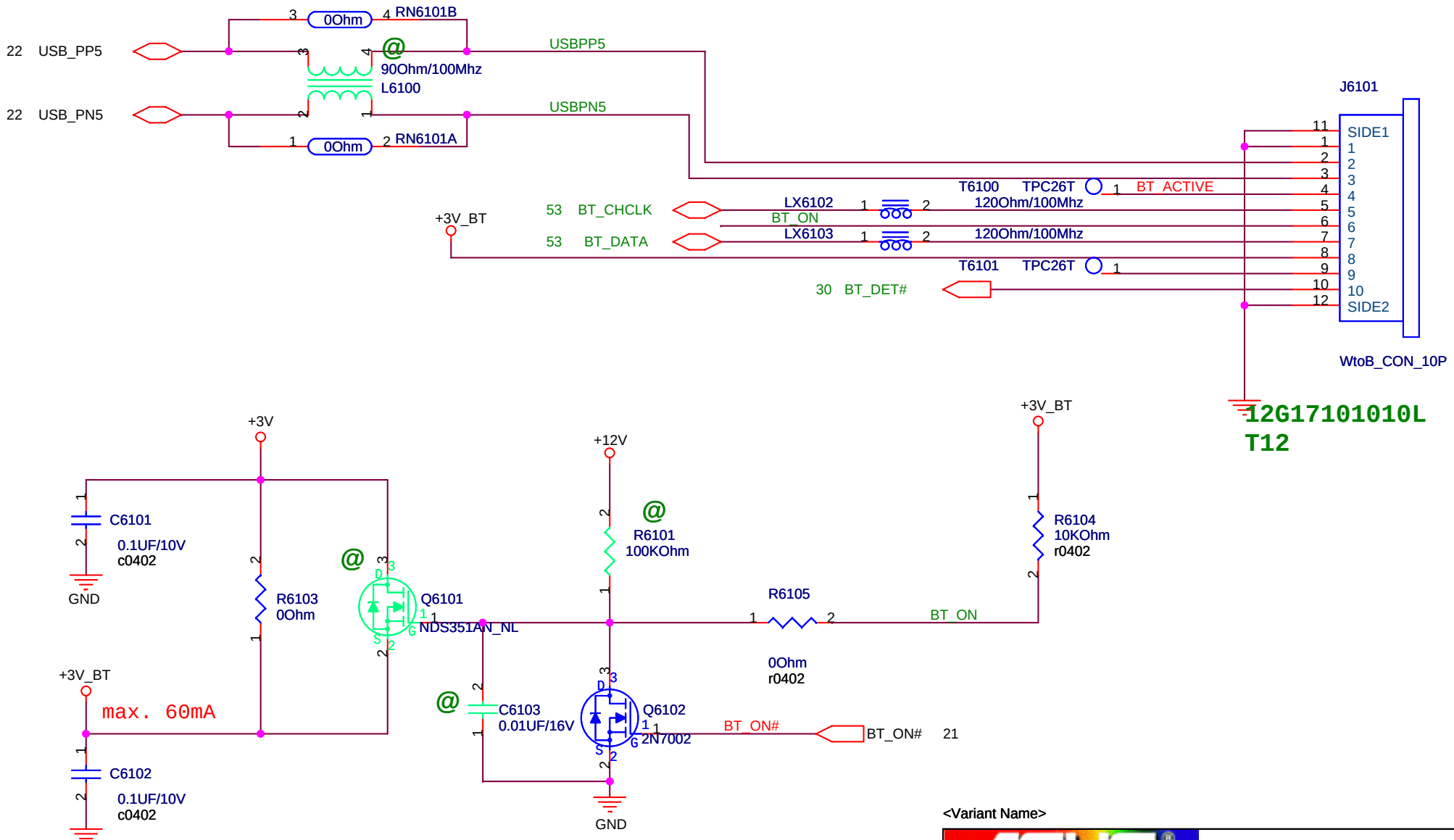
Without Battery & Pull out Adapter



<Variant Name>

ASUSTeK COMPUTER INC. NB	Title : DCIN/Batt conn.	
	Engineer: Hawk / Kaxidy	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Friday, August 17, 2007	Sheet 60 of 94	

BLUETOOTH CONNECTOR



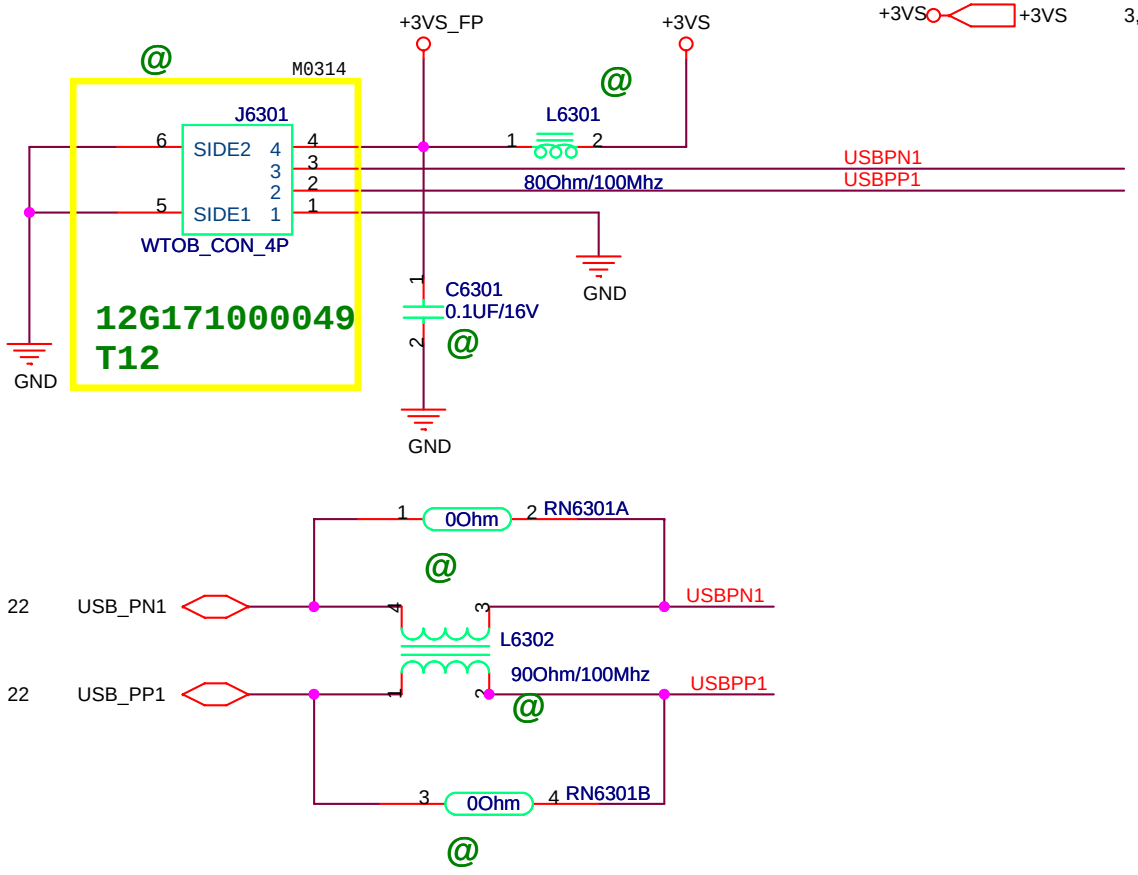
<Variant Name>

ASUSTeK COMPUTER INC .NB	Title : Blue Tooth	
	Engineer: Hawk / Kaxidy	
Size: A	Project Name: T12C	Rev: 1.1
Date: Friday, August 17, 2007	Sheet 61 of 94	

