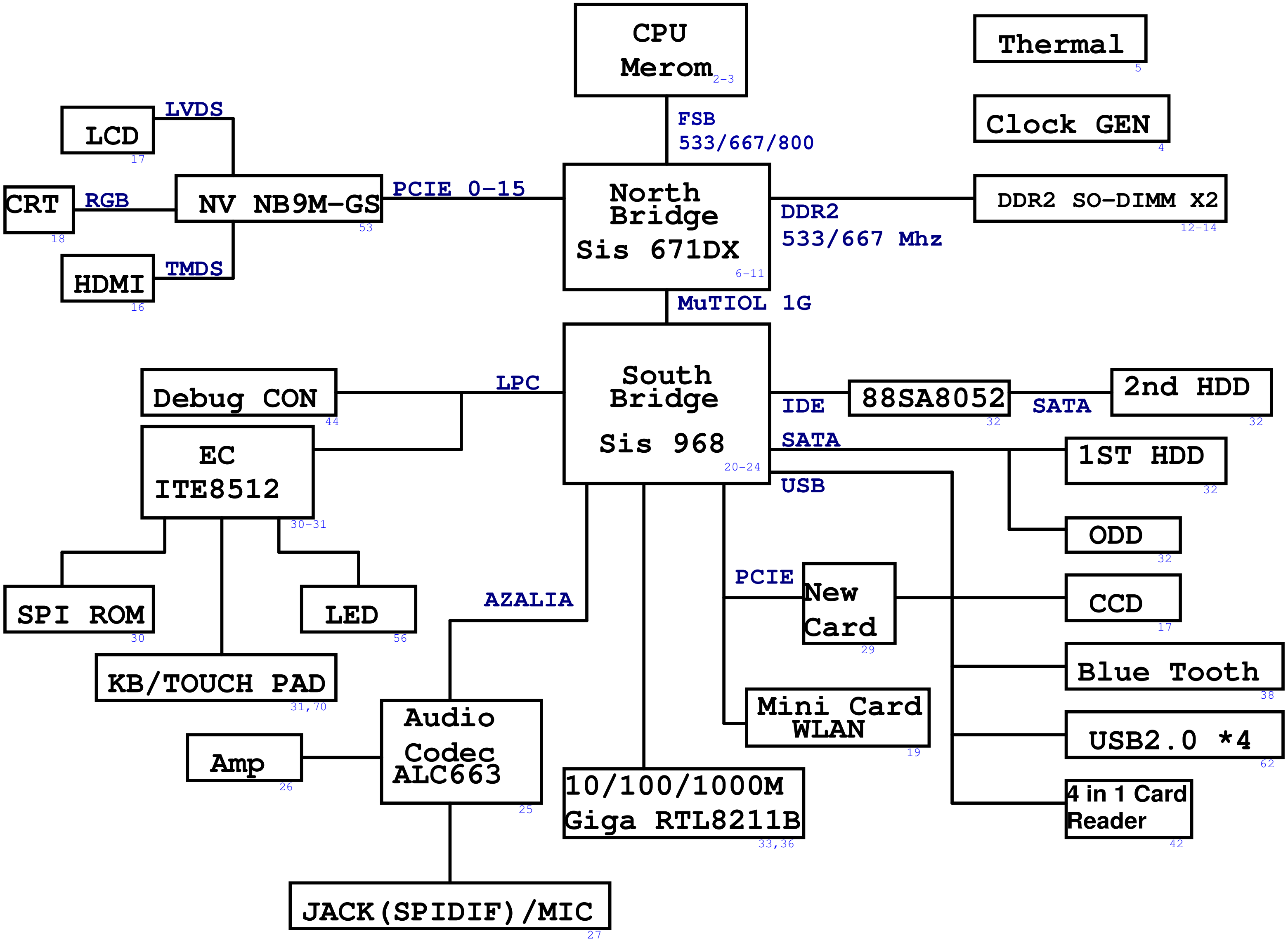
F70SL Main BD. R1.0 BLOCK DIAGRAM


CPU
Merom
2-3
FSB
533/667/800
Thermal
5
Clock GEN
4
LCD
17
LVDS
CRT
18
RGB
NV NB9M-GS
53
PCIE 0-15
HDMI
16
TMDS
North
Bridge
Sis 671DX
6-11
DDR2
533/667 Mhz
DDR2 SO-DIMM X2
12-14
MuTIOL 1G
Debug CON
44
LPC
South
Bridge
Sis 968
20-24
EC
ITE8512
30-31
IDE
88SA8052
32
SATA
2nd HDD
32
SATA
1ST HDD
32
USB
ODD
32
SPI ROM
30
LED
56
AZALIA
PCIE
New
Card
29
CCD
17
KB/TOUCH PAD
31,70
Blue Tooth
38
Mini Card
WLAN
19
Audio
Codec
ALC663
25
Amp
26
USB2.0 *4
62
10/100/1000M
Giga RTL8211B
33,36
4 in 1 Card
Reader
42
JACK(SPIDIF)/MIC
27

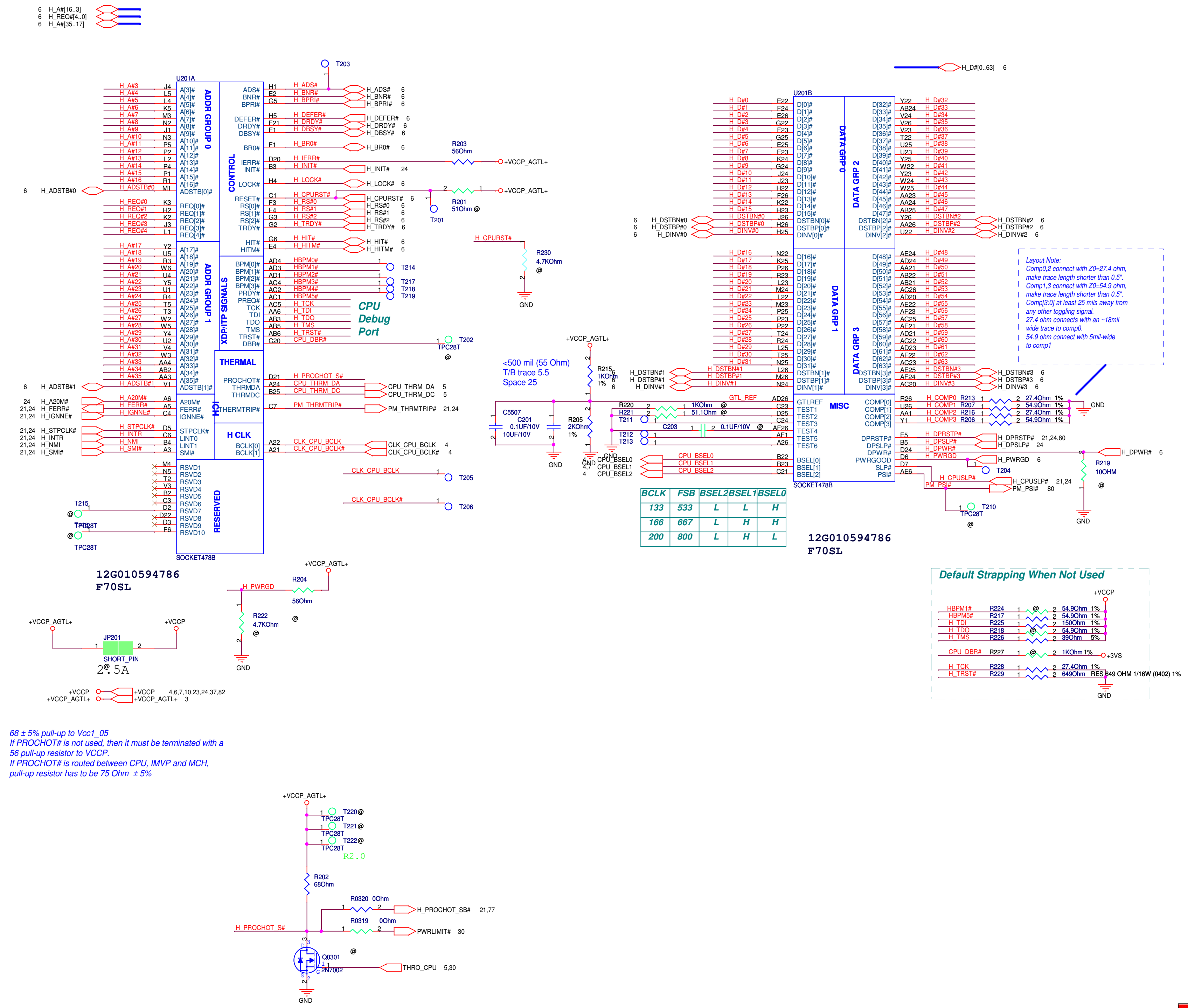
ASUSTeK Computer INC

Title : Block Diagram

Engineer: Miller / Daniel

Size	Project Name	Rev
B	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 1 of 94


U201A
ADDR GROUP 0
ADDR GROUP 1
CONTROL
XDP/ITP SIGNALS
THERMAL
ICH
H CLK
RESERVED
SOCKET478B
U201B
DATA GRP 0
DATA GRP 1
DATA GRP 2
DATA GRP 3
MISC
CPU
Debug
Port
H_A#[16..3]
H_REQ#[4..0]
H_A#[35..17]
H_D#[0..63]
H_ADSTB#0
H_ADSTB#1
H_A20M#
H_FERR#
H_IGNNE#
H_STPCLK#
H_INTR
H_NMI
H_SMI#
H_ADS#
H_BNR#
H_BPRI#
H_DEFER#
H_DRDY#
H_DBSY#
H_BR0#
H_INIT#
H_LOCK#
H_CPURST#
H_RS#0
H_RS#1
H_RS#2
H_TRDY#
H_HIT#
H_HITM#
CPU_THRM_DA
CPU_THRM_DC
PM_THRMTRIP#
CLK_CPU_BCLK
CLK_CPU_BCLK#
H_DSTBN#0
H_DSTBP#0
H_DINV#0
H_DSTBN#1
H_DSTBP#1
H_DINV#1
H_DSTBN#2
H_DSTBP#2
H_DINV#2
H_DSTBN#3
H_DSTBP#3
H_DINV#3
H_DPRSTP#
H_DPSLP#
H_DPWR#
H_PWRGD
H_CPUSLP#
PM_PSI#
CPU_BSEL0
CPU_BSEL1
CPU_BSEL2
+VCCP_AGTL+
+VCCP
+3VS
GND
R203 56Ohm
R201 51Ohm
R230 4.7KOhm
R215 1KOhm 1%
R205 2KOhm 1%
C5507 0.1UF/10V
C201 0.1UF/10V
R220 1KOhm
R221 51.1Ohm
C203 0.1UF/10V
R213 27.4Ohm 1%
R207 54.9Ohm 1%
R216 27.4Ohm 1%
R206 54.9Ohm 1%
R219 10OHM
R204 56Ohm
R222 4.7KOhm
JP201 SHORT_PIN 2.5A
R202 68Ohm
R0320 0Ohm
R0319 0Ohm
Q0301 2N7002
H_PROCHOT_SB#
PWRLIMIT#
THRO_CPU
R2.0
<500 mil (55 Ohm)
T/B trace 5.5
Space 25
12G010594786
F70SL
Default Strapping When Not Used
HBPM1# R224 54.9Ohm 1%
HBPM5# R217 54.9Ohm 1%
H_TDI R225 150Ohm 1%
H_TDO R218 54.9Ohm 1%
H_TMS R226 39Ohm 5%
CPU_DBR# R227 1KOhm 1%
H_TCK R228 27.4Ohm 1%
H_TRST# R229 649Ohm RES 649 OHM 1/16W (0402) 1%

Layout Note:
Comp0,2 connect with Z0=27.4 ohm,
make trace length shorter than 0.5".
Comp1,3 connect with Z0=54.9 ohm,
make trace length shorter than 0.5".
Comp[3:0] at least 25 mils away from
any other toggling signal.
27.4 ohm connects with an ~18mil
wide trace to comp0.
54.9 ohm connect with 5mil-wide
to comp1

BCLK	FSB	BSEL2	BSEL1	BSEL0
133	533	L	L	H
166	667	L	H	H
200	800	L	H	L

68 ± 5% pull-up to Vcc1_05
If PROCHOT# is not used, then it must be terminated with a
56 pull-up resistor to VCCP.
If PROCHOT# is routed between CPU, IMVP and MCH,
pull-up resistor has to be 75 Ohm ± 5%

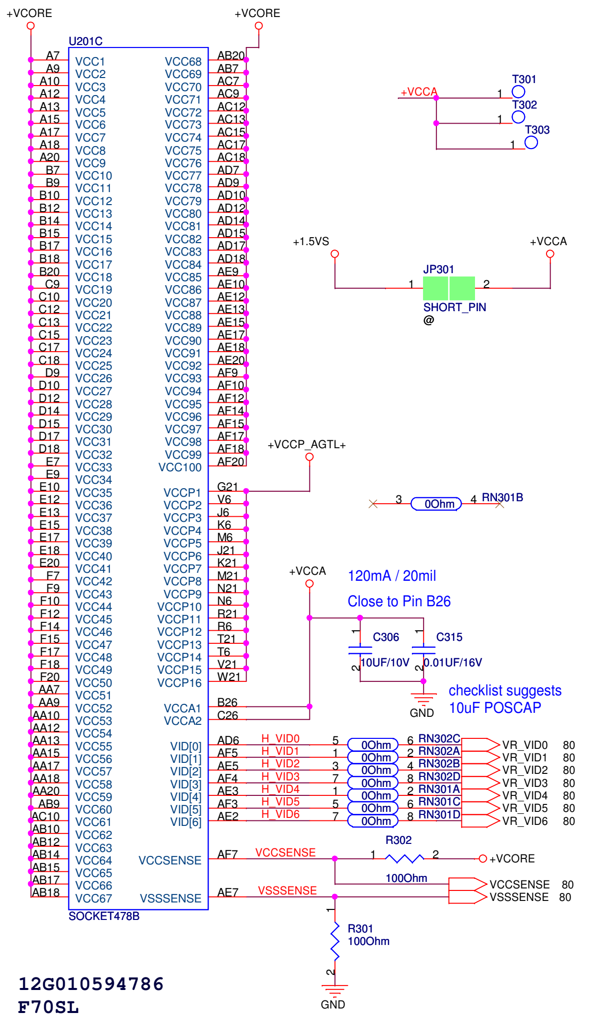
Title : Merom CPU (1)		
ASUSTeK COMPUTER INC	**Engineer:** *Miller / Daniel*	
Size C	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 2 of 94	

YUNAH FSB667

	LFM	TYP	HFM
VCC	1.14V	1.2V	1.356V
	C4	C3	C0
ICC	0.9A	7.59A	27A

YUNAH FSB667

	Min	Typ	Max
VCCP	0.997V	1.05V	1.102V
	Min	Typ	Max
ICCP			2.5A



+VCORE
+VCORE
U201C
VCC1 … VCC67
VCC68 … VCC100
VCCP1 … VCCP16
VCCA1
VCCA2
VID[0] … VID[6]
VCCSENSE
VSSSENSE
SOCKET478B
+VCCA
T301
T302
T303
+1.5VS
+VCCA
JP301
SHORT_PIN
@
+VCCP_AGTL+
RN301B
0Ohm
+VCCA
C306
10UF/10V
C315
0.01UF/16V
GND
H_VID0
H_VID1
H_VID2
H_VID3
H_VID4
H_VID5
H_VID6
RN302C
RN302A
RN302B
RN302D
RN301A
RN301C
RN301D
0Ohm
VR_VID0 80
VR_VID1 80
VR_VID2 80
VR_VID3 80
VR_VID4 80
VR_VID5 80
VR_VID6 80
VCCSENSE
VSSSENSE
R302
100Ohm
+VCORE
VCCSENSE 80
VSSSENSE 80
R301
100Ohm
GND

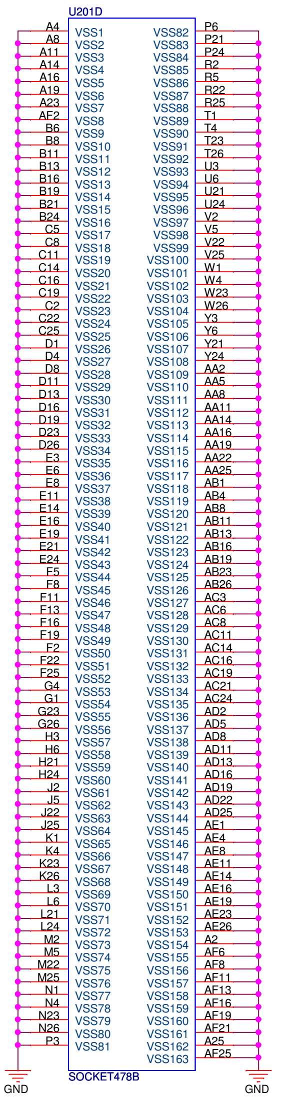
120mA / 20mil

Close to Pin B26

checklist suggests 10uF POSCAP

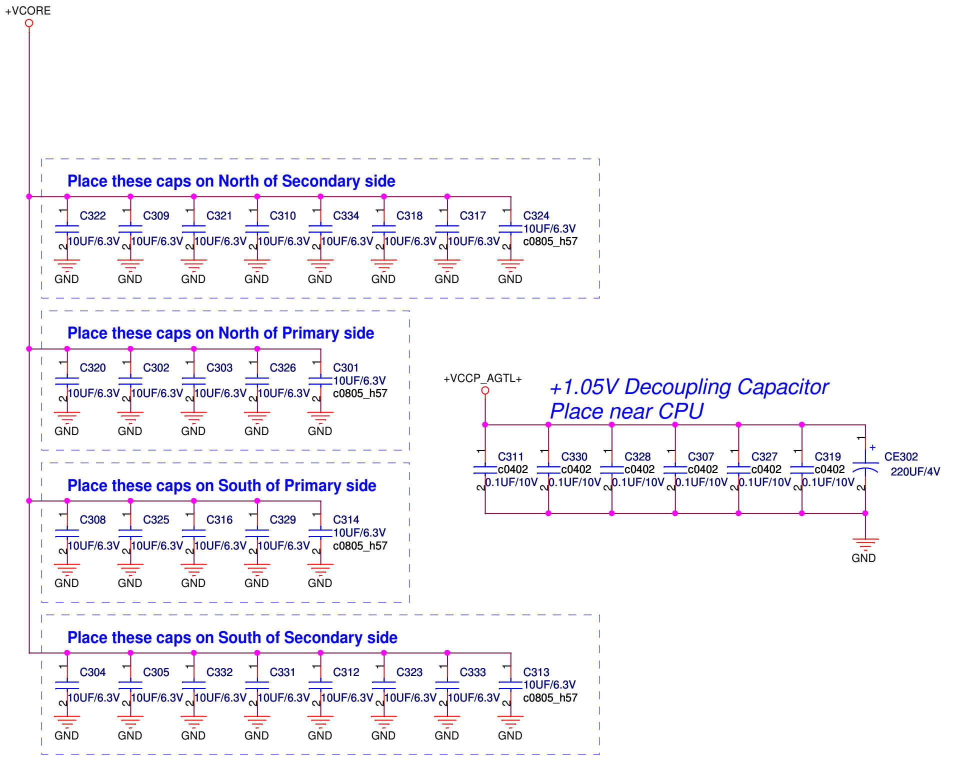
12G010594786
F70SL

Layout Note:
VCCSENSE/VSSSENSE lines between the CPU and the VR should have a trace width of 18 mils on 7 mils spacing, with trace impedance of Zo=27.4 Ohm.
The VCCSENSE/VSSSENSE should be length matched to within 25 mils.
These resistors should be placed within 2 inch of the CPU.



U201D
VSS1 … VSS81
VSS82 … VSS163
SOCKET478B
GND
GND

12G010594786
F70SL



+VCORE
C322
C309
C321
C310
C334
C318
C317
C324
10UF/6.3V
c0805_h57
GND
C320
C302
C303
C326
C301
C308
C325
C316
C329
C314
C304
C305
C332
C331
C312
C323
C333
C313
+VCCP_AGTL+
C311
C330
C328
C307
C327
C319
c0402
0.1UF/10V
CE302
220UF/4V
GND

Place these caps on North of Secondary side

Place these caps on North of Primary side

Place these caps on South of Primary side

Place these caps on South of Secondary side

+1.05V Decoupling Capacitor
Place near CPU

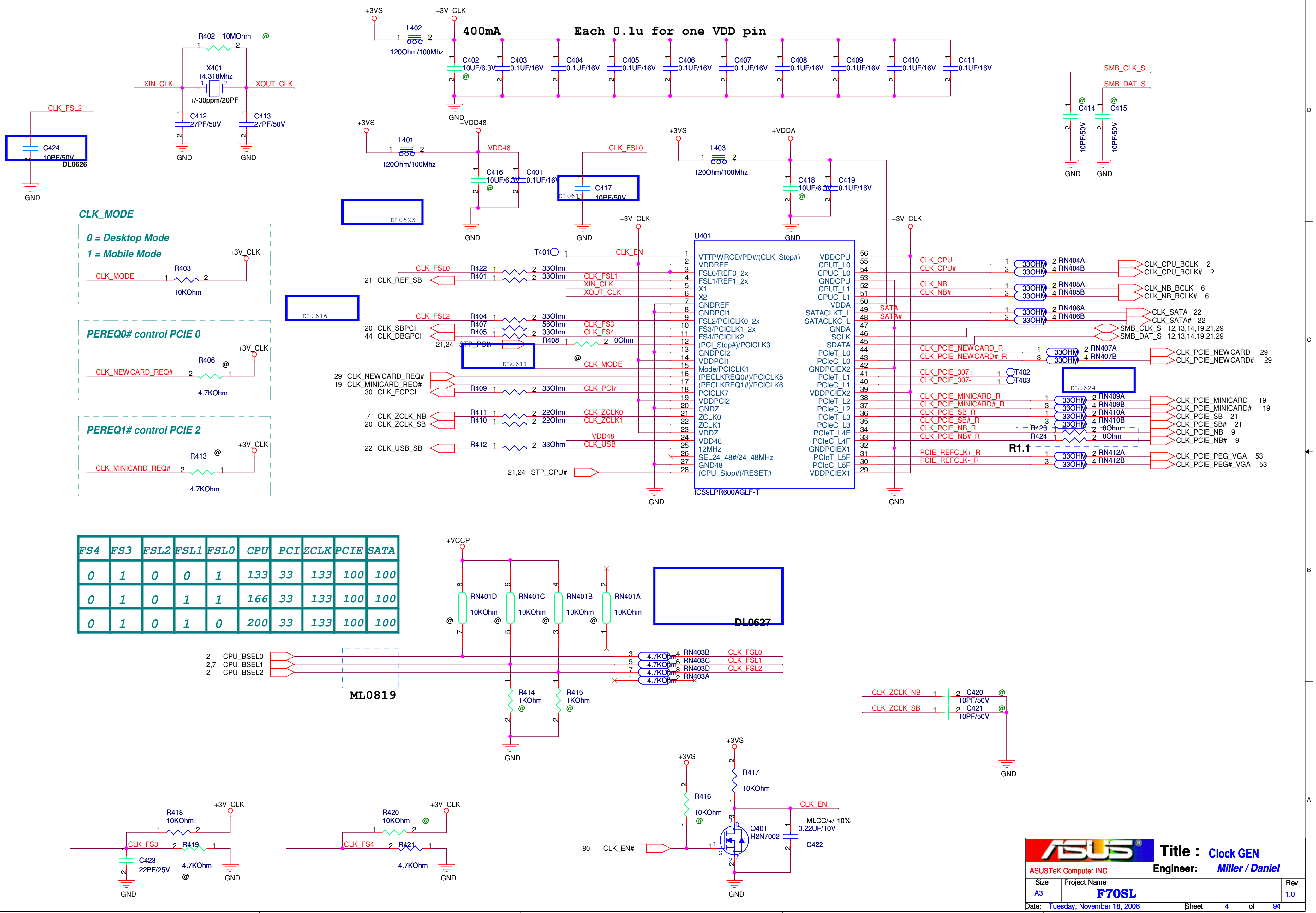
ASUSTeK COMPUTER INC

Title : Merom CPU (2)

Engineer: Miller / Daniel

Size	Project Name	Rev
A3	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 3 of 94


400mA
Each 0.1u for one VDD pin
+3VS
+3V_CLK
L402
120Ohm/100Mhz
C402 10UF/6.3V
C403 0.1UF/16V
C404 0.1UF/16V
C405 0.1UF/16V
C406 0.1UF/16V
C407 0.1UF/16V
C408 0.1UF/16V
C409 0.1UF/16V
C410 0.1UF/16V
C411 0.1UF/16V
GND
R402 10MOhm
X401 14.318Mhz
+/-30ppm/20PF
XIN_CLK
XOUT_CLK
C412 27PF/50V
C413 27PF/50V
CLK_FSL2
C424 10PF/50V
DL0626
+VDD48
L401
120Ohm/100Mhz
VDD48
C416 10UF/6.3V
C401 0.1UF/16V
CLK_FSL0
C417 10PF/50V
DL0611
+VDDA
L403
120Ohm/100Mhz
C418 10UF/6.3V
C419 0.1UF/16V
SMB_CLK_S
SMB_DAT_S
C414 10PF/50V
C415 10PF/50V
DL0623
DL0616
CLK_MODE
0 = Desktop Mode
1 = Mobile Mode
R403 10KOhm
PEREQ0# control PCIE 0
CLK_NEWCARD_REQ#
R406 4.7KOhm
PEREQ1# control PCIE 2
CLK_MINICARD_REQ#
R413 4.7KOhm
U401
ICS9LPR600AGLF-T
VTTPWRGD/PD#/(CLK_Stop#)
VDDREF
FSL0/REF0_2x
FSL1/REF1_2x
X1
X2
GNDREF
GNDPCI1
FSL2/PCICLK0_2x
FS3/PCICLK1_2x
FS4/PCICLK2
(PCI_Stop#)/PCICLK3
GNDPCI2
VDDPCI1
Mode/PCICLK4
(PECLKREQ0#)/PCICLK5
(PECLKREQ1#)/PCICLK6
PCICLK7
VDDPCI2
GNDZ
ZCLK0
ZCLK1
VDDZ
VDD48
12MHz
SEL24_48#/24_48MHz
GND48
(CPU_Stop#)/RESET#
VDDCPU
CPUT_L0
CPUC_L0
GNDCPU
CPUT_L1
CPUC_L1
VDDA
SATACLKT_L
SATACLKC_L
GNDA
SCLK
SDATA
PCIeT_L0
PCIeC_L0
GNDPCIEX2
PCIeT_L1
PCIeC_L1
VDDPCIEX2
PCIeT_L2
PCIeC_L2
PCIeT_L3
PCIeC_L3
PCIeT_L4F
PCIeC_L4F
GNDPCIEX1
PCIeT_L5F
PCIeC_L5F
VDDPCIEX1
T401
CLK_EN
R422 33Ohm
R401 33Ohm
21 CLK_REF_SB
CLK_FSL1
R404 33Ohm
R407 56Ohm
R405 33Ohm
R408 0Ohm
20 CLK_SBPCI
44 CLK_DBGPCI
21,24 STP_PCI#
CLK_FS3
CLK_FS4
CLK_MODE
29 CLK_NEWCARD_REQ#
19 CLK_MINICARD_REQ#
30 CLK_ECPCI
R409 33Ohm
CLK_PCI7
7 CLK_ZCLK_NB
20 CLK_ZCLK_SB
R411 22Ohm
R410 22Ohm
CLK_ZCLK0
CLK_ZCLK1
22 CLK_USB_SB
R412 33Ohm
CLK_USB
21,24 STP_CPU#
CLK_CPU
CLK_CPU#
RN404A 33OHM
RN404B 33OHM
CLK_CPU_BCLK 2
CLK_CPU_BCLK# 2
CLK_NB
CLK_NB#
RN405A 33OHM
RN405B 33OHM
CLK_NB_BCLK 6
CLK_NB_BCLK# 6
SATA
SATA#
RN406A 33OHM
RN406B 33OHM
CLK_SATA 22
CLK_SATA# 22
SMB_CLK_S 12,13,14,19,21,29
SMB_DAT_S 12,13,14,19,21,29
CLK_PCIE_NEWCARD_R
CLK_PCIE_NEWCARD#_R
RN407A 33OHM
RN407B 33OHM
CLK_PCIE_NEWCARD 29
CLK_PCIE_NEWCARD# 29
CLK_PCIE_307+
CLK_PCIE_307-
T402
T403
DL0624
CLK_PCIE_MINICARD_R
CLK_PCIE_MINICARD#_R
RN409A 33OHM
RN409B 33OHM
CLK_PCIE_MINICARD 19
CLK_PCIE_MINICARD# 19
CLK_PCIE_SB_R
CLK_PCIE_SB#_R
RN410A 33OHM
RN410B 33OHM
CLK_PCIE_SB 21
CLK_PCIE_SB# 21
CLK_PCIE_NB_R
CLK_PCIE_NB#_R
R423 0Ohm
R424 0Ohm
CLK_PCIE_NB 9
CLK_PCIE_NB# 9
R1.1
PCIE_REFCLK+_R
PCIE_REFCLK-_R
RN412A 33OHM
RN412B 33OHM
CLK_PCIE_PEG_VGA 53
CLK_PCIE_PEG#_VGA 53
+VCCP
RN401D 10KOhm
RN401C 10KOhm
RN401B 10KOhm
RN401A 10KOhm
DL0627
2 CPU_BSEL0
2,7 CPU_BSEL1
2 CPU_BSEL2
ML0819
RN403B 4.7KOhm
RN403C 4.7KOhm
RN403D 4.7KOhm
RN403A 4.7KOhm
CLK_FSL0
CLK_FSL1
CLK_FSL2
R414 1KOhm
R415 1KOhm
CLK_ZCLK_NB
CLK_ZCLK_SB
C420 10PF/50V
C421 10PF/50V
R417 10KOhm
R416 10KOhm
CLK_EN
Q401 H2N7002
MLCC/+/-10% 0.22UF/10V
C422
80 CLK_EN#
R418 10KOhm
CLK_FS3
R419 4.7KOhm
C423 22PF/25V
R420 10KOhm
CLK_FS4
R421 4.7KOhm