TPM Connector

<Variant Name>

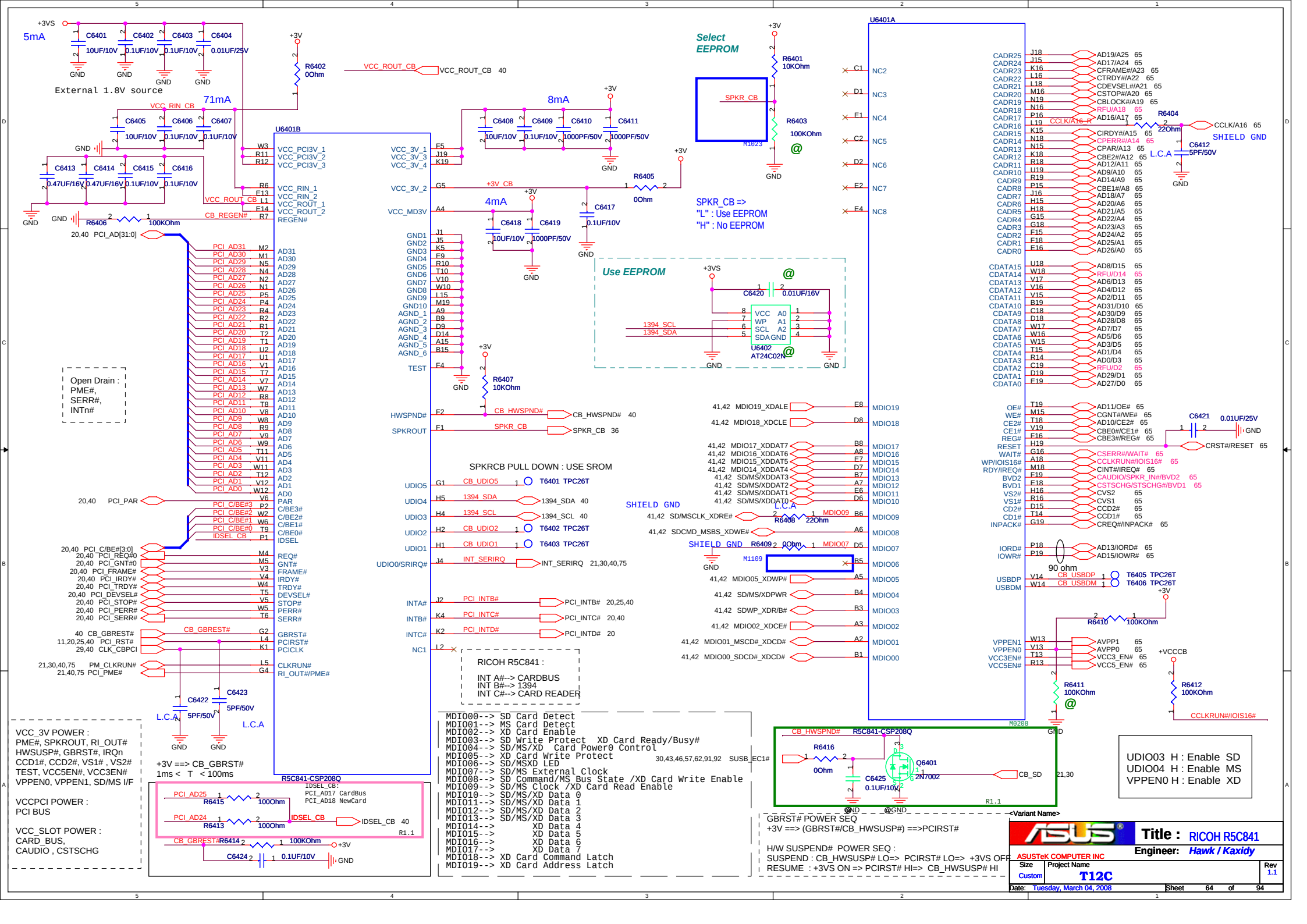
ASUSTeK COMPUTER INC. NB	Title : TPM
	Engineer: Hawk / Kaxidy
Size: A	Project Name: T12C
	Rev: 1.1
Date: Tuesday, March 04, 2008	Sheet 62 of 94



+3VS +3VS 3,7,8,11,20,21,22,23,25,29,30,32,36,37,40,41,42,43,44,45,46,50,51,53,57,62,64,80,91,92

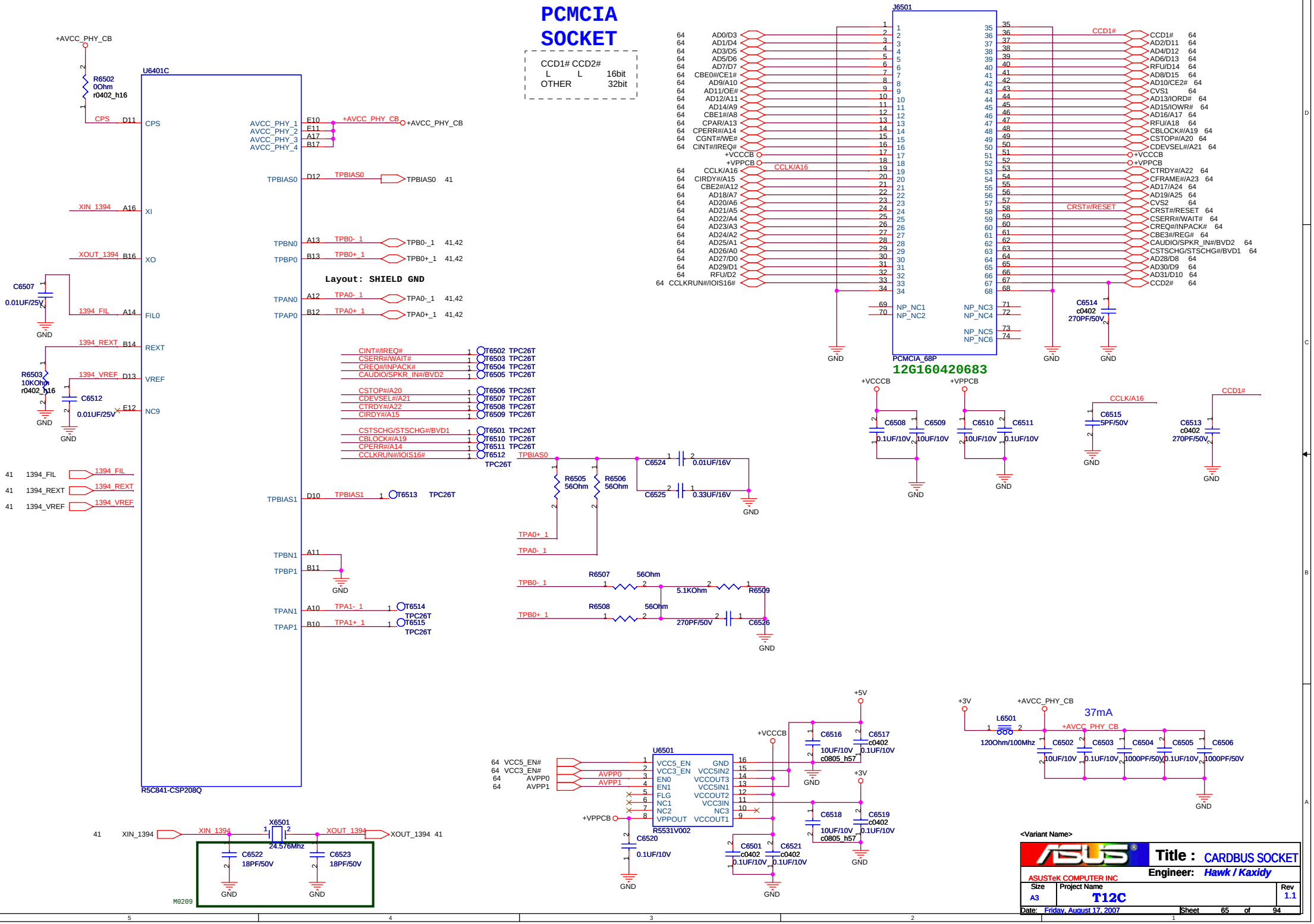
<Variant Name>

ASUSTeK COMPUTER INC. NB	Title : Finger Print	
	Engineer: Hawk / Kaxidy	
Size: A	Project Name: T12C	Rev: 1.1
Date: Friday, August 17, 2007	Sheet 63 of 94	


5mA
External 1.8V source
71mA
8mA
4mA
Select EEPROM
SPKR_CB =>
"L" : Use EEPROM
"H" : No EEPROM
Use EEPROM
SPKRCB PULL DOWN : USE SROM
Open Drain : PME#, SERR#, INTn#
RICOH R5C841 :
INT A#--> CARDBUS
INT B#--> 1394
INT C#--> CARD READER
VCC_3V POWER :
PME#, SPKROUT, RI_OUT#
HWSUSP#, GBRST#, IRQn
CCD1#, CCD2#, VS1# , VS2#
TEST, VCC5EN#, VCC3EN#
VPPEN0, VPPEN1, SD/MS I/F
VCCPCI POWER :
PCI BUS
VCC_SLOT POWER :
CARD_BUS,
CAUDIO , CSTSCHG
+3V ==> CB_GBREST#
1ms < T < 100ms
MDIO00--> SD Card Detect
MDIO01--> MS Card Detect
MDIO02--> XD Card Enable
MDIO03--> SD Write Protect XD Card Ready/Busy#
MDIO04--> SD/MS/XD Card Power0 Control
MDIO05--> XD Card Write Protect
MDIO06--> SD/MSXD LED
MDIO07--> SD/MS External Clock
MDIO08--> SD Command/MS Bus State /XD Card Write Enable
MDIO09--> SD/MS Clock /XD Card Read Enable
MDIO10--> SD/MS/XD Data 0
MDIO11--> SD/MS/XD Data 1
MDIO12--> SD/MS/XD Data 2
MDIO13--> SD/MS/XD Data 3
MDIO14--> XD Data 4
MDIO15--> XD Data 5
MDIO16--> XD Data 6
MDIO17--> XD Data 7
MDIO18--> XD Card Command Latch
MDIO19--> XD Card Address Latch
GBRST# POWER SEQ
+3V ==> (GBRST#/CB_HWSUSP#) ==>PCIRST#
H/W SUSPEND# POWER SEQ :
SUSPEND : CB_HWSUSP# LO=> PCIRST# LO=> +3VS OFF
RESUME : +3VS ON => PCIRST# HI=> CB_HWSUSP# HI
UDIO03 H : Enable SD
UDIO04 H : Enable MS
VPPEN0 H : Enable XD
Title : RICOH R5C841
Engineer: Hawk / Kaxidy
ASUSTeK COMPUTER INC
Size Custom
Project Name T12C
Rev 1.1
Date: Tuesday, March 04, 2008
Sheet 64 of 94

PCMCIA SOCKET

CCD1# CCD2#
L L 16bit
OTHER 32bit



ASUSTeK COMPUTER INC
Engineer: Hawk / Kaxidy

Title : CARDBUS SOCKET

<Variant Name>

Size	Project Name	Rev
A3	T12C	1.1

Date: Friday, August 17, 2007 Sheet 65 of 94

<Variant Name>

Title : eSATA

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Monday, August 13, 2007 Sheet 66 of 94

PCI Device	IDSEL#	REQ/GNT#	Interrupts
LAN	AD15	2	D
1394 (R5C841)	AD17	1	B
CARD READER (R5C841)	AD17	1	C
CARDBUS (R5C841)	AD17	1	D
1394 (R5C832)	AD18	1	B
CARD READER (R5C832)	AD18	1	C

SM-Bus Device	SM-Bus Address
Clock Generator	1101001x (D2)
SO-DIMM 0	1010000x (A0)
SO-DIMM 1	1010001x (A2)
Thermal Sensor (MAX6657)	1001100x (98)
SDVO to DVI (SIL1362A)	0111000x (70)

ASUSTeK COMPUTER INC

Title : RESOURCE

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Monday, August 13, 2007 Sheet 67 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 68 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 69 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 70 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 71 of 94

<Variant Name>

ASUSTeK COMPUTER INC	Title : NULL	
	Engineer: Hawk / Kaxidy	
Size: A	Project Name: T12C	Rev: 1.1
Date: Monday, August 13, 2007	Sheet 72 of 94	

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 73 of 94

<Variant Name>

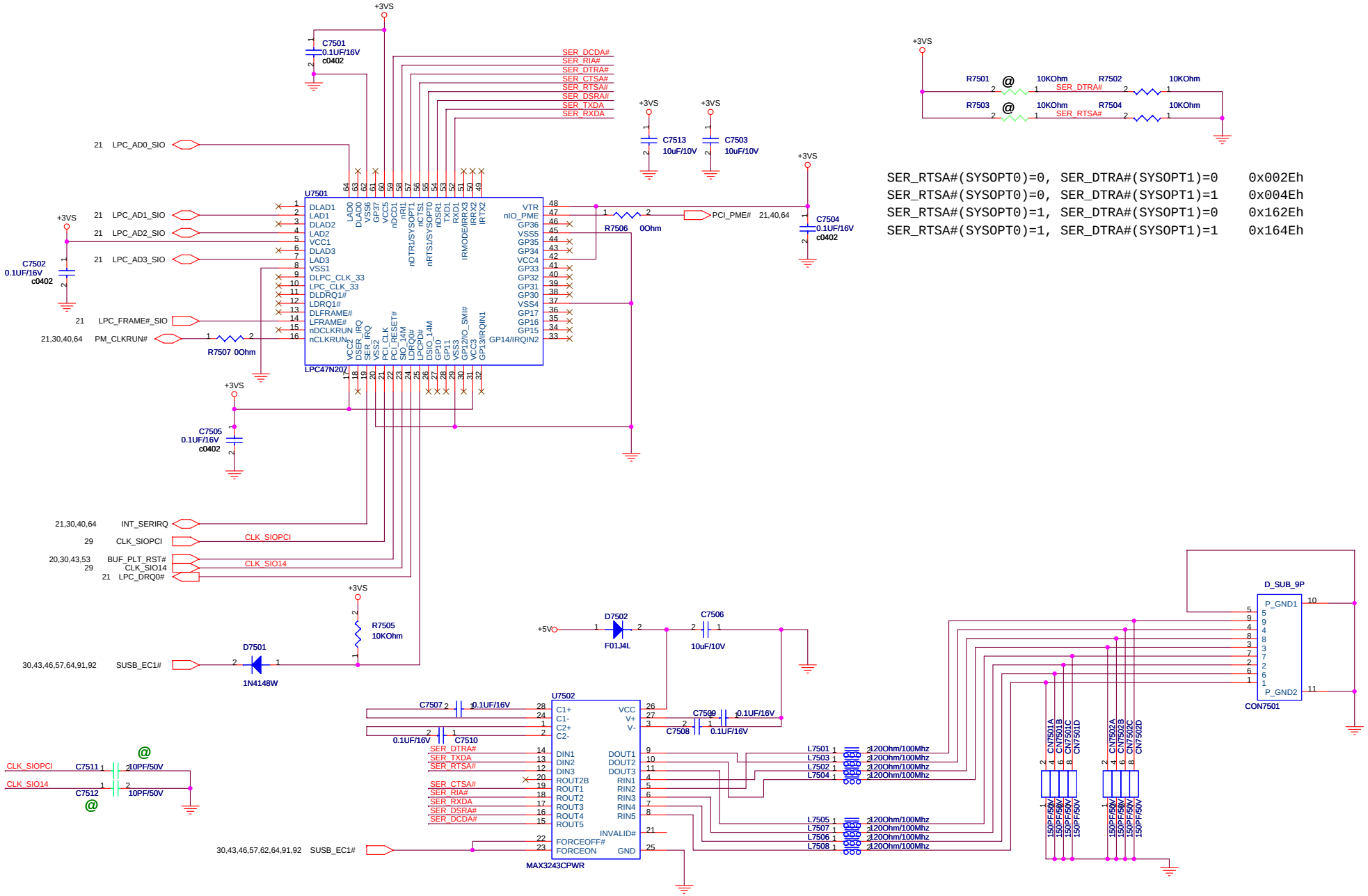
Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 74 of 94



SER_RTSA#(SYSOPT0)=0,	SER_DTRA#(SYSOPT1)=0	0x002Eh
SER_RTSA#(SYSOPT0)=0,	SER_DTRA#(SYSOPT1)=1	0x004Eh
SER_RTSA#(SYSOPT0)=1,	SER_DTRA#(SYSOPT1)=0	0x162Eh
SER_RTSA#(SYSOPT0)=1,	SER_DTRA#(SYSOPT1)=1	0x164Eh

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, March 07, 2008 Sheet 75 of 94

Title :	Null
ASUSTeK COMPUTER INC	Engineer: *Hawk / Kaxidy*
Size: Custom	Project Name: T12C
Rev: 1.1	
Date: Tuesday, February 26, 2008	Sheet 76 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 77 of 94

<Variant Name>

Title : NULL

ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
A	T12C	1.1

Date: Monday, August 13, 2007 Sheet 78 of 94

Change Note:

R1.1 :

1. Reserve LVDS Up and Low channel of VGA side.
2. Change R3404 R3405 to 0ohm for LAN disconnect issue.
3. Change U3302 U3303 for new part.
4. Add D6004/D6003 for optional
5. Add R3114,R3115
6. Add Q3301,Q3302,R3341,R3342, C3329,C3330
7. Change IDSEL_CB to AD24/AD25. p64
8. add R6416 to CB_HWSPND#. P65
9. add Q3709 for depop issue. P37
9. change Q9203 TO Q3705B for ref error.

R2.0 :

1. Add C3202/C4210 /R4216 for EMI
2. Add R4607 and change Q4603 for LCD VCC
3. Add C2530,C2545,C2546,C2547,C2548,C2549,C2550,C2551,C2552,C2553,C2554,C2555