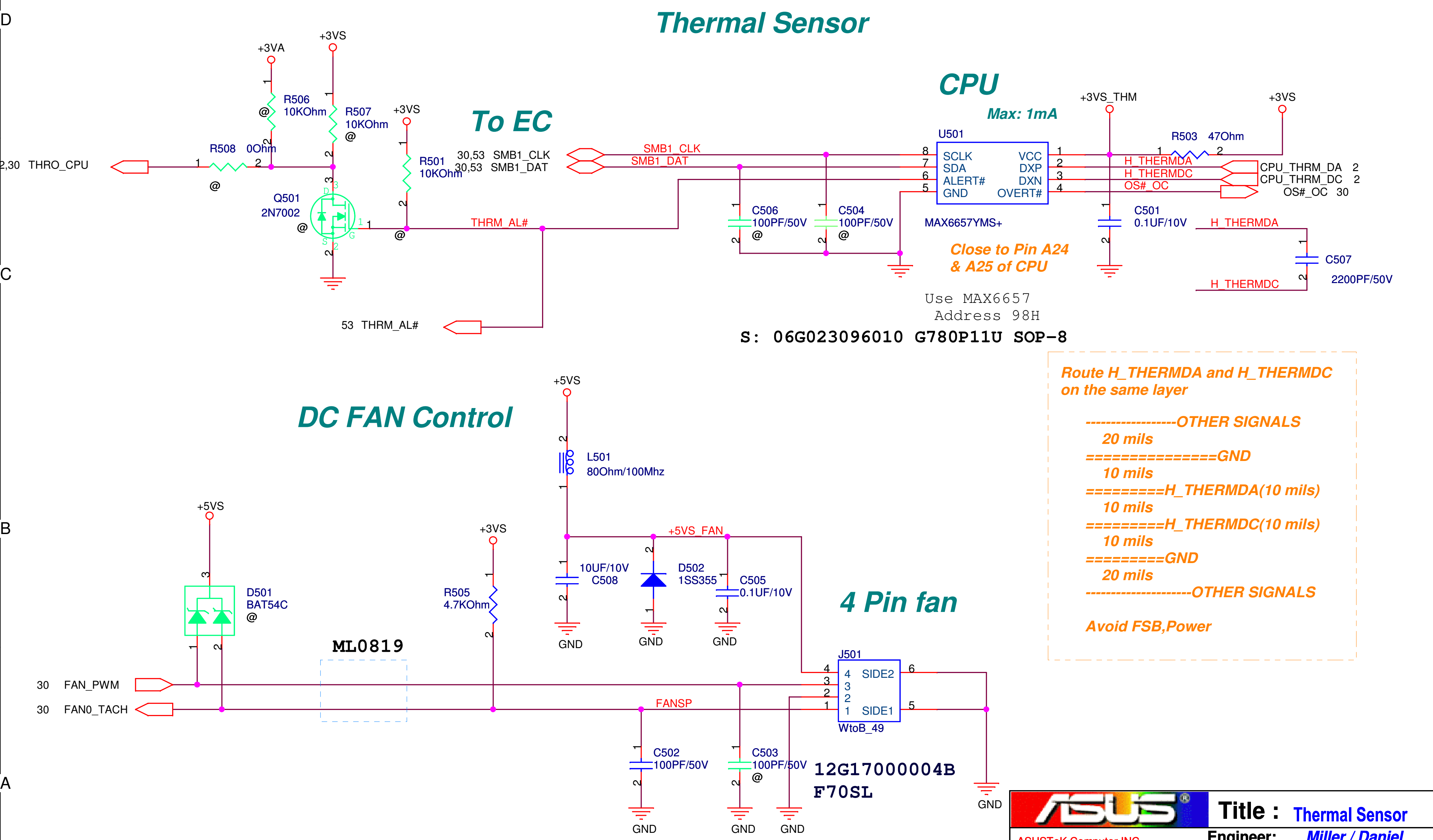
FS4	FS3	FSL2	FSL1	FSL0	CPU	PCI	ZCLK	PCIE	SATA
0	1	0	0	1	133	33	133	100	100
0	1	0	1	1	166	33	133	100	100
0	1	0	1	0	200	33	133	100	100

ASUSTeK Computer INC

Title : Clock GEN

Engineer: Miller / Daniel

Size A3
Project Name F70SL
Rev 1.0
Date: Tuesday, November 18, 2008
Sheet 4 of 94


Thermal Sensor
+3VA
+3VS
R506
10KOhm
@
R507
10KOhm
@
+3VS
R501
10KOhm
To EC
2,30 THRO_CPU
R508 0Ohm
@
Q501
2N7002
@
30,53 SMB1_CLK
30,53 SMB1_DAT
SMB1_CLK
SMB1_DAT
THRM_AL#
53 THRM_AL#
CPU
Max: 1mA
+3VS_THM
+3VS
U501
SCLK
SDA
ALERT#
GND
VCC
DXP
DXN
OVERT#
MAX6657YMS+
R503 47Ohm
H_THERMDA
H_THERMDC
OS#_OC
CPU_THRM_DA 2
CPU_THRM_DC 2
OS#_OC 30
C506
100PF/50V
@
C504
100PF/50V
@
C501
0.1UF/10V
C507
2200PF/50V
Close to Pin A24
& A25 of CPU
Use MAX6657
Address 98H
S: 06G023096010 G780P11U SOP-8
Route H_THERMDA and H_THERMDC
on the same layer
-----------------OTHER SIGNALS
20 mils
================GND
10 mils
=========H_THERMDA(10 mils)
10 mils
=========H_THERMDC(10 mils)
10 mils
=========GND
20 mils
--------------------OTHER SIGNALS
Avoid FSB,Power
DC FAN Control
+5VS
L501
80Ohm/100Mhz
+5VS
D501
BAT54C
@
+3VS
R505
4.7KOhm
10UF/10V
C508
D502
1SS355
C505
0.1UF/10V
+5VS_FAN
GND
4 Pin fan
ML0819
30 FAN_PWM
30 FAN0_TACH
FANSP
J501
SIDE2
SIDE1
WtoB_49
C502
100PF/50V
C503
100PF/50V
@
12G17000004B
F70SL

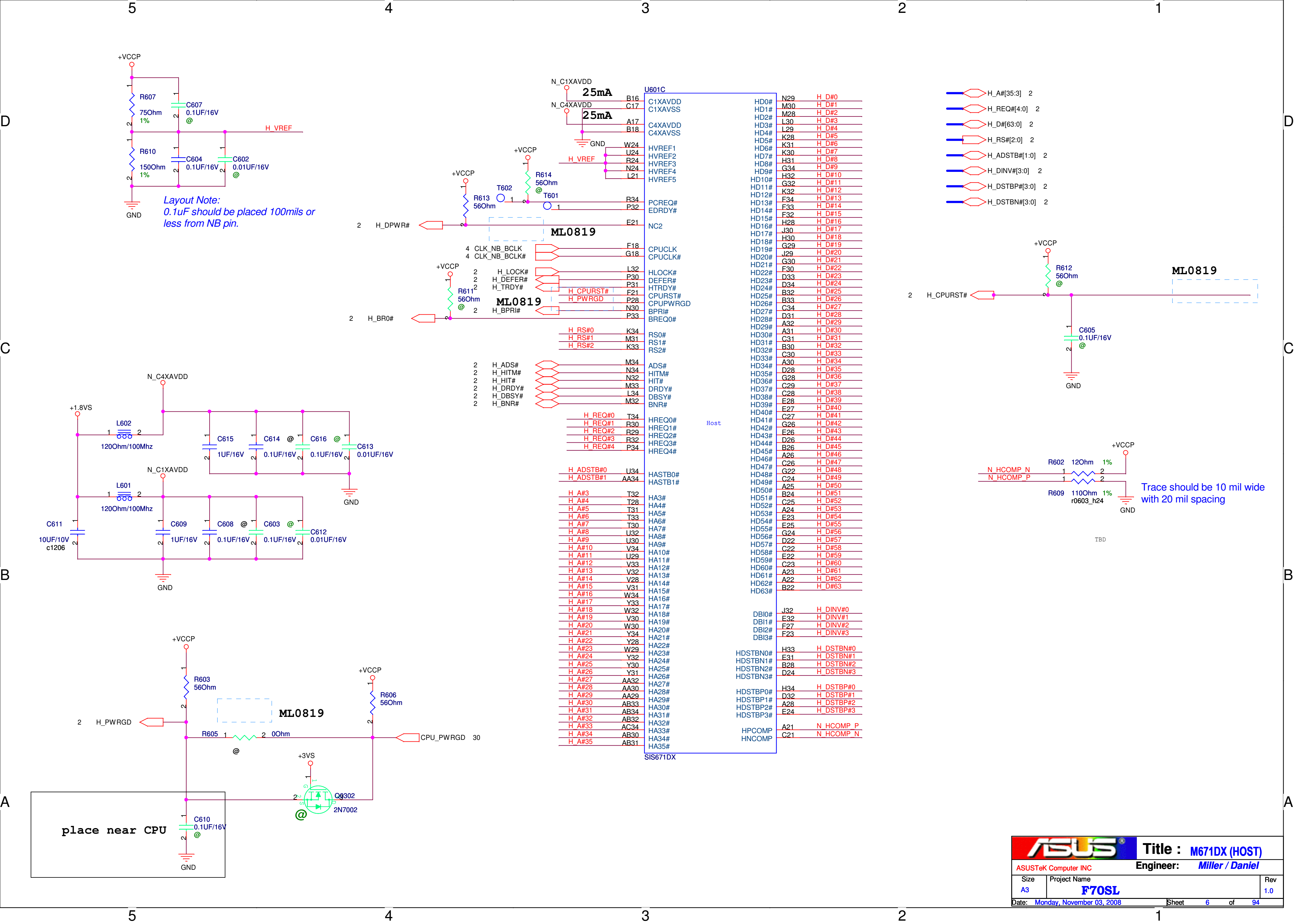
ASUSTeK Computer INC

Title : Thermal Sensor

Engineer: Miller / Daniel

Size	Project Name	Rev
A4	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 5 of 94


5
4
3
2
1
D
C
B
A
+VCCP
R607
75Ohm
1%
C607
0.1UF/16V
@
H_VREF
R610
150Ohm
1%
C604
0.1UF/16V
C602
0.01UF/16V
@
GND
Layout Note:
0.1uF should be placed 100mils or
less from NB pin.
N_C1XAVDD
25mA
N_C4XAVDD
25mA
GND
U601C
B16 C1XAVDD
C17 C1XAVSS
A17 C4XAVDD
B18 C4XAVSS
W24 HVREF1
U24 HVREF2
R24 HVREF3
N24 HVREF4
L21 HVREF5
+VCCP
R614
56Ohm
@
T602
T601
R613
56Ohm
R34 PCREQ#
P32 EDRDY#
2 H_DPWR#
E21 NC2
ML0819
4 CLK_NB_BCLK
4 CLK_NB_BCLK#
F18 CPUCLK
G18 CPUCLK#
R611
56Ohm
@
2 H_LOCK#
2 H_DEFER#
2 H_TRDY#
H_CPURST#
H_PWRGD
2 H_BPRI#
2 H_BR0#
L32 HLOCK#
P30 DEFER#
P31 HTRDY#
F21 CPURST#
P28 CPUPWRGD
N30 BPRI#
P33 BREQ0#
H_RS#0 K34 RS0#
H_RS#1 M31 RS1#
H_RS#2 K33 RS2#
2 H_ADS# M34 ADS#
2 H_HITM# N34 HITM#
2 H_HIT# N32 HIT#
2 H_DRDY# M33 DRDY#
2 H_DBSY# L34 DBSY#
2 H_BNR# M32 BNR#
H_REQ#0 T34 HREQ0#
H_REQ#1 R30 HREQ1#
H_REQ#2 R29 HREQ2#
H_REQ#3 R32 HREQ3#
H_REQ#4 P34 HREQ4#
H_ADSTB#0 U34 HASTB0#
H_ADSTB#1 AA34 HASTB1#
H_A#3 T32 HA3#
H_A#4 T28 HA4#
H_A#5 T31 HA5#
H_A#6 T33 HA6#
H_A#7 T30 HA7#
H_A#8 U32 HA8#
H_A#9 U30 HA9#
H_A#10 V34 HA10#
H_A#11 U29 HA11#
H_A#12 V33 HA12#
H_A#13 V32 HA13#
H_A#14 V28 HA14#
H_A#15 V31 HA15#
H_A#16 W34 HA16#
H_A#17 Y33 HA17#
H_A#18 W32 HA18#
H_A#19 V30 HA19#
H_A#20 W30 HA20#
H_A#21 Y34 HA21#
H_A#22 Y28 HA22#
H_A#23 W29 HA23#
H_A#24 Y32 HA24#
H_A#25 Y30 HA25#
H_A#26 Y31 HA26#
H_A#27 AA32 HA27#
H_A#28 AA30 HA28#
H_A#29 AA29 HA29#
H_A#30 AB33 HA30#
H_A#31 AB34 HA31#
H_A#32 AB32 HA32#
H_A#33 AC34 HA33#
H_A#34 AB30 HA34#
H_A#35 AB31 HA35#
SIS671DX
Host
HD0# N29 H_D#0
HD1# M30 H_D#1
HD2# M28 H_D#2
HD3# L30 H_D#3
HD4# L29 H_D#4
HD5# K28 H_D#5
HD6# K31 H_D#6
HD7# K30 H_D#7
HD8# H31 H_D#8
HD9# G34 H_D#9
HD10# H32 H_D#10
HD11# G32 H_D#11
HD12# K32 H_D#12
HD13# F34 H_D#13
HD14# F33 H_D#14
HD15# F32 H_D#15
HD16# H28 H_D#16
HD17# J30 H_D#17
HD18# H30 H_D#18
HD19# G29 H_D#19
HD20# J29 H_D#20
HD21# G30 H_D#21
HD22# F30 H_D#22
HD23# D33 H_D#23
HD24# D34 H_D#24
HD25# B32 H_D#25
HD26# B33 H_D#26
HD27# C34 H_D#27
HD28# D31 H_D#28
HD29# A32 H_D#29
HD30# A31 H_D#30
HD31# C31 H_D#31
HD32# B30 H_D#32
HD33# C30 H_D#33
HD34# A30 H_D#34
HD35# D28 H_D#35
HD36# G28 H_D#36
HD37# C29 H_D#37
HD38# C28 H_D#38
HD39# E28 H_D#39
HD40# E27 H_D#40
HD41# C27 H_D#41
HD42# G26 H_D#42
HD43# E26 H_D#43
HD44# D26 H_D#44
HD45# B26 H_D#45
HD46# A26 H_D#46
HD47# C26 H_D#47
HD48# G22 H_D#48
HD49# C24 H_D#49
HD50# A25 H_D#50
HD51# B24 H_D#51
HD52# C25 H_D#52
HD53# A24 H_D#53
HD54# E23 H_D#54
HD55# E25 H_D#55
HD56# G24 H_D#56
HD57# D22 H_D#57
HD58# C22 H_D#58
HD59# E22 H_D#59
HD60# C23 H_D#60
HD61# A23 H_D#61
HD62# A22 H_D#62
HD63# B22 H_D#63
DBI0# J32 H_DINV#0
DBI1# E32 H_DINV#1
DBI2# F27 H_DINV#2
DBI3# F23 H_DINV#3
HDSTBN0# H33 H_DSTBN#0
HDSTBN1# E31 H_DSTBN#1
HDSTBN2# B28 H_DSTBN#2
HDSTBN3# D24 H_DSTBN#3
HDSTBP0# H34 H_DSTBP#0
HDSTBP1# D32 H_DSTBP#1
HDSTBP2# A28 H_DSTBP#2
HDSTBP3# E24 H_DSTBP#3
HPCOMP A21 N_HCOMP_P
HNCOMP C21 N_HCOMP_N
H_A#[35:3] 2
H_REQ#[4:0] 2
H_D#[63:0] 2
H_RS#[2:0] 2
H_ADSTB#[1:0] 2
H_DINV#[3:0] 2
H_DSTBP#[3:0] 2
H_DSTBN#[3:0] 2
+VCCP
R612
56Ohm
@
ML0819
2 H_CPURST#
C605
0.1UF/16V
@
GND
+VCCP
R602 12Ohm 1%
N_HCOMP_N
N_HCOMP_P
R609 110Ohm 1%
r0603_h24
GND
Trace should be 10 mil wide
with 20 mil spacing
TBD
N_C4XAVDD
+1.8VS
L602
120Ohm/100Mhz
C615
1UF/16V
C614 @
0.1UF/16V
C616 @
0.1UF/16V
C613
0.01UF/16V
GND
N_C1XAVDD
L601
120Ohm/100Mhz
C611
10UF/10V
c1206
C609
1UF/16V
C608 @
0.1UF/16V
C603 @
0.1UF/16V
C612
0.01UF/16V
GND
+VCCP
R603
56Ohm
ML0819
2 H_PWRGD
R605 0Ohm
@
+VCCP
R606
56Ohm
CPU_PWRGD 30
+3VS
Q602
2N7002
@
place near CPU
C610
0.1UF/16V
@
GND

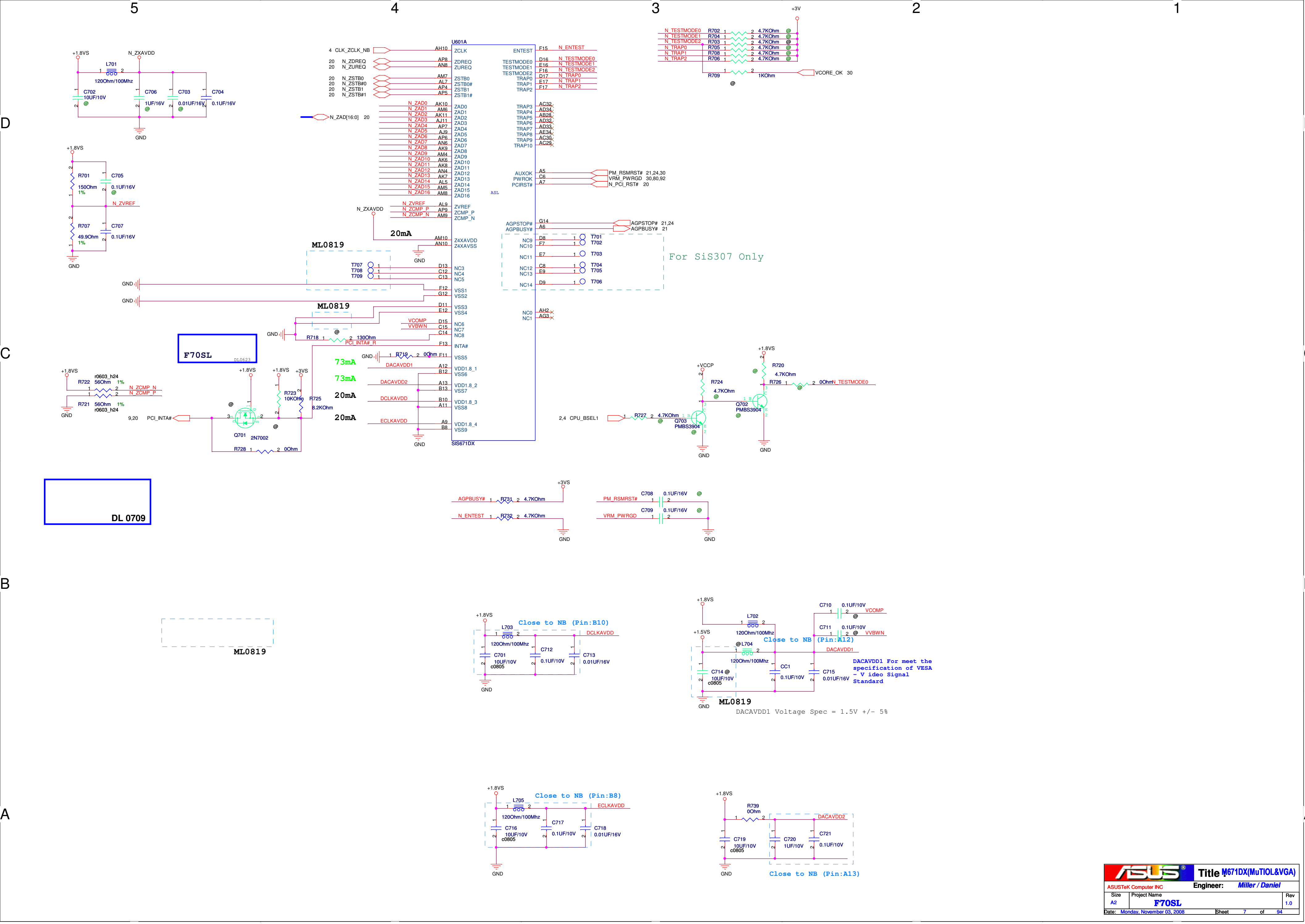
Title : **M671DX (HOST)**

ASUSTeK Computer INC

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A3	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 6 of 94


U601A
SIS671DX
ZCLK
ZDREQ
ZUREQ
ZSTB0
ZSTB0#
ZSTB1
ZSTB1#
ZAD0
ZAD16
ZVREF
ZCMP_P
ZCMP_N
Z4XAVDD
Z4XAVSS
ENTEST
TESTMODE0
TESTMODE1
TESTMODE2
TRAP0
TRAP1
TRAP2
TRAP10
AUXOK
PWROK
PCIRST#
AGPSTOP#
AGPBUSY#
INTA#
VDD1.8_1
VDD1.8_2
VDD1.8_3
VDD1.8_4
4 CLK_ZCLK_NB
N_ZAD[16:0] 20
N_ZXAVDD
+1.8VS
+3V
+3VS
+VCCP
+1.5VS
GND
L701
120Ohm/100Mhz
C702 10UF/10V
C706 1UF/16V
C703 0.01UF/16V
C704 0.1UF/16V
R701 150Ohm 1%
C705 0.1UF/16V
N_ZVREF
R707 49.9Ohm 1%
C707 0.1UF/16V
20mA
73mA
73mA
20mA
20mA
ML0819
ML0819
ML0819
ML0819
T707
T708
T709
T701
T702
T703
T704
T705
T706
For SiS307 Only
R702 4.7KOhm
R704 4.7KOhm
R703 4.7KOhm
R705 4.7KOhm
R708 4.7KOhm
R706 4.7KOhm
R709 1KOhm
VCORE_OK 30
PM_RSMRST# 21,24,30
VRM_PWRGD 30,80,92
N_PCI_RST# 20
AGPSTOP# 21,24
AGPBUSY# 21
R718 130Ohm
PCI_INTA#_R
R719 0Ohm
VCOMP
VVBWN
DACAVDD1
DACAVDD2
DCLKAVDD
ECLKAVDD
F70SL
DL0623
R722 56Ohm 1%
R721 56Ohm 1%
r0603_h24
N_ZCMP_N
N_ZCMP_P
R723 10KOhm
R725 8.2KOhm
Q701 2N7002
9,20 PCI_INTA#
R728 0Ohm
DL 0709
R720 4.7KOhm
R726 0Ohm
N_TESTMODE0
R724 4.7KOhm
Q702 PMBS3904
Q703 PMBS3904
2,4 CPU_BSEL1
R727 4.7KOhm
AGPBUSY# R731 4.7KOhm
N_ENTEST R732 4.7KOhm
PM_RSMRST# C708 0.1UF/16V
VRM_PWRGD C709 0.1UF/16V
Close to NB (Pin:B10)
L703 120Ohm/100Mhz
C701 10UF/10V c0805
C712 0.1UF/10V
C713 0.01UF/16V
L702 120Ohm/100Mhz
C710 0.1UF/10V
C711 0.1UF/10V
Close to NB (Pin:A12)
L704 120Ohm/100Mhz
C714 10UF/10V c0805
CC1 0.1UF/10V
C715 0.01UF/16V
DACAVDD1 For meet the specification of VESA - V ideo Signal Standard
DACAVDD1 Voltage Spec = 1.5V +/- 5%
Close to NB (Pin:B8)
L705 120Ohm/100Mhz
C716 10UF/10V c0805
C717 0.1UF/10V
C718 0.01UF/16V
R739 0Ohm
C719 10UF/10V c0805
C720 1UF/10V
C721 0.1UF/10V
Close to NB (Pin:A13)

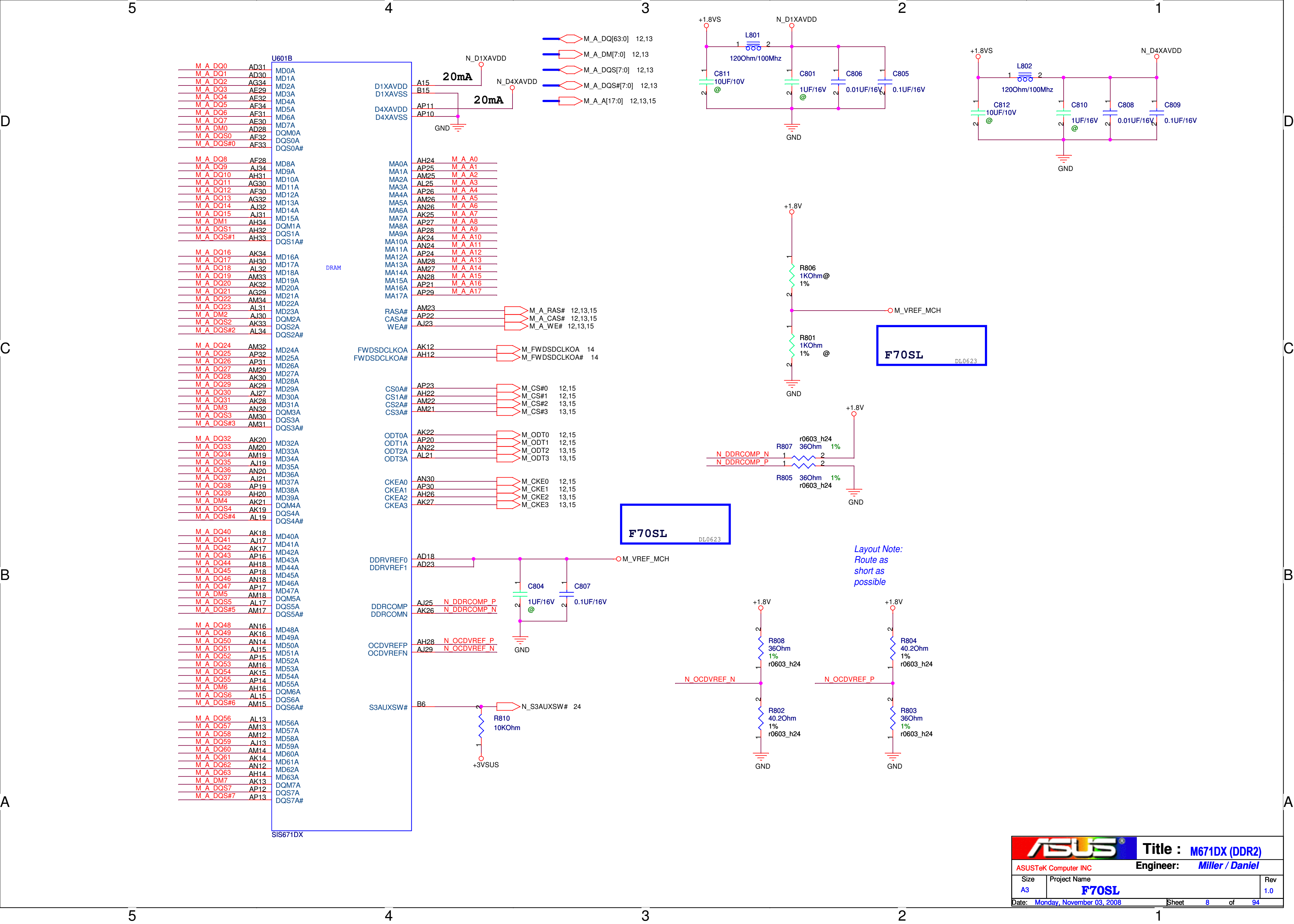
ASUSTeK Computer INC

Title: M671DX(MuTIOL&VGA)