<Variant Name>

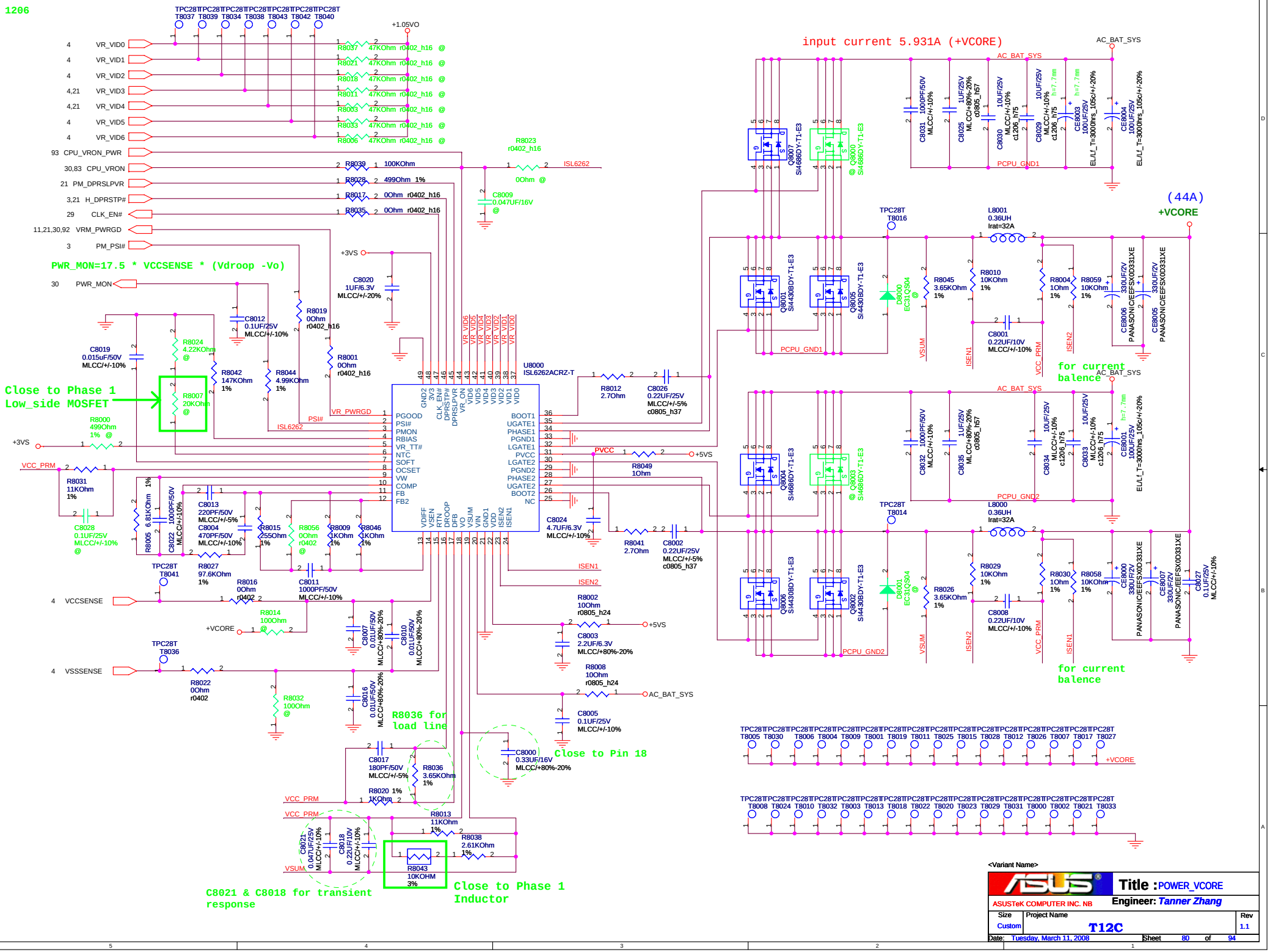
Title : NULL

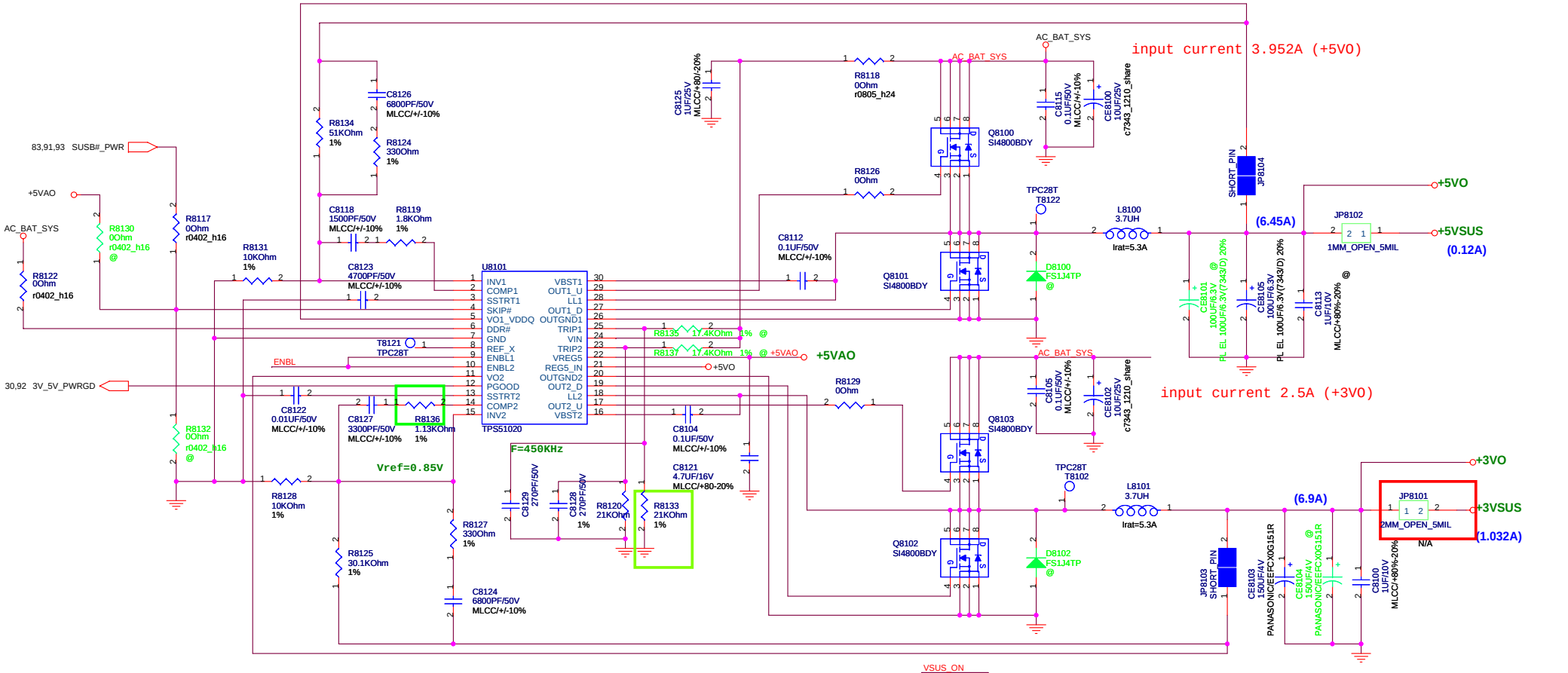
ASUSTeK COMPUTER INC

Engineer: Hawk / Kaxidy

Size	Project Name	Rev
Custom	T12C	1.1

Date: Friday, August 17, 2007 Sheet 79 of 94


1206
input current 5.931A (+VCORE)
(44A)
+VCORE
PWR_MON=17.5 * VCCSENSE * (Vdroop -Vo)
Close to Phase 1
Low_side MOSFET
for current
balence
R8036 for
load line
Close to Pin 18
C8021 & C8018 for transient
response
Close to Phase 1
Inductor
U8000
ISL6262ACRZ-T
Title : POWER_VCORE
ASUSTeK COMPUTER INC. NB
Engineer: Tanner Zhang
Project Name
T12C
Rev
1.1
Size
Custom
Date: Tuesday, March 11, 2008
Sheet 80 of 94

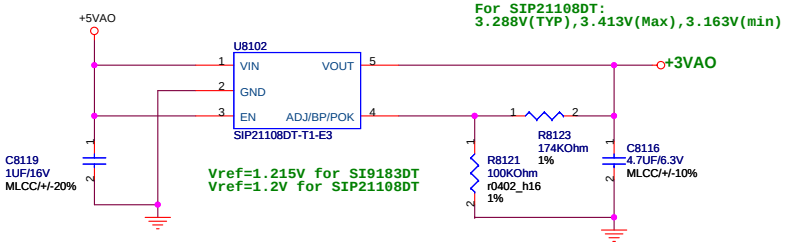


+3VAO

BOM need add second source:
SI9183 (06G007055114)

For SI9183DT:
3.329V(TYP),3.473V(Max),3.178V(min)

For SIP21108DT:
3.288V(TYP),3.413V(Max),3.163V(min)

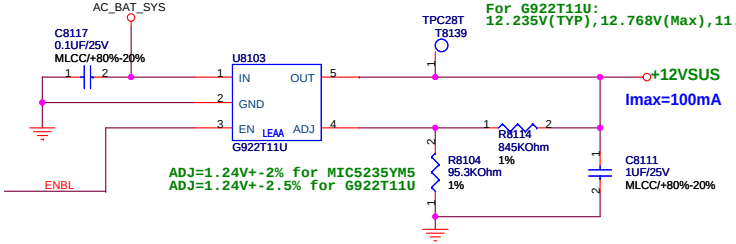


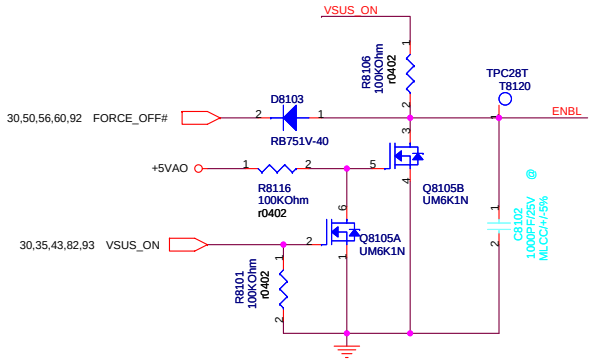
+12VSUS

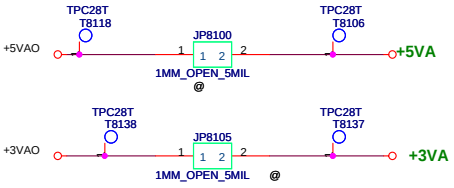
BOM need add second source:
MIC5235YM5 (06G007137020)