Engineer: Miller / Daniel

Size	Project Name	Rev
A2	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 7 of 94


U601B
SIS671DX
DRAM
M_A_DQ0 … M_A_DQ63, M_A_DM0 … M_A_DM7, M_A_DQS0 … M_A_DQS7, M_A_DQS#0 … M_A_DQS#7
MD0A … MD63A, DQM0A … DQM7A, DQS0A … DQS7A, DQS0A# … DQS7A#
D1XAVDD A15
D1XAVSS B15
D4XAVDD AP11
D4XAVSS AP10
20mA
N_D1XAVDD
N_D4XAVDD
GND
M_A_DQ[63:0] 12,13
M_A_DM[7:0] 12,13
M_A_DQS[7:0] 12,13
M_A_DQS#[7:0] 12,13
M_A_A[17:0] 12,13,15
MA0A … MA17A
M_A_A0 … M_A_A17
RASA# AM23 M_A_RAS# 12,13,15
CASA# AP22 M_A_CAS# 12,13,15
WEA# AJ23 M_A_WE# 12,13,15
FWDSDCLKOA AK12 M_FWDSDCLKOA 14
FWDSDCLKOA# AH12 M_FWDSDCLKOA# 14
CS0A# AP23 M_CS#0 12,15
CS1A# AH22 M_CS#1 12,15
CS2A# AM22 M_CS#2 13,15
CS3A# AM21 M_CS#3 13,15
ODT0A AK22 M_ODT0 12,15
ODT1A AP20 M_ODT1 12,15
ODT2A AN22 M_ODT2 13,15
ODT3A AL21 M_ODT3 13,15
CKEA0 AN30 M_CKE0 12,15
CKEA1 AP30 M_CKE1 12,15
CKEA2 AH26 M_CKE2 13,15
CKEA3 AK27 M_CKE3 13,15
DDRVREF0 AD18
DDRVREF1 AD23
M_VREF_MCH
C804 1UF/16V @
C807 0.1UF/16V
DDRCOMP AJ25 N_DDRCOMP_P
DDRCOMPN AK26 N_DDRCOMP_N
OCDVREFP AH28 N_OCDVREF_P
OCDVREFN AJ29 N_OCDVREF_N
S3AUXSW# B6 N_S3AUXSW# 24
R810 10KOhm
+3VSUS
+1.8VS
L801 120Ohm/100Mhz
C811 10UF/10V @
C801 1UF/16V @
C806 0.01UF/16V
C805 0.1UF/16V
L802 120Ohm/100Mhz
C812 10UF/10V @
C810 1UF/16V @
C808 0.01UF/16V
C809 0.1UF/16V
+1.8V
R806 1KOhm@ 1%
R801 1KOhm 1% @
R807 36Ohm 1% r0603_h24
R805 36Ohm 1% r0603_h24
R808 36Ohm 1% r0603_h24
R802 40.2Ohm 1% r0603_h24
R804 40.2Ohm 1% r0603_h24
R803 36Ohm 1% r0603_h24
F70SL DL0623
Layout Note:
Route as
short as
possible

ASUSTeK Computer INC

Title : M671DX (DDR2)

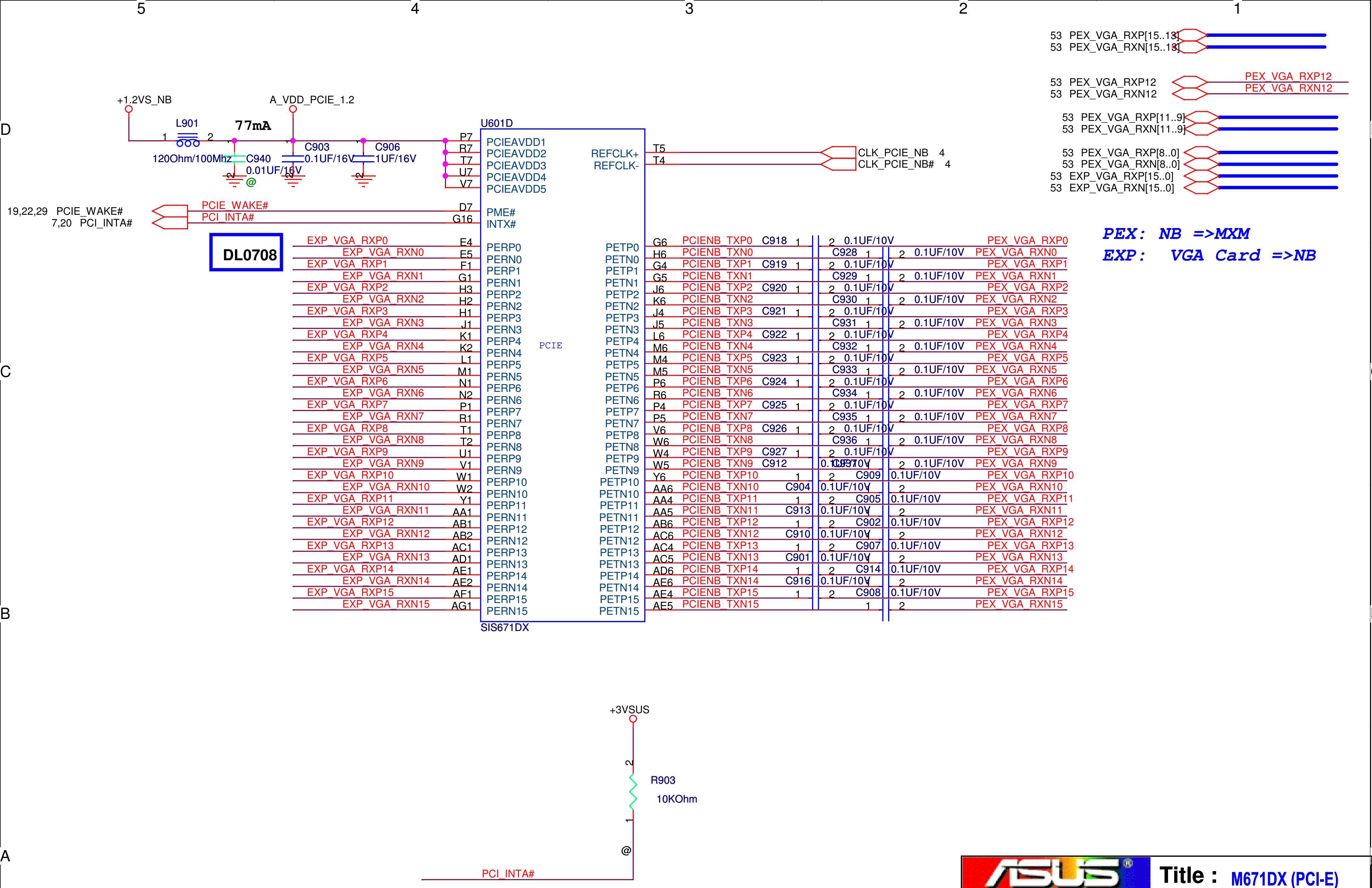
Engineer: Miller / Daniel

Size A3

Project Name **F70SL**

Rev 1.0

Date: Monday, November 03, 2008 Sheet 8 of 94


5
4
3
2
1
D
C
B
A
53 PEX_VGA_RXP[15..13]
53 PEX_VGA_RXN[15..13]
53 PEX_VGA_RXP12
53 PEX_VGA_RXN12
PEX_VGA_RXP12
PEX_VGA_RXN12
53 PEX_VGA_RXP[11..9]
53 PEX_VGA_RXN[11..9]
53 PEX_VGA_RXP[8..0]
53 PEX_VGA_RXN[8..0]
53 EXP_VGA_RXP[15..0]
53 EXP_VGA_RXN[15..0]
+1.2VS_NB
A_VDD_PCIE_1.2
L901
77mA
120Ohm/100Mhz
C940
0.01UF/16V
C903
0.1UF/16V
C906
1UF/16V
U601D
PCIEAVDD1
PCIEAVDD2
PCIEAVDD3
PCIEAVDD4
PCIEAVDD5
P7
R7
T7
U7
V7
REFCLK+
REFCLK-
T5
T4
CLK_PCIE_NB 4
CLK_PCIE_NB# 4
19,22,29 PCIE_WAKE#
7,20 PCI_INTA#
PCIE_WAKE#
PCI_INTA#
D7
G16
PME#
INTX#
DL0708
EXP_VGA_RXP0 … EXP_VGA_RXN15
PERP0 … PERN15
PCIE
PETP0 … PETN15
PCIENB_TXP0 … PCIENB_TXN15
C918, C928, C919, C929, C920, C930, C921, C931, C922, C932, C923, C933, C924, C934, C925, C935, C926, C936, C927, C937, C912, C909, C904, C905, C913, C902, C910, C907, C901, C914, C916, C908
0.1UF/10V
PEX_VGA_RXP0 … PEX_VGA_RXN15
SIS671DX
PEX: NB =>MXM
EXP: VGA Card =>NB
+3VSUS
R903
10KOhm
PCI_INTA#

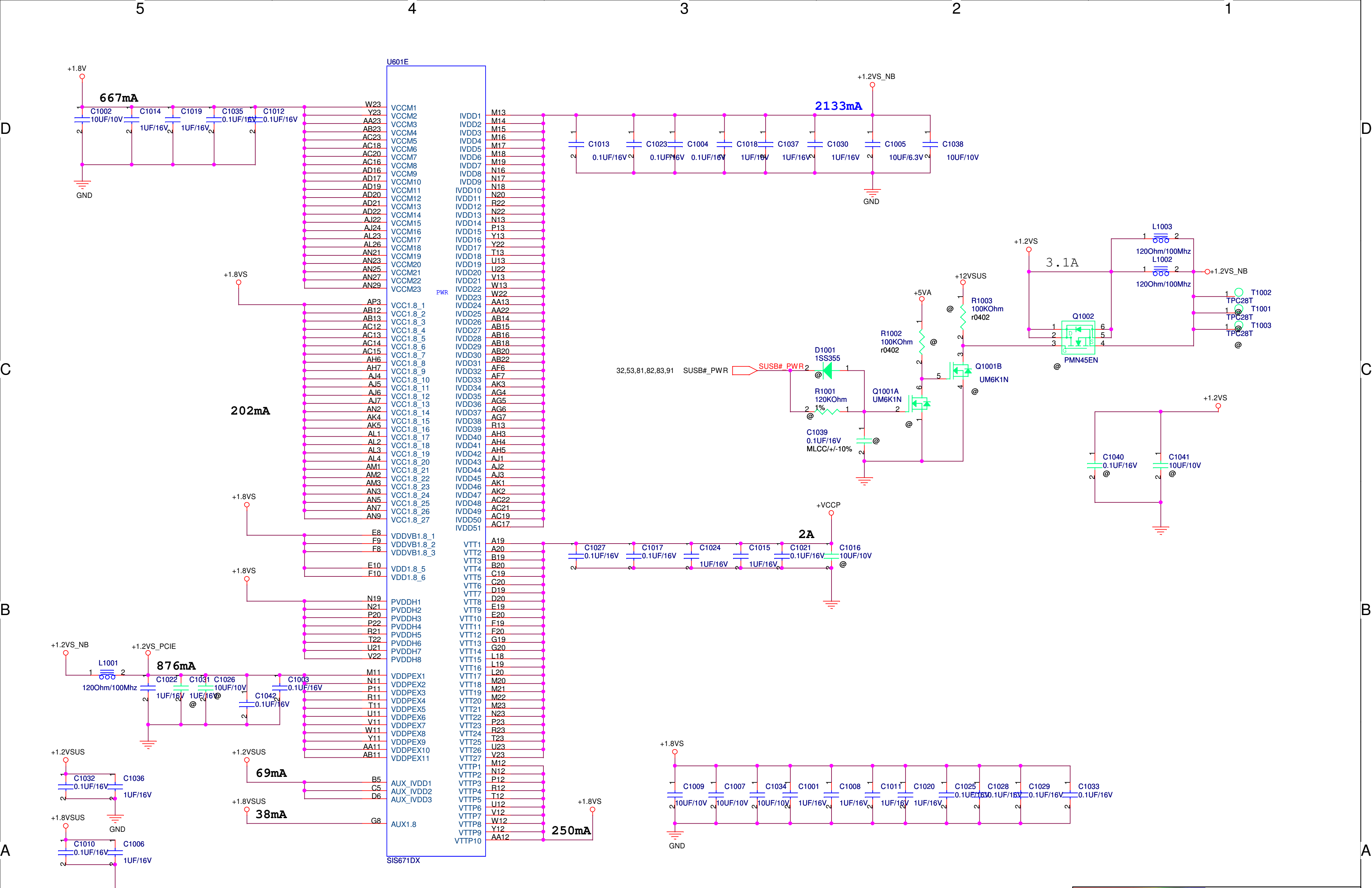
ASUSTeK Computer INC

Title : M671DX (PCI-E)

Engineer: Miller / Daniel

Size	Project Name	Rev
A4	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 9 of 94


5
4
3
2
1
D
C
B
A
U601E
+1.8V
667mA
C1002
10UF/10V
C1014
1UF/16V
C1019
1UF/16V
C1035
0.1UF/16V
C1012
0.1UF/16V
GND
W23 VCCM1
Y23 VCCM2
AA23 VCCM3
AB23 VCCM4
AC23 VCCM5
AC18 VCCM6
AC20 VCCM7
AC16 VCCM8
AD16 VCCM9
AD17 VCCM10
AD19 VCCM11
AD20 VCCM12
AD21 VCCM13
AD22 VCCM14
AJ22 VCCM15
AJ24 VCCM16
AL23 VCCM17
AL26 VCCM18
AN21 VCCM19
AN23 VCCM20
AN25 VCCM21
AN27 VCCM22
AN29 VCCM23
PWR
+1.8VS
AP3 VCC1.8_1
AB12 VCC1.8_2
AB13 VCC1.8_3
AC12 VCC1.8_4
AC13 VCC1.8_5
AC14 VCC1.8_6
AC15 VCC1.8_7
AH6 VCC1.8_8
AH7 VCC1.8_9
AJ4 VCC1.8_10
AJ5 VCC1.8_11
AJ6 VCC1.8_12
AJ7 VCC1.8_13
AN2 VCC1.8_14
AK4 VCC1.8_15
AK5 VCC1.8_16
AL1 VCC1.8_17
AL2 VCC1.8_18
AL3 VCC1.8_19
AL4 VCC1.8_20
AM1 VCC1.8_21
AM2 VCC1.8_22
AM3 VCC1.8_23
AN3 VCC1.8_24
AN5 VCC1.8_25
AN7 VCC1.8_26
AN9 VCC1.8_27
202mA
+1.8VS
E8 VDDVB1.8_1
F9 VDDVB1.8_2
F8 VDDVB1.8_3
E10 VDD1.8_5
F10 VDD1.8_6
+1.8VS
N19 PVDDH1
N21 PVDDH2
P20 PVDDH3
P22 PVDDH4
R21 PVDDH5
T22 PVDDH6
U21 PVDDH7
V22 PVDDH8
+1.2VS_NB
+1.2VS_PCIE
L1001
120Ohm/100Mhz
876mA
C1022
1UF/16V
C1031
1UF/16V
C1026
10UF/10V
C1042
0.1UF/16V
C1003
0.1UF/16V
M11 VDDPEX1
N11 VDDPEX2
P11 VDDPEX3
R11 VDDPEX4
T11 VDDPEX5
U11 VDDPEX6
V11 VDDPEX7
W11 VDDPEX8
Y11 VDDPEX9
AA11 VDDPEX10
AB11 VDDPEX11
+1.2VSUS
C1032
0.1UF/16V
C1036
1UF/16V
GND
+1.2VSUS
69mA
B5 AUX_IVDD1
C5 AUX_IVDD2
D6 AUX_IVDD3
+1.8VSUS
C1010
0.1UF/16V
C1006
1UF/16V
GND
+1.8VSUS
38mA
G8 AUX1.8
SIS671DX
IVDD1 M13
IVDD2 M14
IVDD3 M15
IVDD4 M16
IVDD5 M17
IVDD6 M18
IVDD7 M19
IVDD8 N16
IVDD9 N17
IVDD10 N18
IVDD11 N20
IVDD12 R22
IVDD13 N22
IVDD14 N13
IVDD15 P13
IVDD16 Y13
IVDD17 Y22
IVDD18 T13
IVDD19 U13
IVDD20 U22
IVDD21 V13
IVDD22 W13
IVDD23 W22
IVDD24 AA13
IVDD25 AA22
IVDD26 AB14
IVDD27 AB15
IVDD28 AB16
IVDD29 AB18
IVDD30 AB20
IVDD31 AB22
IVDD32 AF6
IVDD33 AF7
IVDD34 AK3
IVDD35 AG4
IVDD36 AG5
IVDD37 AG6
IVDD38 AG7
IVDD39 R13
IVDD40 AH3
IVDD41 AH4
IVDD42 AH5
IVDD43 AJ1
IVDD44 AJ2
IVDD45 AJ3
IVDD46 AK1
IVDD47 AK2
IVDD48 AC22
IVDD49 AC21
IVDD50 AC19
IVDD51 AC17
VTT1 A19
VTT2 A20
VTT3 B19
VTT4 B20
VTT5 C19
VTT6 C20
VTT7 D19
VTT8 D20
VTT9 E19
VTT10 E20
VTT11 F19
VTT12 F20
VTT13 G19
VTT14 G20
VTT15 L18
VTT16 L19
VTT17 L20
VTT18 M20
VTT19 M21
VTT20 M22
VTT21 M23
VTT22 N23
VTT23 P23
VTT24 R23
VTT25 T23
VTT26 U23
VTT27 V23
VTTP1 M12
VTTP2 N12
VTTP3 P12
VTTP4 R12
VTTP5 T12
VTTP6 U12
VTTP7 V12
VTTP8 W12
VTTP9 Y12
VTTP10 AA12
250mA
+1.8VS
+1.2VS_NB
2133mA
C1013
0.1UF/16V
C1023
0.1UF/16V
C1004
0.1UF/16V
C1018
1UF/16V
C1037
1UF/16V
C1030
1UF/16V
C1005
10UF/6.3V
C1038
10UF/10V
GND
+1.2VS
3.1A
L1003
120Ohm/100Mhz
L1002
120Ohm/100Mhz
+1.2VS_NB
T1002
TPC28T
T1001
TPC28T
T1003
TPC28T
Q1002
PMN45EN
+12VSUS
R1003
100KOhm
r0402
+5VA
R1002
100KOhm
r0402
Q1001B
UM6K1N
32,53,81,82,83,91
SUSB#_PWR
SUSB#_PWR
D1001
1SS355
R1001
120KOhm
1%
Q1001A
UM6K1N
C1039
0.1UF/16V
MLCC/+/-10%
+1.2VS
C1040
0.1UF/16V
C1041
10UF/10V
+VCCP
2A
C1027
0.1UF/16V
C1017
0.1UF/16V
C1024
1UF/16V
C1015
1UF/16V
C1021
0.1UF/16V
C1016
10UF/10V
+1.8VS
C1009
10UF/10V
C1007
10UF/10V
C1034
10UF/10V
C1001
1UF/16V
C1008
1UF/16V
C1011
1UF/16V
C1020
1UF/16V
C1025
0.1UF/16V
C1028
0.1UF/16V
C1029
0.1UF/16V
C1033
0.1UF/16V
GND
@

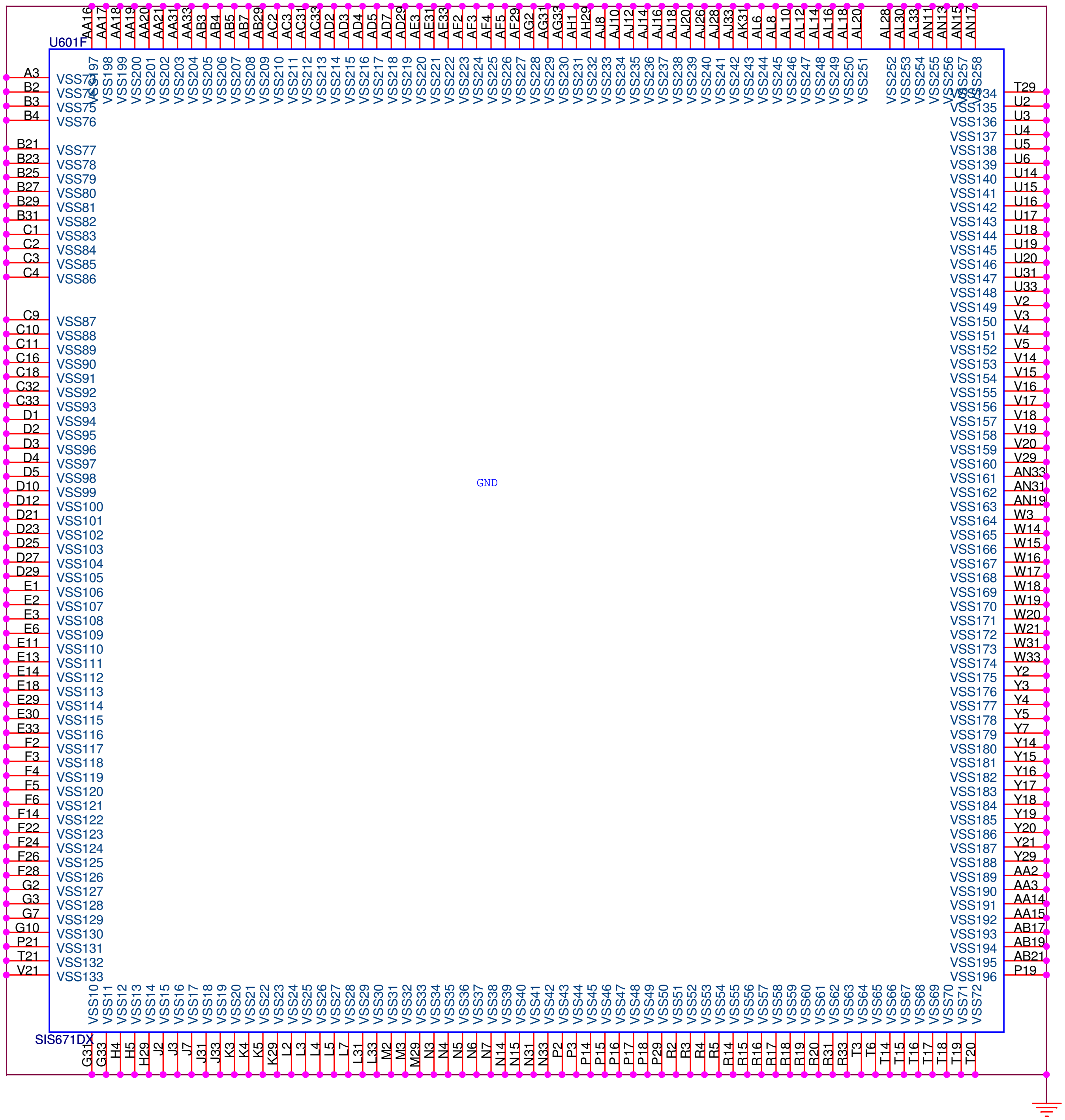
ASUSTeK Computer INC

Title : M671DX (PWR)

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A3	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 10 of 94


U601F
SIS671DX
GND
AA16 VSS197
AA17 VSS198
AA18 VSS199
AA19 VSS200
AA20 VSS201
AA21 VSS202
AA31 VSS203
AA33 VSS204
AB3 VSS205
AB4 VSS206
AB5 VSS207
AB7 VSS208
AB29 VSS209
AC2 VSS210
AC3 VSS211
AC31 VSS212
AC33 VSS213
AD2 VSS214
AD3 VSS215
AD4 VSS216
AD5 VSS217
AD7 VSS218
AD29 VSS219
AE3 VSS220
AE31 VSS221
AE33 VSS222
AF2 VSS223
AF3 VSS224
AF4 VSS225
AF5 VSS226
AF29 VSS227
AG2 VSS228
AG31 VSS229
AG33 VSS230
AH1 VSS231
AH29 VSS232
AJ8 VSS233
AJ10 VSS234
AJ12 VSS235
AJ14 VSS236
AJ16 VSS237
AJ18 VSS238
AJ20 VSS239
AJ26 VSS240
AJ28 VSS241
AJ33 VSS242
AK31 VSS243
AL6 VSS244
AL8 VSS245
AL10 VSS246
AL12 VSS247
AL14 VSS248
AL16 VSS249
AL18 VSS250
AL20 VSS251
AL28 VSS252
AL30 VSS253
AL33 VSS254
AN11 VSS255
AN13 VSS256
AN15 VSS257
AN17 VSS258
A3 VSS73
B2 VSS74
B3 VSS75
B4 VSS76
B21 VSS77
B23 VSS78
B25 VSS79
B27 VSS80
B29 VSS81
B31 VSS82
C1 VSS83
C2 VSS84
C3 VSS85
C4 VSS86
C9 VSS87
C10 VSS88
C11 VSS89
C16 VSS90
C18 VSS91
C32 VSS92
C33 VSS93
D1 VSS94
D2 VSS95
D3 VSS96
D4 VSS97
D5 VSS98
D10 VSS99
D12 VSS100
D21 VSS101
D23 VSS102
D25 VSS103
D27 VSS104
D29 VSS105
E1 VSS106
E2 VSS107
E3 VSS108
E6 VSS109
E11 VSS110
E13 VSS111
E14 VSS112
E18 VSS113
E29 VSS114
E30 VSS115
E33 VSS116
F2 VSS117
F3 VSS118
F4 VSS119
F5 VSS120
F6 VSS121
F14 VSS122
F22 VSS123
F24 VSS124
F26 VSS125
F28 VSS126
G2 VSS127
G3 VSS128
G7 VSS129
G10 VSS130
P21 VSS131
T21 VSS132
V21 VSS133
T29 VSS134
U2 VSS135
U3 VSS136
U4 VSS137
U5 VSS138
U6 VSS139
U14 VSS140
U15 VSS141
U16 VSS142
U17 VSS143
U18 VSS144
U19 VSS145
U20 VSS146
U31 VSS147
U33 VSS148
V2 VSS149
V3 VSS150
V4 VSS151
V5 VSS152
V14 VSS153
V15 VSS154
V16 VSS155
V17 VSS156
V18 VSS157
V19 VSS158
V20 VSS159
V29 VSS160
AN33 VSS161
AN31 VSS162
AN19 VSS163
W3 VSS164
W14 VSS165
W15 VSS166
W16 VSS167
W17 VSS168
W18 VSS169
W19 VSS170
W20 VSS171
W21 VSS172
W31 VSS173
W33 VSS174
Y2 VSS175
Y3 VSS176
Y4 VSS177
Y5 VSS178
Y7 VSS179
Y14 VSS180
Y15 VSS181
Y16 VSS182
Y17 VSS183
Y18 VSS184
Y19 VSS185
Y20 VSS186
Y21 VSS187
Y29 VSS188
AA2 VSS189
AA3 VSS190
AA14 VSS191
AA15 VSS192
AB17 VSS193
AB19 VSS194
AB21 VSS195
P19 VSS196
G31 VSS10
G33 VSS11
H4 VSS12
H5 VSS13
H29 VSS14
J2 VSS15
J3 VSS16
J7 VSS17
J31 VSS18
J33 VSS19
K3 VSS20
K4 VSS21
K5 VSS22
K29 VSS23
L2 VSS24
L3 VSS25
L4 VSS26
L5 VSS27
L7 VSS28
L31 VSS29
L33 VSS30
M2 VSS31
M3 VSS32
M29 VSS33
N3 VSS34
N4 VSS35
N5 VSS36
N6 VSS37
N7 VSS38
N14 VSS39
N15 VSS40
N31 VSS41
N33 VSS42
P2 VSS43
P3 VSS44
P14 VSS45
P15 VSS46
P16 VSS47
P17 VSS48
P18 VSS49
P29 VSS50
R2 VSS51
R3 VSS52
R4 VSS53
R5 VSS54
R14 VSS55
R15 VSS56
R16 VSS57
R17 VSS58
R18 VSS59
R19 VSS60
R20 VSS61
R31 VSS62
R33 VSS63
T3 VSS64
T6 VSS65
T14 VSS66
T15 VSS67
T16 VSS68
T17 VSS69
T18 VSS70
T19 VSS71
T20 VSS72

Title : M671DX (GND)

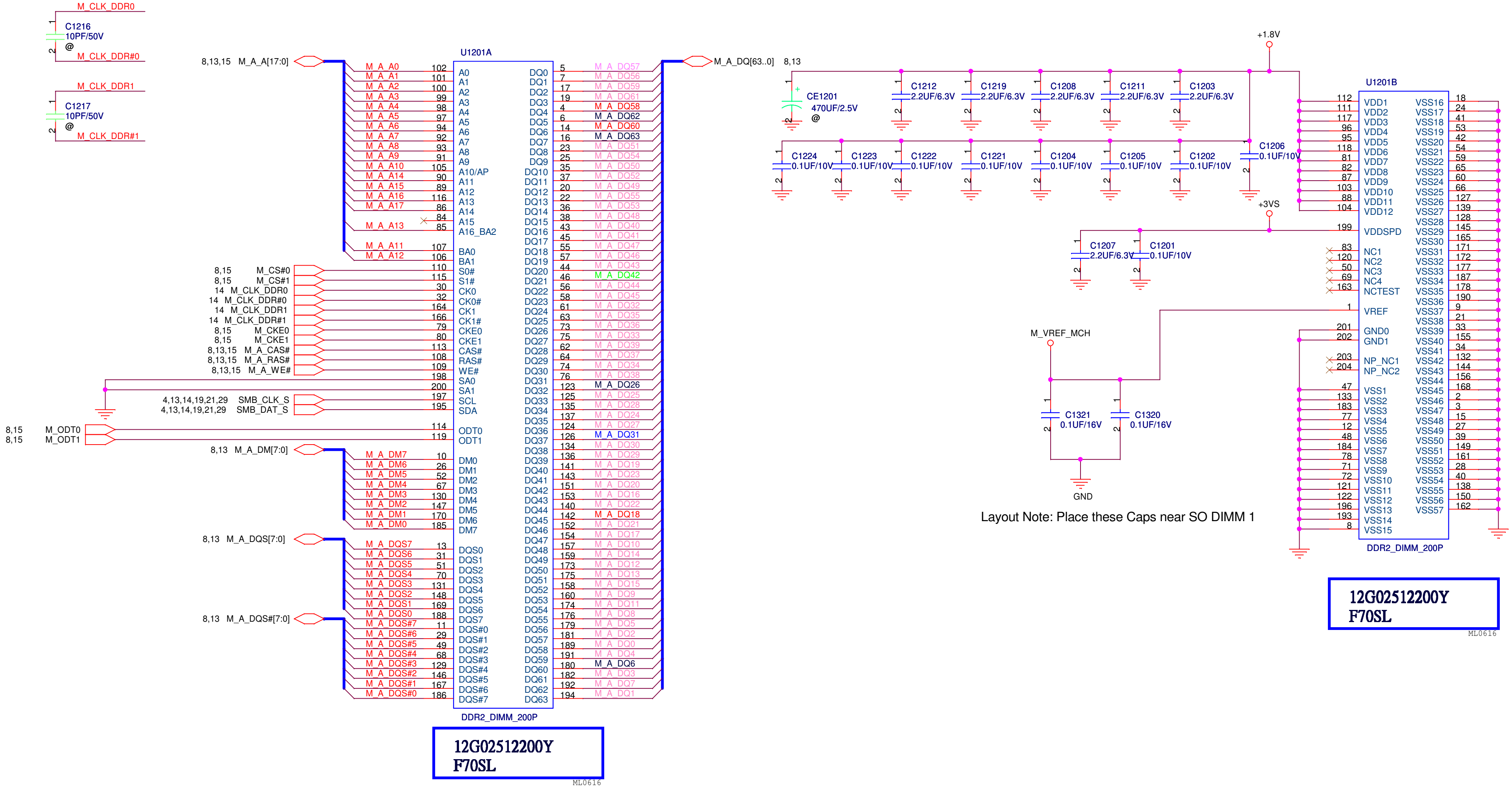
ASUSTeK Computer INC

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A4	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 11 of 94

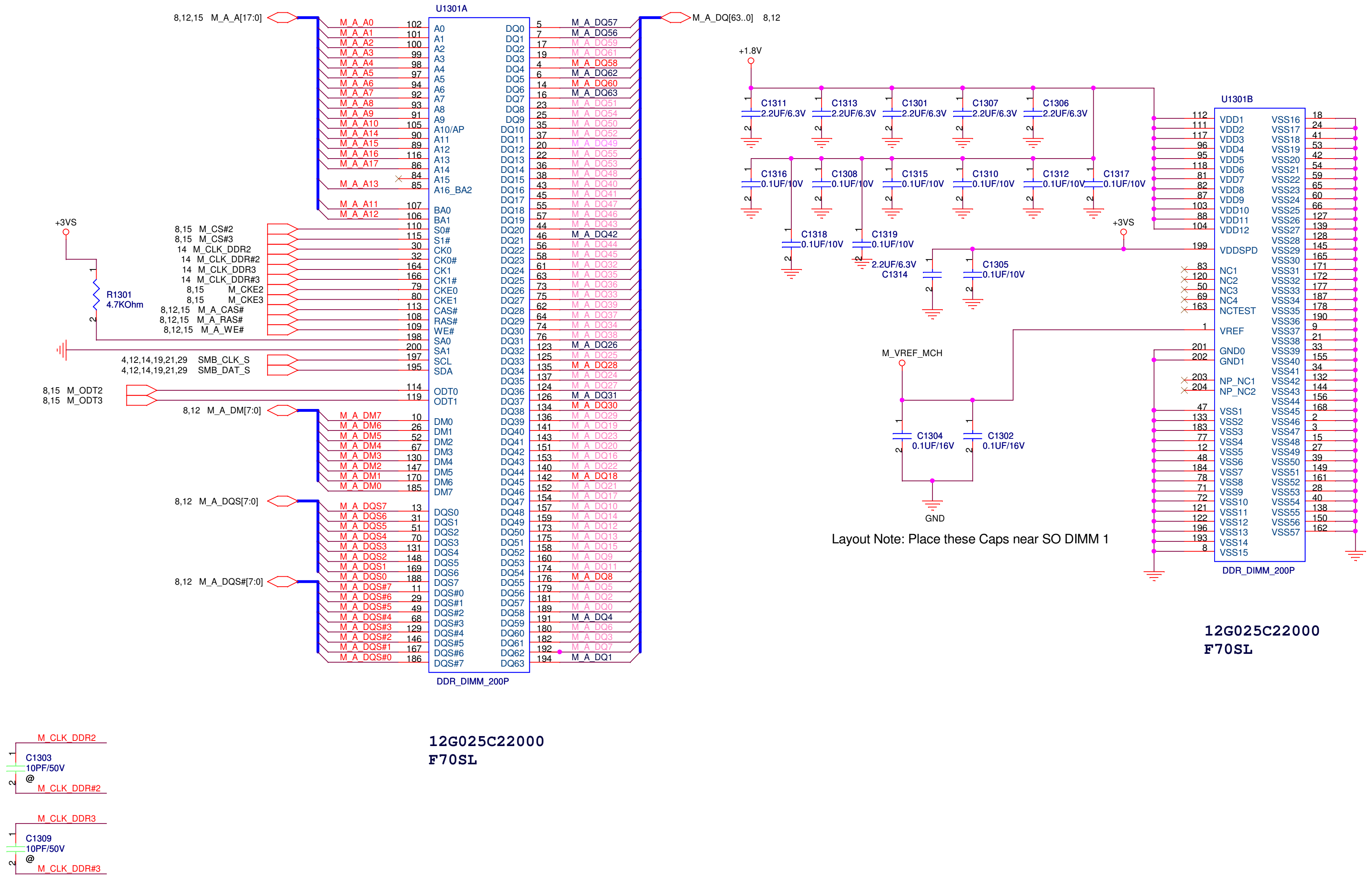
TOP



M_CLK_DDR0
C1216
10PF/50V
@
M_CLK_DDR#0
M_CLK_DDR1
C1217
10PF/50V
@
M_CLK_DDR#1
U1201A
8,13,15 M_A_A[17:0]
M_A_A0 102 A0
M_A_A1 101 A1
M_A_A2 100 A2
M_A_A3 99 A3
M_A_A4 98 A4
M_A_A5 97 A5
M_A_A6 94 A6
M_A_A7 92 A7
M_A_A8 93 A8
M_A_A9 91 A9
M_A_A10 105 A10/AP
M_A_A14 90 A11
M_A_A15 89 A12
M_A_A16 116 A13
M_A_A17 86 A14
84 A15
M_A_A13 85 A16_BA2
M_A_A11 107 BA0
M_A_A12 106 BA1
8,15 M_CS#0 110 S0#
8,15 M_CS#1 115 S1#
14 M_CLK_DDR0 30 CK0
14 M_CLK_DDR#0 32 CK0#
14 M_CLK_DDR1 164 CK1
14 M_CLK_DDR#1 166 CK1#
8,15 M_CKE0 79 CKE0
8,15 M_CKE1 80 CKE1
8,13,15 M_A_CAS# 113 CAS#
8,13,15 M_A_RAS# 108 RAS#
8,13,15 M_A_WE# 109 WE#
198 SA0
200 SA1
4,13,14,19,21,29 SMB_CLK_S 197 SCL
4,13,14,19,21,29 SMB_DAT_S 195 SDA
8,15 M_ODT0 114 ODT0
8,15 M_ODT1 119 ODT1
8,13 M_A_DM[7:0]
M_A_DM7 10 DM0
M_A_DM6 26 DM1
M_A_DM5 52 DM2
M_A_DM4 67 DM3
M_A_DM3 130 DM4
M_A_DM2 147 DM5
M_A_DM1 170 DM6
M_A_DM0 185 DM7
8,13 M_A_DQS[7:0]
M_A_DQS7 13 DQS0
M_A_DQS6 31 DQS1
M_A_DQS5 51 DQS2
M_A_DQS4 70 DQS3
M_A_DQS3 131 DQS4
M_A_DQS2 148 DQS5
M_A_DQS1 169 DQS6
M_A_DQS0 188 DQS7
8,13 M_A_DQS#[7:0]
M_A_DQS#7 11 DQS#0
M_A_DQS#6 29 DQS#1
M_A_DQS#5 49 DQS#2
M_A_DQS#4 68 DQS#3
M_A_DQS#3 129 DQS#4
M_A_DQS#2 146 DQS#5
M_A_DQS#1 167 DQS#6
M_A_DQS#0 186 DQS#7
M_A_DQ[63..0] 8,13
DQ0 5 M_A_DQ57
DQ1 7 M_A_DQ56
DQ2 17 M_A_DQ59
DQ3 19 M_A_DQ61
DQ4 4 M_A_DQ58
DQ5 6 M_A_DQ62
DQ6 14 M_A_DQ60
DQ7 16 M_A_DQ63
DQ8 23 M_A_DQ51
DQ9 25 M_A_DQ54
DQ10 35 M_A_DQ50
DQ11 37 M_A_DQ49
DQ12 20 M_A_DQ52
DQ13 22 M_A_DQ55
DQ14 36 M_A_DQ53
DQ15 38 M_A_DQ48
DQ16 43 M_A_DQ40
DQ17 45 M_A_DQ41
DQ18 55 M_A_DQ47
DQ19 57 M_A_DQ46
DQ20 44 M_A_DQ43
DQ21 46 M_A_DQ42
DQ22 56 M_A_DQ44
DQ23 58 M_A_DQ45
DQ24 61 M_A_DQ32
DQ25 63 M_A_DQ35
DQ26 73 M_A_DQ36
DQ27 75 M_A_DQ33
DQ28 62 M_A_DQ39
DQ29 64 M_A_DQ37
DQ30 74 M_A_DQ34
DQ31 76 M_A_DQ38
DQ32 123 M_A_DQ26
DQ33 125 M_A_DQ25
DQ34 135 M_A_DQ28
DQ35 137 M_A_DQ24
DQ36 124 M_A_DQ27
DQ37 126 M_A_DQ31
DQ38 134 M_A_DQ30
DQ39 136 M_A_DQ29
DQ40 141 M_A_DQ19
DQ41 143 M_A_DQ23
DQ42 151 M_A_DQ20
DQ43 153 M_A_DQ16
DQ44 140 M_A_DQ22
DQ45 142 M_A_DQ18
DQ46 152 M_A_DQ21
DQ47 154 M_A_DQ17
DQ48 157 M_A_DQ10
DQ49 159 M_A_DQ14
DQ50 173 M_A_DQ12
DQ51 175 M_A_DQ13
DQ52 158 M_A_DQ15
DQ53 160 M_A_DQ9
DQ54 174 M_A_DQ11
DQ55 176 M_A_DQ8
DQ56 179 M_A_DQ5
DQ57 181 M_A_DQ2
DQ58 189 M_A_DQ0
DQ59 191 M_A_DQ4
DQ60 180 M_A_DQ6
DQ61 182 M_A_DQ3
DQ62 192 M_A_DQ7
DQ63 194 M_A_DQ1
DDR2_DIMM_200P
12G02512200Y
F70SL
ML0616
+1.8V
CE1201
470UF/2.5V
@
C1212 2.2UF/6.3V
C1219 2.2UF/6.3V
C1208 2.2UF/6.3V
C1211 2.2UF/6.3V
C1203 2.2UF/6.3V
C1224 0.1UF/10V
C1223 0.1UF/10V
C1222 0.1UF/10V
C1221 0.1UF/10V
C1204 0.1UF/10V
C1205 0.1UF/10V
C1202 0.1UF/10V
C1206 0.1UF/10V
+3VS
C1207 2.2UF/6.3V
C1201 0.1UF/10V
M_VREF_MCH
C1321 0.1UF/16V
C1320 0.1UF/16V
GND
U1201B
112 VDD1
111 VDD2
117 VDD3
96 VDD4
95 VDD5
118 VDD6
81 VDD7
82 VDD8
87 VDD9
103 VDD10
88 VDD11
104 VDD12
199 VDDSPD
83 NC1
120 NC2
50 NC3
69 NC4
163 NCTEST
1 VREF
201 GND0
202 GND1
203 NP_NC1
204 NP_NC2
47 VSS1
133 VSS2
183 VSS3
77 VSS4
12 VSS5
48 VSS6
184 VSS7
78 VSS8
71 VSS9
72 VSS10
121 VSS11
122 VSS12
196 VSS13
193 VSS14
8 VSS15
VSS16 18
VSS17 24
VSS18 41
VSS19 53
VSS20 42
VSS21 54
VSS22 59
VSS23 65
VSS24 60
VSS25 66
VSS26 127
VSS27 139
VSS28 128
VSS29 145
VSS30 165
VSS31 171
VSS32 172
VSS33 177
VSS34 187
VSS35 178
VSS36 190
VSS37 9
VSS38 21
VSS39 33
VSS40 155
VSS41 34
VSS42 132
VSS43 144
VSS44 156
VSS45 168
VSS46 2
VSS47 3
VSS48 15
VSS49 27
VSS50 39
VSS51 149
VSS52 161
VSS53 28
VSS54 40
VSS55 138
VSS56 150
VSS57 162
DDR2_DIMM_200P
12G02512200Y
F70SL
ML0616

Layout Note: Place these Caps near SO DIMM 1

ASUSTeK Computer INC	**Title :** DDR2 SO-DIMM1	
	Engineer: Miller / Daniel	
Size: A3	Project Name: **F70SL**	Rev: 1.0
Date: Monday, November 03, 2008	Sheet 12 of 94	


U1301A
8,12,15 M_A_A[17:0]
M_A_DQ[63..0] 8,12
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14
A15
A16_BA2
BA0
BA1
S0#
S1#
CK0
CK0#
CK1
CK1#
CKE0
CKE1
CAS#
RAS#
WE#
SA0
SA1
SCL
SDA
ODT0
ODT1
DM0–DM7
DQS0–DQS7
DQS#0–DQS#7
DQ0–DQ63
DDR_DIMM_200P
+3VS
R1301
4.7KOhm
8,15 M_CS#2
8,15 M_CS#3
14 M_CLK_DDR2
14 M_CLK_DDR#2
14 M_CLK_DDR3
14 M_CLK_DDR#3
8,15 M_CKE2
8,15 M_CKE3
8,12,15 M_A_CAS#
8,12,15 M_A_RAS#
8,12,15 M_A_WE#
4,12,14,19,21,29 SMB_CLK_S
4,12,14,19,21,29 SMB_DAT_S
8,15 M_ODT2
8,15 M_ODT3
8,12 M_A_DM[7:0]
8,12 M_A_DQS[7:0]
8,12 M_A_DQS#[7:0]
+1.8V
C1311 2.2UF/6.3V
C1313 2.2UF/6.3V
C1301 2.2UF/6.3V
C1307 2.2UF/6.3V
C1306 2.2UF/6.3V
C1316 0.1UF/10V
C1308 0.1UF/10V
C1315 0.1UF/10V
C1310 0.1UF/10V
C1312 0.1UF/10V
C1317 0.1UF/10V
C1318 0.1UF/10V
C1319 0.1UF/10V
2.2UF/6.3V C1314
C1305 0.1UF/10V
U1301B
VDD1–VDD12
VDDSPD
NC1
NC2
NC3
NC4
NCTEST
VREF
GND0
GND1
NP_NC1
NP_NC2
VSS1–VSS57
DDR_DIMM_200P
M_VREF_MCH
C1304 0.1UF/16V
C1302 0.1UF/16V
GND
M_CLK_DDR2
C1303 10PF/50V
@
M_CLK_DDR#2
M_CLK_DDR3
C1309 10PF/50V
@
M_CLK_DDR#3

Layout Note: Place these Caps near SO DIMM 1

12G025C22000
F70SL

12G025C22000
F70SL

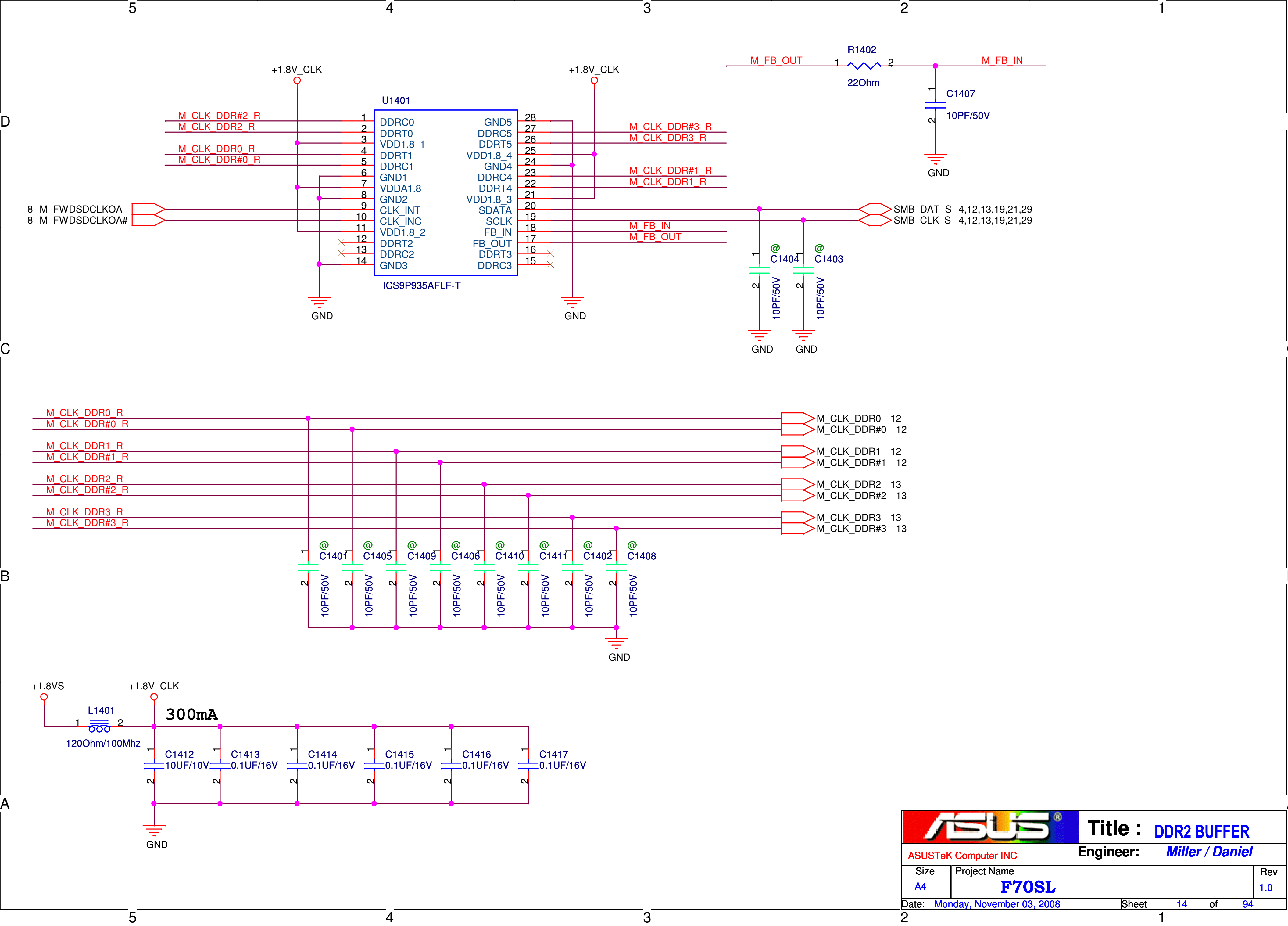
ASUSTeK Computer INC

Title : DDR2 SO-DIMM2

Engineer: Miller / Daniel

Size	Project Name	Rev
A3	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 13 of 94


5
4
3
2
1
D
C
B
A
+1.8V_CLK
+1.8V_CLK
U1401
M_CLK_DDR#2_R
M_CLK_DDR2_R
M_CLK_DDR0_R
M_CLK_DDR#0_R
8 M_FWDSDCLKOA
8 M_FWDSDCLKOA#
1 DDRC0
2 DDRT0
3 VDD1.8_1
4 DDRT1
5 DDRC1
6 GND1
7 VDDA1.8
8 GND2
9 CLK_INT
10 CLK_INC
11 VDD1.8_2
12 DDRT2
13 DDRC2
14 GND3
28 GND5
27 DDRC5
26 DDRT5
25 VDD1.8_4
24 GND4
23 DDRC4
22 DDRT4
21 VDD1.8_3
20 SDATA
19 SCLK
18 FB_IN
17 FB_OUT
16 DDRT3
15 DDRC3
ICS9P935AFLF-T
GND
GND
M_CLK_DDR#3_R
M_CLK_DDR3_R
M_CLK_DDR#1_R
M_CLK_DDR1_R
M_FB_IN
M_FB_OUT
SMB_DAT_S 4,12,13,19,21,29
SMB_CLK_S 4,12,13,19,21,29
M_FB_OUT
R1402
1
2
22Ohm
M_FB_IN
C1407
1
2
10PF/50V
GND
@
C1404
10PF/50V
@
C1403
10PF/50V
GND
GND
M_CLK_DDR0_R
M_CLK_DDR#0_R
M_CLK_DDR1_R
M_CLK_DDR#1_R
M_CLK_DDR2_R
M_CLK_DDR#2_R
M_CLK_DDR3_R
M_CLK_DDR#3_R
M_CLK_DDR0 12
M_CLK_DDR#0 12
M_CLK_DDR1 12
M_CLK_DDR#1 12
M_CLK_DDR2 13
M_CLK_DDR#2 13
M_CLK_DDR3 13
M_CLK_DDR#3 13
@ C1401 10PF/50V
@ C1405 10PF/50V
@ C1409 10PF/50V
@ C1406 10PF/50V
@ C1410 10PF/50V
@ C1411 10PF/50V
@ C1402 10PF/50V
@ C1408 10PF/50V
GND
+1.8VS
+1.8V_CLK
L1401
1
2
120Ohm/100Mhz
300mA
C1412 10UF/10V
C1413 0.1UF/16V
C1414 0.1UF/16V
C1415 0.1UF/16V
C1416 0.1UF/16V
C1417 0.1UF/16V
GND

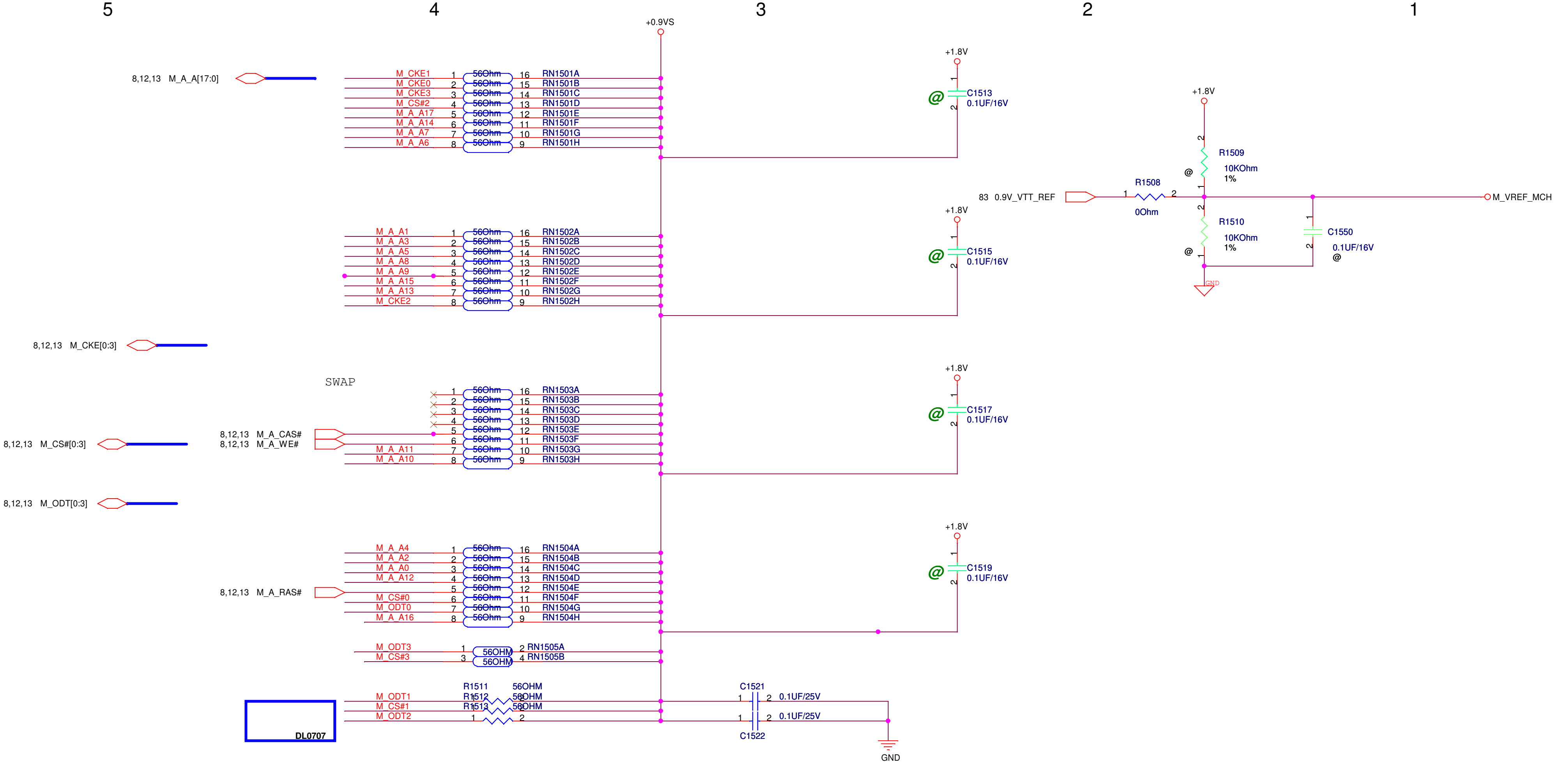
ASUSTeK Computer INC

Title : DDR2 BUFFER

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A4	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 14 of 94