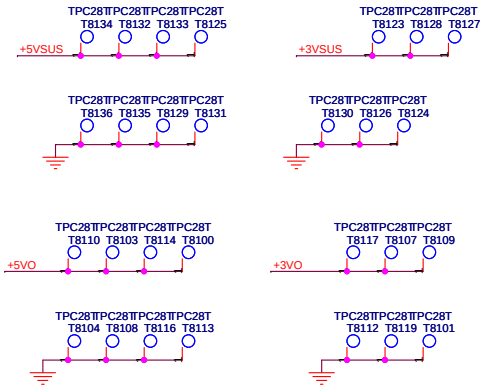
For MIC5235YM5:
12.235V(TYP),12.706V(Max),11.777V(min)

For G922T11U:
12.235V(TYP),12.768V(Max),11.717V(min)



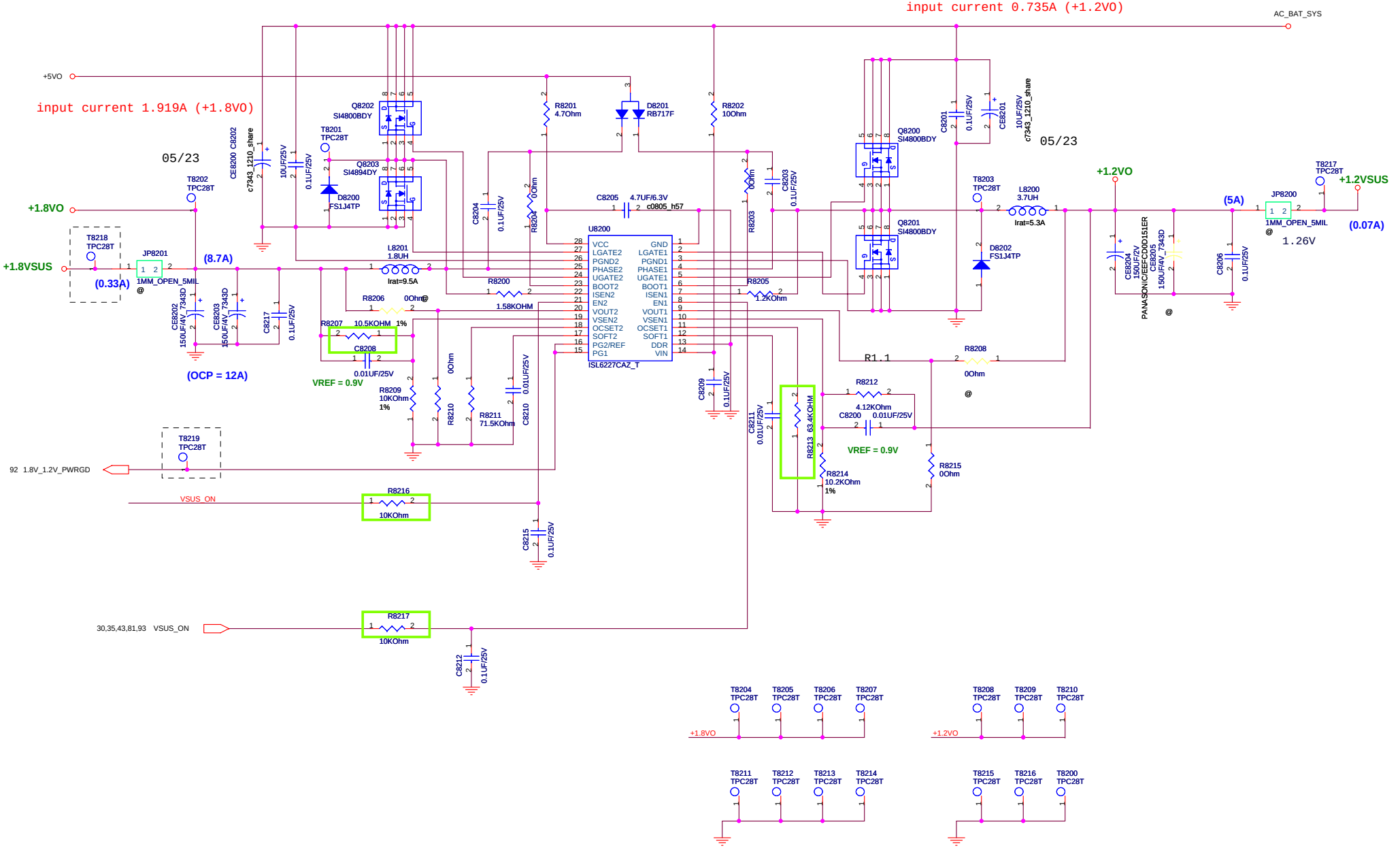




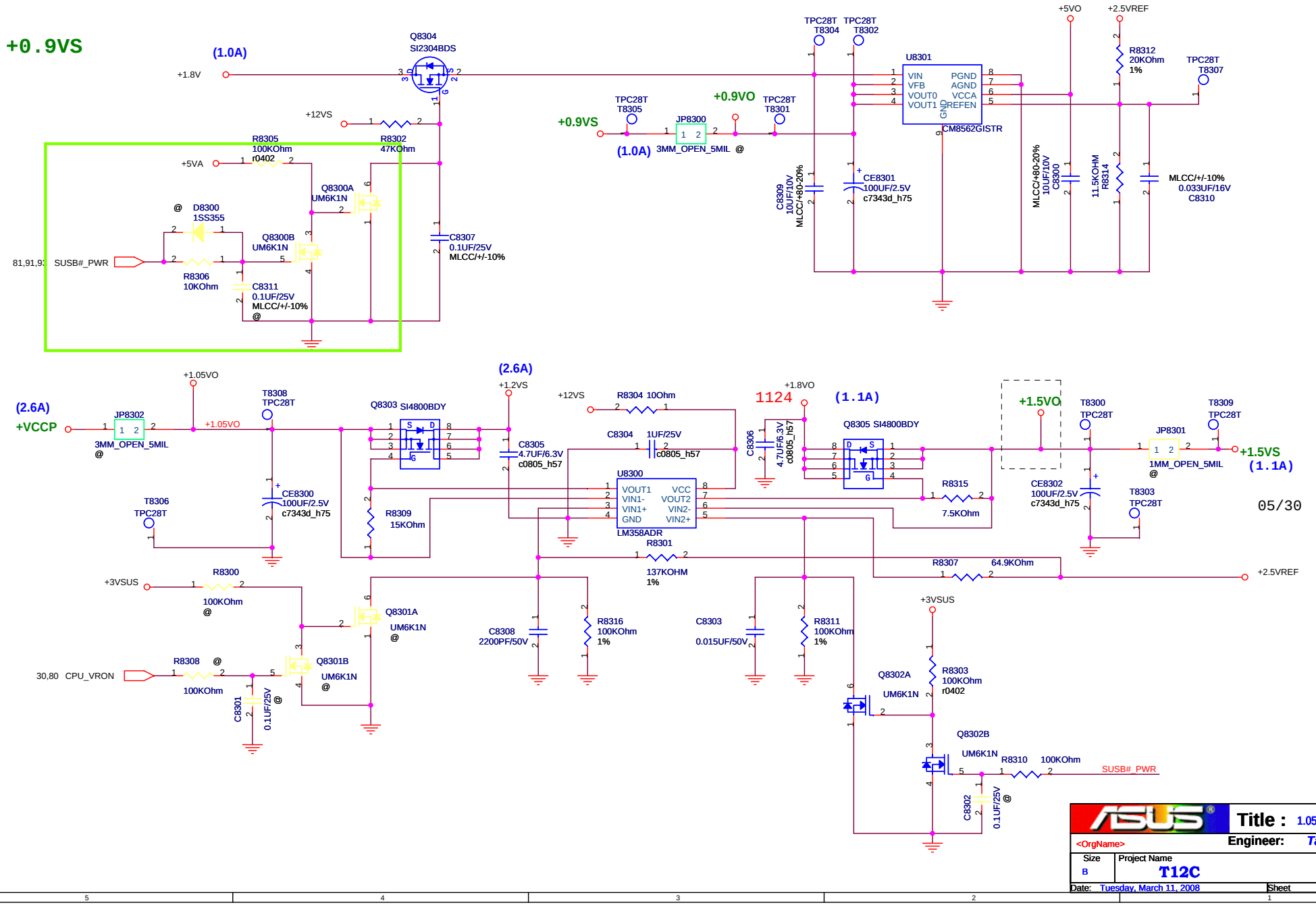


<variant_name>

Title : POWER_SYSTEM		
<OrgName>	Engineer: Tanner_zhang	
Size: Custom	Project Name: T12C	Rev: 1.0
Date: Tuesday, March 11, 2008	Sheet 81 of 94	



Title : 1.8VO&1.2VO		
<OrgName>	Engineer: Tanner	
Size: Custom	Project Name: T12C	Rev: 1.1
Date: Tuesday, March 11, 2008	Sheet 82 of 94	