+0.9VS
8,12,13 M_A_A[17:0]
M_CKE1
M_CKE0
M_CKE3
M_CS#2
M_A_A17
M_A_A14
M_A_A7
M_A_A6
56Ohm
RN1501A
RN1501B
RN1501C
RN1501D
RN1501E
RN1501F
RN1501G
RN1501H
+1.8V
C1513
0.1UF/16V
@
+1.8V
R1509
10KOhm
1%
83 0.9V_VTT_REF
R1508
0Ohm
M_VREF_MCH
R1510
10KOhm
1%
C1550
0.1UF/16V
GND
M_A_A1
M_A_A3
M_A_A5
M_A_A8
M_A_A9
M_A_A15
M_A_A13
M_CKE2
RN1502A
RN1502B
RN1502C
RN1502D
RN1502E
RN1502F
RN1502G
RN1502H
C1515
0.1UF/16V
8,12,13 M_CKE[0:3]
SWAP
8,12,13 M_CS#[0:3]
8,12,13 M_A_CAS#
8,12,13 M_A_WE#
M_A_A11
M_A_A10
RN1503A
RN1503B
RN1503C
RN1503D
RN1503E
RN1503F
RN1503G
RN1503H
C1517
0.1UF/16V
8,12,13 M_ODT[0:3]
M_A_A4
M_A_A2
M_A_A0
M_A_A12
8,12,13 M_A_RAS#
M_CS#0
M_ODT0
M_A_A16
RN1504A
RN1504B
RN1504C
RN1504D
RN1504E
RN1504F
RN1504G
RN1504H
C1519
0.1UF/16V
M_ODT3
M_CS#3
56OHM
RN1505A
RN1505B
R1511
R1512
R1513
56OHM
M_ODT1
M_CS#1
M_ODT2
DL0707
C1521
0.1UF/25V
C1522
0.1UF/25V
GND

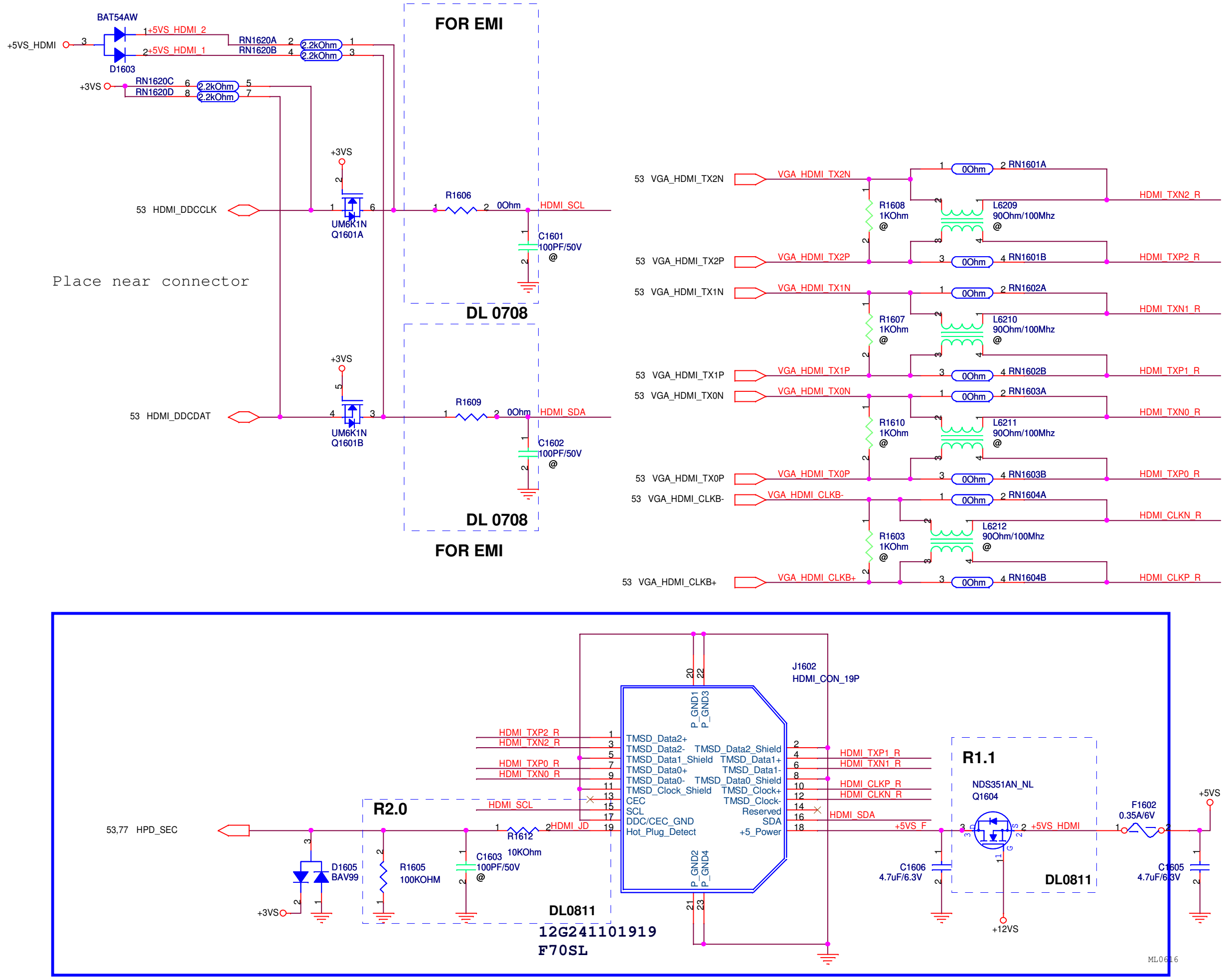
Title : DDR2 TERMINATION

ASUSTeK Computer INC

Engineer: ***Miller / Daniel***

Size	Project Name	Rev
A3	**F70SL**	1.0

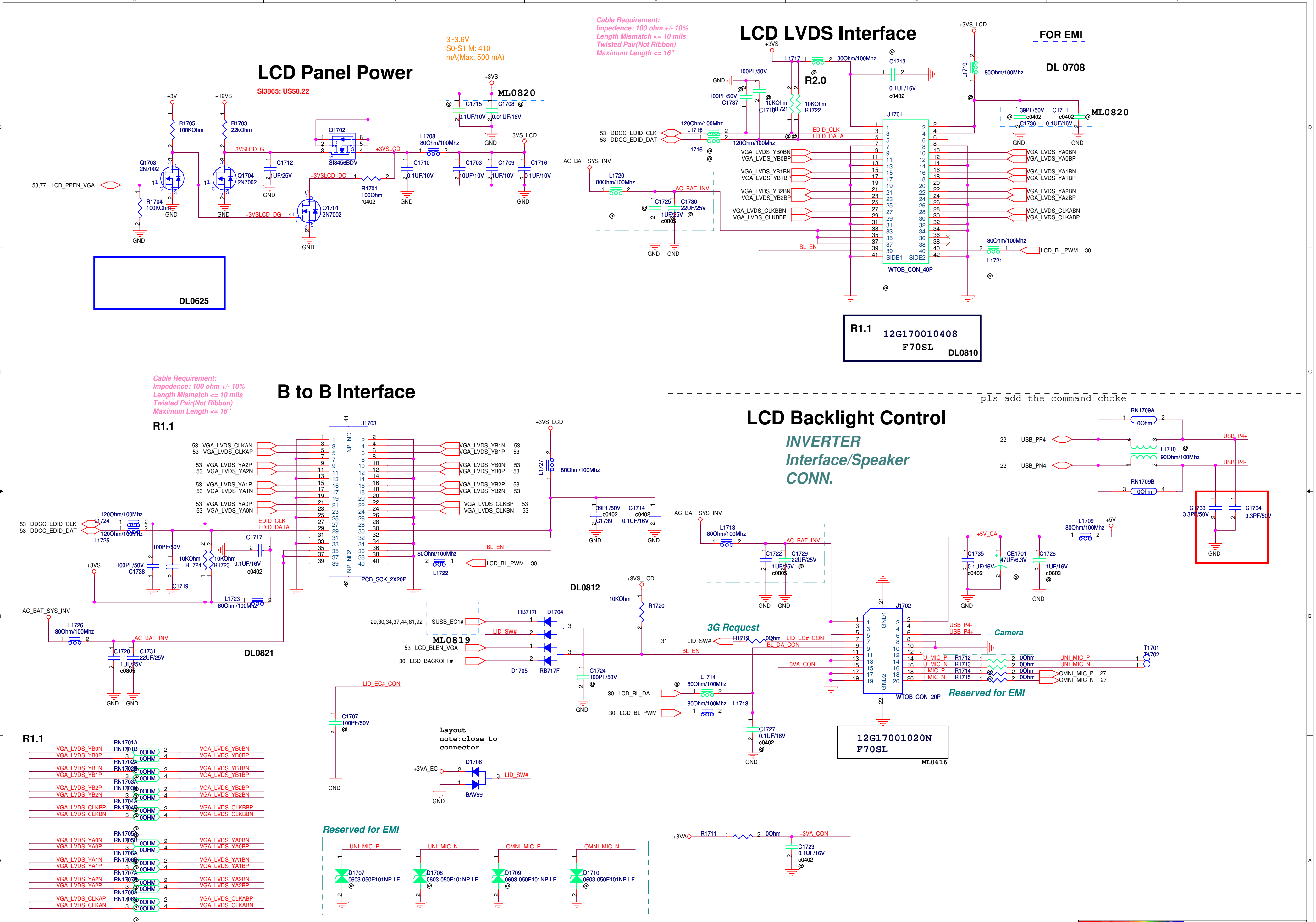
Date: Monday, November 03, 2008 Sheet 15 of 94


BAT54AW
+5VS_HDMI
3
1 +5VS_HDMI_2
2 +5VS_HDMI_1
D1603
RN1620A 2 2.2kOhm 1
RN1620B 4 2.2kOhm 3
+3VS
RN1620C 6 2.2kOhm 5
RN1620D 8 2.2kOhm 7
FOR EMI
+3VS
53 HDMI_DDCCLK
UM6K1N
Q1601A
R1606
0Ohm
HDMI_SCL
C1601
100PF/50V
@
Place near connector
DL 0708
+3VS
53 HDMI_DDCDAT
UM6K1N
Q1601B
R1609
0Ohm
HDMI_SDA
C1602
100PF/50V
@
DL 0708
FOR EMI
53 VGA_HDMI_TX2N
VGA_HDMI_TX2N
RN1601A
0Ohm
R1608
1KOhm
@
L6209
90Ohm/100Mhz
@
HDMI_TXN2_R
53 VGA_HDMI_TX2P
VGA_HDMI_TX2P
RN1601B
HDMI_TXP2_R
53 VGA_HDMI_TX1N
VGA_HDMI_TX1N
RN1602A
R1607
1KOhm
@
L6210
90Ohm/100Mhz
@
HDMI_TXN1_R
53 VGA_HDMI_TX1P
VGA_HDMI_TX1P
RN1602B
HDMI_TXP1_R
53 VGA_HDMI_TX0N
VGA_HDMI_TX0N
RN1603A
R1610
1KOhm
@
L6211
90Ohm/100Mhz
@
HDMI_TXN0_R
53 VGA_HDMI_TX0P
VGA_HDMI_TX0P
RN1603B
HDMI_TXP0_R
53 VGA_HDMI_CLKB-
VGA_HDMI_CLKB-
RN1604A
R1603
1KOhm
@
L6212
90Ohm/100Mhz
@
HDMI_CLKN_R
53 VGA_HDMI_CLKB+
VGA_HDMI_CLKB+
RN1604B
HDMI_CLKP_R
J1602
HDMI_CON_19P
P_GND1
P_GND3
P_GND2
P_GND4
TMSD_Data2+
TMSD_Data2-
TMSD_Data1_Shield
TMSD_Data0+
TMSD_Data0-
TMSD_Clock_Shield
CEC
SCL
DDC/CEC_GND
Hot_Plug_Detect
TMSD_Data2_Shield
TMSD_Data1+
TMSD_Data1-
TMSD_Data0_Shield
TMSD_Clock+
TMSD_Clock-
Reserved
SDA
+5_Power
HDMI_TXP2_R
HDMI_TXN2_R
HDMI_TXP0_R
HDMI_TXN0_R
HDMI_SCL
HDMI_JD
HDMI_TXP1_R
HDMI_TXN1_R
HDMI_CLKP_R
HDMI_CLKN_R
HDMI_SDA
+5VS_F
R2.0
53,77 HPD_SEC
D1605
BAV99
+3VS
R1605
100KOHM
C1603
100PF/50V
@
R1612
10KOhm
DL0811
12G241101919
F70SL
R1.1
NDS351AN_NL
Q1604
+5VS_HDMI
+12VS
C1606
4.7uF/6.3V
DL0811
F1602
0.35A/6V
+5VS
C1605
4.7uF/6.3V
ML0616

Title : HDMI
ASUSTeK Computer INC
Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 16 of 94



LCD Panel Power
SI3865: US$0.22
3~3.6V
S0-S1 M: 410
mA(Max. 500 mA)
ML0820
+3V
+12VS
+3VS
+3VS_LCD
R1705
100KOhm
R1703
22kOhm
Q1703
2N7002
Q1704
2N7002
Q1701
2N7002
Q1702
SI3456BDV
R1704
100KOhm
53,77 LCD_PPEN_VGA
+3VSLCD_G
+3VSLCD_DC
+3VSLCD_DG
+3VSLCD
C1712
1UF/25V
C1715
0.1UF/10V
C1708
0.01UF/16V
L1708
80Ohm/100Mhz
R1701
100Ohm
r0402
C1710
0.1UF/10V
C1703
10UF/10V
C1709
1UF/10V
C1716
0.1UF/10V
GND
DL0625
Cable Requirement:
Impedence: 100 ohm +/- 10%
Length Mismatch <= 10 mils
Twisted Pair(Not Ribbon)
Maximum Length <= 16"
LCD LVDS Interface
R2.0
L1717
80Ohm/100Mhz
C1713
0.1UF/16V
c0402
100PF/50V
C1737
C1718
10KOhm
R1721
10KOhm
R1722
53 DDCC_EDID_CLK
53 DDCC_EDID_DAT
L1715
120Ohm/100Mhz
L1716
EDID_CLK
EDID_DATA
J1701
WTOB_CON_40P
SIDE1
SIDE2
VGA_LVDS_YB0BN
VGA_LVDS_YB0BP
VGA_LVDS_YB1BN
VGA_LVDS_YB1BP
VGA_LVDS_YB2BN
VGA_LVDS_YB2BP
VGA_LVDS_CLKBBN
VGA_LVDS_CLKBBP
VGA_LVDS_YA0BN
VGA_LVDS_YA0BP
VGA_LVDS_YA1BN
VGA_LVDS_YA1BP
VGA_LVDS_YA2BN
VGA_LVDS_YA2BP
VGA_LVDS_CLKABN
VGA_LVDS_CLKABP
AC_BAT_SYS_INV
L1720
80Ohm/100Mhz
AC_BAT_INV
C1725
1UF/25V
c0805
C1730
22UF/25V
BL_EN
L1721
80Ohm/100Mhz
LCD_BL_PWM 30
L1719
80Ohm/100Mhz
FOR EMI
DL 0708
39PF/50V
C1736
c0402
C1711
0.1UF/16V
ML0820
R1.1
12G170010408
F70SL
DL0810
B to B Interface
R1.1
J1703
PCB_SCK_2X20P
NP_NC1
NP_NC2
53 VGA_LVDS_CLKAN
53 VGA_LVDS_CLKAP
53 VGA_LVDS_YA2P
53 VGA_LVDS_YA2N
53 VGA_LVDS_YA1P
53 VGA_LVDS_YA1N
53 VGA_LVDS_YA0P
53 VGA_LVDS_YA0N
VGA_LVDS_YB1N 53
VGA_LVDS_YB1P 53
VGA_LVDS_YB0N 53
VGA_LVDS_YB0P 53
VGA_LVDS_YB2P 53
VGA_LVDS_YB2N 53
VGA_LVDS_CLKBP 53
VGA_LVDS_CLKBN 53
L1724
120Ohm/100Mhz
L1725
C1738
100PF/50V
C1719
R1724
R1723
10KOhm
C1717
0.1UF/16V
c0402
L1723
80Ohm/100Mhz
L1727
80Ohm/100Mhz
C1739
39PF/50V
C1714
0.1UF/16V
L1722
DL0812
L1726
80Ohm/100Mhz
C1728
1UF/25V
c0805
C1731
22UF/25V
DL0821
pls add the command choke
LCD Backlight Control
INVERTER
Interface/Speaker
CONN.
RN1709A
RN1709B
0Ohm
L1710
90Ohm/100Mhz
22 USB_PP4
22 USB_PN4
USB_P4+
USB_P4-
C1733
3.3PF/50V
C1734
3.3PF/50V
L1713
80Ohm/100Mhz
C1722
C1729
22UF/25V
L1709
80Ohm/100Mhz
+5V
+5V_CA
C1735
CE1701
47UF/6.3V
C1726
1UF/16V
c0603
J1702
WTOB_CON_20P
GND1
GND2
3G Request
Camera
29,30,34,37,44,81,92 SUSB_EC1#
LID_SW#
RB717F
D1704
D1705
ML0819
53 LCD_BLEN_VGA
30 LCD_BACKOFF#
R1720
10KOhm
31 LID_SW#
R1719
LID_EC#_CON
BL_DA_CON
+3VA_CON
C1724
100PF/50V
30 LCD_BL_DA
30 LCD_BL_PWM
L1714
L1718
C1727
0.1UF/16V
c0402
U_MIC_P
U_MIC_N
I_MIC_P
I_MIC_N
R1712
R1713
R1714
R1715
UNI_MIC_P
UNI_MIC_N
OMNI_MIC_P 27
OMNI_MIC_N 27
T1701
T1702
Reserved for EMI
12G17001020N
F70SL
ML0616
C1707
100PF/50V
Layout
note:close to
connector
+3VA_EC
D1706
BAV99
R1711
+3VA
C1723
0.1UF/16V
c0402
R1.1
RN1701A
RN1701B
RN1702A
RN1702B
RN1703A
RN1703B
RN1704A
RN1704B
RN1705A
RN1705B
RN1706A
RN1706B
RN1707A
RN1707B
RN1708A
RN1708B
0OHM
VGA_LVDS_YB0N
VGA_LVDS_YB0P
VGA_LVDS_YB1N
VGA_LVDS_YB1P
VGA_LVDS_YB2P
VGA_LVDS_YB2N
VGA_LVDS_CLKBP
VGA_LVDS_CLKBN
VGA_LVDS_YA0N
VGA_LVDS_YA0P
VGA_LVDS_YA1N
VGA_LVDS_YA1P
VGA_LVDS_YA2N
VGA_LVDS_YA2P
VGA_LVDS_CLKAP
VGA_LVDS_CLKAN
DL0821
Reserved for EMI
UNI_MIC_P
UNI_MIC_N
OMNI_MIC_P
OMNI_MIC_N
D1707
D1708
D1709
D1710
0603-050E101NP-LF

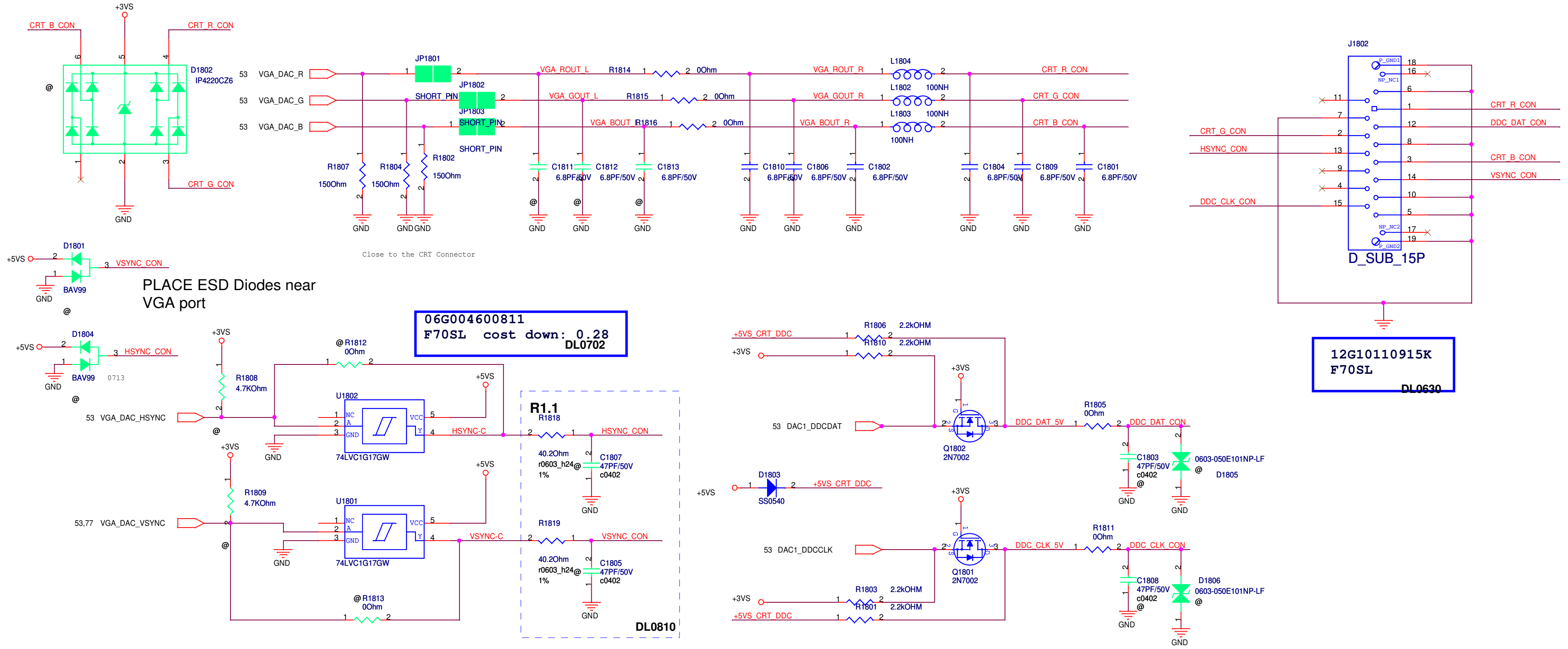
ASUSTeK Computer INC

Title : LVDS

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 10, 2008 Sheet 17 of 94


+3VS
CRT_B_CON
CRT_R_CON
CRT_G_CON
D1802
IP4220CZ6
GND
@
53 VGA_DAC_R
53 VGA_DAC_G
53 VGA_DAC_B
JP1801
JP1802
SHORT_PIN
JP1803
SHORT_PIN
SHORT_PIN
R1807
150Ohm
R1804
150Ohm
R1802
150Ohm
VGA_ROUT_L
VGA_GOUT_L
VGA_BOUT_L
R1814
R1815
R1816
0Ohm
C1811
6.8PF/50V
C1812
6.8PF/50V
C1813
6.8PF/50V
C1810
6.8PF/50V
C1806
6.8PF/50V
C1802
6.8PF/50V
VGA_ROUT_R
VGA_GOUT_R
VGA_BOUT_R
L1804
L1802
L1803
100NH
C1804
6.8PF/50V
C1809
6.8PF/50V
C1801
6.8PF/50V
CRT_R_CON
CRT_G_CON
CRT_B_CON
Close to the CRT Connector
J1802
P_GND1
NP_NC1
NP_NC2
P_GND2
D_SUB_15P
CRT_R_CON
DDC_DAT_CON
CRT_B_CON
VSYNC_CON
CRT_G_CON
HSYNC_CON
DDC_CLK_CON
12G10110915K
F70SL
DL0630
D1801
+5VS
VSYNC_CON
BAV99
PLACE ESD Diodes near VGA port
D1804
HSYNC_CON
0713
06G004600811
F70SL cost down: 0.28
DL0702
+3VS
R1808
4.7KOhm
@R1812
0Ohm
+5VS
U1802
74LVC1G17GW
NC
A
GND
VCC
Y
53 VGA_DAC_HSYNC
HSYNC-C
R1.1
R1818
40.2Ohm
r0603_h24
1%
HSYNC_CON
C1807
47PF/50V
c0402
R1809
4.7KOhm
U1801
74LVC1G17GW
53,77 VGA_DAC_VSYNC
VSYNC-C
R1819
40.2Ohm
r0603_h24
1%
VSYNC_CON
C1805
47PF/50V
c0402
@R1813
0Ohm
DL0810
+5VS_CRT_DDC
+3VS
R1806
2.2kOHM
R1810
2.2kOHM
53 DAC1_DDCDAT
Q1802
2N7002
DDC_DAT_5V
R1805
0Ohm
DDC_DAT_CON
C1803
47PF/50V
c0402
0603-050E101NP-LF
D1805
+5VS
D1803
SS0540
+5VS_CRT_DDC
53 DAC1_DDCCLK
Q1801
2N7002
DDC_CLK_5V
R1811
0Ohm
DDC_CLK_CON
C1808
47PF/50V
c0402
D1806
0603-050E101NP-LF
R1803
2.2kOHM
R1801
2.2kOHM
GND

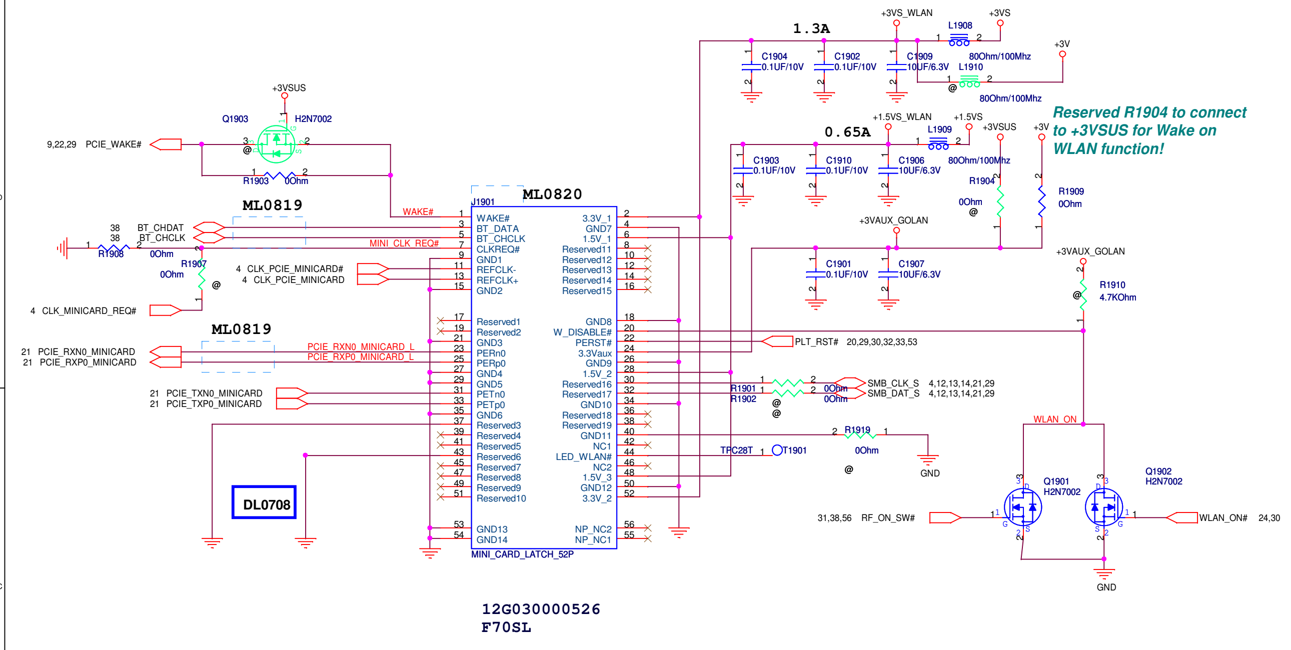
ASUSTeK Computer INC

Title : CRT

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 18 of 94


1.3A
+3VS_WLAN
+3VS
L1908
C1904
0.1UF/10V
C1902
0.1UF/10V
C1909
10UF/6.3V
80Ohm/100Mhz
L1910
80Ohm/100Mhz
+3V
0.65A
+1.5VS_WLAN
+1.5VS
L1909
+3VSUS
C1903
0.1UF/10V
C1910
0.1UF/10V
C1906
10UF/6.3V
80Ohm/100Mhz
R1904
0Ohm
R1909
0Ohm
Reserved R1904 to connect to +3VSUS for Wake on WLAN function!
+3VAUX_GOLAN
C1901
0.1UF/10V
C1907
10UF/6.3V
+3VAUX_GOLAN
R1910
4.7KOhm
+3VSUS
Q1903
H2N7002
9,22,29 PCIE_WAKE#
R1903 0Ohm
ML0819
WAKE#
38 BT_CHDAT
38 BT_CHCLK
R1908
0Ohm
R1907
0Ohm
MINI_CLK_REQ#
4 CLK_PCIE_MINICARD#
4 CLK_PCIE_MINICARD
4 CLK_MINICARD_REQ#
ML0819
21 PCIE_RXN0_MINICARD
21 PCIE_RXP0_MINICARD
PCIE_RXN0_MINICARD_L
PCIE_RXP0_MINICARD_L
21 PCIE_TXN0_MINICARD
21 PCIE_TXP0_MINICARD
DL0708
J1901
ML0820
WAKE#
BT_DATA
BT_CHCLK
CLKREQ#
GND1
REFCLK-
REFCLK+
GND2
Reserved1
Reserved2
GND3
PERn0
PERp0
GND4
GND5
PETn0
PETp0
GND6
Reserved3
Reserved4
Reserved5
Reserved6
Reserved7
Reserved8
Reserved9
Reserved10
GND13
GND14
3.3V_1
GND7
1.5V_1
Reserved11
Reserved12
Reserved13
Reserved14
Reserved15
GND8
W_DISABLE#
PERST#
3.3Vaux
GND9
1.5V_2
Reserved16
Reserved17
GND10
Reserved18
Reserved19
GND11
NC1
LED_WLAN#
NC2
1.5V_3
GND12
3.3V_2
NP_NC2
NP_NC1
MINI_CARD_LATCH_52P
PLT_RST# 20,29,30,32,33,53
R1901
R1902
0Ohm
0Ohm
SMB_CLK_S 4,12,13,14,21,29
SMB_DAT_S 4,12,13,14,21,29
R1919
0Ohm
GND
TPC28T
T1901
WLAN_ON
Q1901
H2N7002
Q1902
H2N7002
31,38,56 RF_ON_SW#
WLAN_ON# 24,30
GND
H1903
A40M20-64AS
GND
H1904
A40M20-64AS
GND
12G030000526
F70SL

DL0619

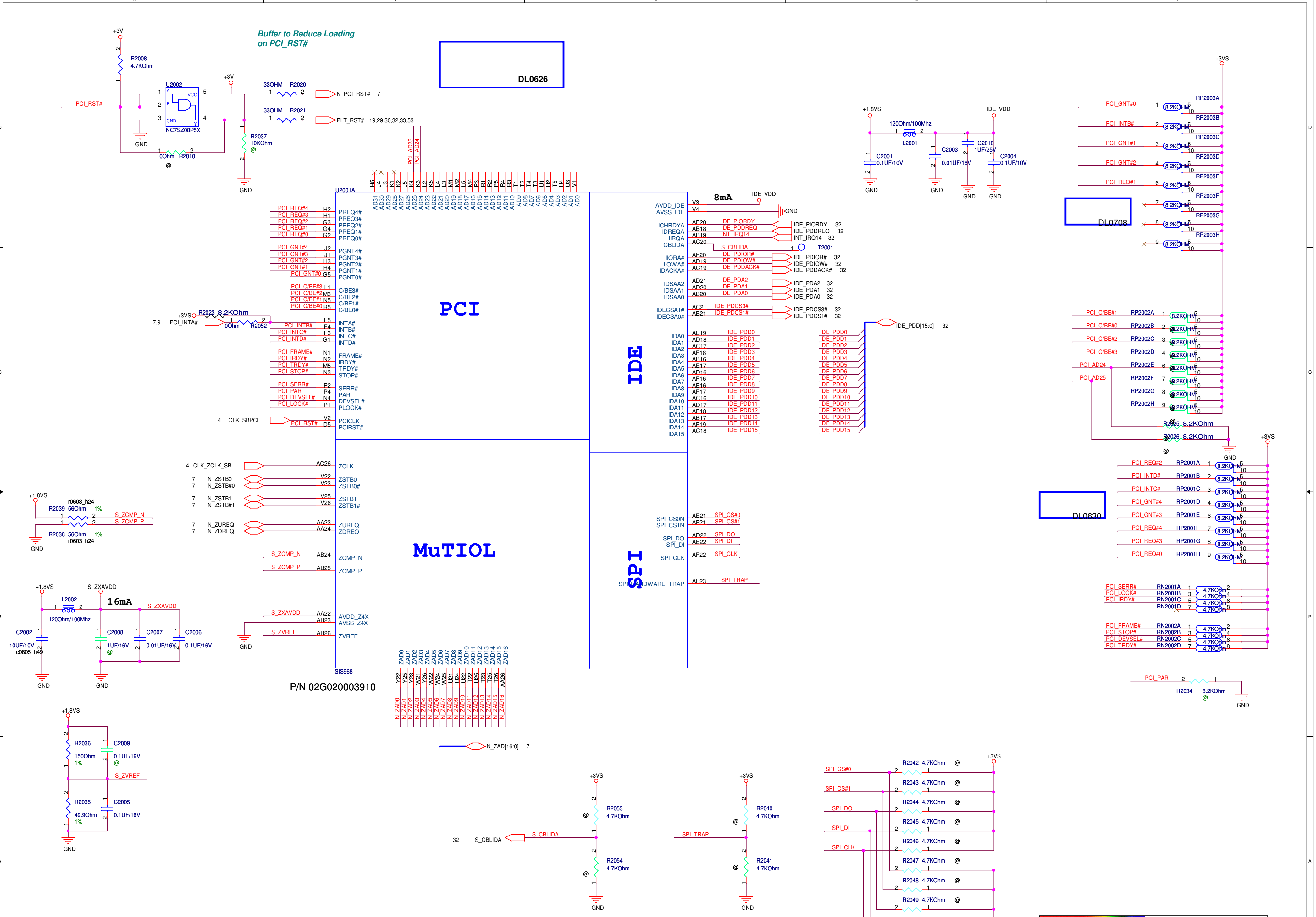
Title : Mini card WLAN/TV Tune

ASUSTeK Computer INC

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 19 of 94


Buffer to Reduce Loading
on PCI_RST#
DL0626
DL0708
DL0630
+3V
R2008
4.7KOhm
U2002
NC7SZ08P5X
PCI_RST#
GND
0Ohm R2010
33OHM R2020
N_PCI_RST# 7
33OHM R2021
PLT_RST# 19,29,30,32,33,53
R2037
10KOhm
U2001A
PCI
IDE
MuTIOL
SPI
SIS968
P/N 02G020003910
PREQ4#
PREQ3#
PREQ2#
PREQ1#
PREQ0#
PGNT4#
PGNT3#
PGNT2#
PGNT1#
PGNT0#
C/BE3#
C/BE2#
C/BE1#
C/BE0#
INTA#
INTB#
INTC#
INTD#
FRAME#
IRDY#
TRDY#
STOP#
SERR#
PAR
DEVSEL#
PLOCK#
PCICLK
PCIRST#
4 CLK_SBPCI
7,9 PCI_INTA#
R2023 8.2KOhm
R2052 0Ohm
AVDD_IDE
AVSS_IDE
8mA
IDE_VDD
ICHRDYA
IDREQA
IIRQA
CBLIDA
IDE_PIORDY 32
IDE_PDDREQ 32
INT_IRQ14 32
S_CBLIDA
T2001
IIORA#
IIOWA#
IDACKA#
IDE_PDIOR# 32
IDE_PDIOW# 32
IDE_PDDACK# 32
IDSAA2
IDSAA1
IDSAA0
IDE_PDA2 32
IDE_PDA1 32
IDE_PDA0 32
IDECSA1#
IDECSA0#
IDE_PDCS3# 32
IDE_PDCS1# 32
IDE_PDD[15:0] 32
IDA0 … IDA15
IDE_PDD0 … IDE_PDD15
4 CLK_ZCLK_SB
ZCLK
7 N_ZSTB0
7 N_ZSTB#0
7 N_ZSTB1
7 N_ZSTB#1
7 N_ZUREQ
7 N_ZDREQ
ZSTB0
ZSTB0#
ZSTB1
ZSTB1#
ZUREQ
ZDREQ
ZCMP_N
ZCMP_P
AVDD_Z4X
AVSS_Z4X
ZVREF
S_ZCMP_N
S_ZCMP_P
S_ZXAVDD
S_ZVREF
ZAD0 … ZAD16
N_ZAD0 … N_ZAD16
N_ZAD[16:0] 7
+1.8VS
R2039 56Ohm 1%
R2038 56Ohm 1%
r0603_h24
16mA
L2002
120Ohm/100Mhz
C2002 10UF/10V c0805_h49
C2008 1UF/16V
C2007 0.01UF/16V
C2006 0.1UF/16V
R2036 150Ohm 1%
C2009 0.1UF/16V
R2035 49.9Ohm 1%
C2005 0.1UF/16V
SPI_CS0N
SPI_CS1N
SPI_DO
SPI_DI
SPI_CLK
SPI_HARDWARE_TRAP
SPI_CS#0
SPI_CS#1
SPI_TRAP
120Ohm/100Mhz L2001
C2001 0.1UF/10V
C2003 0.01UF/16V
C2010 1UF/25V
C2004 0.1UF/10V
+3VS
RP2003A … RP2003H 8.2KOhm
PCI_GNT#0
PCI_INTB#
PCI_GNT#1
PCI_GNT#2
PCI_REQ#1
RP2002A … RP2002H 8.2KOhm
PCI_C/BE#1
PCI_C/BE#0
PCI_C/BE#2
PCI_C/BE#3
PCI_AD24
PCI_AD25
R2025 8.2KOhm
R2026 8.2KOhm
RP2001A … RP2001H 8.2KOhm
PCI_REQ#2
PCI_INTD#
PCI_INTC#
PCI_GNT#4
PCI_GNT#3
PCI_REQ#4
PCI_REQ#3
PCI_REQ#0
RN2001A … RN2001D 4.7KOhm
PCI_SERR#
PCI_LOCK#
PCI_IRDY#
RN2002A … RN2002D 4.7KOhm
PCI_FRAME#
PCI_STOP#
PCI_DEVSEL#
PCI_TRDY#
PCI_PAR
R2034 8.2KOhm
R2053 4.7KOhm
R2054 4.7KOhm
32 S_CBLIDA
R2040 4.7KOhm
R2041 4.7KOhm
R2042 … R2051 4.7KOhm
0:LPC ROM 1:SPI ROM

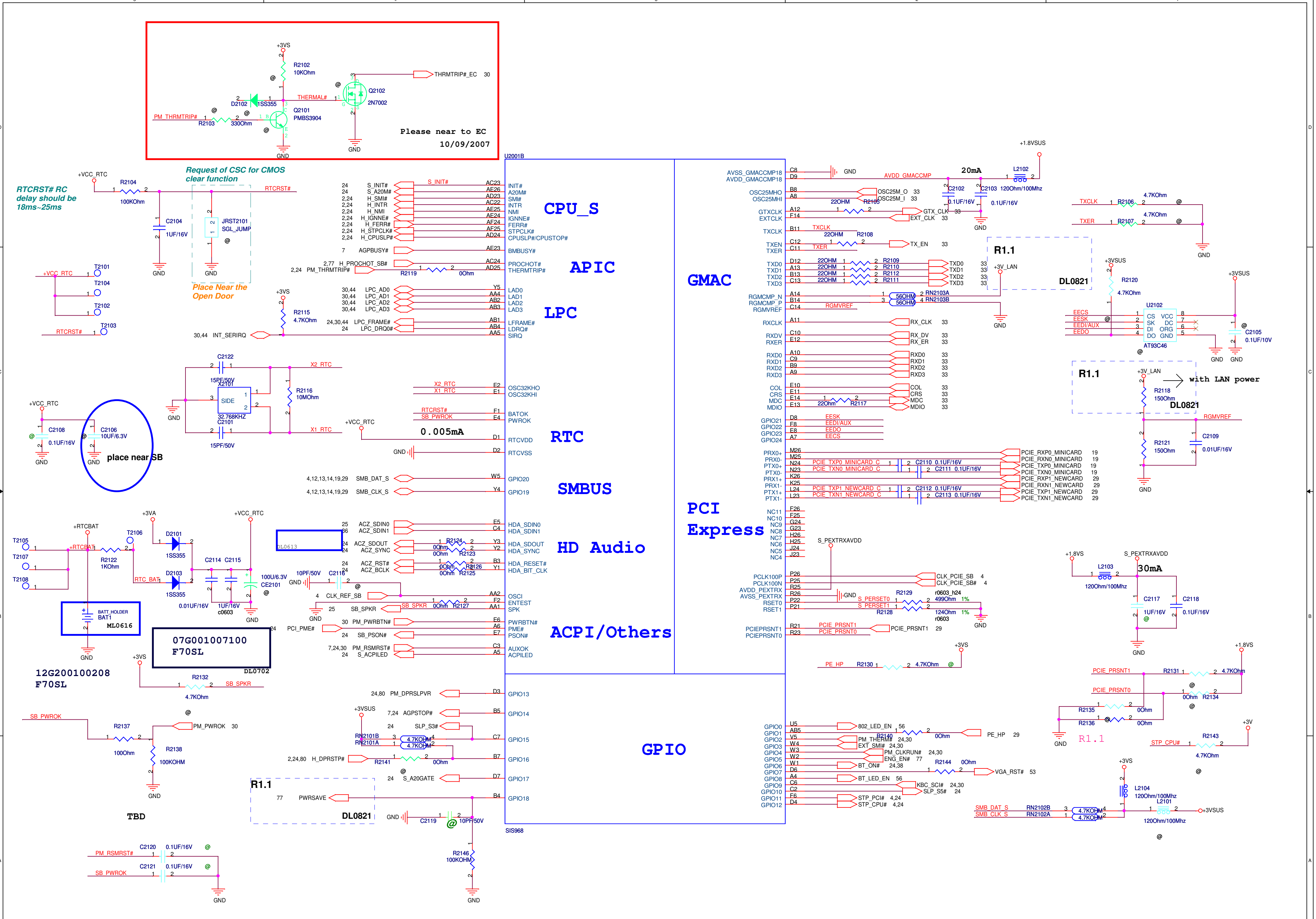
ASUSTeK COMPUTER INC. NB1

Title : 968 IDE/SPI/PCI/MuTIOL(1)

Engineer: Miller / Daniel

Size	Project Name	Rev
C	X71C	1.0

Date: Monday, November 03, 2008 Sheet 20 of 94



+3VS
R2102
10KOhm
THRMTRIP#_EC 30
Q2102
2N7002
THERMAL#
D2102
1SS355
Q2101
PMBS3904
PM_THRMTRIP#
R2103
330Ohm
GND
Please near to EC
10/09/2007
+VCC_RTC
R2104
100KOhm
RTCRST# RC
delay should be
18ms~25ms
Request of CSC for CMOS
clear function
RTCRST#
C2104
1UF/16V
JRST2101
SGL_JUMP
Place Near the
Open Door
T2101
T2104
T2102
T2103
+VCC_RTC
RTCRST#
U2001B
S_INIT#
S_A20M#
H_SMI#
H_INTR
H_NMI
H_IGNNE#
H_FERR#
H_STPCLK#
H_CPUSLP#
AGPBUSY#
H_PROCHOT_SB#
PM_THRMTRIP#
R2119
0Ohm
INIT#
A20M#
SMI#
INTR
NMI
IGNNE#
FERR#
STPCLK#
CPUSLP#/CPUSTOP#
BMBUSY#
PROCHOT#
THERMTRIP#
CPU_S
APIC
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_FRAME#
LPC_DRQ0#
INT_SERIRQ
R2115
4.7KOhm
LAD0
LAD1
LAD2
LAD3
LFRAME#
LDRQ#
SIRQ
LPC
C2122
15PF/50V
X2101
32.768KHZ
C2101
15PF/50V
R2116
10MOhm
X2_RTC
X1_RTC
RTCRST#
SB_PWROK
OSC32KHO
OSC32KHI
BATOK
PWROK
+VCC_RTC
0.005mA
RTCVDD
RTCVSS
RTC
C2108
0.1UF/16V
C2106
10UF/6.3V
place near SB
SMB_DAT_S
SMB_CLK_S
GPIO20
GPIO19
SMBUS
ACZ_SDIN0
ACZ_SDIN1
ACZ_SDOUT
ACZ_SYNC
ACZ_RST#
ACZ_BCLK
R2124
R2123
R2126
R2125
HDA_SDIN0
HDA_SDIN1
HDA_SDOUT
HDA_SYNC
HDA_RESET#
HDA_BIT_CLK
HD Audio
DL0613
T2105
T2107
T2108
+RTCBAT
R2122
1KOhm
T2106
+3VA
D2101
1SS355
D2103
1SS355
RTC_BAT
C2114
C2115
0.01UF/16V
1UF/16V
c0603
100U/6.3V
CE2101
10PF/50V
C2116
CLK_REF_SB
SB_SPKR
R2127
PM_PWRBTN#
PCI_PME#
SB_PSON#
PM_RSMRST#
S_ACPILED
OSCI
ENTEST
SPK
PWRBTN#
PME#
PSON#
AUXOK
ACPILED
ACPI/Others
BATT_HOLDER
BAT1
ML0616
07G001007100
F70SL
DL0702
12G200100208
F70SL
R2132
4.7KOhm
SB_SPKR
SB_PWROK
R2137
100Ohm
PM_PWROK
R2138
100KOHM
TBD
PM_DPRSLPVR
AGPSTOP#
SLP_S3#
RN2101B
RN2101A
4.7KOHM
H_DPRSTP#
R2141
S_A20GATE
PWRSAVE
R1.1
DL0821
C2119
10PF/50V
R2146
100KOHM
GPIO13
GPIO14
GPIO15
GPIO16
GPIO17
GPIO18
SIS968
GPIO
PM_RSMRST#
C2120
0.1UF/16V
SB_PWROK
C2121
0.1UF/16V
AVSS_GMACCMP18
AVDD_GMACCMP18
OSC25MHO
OSC25MHI
GTXCLK
EXTCLK
TXCLK
TXEN
TXER
TXD0
TXD1
TXD2
TXD3
RGMCMP_N
RGMCMP_P
RGMVREF
RXCLK
RXDV
RXER
RXD0
RXD1
RXD2
RXD3
COL
CRS
MDC
MDIO
GPIO21
GPIO22
GPIO23
GPIO24
GMAC
+1.8VSUS
AVDD_GMACCMP
20mA
L2102
120Ohm/100Mhz
C2102
0.1UF/16V
C2103
0.1UF/16V
OSC25M_O
OSC25M_I
R2105
22OHM
GTX_CLK
EXT_CLK
R2108
TX_EN
R2109
R2110
R2112
R2111
RN2103A
RN2103B
56OHM
RX_CLK
RX_DV
RX_ER
RXD0
RXD1
RXD2
RXD3
COL
CRS
MDC
MDIO
R2117
EESK
EEDI/AUX
EEDO
EECS
TXCLK
R2106
4.7KOhm
TXER
R2107
R1.1
+3V_LAN
DL0821
+3VSUS
R2120
4.7KOhm
U2102
AT93C46
CS
SK
DI
DO
VCC
DC
ORG
GND
C2105
0.1UF/10V
R1.1
+3V_LAN
with LAN power
R2118
150Ohm
DL0821
RGMVREF
R2121
150Ohm
C2109
0.01UF/16V
PRX0+
PRX0-
PTX0+
PTX0-
PRX1+
PRX1-
PTX1+
PTX1-
NC11
NC10
NC9
NC8
NC7
NC6
NC5
NC4
PCI Express
PCIE_TXP0_MINICARD_C
PCIE_TXN0_MINICARD_C
C2110 0.1UF/16V
C2111 0.1UF/16V
PCIE_TXP1_NEWCARD_C
PCIE_TXN1_NEWCARD_C
C2112 0.1UF/16V
C2113 0.1UF/16V
PCIE_RXP0_MINICARD
PCIE_RXN0_MINICARD
PCIE_TXP0_MINICARD
PCIE_TXN0_MINICARD
PCIE_RXP1_NEWCARD
PCIE_RXN1_NEWCARD
PCIE_TXP1_NEWCARD
PCIE_TXN1_NEWCARD
S_PEXTRXAVDD
PCLK100P
PCLK100N
AVDD_PEXTRX
AVSS_PEXTRX
RSET0
RSET1
CLK_PCIE_SB
CLK_PCIE_SB#
R2129
499Ohm 1%
r0603_h24
S_PERSET0
S_PERSET1
R2128
124Ohm 1%
r0603
+1.8VS
L2103
120Ohm/100Mhz
S_PEXTRXAVDD
30mA
C2117
1UF/16V
C2118
0.1UF/16V
PCIEPRSNT1
PCIEPRSNT0
PCIE_PRSNT1
PCIE_PRSNT0
+3VS
PE_HP
R2130
4.7KOhm
+1.8VS
PCIE_PRSNT1
R2131
4.7KOhm
PCIE_PRSNT0
0Ohm
R2134
R2135
R2136
0Ohm
R1.1
GPIO0
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
GPIO9
GPIO10
GPIO11
GPIO12
802_LED_EN
PM_THERM#
R2140
EXT_SMI#
PM_CLKRUN#
ENG_EN#
BT_ON#
R2144
VGA_RST#
BT_LED_EN
KBC_SCI#
SLP_S5#
STP_PCI#
STP_CPU#
PE_HP
+3V
R2143
STP_CPU#
4.7KOhm
+3VS
L2104
120Ohm/100Mhz
L2101
120Ohm/100Mhz
+3VSUS
SMB_DAT_S
SMB_CLK_S
RN2102B
RN2102A
4.7KOHM

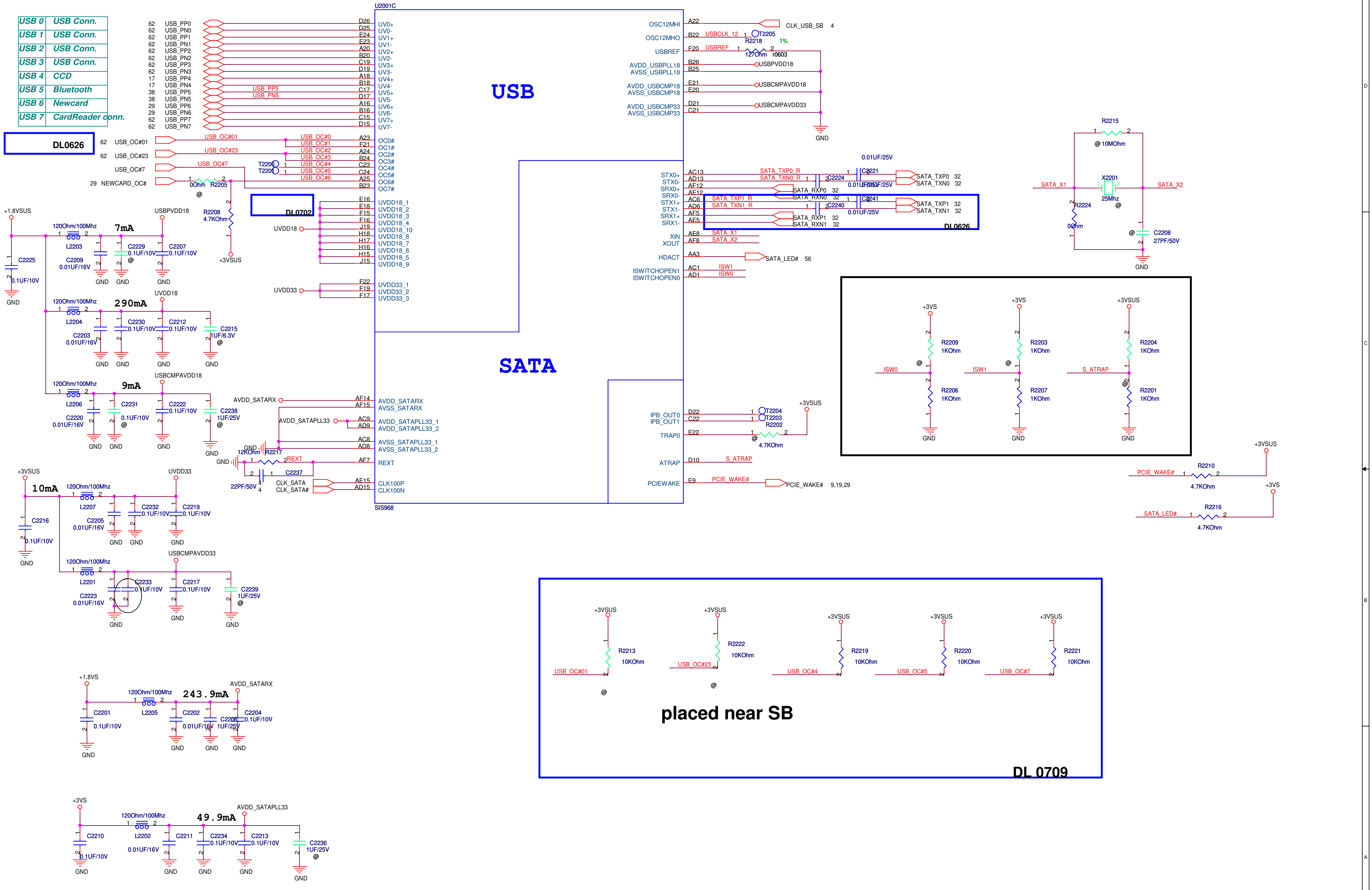
ASUSTeK COMPUTER INC. NB1

Title : 968 PCIE/AUDIO/ACPI/GPIO(2)