+0.9VS
(1.0A)
+1.8V
Q8304
SI2304BDS
+12VS
R8305
100KOhm
r0402
R8302
47KOhm
+5VA
Q8300A
UM6K1N
@ D8300
1SS355
Q8300B
UM6K1N
81,91,93 SUSB#_PWR
R8306
10KOhm
C8311
0.1UF/25V
MLCC/+/-10%
@
C8307
0.1UF/25V
MLCC/+/-10%
TPC28T T8304
TPC28T T8302
U8301
VIN
VFB
VOUT0
VOUT1
GND
PGND
AGND
VCCA
PREFEN
CM8562GISTR
+5VO
+2.5VREF
R8312
20KOhm
1%
TPC28T T8307
TPC28T T8305
+0.9VS
JP8300
3MM_OPEN_5MIL @
+0.9VO
TPC28T T8301
(1.0A)
C8309
10UF/10V
MLCC/+80-20%
CE8301
100UF/2.5V
c7343d_h75
MLCC/+80-20%
10UF/10V
C8300
11.5KOHM
R8314
MLCC/+/-10%
0.033UF/16V
C8310
(2.6A)
+VCCP
JP8302
3MM_OPEN_5MIL
@
+1.05VO
T8308
TPC28T
Q8303 SI4800BDY
+1.2VS
+12VS
R8304 10Ohm
C8305
4.7UF/6.3V
c0805_h57
C8304
1UF/25V
c0805_h57
U8300
VOUT1
VIN1-
VIN1+
GND
VCC
VOUT2
VIN2-
VIN2+
LM358ADR
CE8300
100UF/2.5V
c7343d_h75
T8306
TPC28T
R8309
15KOhm
R8301
137KOHM
1%
1124
+1.8VO
(1.1A)
C8306
4.7UF/6.3V
c0805_h57
Q8305 SI4800BDY
R8315
7.5KOhm
+1.5VO
T8300
TPC28T
CE8302
100UF/2.5V
c7343d_h75
T8303
TPC28T
JP8301
1MM_OPEN_5MIL
@
T8309
TPC28T
+1.5VS
(1.1A)
05/30
R8307
64.9KOhm
+2.5VREF
+3VSUS
R8300
100KOhm
@
Q8301A
UM6K1N
@
C8308
2200PF/50V
R8316
100KOhm
1%
C8303
0.015UF/50V
R8311
100KOhm
1%
+3VSUS
Q8302A
UM6K1N
R8303
100KOhm
r0402
Q8302B
UM6K1N
R8310
100KOhm
SUSB#_PWR
30,80 CPU_VRON
R8308
@
100KOhm
C8301
0.1UF/25V
@
C8302
0.1UF/25V
@
Title : 1.05V & +0.9VS
<OrgName>
Engineer: Tanner_zhang
Size B
Project Name T12C
Rev 1.1
Date: Tuesday, March 11, 2008
Sheet 83 of 94

<Variant Name>

Title : POWER_I/O_+3VA & +2.5V

<OrgName>

Engineer: *Tanner_Zhang*

Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 84 of 94

<Variant Name>

Title : POWER_VGA_CORE & RAM

<OrgName>

Engineer: Tanner_zhang

Size	Project Name	Rev
C	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 85 of 94

<Variant Name>

Title : N/A

<OrgName>

Engineer: Tanner_zhang

Size	Project Name	Rev
B	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 86 of 94

<Variant Name>

Title : N/A

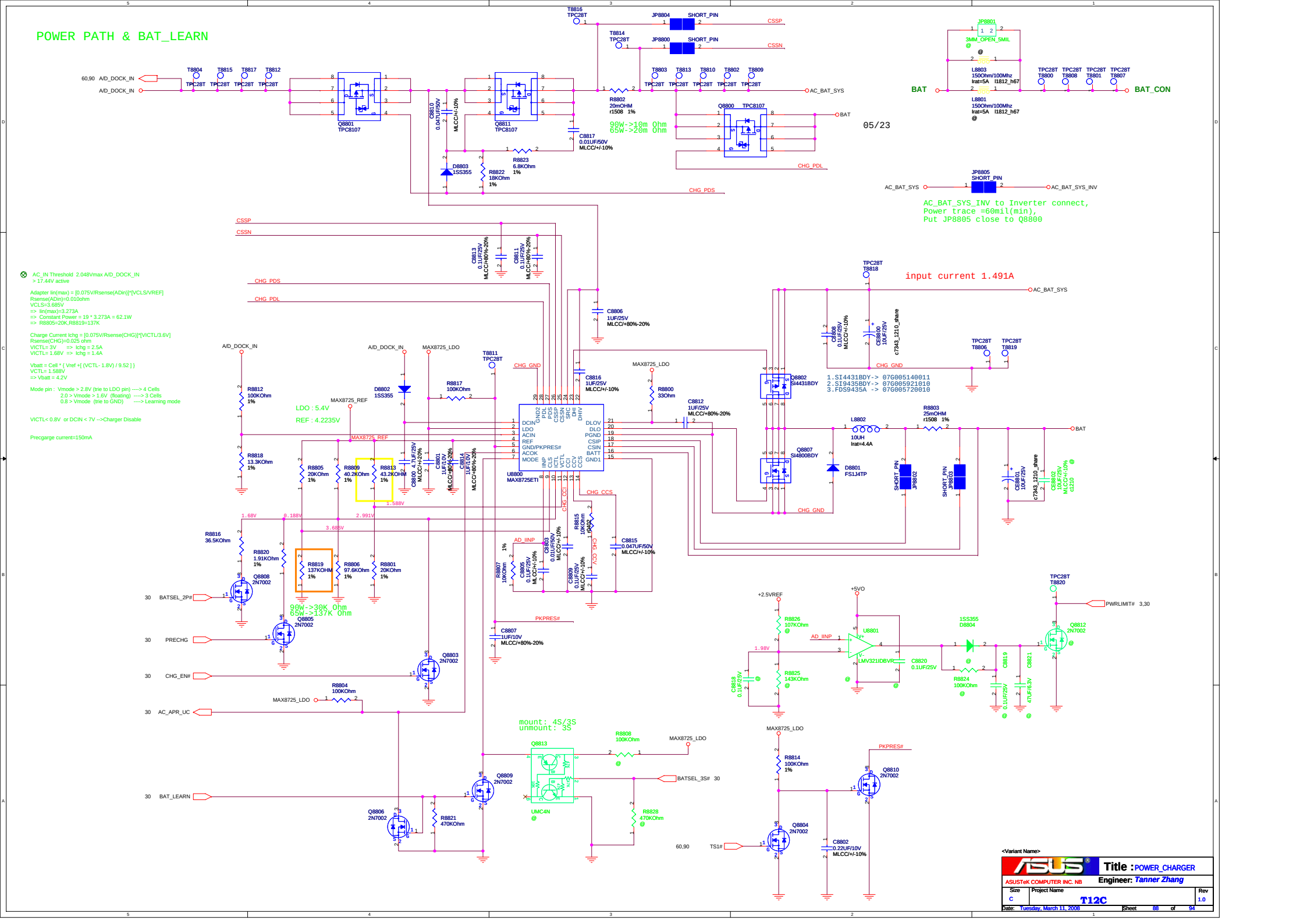
<OrgName>

Engineer: Tanner_zhang

Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 87 of 94

POWER PATH & BAT_LEARN



<Variant Name>

Title : POWER_CHARGER

ASUSTeK COMPUTER INC. NB

Engineer: Tanner Zhang

Size	Project Name	Rev
C	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 88 of 94

<Variant Name>

Title : N/A

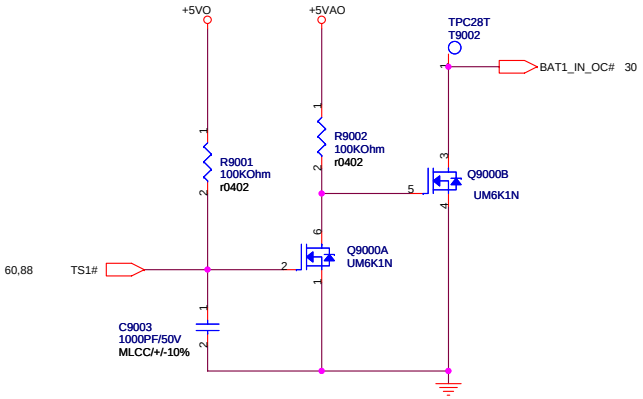
<OrgName>

Engineer: Tanner

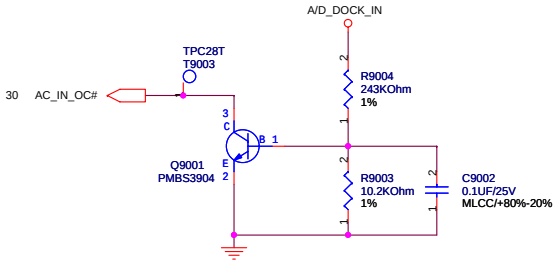
Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 89 of 94

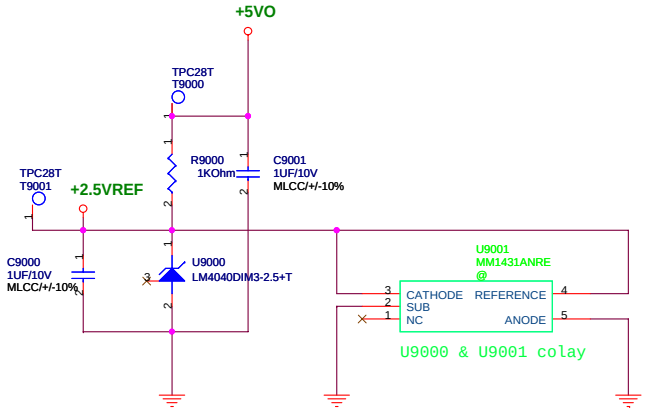
BATTERY IN DETECT



ADAPTER IN DETECT



+2.5VREF



U9000 Main source change to 06G006002414(tolerence:1%).
Add second source 06G006002610 (tolerence:1%),
06G006002412 (tolerence:0.2%) and
06G006002020(tolerence:0.2%)

<Variant Name>

Title : POWER_DETECT

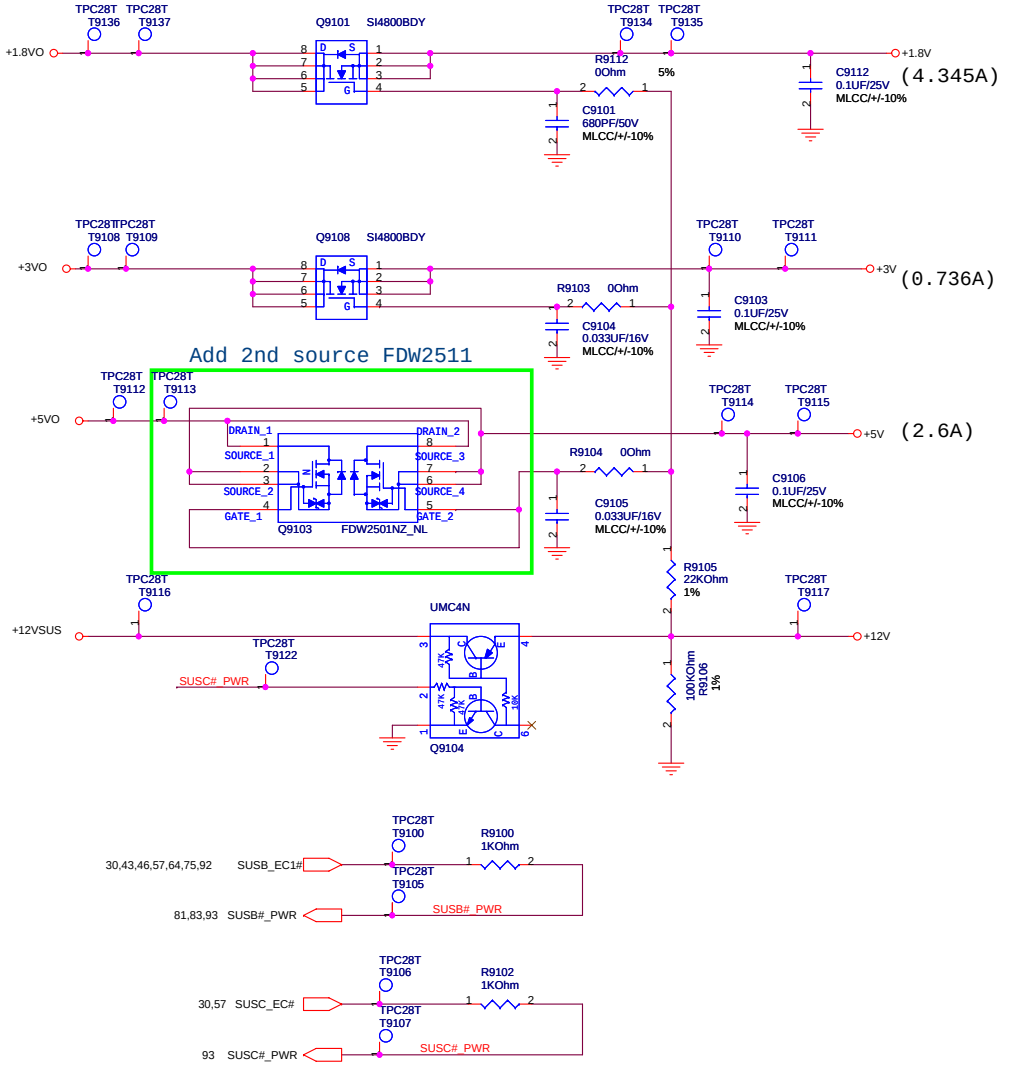
<OrgName>

Engineer: tanner

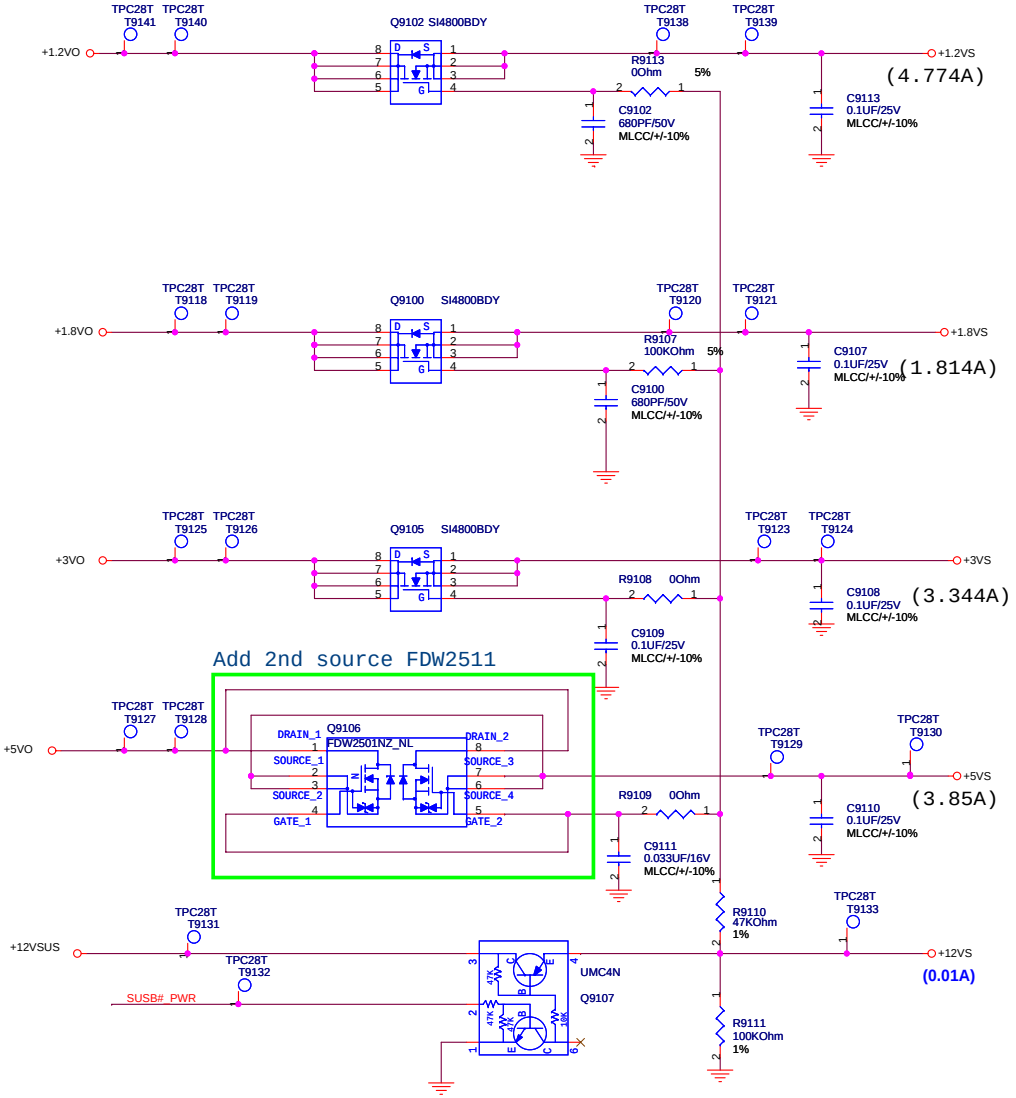
Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 90 of 94