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 21 of 94


USB 0 USB Conn.
USB 1 USB Conn.
USB 2 USB Conn.
USB 3 USB Conn.
USB 4 CCD
USB 5 Bluetooth
USB 6 Newcard
USB 7 CardReader conn.
DL0626
U2001C
USB
SATA
SIS968
USB_PP0
USB_PN0
USB_PP1
USB_PN1
USB_PP2
USB_PN2
USB_PP3
USB_PN3
USB_PP4
USB_PN4
USB_PP5
USB_PN5
USB_PP6
USB_PN6
USB_PP7
USB_PN7
USB_OC#01
USB_OC#23
USB_OC#7
NEWCARD_OC#
UV0+
UV0-
UV1+
UV1-
UV2+
UV2-
UV3+
UV3-
UV4+
UV4-
UV5+
UV5-
UV6+
UV6-
UV7+
UV7-
OC0#
OC1#
OC2#
OC3#
OC4#
OC5#
OC6#
OC7#
UVDD18_1
UVDD18_2
UVDD18_3
UVDD18_4
UVDD18_10
UVDD18_8
UVDD18_7
UVDD18_6
UVDD18_5
UVDD18_9
UVDD33_1
UVDD33_2
UVDD33_3
AVDD_SATARX
AVSS_SATARX
AVDD_SATAPLL33_1
AVDD_SATAPLL33_2
AVSS_SATAPLL33_1
AVSS_SATAPLL33_2
REXT
CLK100P
CLK100N
OSC12MHI
OSC12MHO
USBREF
AVDD_USBPLL18
AVSS_USBPLL18
AVDD_USBCMP18
AVSS_USBCMP18
AVDD_USBCMP33
AVSS_USBCMP33
CLK_USB_SB 4
USBCLK_12
R2218
T2205
USBREF
127Ohm r0603 1%
USBPVDD18
USBCMPAVDD18
USBCMPAVDD33
GND
STX0+
STX0-
SRX0+
SRX0-
STX1+
STX1-
SRX1+
SRX1-
XIN
XOUT
HDACT
ISWITCHOPEN1
ISWITCHOPEN0
IPB_OUT0
IPB_OUT1
TRAP0
ATRAP
PCIEWAKE
SATA_TXP0_R
SATA_TXN0_R
SATA_TXP0 32
SATA_TXN0 32
SATA_RXP0 32
SATA_RXN0 32
SATA_TXP1_R
SATA_TXN1_R
SATA_TXP1 32
SATA_TXN1 32
SATA_RXP1 32
SATA_RXN1 32
C2221
C2224
C2241
C2240
0.01UF/25V
DL0626
SATA_X1
SATA_X2
SATA_LED# 56
ISW1
ISW0
T2204
T2203
R2202 4.7KOhm
+3VSUS
S_ATRAP
PCIE_WAKE#
PCIE_WAKE# 9,19,29
DL0702
R2205 0Ohm
R2208 4.7KOhm
+3VSUS
T2206
T2208
+1.8VSUS
USBPVDD18
120Ohm/100Mhz
7mA
L2203
C2225 0.1UF/10V
C2209 0.01UF/16V
C2229 0.1UF/10V
C2207 0.1UF/10V
UVDD18
290mA
L2204
C2203 0.01UF/16V
C2230 0.1UF/10V
C2212 0.1UF/10V
C2215 1UF/6.3V
USBCMPAVDD18
9mA
L2206
C2220 0.01UF/16V
C2231 0.1UF/10V
C2222 0.1UF/10V
C2238 1UF/25V
AVDD_SATARX
AVDD_SATAPLL33
R2217 12KOhm
C2237 22PF/50V
CLK_SATA
CLK_SATA#
UVDD18
UVDD33
+3VSUS
UVDD33
10mA
L2207
C2216 0.1UF/10V
C2205 0.01UF/16V
C2232 0.1UF/10V
C2219 0.1UF/10V
USBCMPAVDD33
L2201
C2223 0.01UF/16V
C2233 0.1UF/10V
C2217 0.1UF/10V
C2239 1UF/25V
R2215 10MOhm
X2201 25Mhz
R2224 0Ohm
C2208 27PF/50V
+3VS
R2209 1KOhm
R2206 1KOhm
R2203 1KOhm
R2207 1KOhm
+3VSUS
R2204 1KOhm
R2201 1KOhm
ISW0
ISW1
S_ATRAP
R2210 4.7KOhm
PCIE_WAKE#
+3VS
R2216 4.7KOhm
SATA_LED#
+1.8VS
AVDD_SATARX
243.9mA
L2205
C2201 0.1UF/10V
C2202 0.01UF/16V
C2206 1UF/25V
C2204 0.1UF/10V
+3VS
AVDD_SATAPLL33
49.9mA
L2202
C2210 0.1UF/10V
C2211 0.01UF/16V
C2234 0.1UF/10V
C2213 0.1UF/10V
C2236 1UF/25V
R2213 10KOhm
R2222 10KOhm
R2219 10KOhm
R2220 10KOhm
R2221 10KOhm
USB_OC#01
USB_OC#23
USB_OC#4
USB_OC#5
USB_OC#7
placed near SB
DL 0709

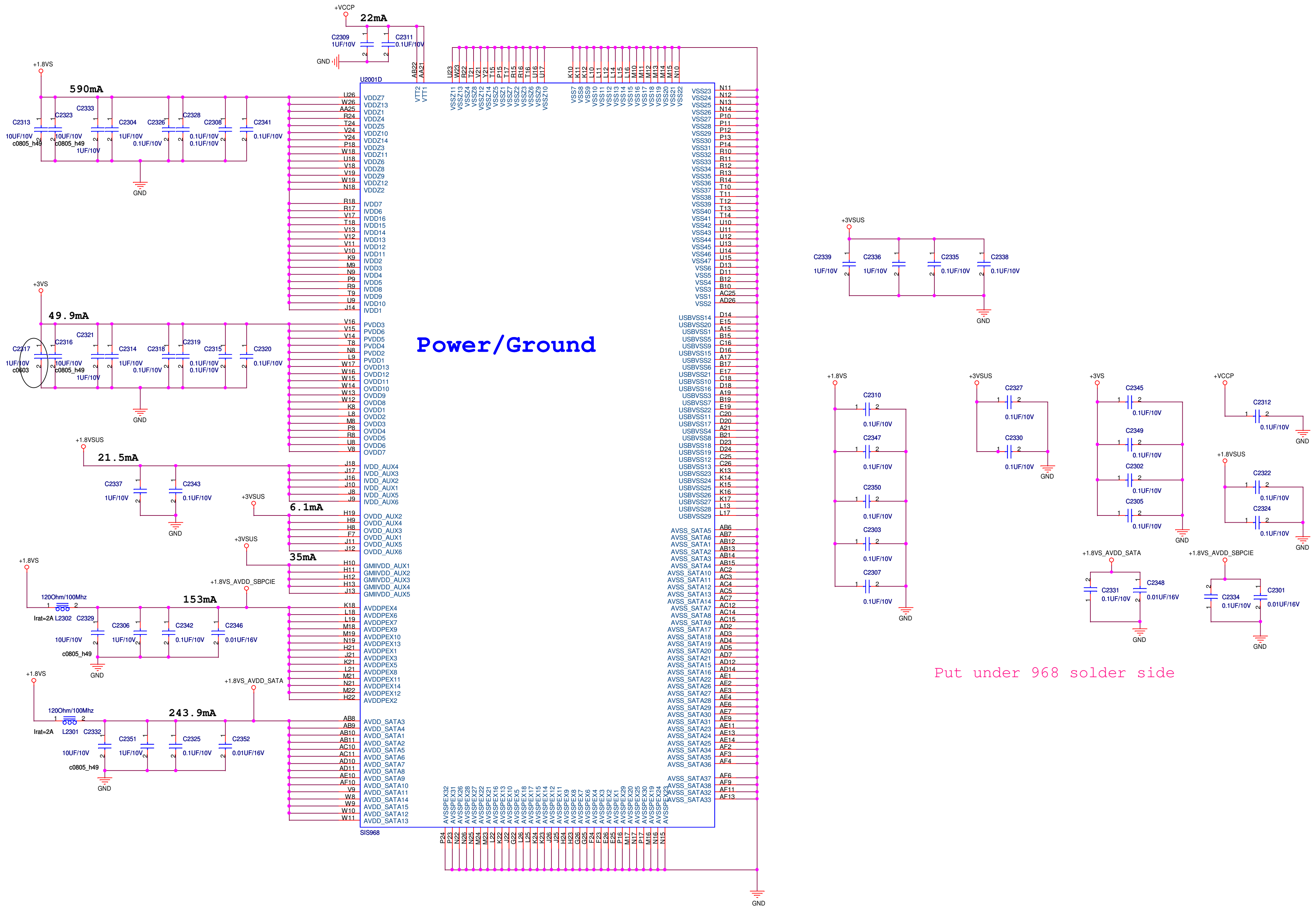
ASUSTeK COMPUTER INC. NB1

Title : 968 USB/SATA(3)

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 22 of 94


Power/Ground
U2001D
SIS968
+VCCP
22mA
C2309 1UF/10V
C2311 0.1UF/10V
GND
AB22 VTT2
AA21 VTT1
U23 VSSZ11
W23 VSSZ13
R22 VSSZ4
T21 VSSZ12
V21 VSSZ8
T15 VSSZ9
P15 VSSZ2
T17 VSSZ5
R15 VSSZ1
R16 VSSZ7
T16 VSSZ3
U16 VSSZ6
U17 VSSZ10
K10 VSS7
K11 VSS8
K12 VSS9
L10 VSS10
L11 VSS11
L12 VSS12
L14 VSS13
L15 VSS14
L16 VSS15
M10 VSS16
M11 VSS17
M12 VSS18
M13 VSS19
M14 VSS20
M15 VSS21
N10 VSS22
+1.8VS
590mA
C2313 10UF/10V c0805_h49
C2323 10UF/10V c0805_h49
C2333 1UF/10V
C2304 1UF/10V
C2326 0.1UF/10V
C2328 0.1UF/10V
C2308 0.1UF/10V
C2341 0.1UF/10V
GND
U26 VDDZ7
W26 VDDZ13
AA25 VDDZ1
R24 VDDZ4
T24 VDDZ5
V24 VDDZ10
Y24 VDDZ14
P18 VDDZ3
W18 VDDZ11
U18 VDDZ6
V18 VDDZ8
V19 VDDZ9
W19 VDDZ12
N18 VDDZ2
R18 IVDD7
R17 IVDD6
V17 IVDD16
T18 IVDD15
V13 IVDD14
V12 IVDD13
V11 IVDD12
V10 IVDD11
K9 IVDD2
M9 IVDD3
N9 IVDD4
P9 IVDD5
R9 IVDD8
T9 IVDD9
U9 IVDD10
J14 IVDD1
+3VS
49.9mA
C2317 1UF/10V c0603
C2316 10UF/10V c0805_h49
C2321 1UF/10V
C2314 1UF/10V
C2318 0.1UF/10V
C2319 0.1UF/10V
C2315 0.1UF/10V
C2320 0.1UF/10V
GND
V16 PVDD3
V15 PVDD6
V14 PVDD5
T8 PVDD4
N8 PVDD2
L9 PVDD1
W17 OVDD13
W16 OVDD12
W15 OVDD11
W14 OVDD10
W13 OVDD9
W12 OVDD8
K8 OVDD1
L8 OVDD2
M8 OVDD3
P8 OVDD4
R8 OVDD5
U8 OVDD6
V8 OVDD7
+1.8VSUS
21.5mA
C2337 1UF/10V
C2343 0.1UF/10V
GND
J18 IVDD_AUX4
J17 IVDD_AUX3
J16 IVDD_AUX2
J10 IVDD_AUX1
J8 IVDD_AUX5
J9 IVDD_AUX6
+3VSUS
6.1mA
H19 OVDD_AUX2
H9 OVDD_AUX4
H8 OVDD_AUX3
F7 OVDD_AUX1
J11 OVDD_AUX5
J12 OVDD_AUX6
+3VSUS
35mA
H10 GMIIVDD_AUX1
H11 GMIIVDD_AUX2
H12 GMIIVDD_AUX3
H13 GMIIVDD_AUX4
J13 GMIIVDD_AUX5
+1.8VS
120Ohm/100Mhz
Irat=2A L2302
+1.8VS_AVDD_SBPCIE
153mA
C2329 10UF/10V c0805_h49
C2306 1UF/10V
C2342 0.1UF/10V
C2346 0.01UF/16V
GND
K18 AVDDPEX4
L18 AVDDPEX6
L19 AVDDPEX7
M18 AVDDPEX9
M19 AVDDPEX10
N19 AVDDPEX13
H21 AVDDPEX1
J21 AVDDPEX3
K21 AVDDPEX5
L21 AVDDPEX8
M21 AVDDPEX11
N21 AVDDPEX14
M22 AVDDPEX12
H22 AVDDPEX2
+1.8VS
120Ohm/100Mhz
Irat=2A L2301
+1.8VS_AVDD_SATA
243.9mA
C2332 10UF/10V c0805_h49
C2351 1UF/10V
C2325 0.1UF/10V
C2352 0.01UF/16V
GND
AB8 AVDD_SATA3
AB9 AVDD_SATA4
AB10 AVDD_SATA1
AB11 AVDD_SATA2
AC10 AVDD_SATA5
AC11 AVDD_SATA6
AD10 AVDD_SATA7
AD11 AVDD_SATA8
AE10 AVDD_SATA9
AF10 AVDD_SATA10
V9 AVDD_SATA11
W8 AVDD_SATA14
W9 AVDD_SATA15
W10 AVDD_SATA12
W11 AVDD_SATA13
P24 AVSSPEX32
P23 AVSSPEX31
N22 AVSSPEX26
N26 AVSSPEX28
M25 AVSSPEX27
M24 AVSSPEX22
M23 AVSSPEX21
L22 AVSSPEX16
K22 AVSSPEX13
J22 AVSSPEX10
G22 AVSSPEX5
L26 AVSSPEX18
L25 AVSSPEX17
K24 AVSSPEX15
K23 AVSSPEX14
J24 AVSSPEX12
J25 AVSSPEX11
J26 AVSSPEX9
H24 AVSSPEX8
H23 AVSSPEX7
G26 AVSSPEX6
G25 AVSSPEX4
F24 AVSSPEX3
F23 AVSSPEX2
E26 AVSSPEX1
E25 AVSSPEX29
P16 AVSSPEX20
M17 AVSSPEX25
P17 AVSSPEX30
M16 AVSSPEX19
N16 AVSSPEX24
N15 AVSSPEX23
N11 VSS23
N12 VSS24
N13 VSS25
N14 VSS26
P10 VSS27
P11 VSS28
P12 VSS29
P13 VSS30
P14 VSS31
R10 VSS32
R11 VSS33
R12 VSS34
R13 VSS35
R14 VSS36
T10 VSS37
T11 VSS38
T12 VSS39
T13 VSS40
T14 VSS41
U10 VSS42
U11 VSS43
U12 VSS44
U13 VSS45
U14 VSS46
U15 VSS47
D13 VSS6
D11 VSS5
B12 VSS4
B10 VSS3
AC25 VSS1
AD26 VSS2
D14 USBVSS14
E15 USBVSS20
A15 USBVSS1
B15 USBVSS5
C16 USBVSS9
D16 USBVSS15
A17 USBVSS2
B17 USBVSS6
E17 USBVSS21
C18 USBVSS10
D18 USBVSS16
A19 USBVSS3
B19 USBVSS7
E19 USBVSS22
C20 USBVSS11
D20 USBVSS17
A21 USBVSS4
B21 USBVSS8
D23 USBVSS18
D24 USBVSS19
C25 USBVSS12
C26 USBVSS13
K13 USBVSS23
K14 USBVSS24
K15 USBVSS25
K16 USBVSS26
K17 USBVSS27
L13 USBVSS28
L17 USBVSS29
AB6 AVSS_SATA5
AB7 AVSS_SATA6
AB12 AVSS_SATA1
AB13 AVSS_SATA2
AB14 AVSS_SATA3
AB15 AVSS_SATA4
AC2 AVSS_SATA10
AC3 AVSS_SATA11
AC4 AVSS_SATA12
AC5 AVSS_SATA13
AC7 AVSS_SATA14
AC12 AVSS_SATA7
AC14 AVSS_SATA8
AC15 AVSS_SATA9
AD2 AVSS_SATA17
AD3 AVSS_SATA18
AD4 AVSS_SATA19
AD5 AVSS_SATA20
AD7 AVSS_SATA21
AD12 AVSS_SATA15
AD14 AVSS_SATA16
AE1 AVSS_SATA22
AE2 AVSS_SATA26
AE3 AVSS_SATA27
AE4 AVSS_SATA28
AE6 AVSS_SATA29
AE7 AVSS_SATA30
AE9 AVSS_SATA31
AE11 AVSS_SATA23
AE13 AVSS_SATA24
AE14 AVSS_SATA25
AF2 AVSS_SATA34
AF3 AVSS_SATA35
AF4 AVSS_SATA36
AF6 AVSS_SATA37
AF9 AVSS_SATA38
AF11 AVSS_SATA32
AF13 AVSS_SATA33
GND
+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
+3VS
C2345 0.1UF/10V
C2349 0.1UF/10V
C2302 0.1UF/10V
C2305 0.1UF/10V
GND
+VCCP
C2312 0.1UF/10V
GND
+1.8VSUS
C2322 0.1UF/10V
C2324 0.1UF/10V
GND
+1.8VS_AVDD_SATA
C2331 0.1UF/10V
C2348 0.01UF/16V
GND
+1.8VS_AVDD_SBPCIE
C2334 0.1UF/10V
C2301 0.01UF/16V
GND
Put under 968 solder side

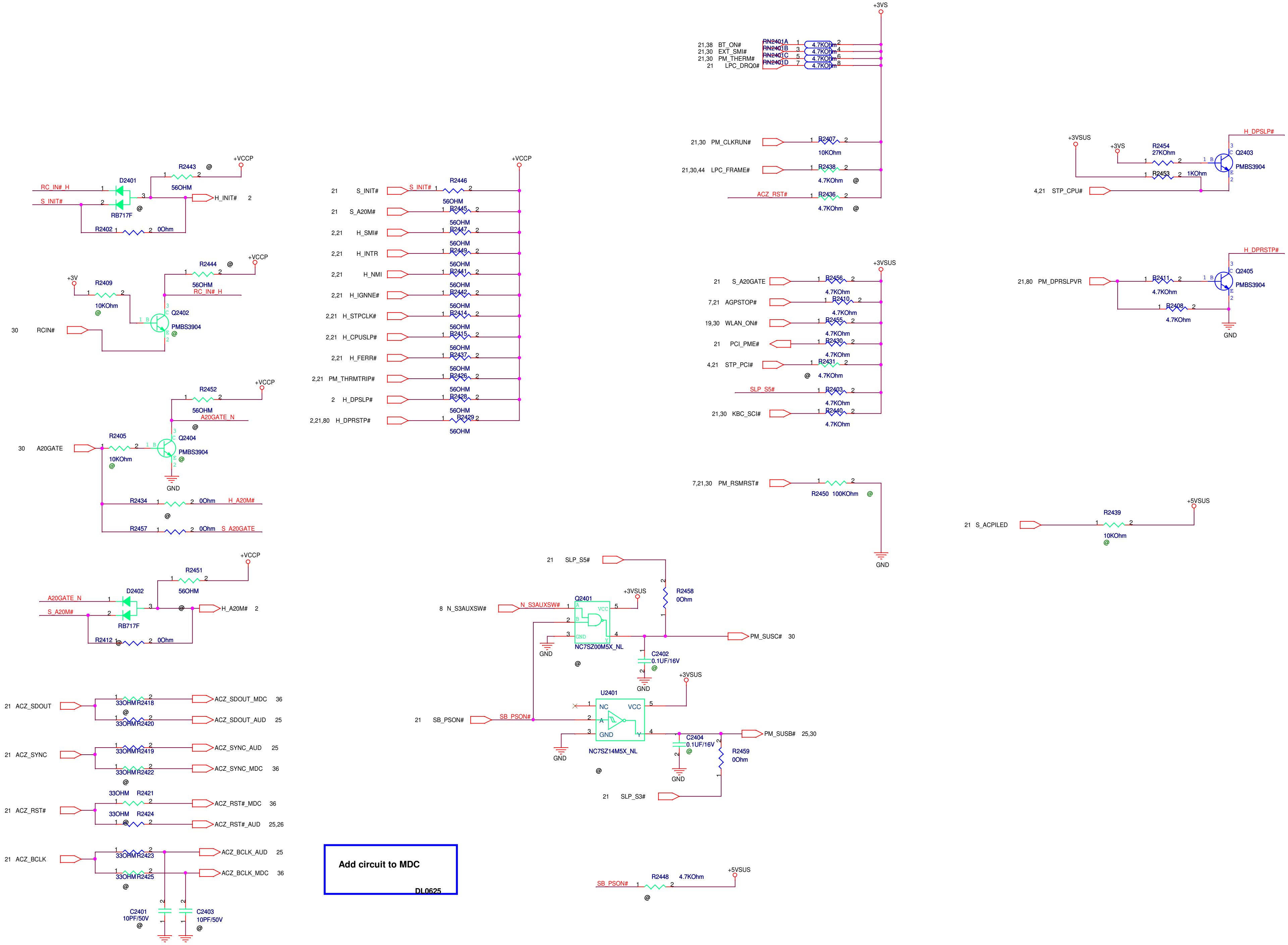
Title : 968 Power(4)

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 23 of 94


+3VS
21,38 BT_ON#
21,30 EXT_SMI#
21,30 PM_THERM#
21 LPC_DRQ0#
RN2401A 4.7KOhm
RN2401B 4.7KOhm
RN2401C 4.7KOhm
RN2401D 4.7KOhm
21,30 PM_CLKRUN#
R2407 10KOhm
21,30,44 LPC_FRAME#
R2438 4.7KOhm
ACZ_RST#
R2436 4.7KOhm
+3VSUS
+3VS
R2454 27KOhm
H_DPSLP#
Q2403 PMBS3904
R2453 1KOhm
4,21 STP_CPU#
H_DPRSTP#
21,80 PM_DPRSLPVR
R2411 4.7KOhm
Q2405 PMBS3904
R2408 4.7KOhm
GND
+VCCP
RC_IN#_H
S_INIT#
D2401 RB717F
R2443 56OHM
H_INIT# 2
R2402 0Ohm
21 S_INIT#
R2446 56OHM
21 S_A20M#
R2445 56OHM
2,21 H_SMI#
R2447 56OHM
2,21 H_INTR
R2449 56OHM
2,21 H_NMI
R2441 56OHM
2,21 H_IGNNE#
R2442 56OHM
2,21 H_STPCLK#
R2414 56OHM
2,21 H_CPUSLP#
R2415 56OHM
2,21 H_FERR#
R2437 56OHM
2,21 PM_THRMTRIP#
R2426 56OHM
2 H_DPSLP#
R2428 56OHM
2,21,80 H_DPRSTP#
R2429 56OHM
+3V
R2409 10KOhm
R2444 56OHM
Q2402 PMBS3904
30 RCIN#
R2452 56OHM
A20GATE_N
R2405 10KOhm
Q2404 PMBS3904
30 A20GATE
R2434 0Ohm H_A20M#
R2457 0Ohm S_A20GATE
21 S_A20GATE
R2456 4.7KOhm
7,21 AGPSTOP#
R2410 4.7KOhm
19,30 WLAN_ON#
R2455 4.7KOhm
21 PCI_PME#
R2430 4.7KOhm
4,21 STP_PCI#
R2431 4.7KOhm
SLP_S5#
R2403 4.7KOhm
21,30 KBC_SCI#
R2440 4.7KOhm
7,21,30 PM_RSMRST#
R2450 100KOhm
+5VSUS
21 S_ACPILED
R2439 10KOhm
R2451 56OHM
D2402 RB717F
A20GATE_N
S_A20M#
H_A20M# 2
R2412 0Ohm
21 SLP_S5#
R2458 0Ohm
8 N_S3AUXSW#
Q2401 NC7SZ00M5X_NL
PM_SUSC# 30
C2402 0.1UF/16V
U2401 NC7SZ14M5X_NL
NC VCC A Y GND
21 SB_PSON#
PM_SUSB# 25,30
C2404 0.1UF/16V
R2459 0Ohm
21 SLP_S3#
SB_PSON#
R2448 4.7KOhm
21 ACZ_SDOUT
33OHM R2418 ACZ_SDOUT_MDC 36
33OHM R2420 ACZ_SDOUT_AUD 25
21 ACZ_SYNC
33OHM R2419 ACZ_SYNC_AUD 25
33OHM R2422 ACZ_SYNC_MDC 36
21 ACZ_RST#
33OHM R2421 ACZ_RST#_MDC 36
33OHM R2424 ACZ_RST#_AUD 25,26
21 ACZ_BCLK
33OHM R2423 ACZ_BCLK_AUD 25
33OHM R2425 ACZ_BCLK_MDC 36
C2401 10PF/50V
C2403 10PF/50V

Add circuit to MDC

DL0625

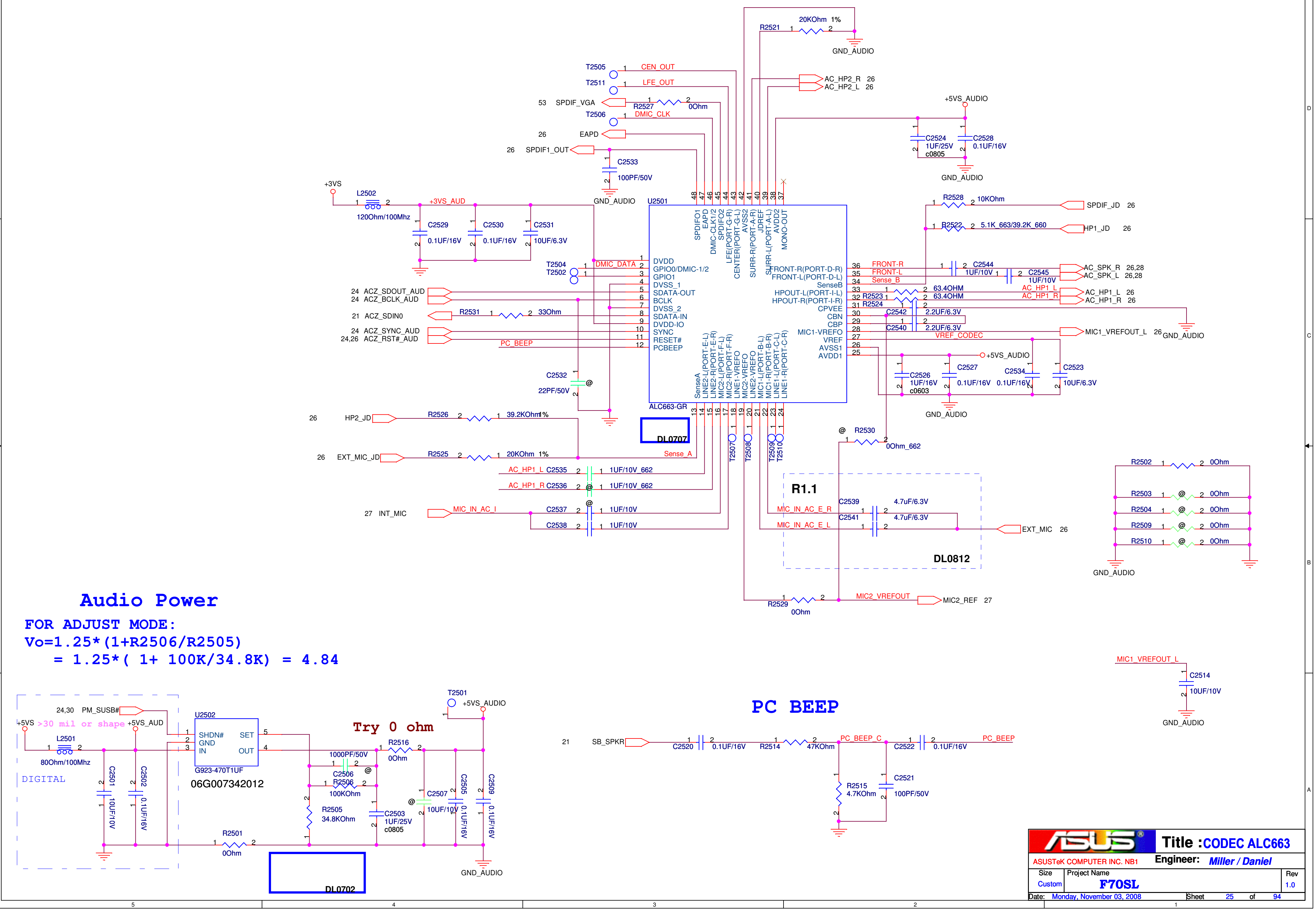
ASUSTeK COMPUTER INC. NB1

Title : 968 Strap(5)