SUSC#_STAGE POWER



SUSB#_STAGE POWER



<Variant Name>

ASUS

Title : POWER_LOAD SWITCH

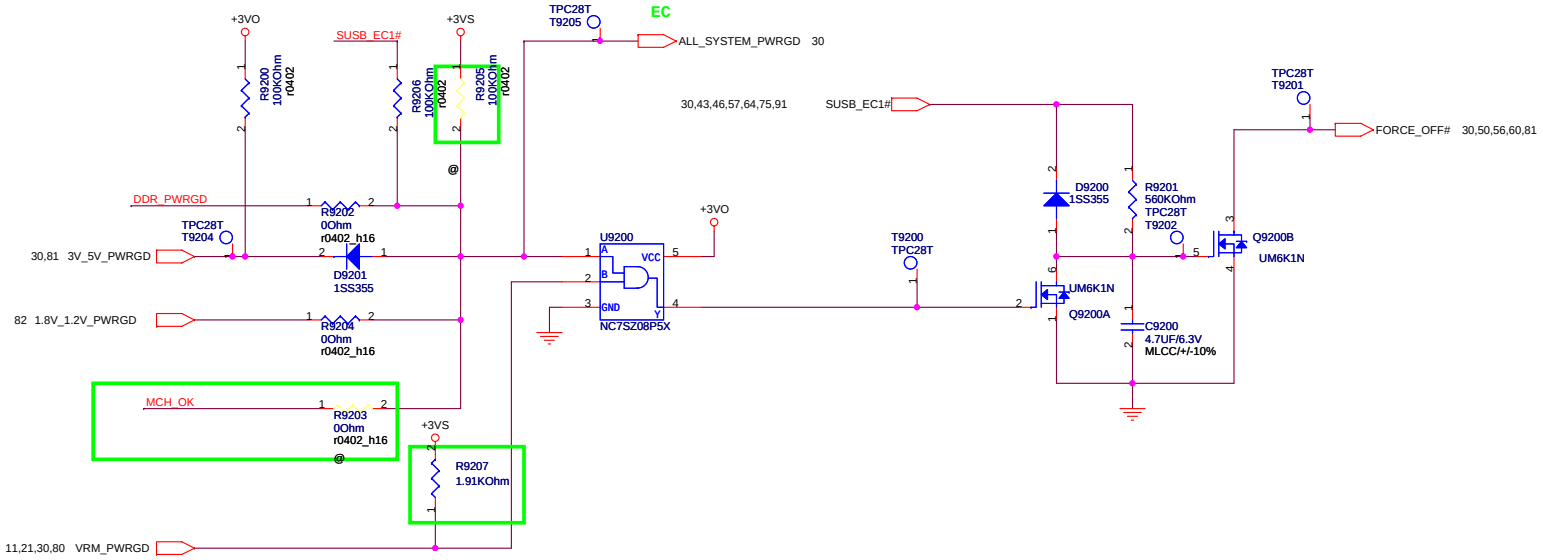
<OrgName>

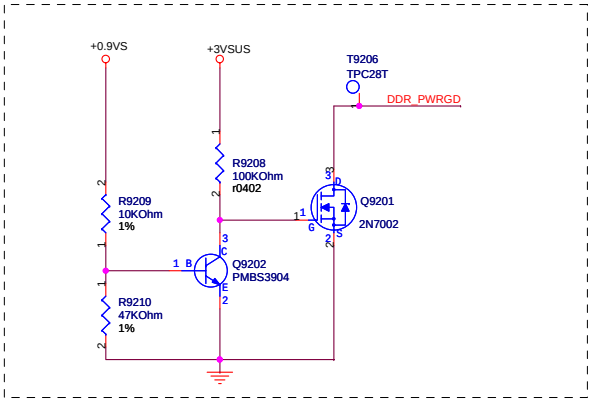
Engineer: Tanner

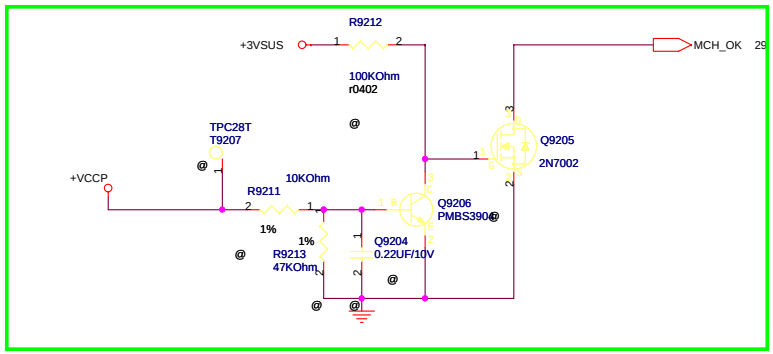
Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 91 of 94

POWER GOOD DETECTER



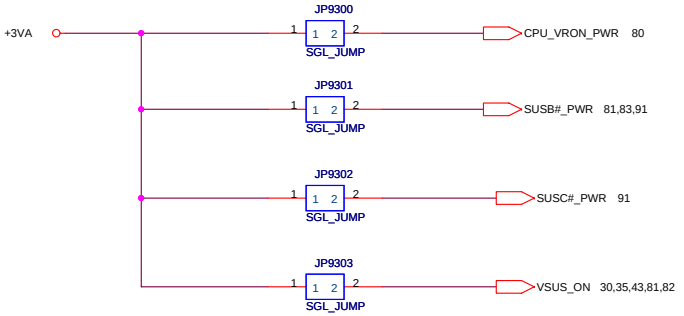




<Variant Name>

ASUS	Title : POWER_PROTECT	
<OrgName>	Engineer: Tanner	
Size: Custom	Project Name: T12C	Rev: 1.0
Date: Tuesday, March 11, 2008	Sheet 92 of 94	

FOR POWER TEST



CHANGE LIST

06/28 SR	change R8133 to 21Kohm, set +5VO ocp at 8.5A
	Change R8216, R8217 to 10Kohm. VSUS_ON soft start.
	change R8213 to 63.4K. set 1.2VO OCP.
	delete R8306,Q8300,R8305.
	Add 2P/1P select circuit in charger
	for power squence, change R9207 to 1.91K
	for BOM cost, change the VCORE output capcitor
07/13 SR	change R8207 to 10.5K, set 1.8vo up tp 1.845V
	change CE8202 to 100uf/2.5v for layout

<Variant Name>

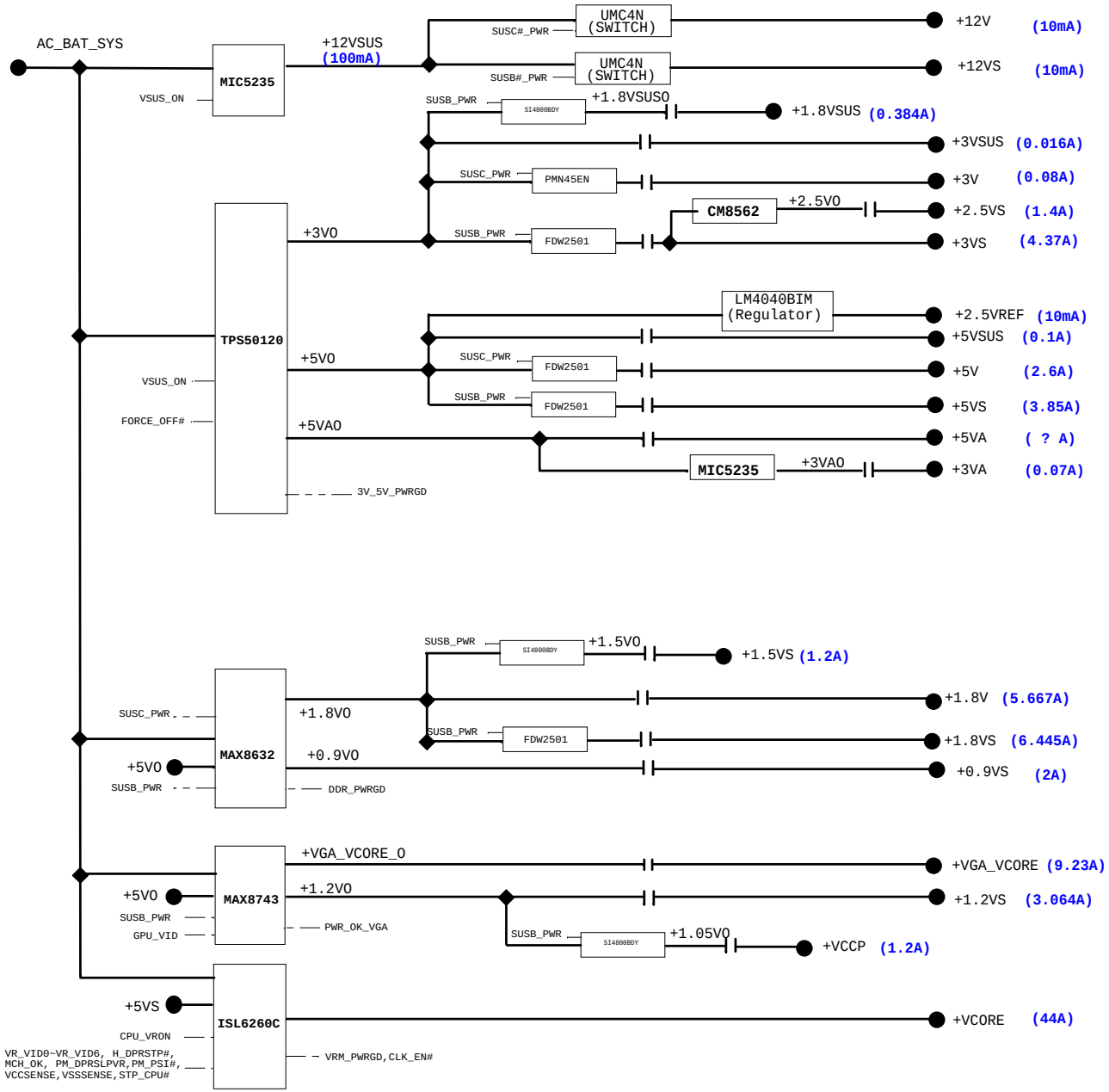
Title : POWER_SIGNAL

<OrgName>

Engineer: Tanner

Size	Project Name	Rev
Custom	T12C	1.0

Date: Tuesday, March 11, 2008 Sheet 93 of 94



<Variant Name>

ASUS	Title : POWER_FLOWCHART	
<OrgName>	Engineer: Tanner	
Size: Custom	Project Name: T12C	Rev: 1.0
Date: Tuesday, March 11, 2008	Sheet 94 of 94	