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 24 of 94


U2501
ALC663-GR
DVDD
GPIO0/DMIC-1/2
GPIO1
DVSS_1
SDATA-OUT
BCLK
DVSS_2
SDATA-IN
DVDD-IO
SYNC
RESET#
PCBEEP
SPDIFO1
EAPD
DMIC-CLK1/2
SPDIFO2
LFE(PORT-G-R)
CENTER(PORT-G-L)
AVSS2
SURR-R(PORT-A-R)
JDREF
SURR-L(PORT-A-L)
AVDD2
MONO-OUT
FRONT-R(PORT-D-R)
FRONT-L(PORT-D-L)
SenseB
HPOUT-L(PORT-I-L)
HPOUT-R(PORT-I-R)
CPVEE
CBN
CBP
MIC1-VREFO
VREF
AVSS1
AVDD1
SenseA
LINE2-L(PORT-E-L)
LINE2-R(PORT-E-R)
MIC2-L(PORT-F-L)
MIC2-R(PORT-F-R)
LINE1-VREFO
MIC2-VREFO
LINE2-VREFO
MIC1-L(PORT-B-L)
MIC1-R(PORT-B-R)
LINE1-L(PORT-C-L)
LINE1-R(PORT-C-R)
R2521 20KOhm 1%
GND_AUDIO
T2505 CEN_OUT
T2511 LFE_OUT
53 SPDIF_VGA
R2527 0Ohm
T2506 DMIC_CLK
26 EAPD
26 SPDIF1_OUT
C2533 100PF/50V
AC_HP2_R 26
AC_HP2_L 26
+5VS_AUDIO
C2524 1UF/25V c0805
C2528 0.1UF/16V
+3VS
L2502 120Ohm/100Mhz
+3VS_AUD
C2529 0.1UF/16V
C2530 0.1UF/16V
C2531 10UF/6.3V
T2504
T2502
DMIC_DATA
24 ACZ_SDOUT_AUD
24 ACZ_BCLK_AUD
21 ACZ_SDIN0
R2531 33Ohm
24 ACZ_SYNC_AUD
24,26 ACZ_RST#_AUD
PC_BEEP
C2532 22PF/50V
R2528 10KOhm
SPDIF_JD 26
R2522 5.1K_663/39.2K_660
HP1_JD 26
FRONT-R
FRONT-L
Sense_B
C2544 1UF/10V
C2545 1UF/10V
AC_SPK_R 26,28
AC_SPK_L 26,28
R2523 63.4OHM
R2524 63.4OHM
AC_HP1_L
AC_HP1_R
AC_HP1_L 26
AC_HP1_R 26
C2542 2.2UF/6.3V
C2540 2.2UF/6.3V
VREF_CODEC
MIC1_VREFOUT_L 26
+5VS_AUDIO
C2526 1UF/16V c0603
C2527 0.1UF/16V
C2534 0.1UF/16V
C2523 10UF/6.3V
26 HP2_JD
R2526 39.2KOhm1%
DL0707
26 EXT_MIC_JD
R2525 20KOhm 1%
Sense_A
AC_HP1_L C2535 1UF/10V_662
AC_HP1_R C2536 1UF/10V_662
27 INT_MIC
MIC_IN_AC_I
C2537 1UF/10V
C2538 1UF/10V
T2507
T2508
T2509
T2510
R2530 0Ohm_662
R1.1
C2539 4.7uF/6.3V
C2541 4.7uF/6.3V
MIC_IN_AC_E_R
MIC_IN_AC_E_L
EXT_MIC 26
DL0812
R2529 0Ohm
MIC2_VREFOUT
MIC2_REF 27
R2502 0Ohm
R2503 0Ohm
R2504 0Ohm
R2509 0Ohm
R2510 0Ohm
GND_AUDIO
MIC1_VREFOUT_L
C2514 10UF/10V
Audio Power
24,30 PM_SUSB#
+5VS >30 mil or shape
+5VS_AUD
L2501 80Ohm/100Mhz
C2501 10UF/10V
C2502 0.1UF/16V
DIGITAL
U2502
SHDN#
GND
IN
SET
OUT
G923-470T1UF
06G007342012
Try 0 ohm
C2506 1000PF/50V
R2516 0Ohm
R2506 100KOhm
R2505 34.8KOhm
C2503 1UF/25V c0805
C2507 10UF/10V
C2505 0.1UF/16V
C2509 0.1UF/16V
T2501
+5VS_AUDIO
R2501 0Ohm
DL0702
PC BEEP
21 SB_SPKR
C2520 0.1UF/16V
R2514 47KOhm
PC_BEEP_C
C2522 0.1UF/16V
PC_BEEP
R2515 4.7KOhm
C2521 100PF/50V

FOR ADJUST MODE:

$$V_o=1.25*(1+R2506/R2505) = 1.25*(1+ 100K/34.8K) = 4.84$$

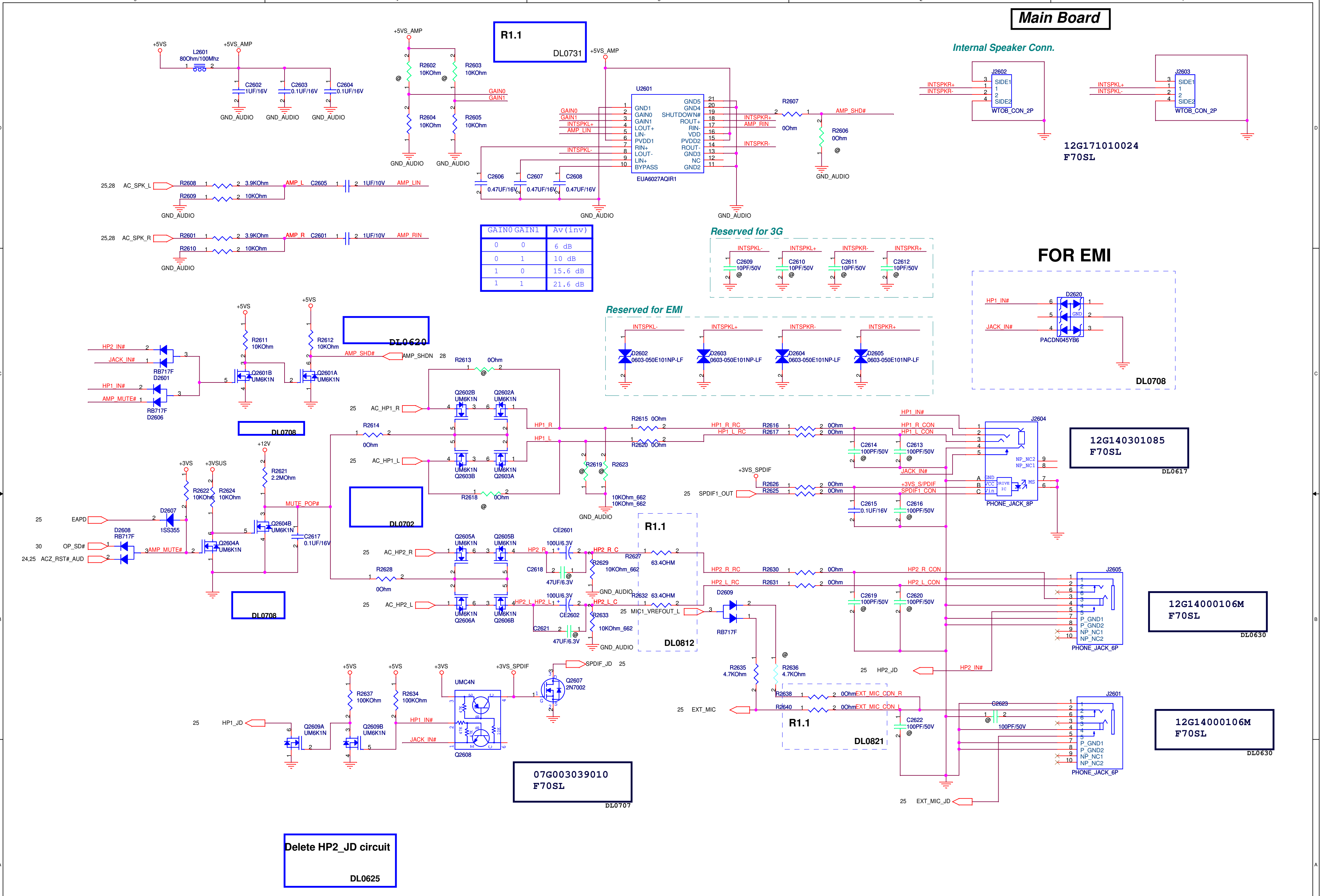
Title : CODEC ALC663

ASUSTeK COMPUTER INC. NB1

Engineer: Miller / Daniel

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 25 of 94


Main Board
Internal Speaker Conn.
R1.1
DL0731
U2601
EUA6027AQIR1
+5VS_AMP
+5VS
L2601
80Ohm/100Mhz
C2602 1UF/16V
C2603 0.1UF/16V
C2604 0.1UF/16V
GND_AUDIO
R2602 10KOhm
R2603 10KOhm
R2604 10KOhm
R2605 10KOhm
GAIN0
GAIN1
INTSPKL+
INTSPKL-
INTSPKR+
INTSPKR-
AMP_LIN
AMP_RIN
AMP_SHD#
GND1
GAIN0
GAIN1
LOUT+
LIN-
PVDD1
RIN+
LOUT-
LIN+
BYPASS
GND5
GND4
SHUTDOWN#
ROUT+
RIN-
VDD
PVDD2
ROUT-
GND3
NC
GND2
R2607 0Ohm
R2606 0Ohm
C2606 0.47UF/16V
C2607 0.47UF/16V
C2608 0.47UF/16V
25,28 AC_SPK_L
R2608 3.9KOhm
R2609 10KOhm
AMP_L
C2605 1UF/10V
25,28 AC_SPK_R
R2601 3.9KOhm
R2610 10KOhm
AMP_R
C2601 1UF/10V
J2602
J2603
WTOB_CON_2P
SIDE1
SIDE2
12G171010024
F70SL
Reserved for 3G
C2609 10PF/50V
C2610 10PF/50V
C2611 10PF/50V
C2612 10PF/50V
FOR EMI
D2620
PACDN045YB6
HP1_IN#
JACK_IN#
DL0708
Reserved for EMI
D2602 0603-050E101NP-LF
D2603 0603-050E101NP-LF
D2604 0603-050E101NP-LF
D2605 0603-050E101NP-LF
DL0620
R2611 10KOhm
R2612 10KOhm
HP2_IN#
AMP_MUTE#
RB717F
D2601
D2606
Q2601B UM6K1N
Q2601A UM6K1N
AMP_SHDN 28
R2613 0Ohm
Q2602B UM6K1N
Q2602A UM6K1N
Q2603B UM6K1N
Q2603A UM6K1N
25 AC_HP1_R
25 AC_HP1_L
R2614 0Ohm
R2618 0Ohm
HP1_R
HP1_L
R2615 0Ohm
R2620 0Ohm
R2619
R2623
10KOhm_662
HP1_R_RC
HP1_L_RC
R2616 0Ohm
R2617 0Ohm
HP1_R_CON
HP1_L_CON
C2614 100PF/50V
C2613 100PF/50V
J2604
PHONE_JACK_8P
12G140301085
F70SL
DL0617
+3VS_SPDIF
25 SPDIF1_OUT
R2626 0Ohm
R2625 0Ohm
+3VS_S/PDIF
SPDIF1_CON
C2615 0.1UF/16V
C2616 100PF/50V
+12V
R2621 2.2MOhm
MUTE_POP#
+3VS
+3VSUS
R2622 10KOhm
R2624 10KOhm
D2607 1SS355
25 EAPD
D2608 RB717F
30 OP_SD#
24,25 ACZ_RST#_AUD
Q2604B UM6K1N
Q2604A UM6K1N
C2617 0.1UF/16V
DL0702
Q2605A UM6K1N
Q2605B UM6K1N
Q2606A UM6K1N
Q2606B UM6K1N
25 AC_HP2_R
25 AC_HP2_L
R2628 0Ohm
CE2601 100U/6.3V
CE2602 100U/6.3V
C2618 47UF/6.3V
C2621 47UF/6.3V
HP2_R
HP2_L
HP2_R_C
HP2_L_C
R2627 63.4OHM
R2632 63.4OHM
R2629 10KOhm_662
R2633 10KOhm_662
25 MIC1_VREFOUT_L
DL0812
HP2_R_RC
HP2_L_RC
R2630 0Ohm
R2631 0Ohm
HP2_R_CON
HP2_L_CON
C2619 100PF/50V
C2620 100PF/50V
D2609 RB717F
J2605
PHONE_JACK_6P
P_GND1
P_GND2
NP_NC1
NP_NC2
12G14000106M
F70SL
DL0630
R2635 4.7KOhm
R2636 4.7KOhm
25 HP2_JD
HP2_IN#
R2638 0Ohm
R2640 0Ohm
EXT_MIC_CON_R
EXT_MIC_CON_L
25 EXT_MIC
DL0821
C2623 100PF/50V
C2622 100PF/50V
J2601
25 EXT_MIC_JD
R2637 100KOhm
R2634 100KOhm
25 HP1_JD
Q2609A UM6K1N
Q2609B UM6K1N
UMC4N
Q2608
HP1_IN#
JACK_IN#
SPDIF_JD 25
Q2607 2N7002
07G003039010
F70SL
DL0707
Delete HP2_JD circuit
DL0625

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

<Variant Name>

ASUSTeK COMPUTER INC. NB1

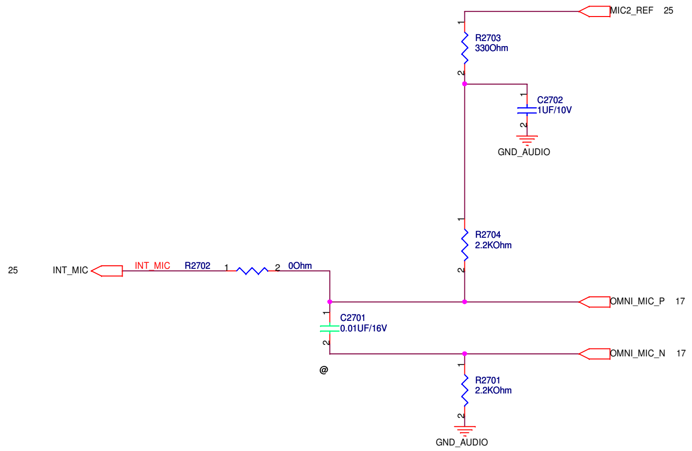
Title : AUDIO AMP & JACK

Engineer: Miller / Daniel

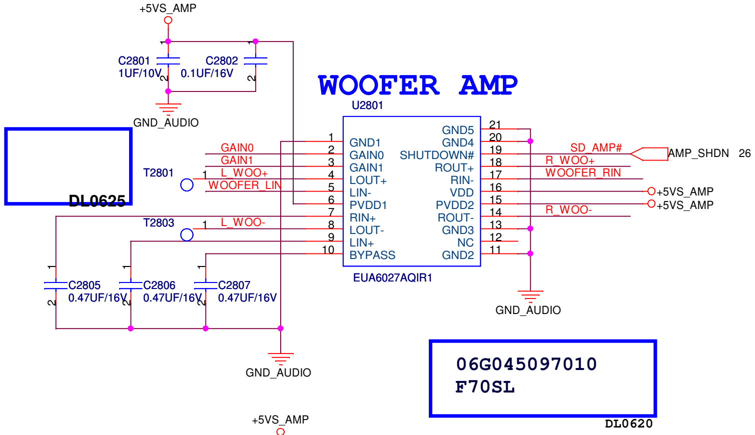
Size	Project Name	Rev
C	F70SL	1.0

Date: Tuesday, November 04, 2008 Sheet 26 of 94

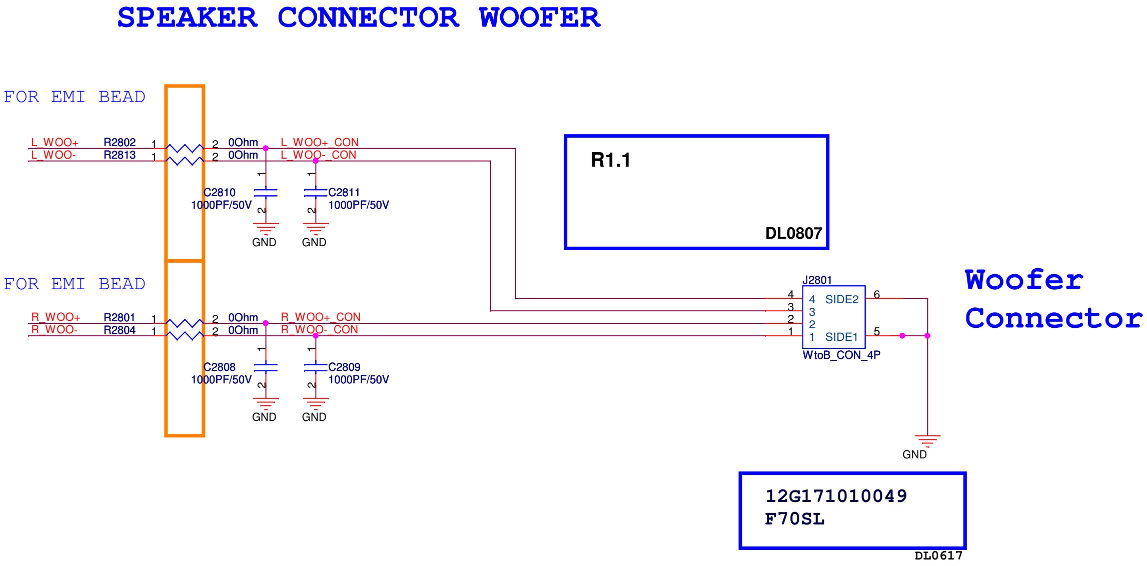
Main Board


MIC2_REF 25
R2703
330Ohm
C2702
1UF/10V
GND_AUDIO
R2704
2.2KOhm
25 INT_MIC
INT_MIC
R2702
1
2
0Ohm
OMNI_MIC_P 17
C2701
0.01UF/16V
@
OMNI_MIC_N 17
R2701
2.2KOhm
GND_AUDIO

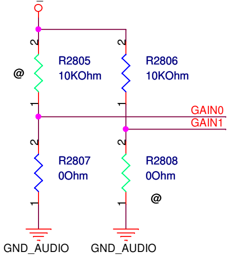
ASUSTeK COMPUTER INC. NB1	Title :	
	Engineer: ***Miller / Daniel***	
Size C	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 27 of 94	



WOOFER AMP
+5VS_AMP
C2801
1UF/10V
C2802
0.1UF/16V
GND_AUDIO
U2801
DL0625
GAIN0
GAIN1
T2801
L_WOO+
WOOFER_LIN
T2803
L_WOO-
GND1
GAIN0
GAIN1
LOUT+
LIN-
PVDD1
RIN+
LOUT-
LIN+
BYPASS
GND5
GND4
SHUTDOWN#
ROUT+
RIN-
VDD
PVDD2
ROUT-
GND3
NC
GND2
EUA6027AQIR1
SD_AMP#
AMP_SHDN 26
R_WOO+
WOOFER_RIN
+5VS_AMP
+5VS_AMP
R_WOO-
C2805
0.47UF/16V
C2806
0.47UF/16V
C2807
0.47UF/16V
GND_AUDIO
GND_AUDIO
06G045097010
F70SL
DL0620

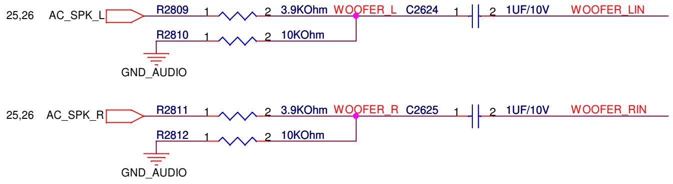


SPEAKER CONNECTOR WOOFER
FOR EMI BEAD
L_WOO+
L_WOO-
R2802
R2813
0Ohm
0Ohm
L_WOO+_CON
L_WOO-_CON
C2810
1000PF/50V
C2811
1000PF/50V
GND
GND
R1.1
DL0807
FOR EMI BEAD
R_WOO+
R_WOO-
R2801
R2804
0Ohm
0Ohm
R_WOO+_CON
R_WOO-_CON
C2808
1000PF/50V
C2809
1000PF/50V
GND
GND
J2801
SIDE2
SIDE1
WtoB_CON_4P
GND
Woofer
Connector
12G171010049
F70SL
DL0617



+5VS_AMP
@
R2805
10KOhm
R2806
10KOhm
GAIN0
GAIN1
R2807
0Ohm
R2808
0Ohm
@
GND_AUDIO
GND_AUDIO

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



25,26
AC_SPK_L
R2809
3.9KOhm
WOOFER_L
C2624
1UF/10V
WOOFER_LIN
R2810
10KOhm
GND_AUDIO
25,26
AC_SPK_R
R2811
3.9KOhm
WOOFER_R
C2625
1UF/10V
WOOFER_RIN
R2812
10KOhm
GND_AUDIO

R1.1

DL0807

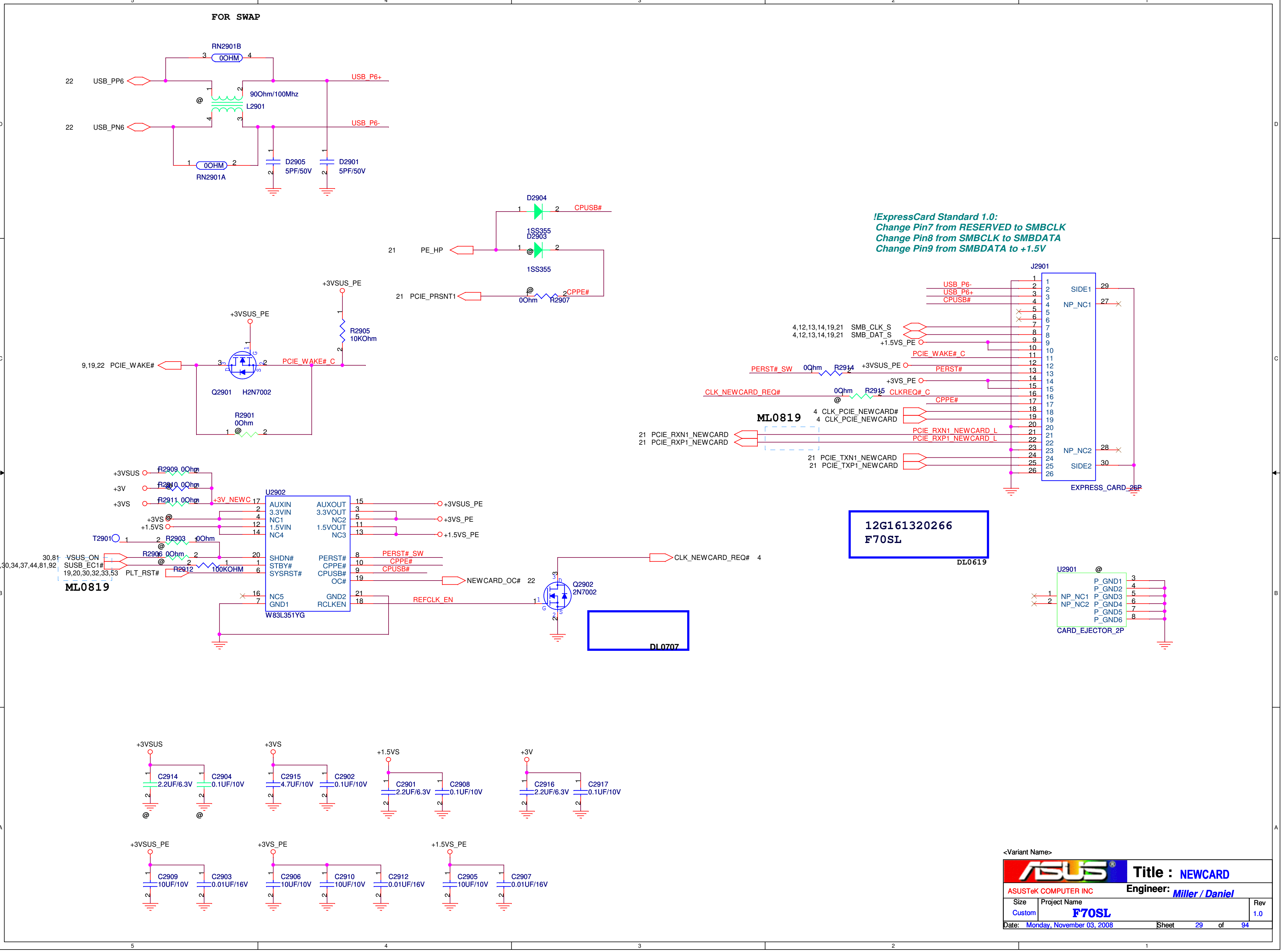
ASUSTeK COMPUTER INC. NB1

Title : Woofer

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 28 of 94


FOR SWAP
RN2901B
0OHM
22 USB_PP6
22 USB_PN6
90Ohm/100Mhz
L2901
USB_P6+
USB_P6-
0OHM
RN2901A
D2905 5PF/50V
D2901 5PF/50V
D2904
1SS355
CPUSB#
D2903
1SS355
21 PE_HP
21 PCIE_PRSNT1#
0Ohm R2907
CPPE#
+3VSUS_PE
R2905 10KOhm
9,19,22 PCIE_WAKE#
PCIE_WAKE#_C
Q2901 H2N7002
R2901 0Ohm
!ExpressCard Standard 1.0:
Change Pin7 from RESERVED to SMBCLK
Change Pin8 from SMBCLK to SMBDATA
Change Pin9 from SMBDATA to +1.5V
J2901
USB_P6-
USB_P6+
CPUSB#
SIDE1
NP_NC1
4,12,13,14,19,21 SMB_CLK_S
4,12,13,14,19,21 SMB_DAT_S
+1.5VS_PE
PCIE_WAKE#_C
PERST#_SW
0Ohm R2914
+3VSUS_PE
PERST#
+3VS_PE
CLK_NEWCARD_REQ#
0Ohm R2915
CLKREQ#_C
CPPE#
4 CLK_PCIE_NEWCARD#
4 CLK_PCIE_NEWCARD
ML0819
21 PCIE_RXN1_NEWCARD
21 PCIE_RXP1_NEWCARD
PCIE_RXN1_NEWCARD_L
PCIE_RXP1_NEWCARD_L
21 PCIE_TXN1_NEWCARD
21 PCIE_TXP1_NEWCARD
NP_NC2
SIDE2
EXPRESS_CARD_26P
+3VSUS R2909 0Ohm
+3V R2910 0Ohm
+3VS R2911 0Ohm
+3V_NEWC
U2902
AUXIN 3.3VIN NC1 1.5VIN NC4
AUXOUT 3.3VOUT NC2 1.5VOUT NC3
+3VSUS_PE
+3VS_PE
+1.5VS_PE
+3VS
+1.5VS
T2901
R2903 0Ohm
30,81 VSUS_ON
7,30,34,37,44,81,92 SUSB_EC1#
19,20,30,32,33,53 PLT_RST#
R2906 0Ohm
R2912 100KOHM
SHDN# STBY# SYSRST#
PERST# CPPE# CPUSB# OC#
PERST#_SW
CPPE#
CPUSB#
NEWCARD_OC# 22
NC5 GND1
GND2 RCLKEN
W83L351YG
REFCLK_EN
ML0819
CLK_NEWCARD_REQ# 4
Q2902 2N7002
DL0707
12G161320266
F70SL
DL0619
U2901
NP_NC1 NP_NC2
P_GND1 P_GND2 P_GND3 P_GND4 P_GND5 P_GND6
CARD_EJECTOR_2P
+3VSUS C2914 2.2UF/6.3V C2904 0.1UF/10V
+3VS C2915 4.7UF/10V C2902 0.1UF/10V
+1.5VS C2901 2.2UF/6.3V C2908 0.1UF/10V
+3V C2916 2.2UF/6.3V C2917 0.1UF/10V
+3VSUS_PE C2909 10UF/10V C2903 0.01UF/16V
+3VS_PE C2906 10UF/10V C2910 10UF/10V C2912 0.01UF/16V
+1.5VS_PE C2905 10UF/10V C2907 0.01UF/16V
5 4 3 2 1
D C B A

<Variant Name>

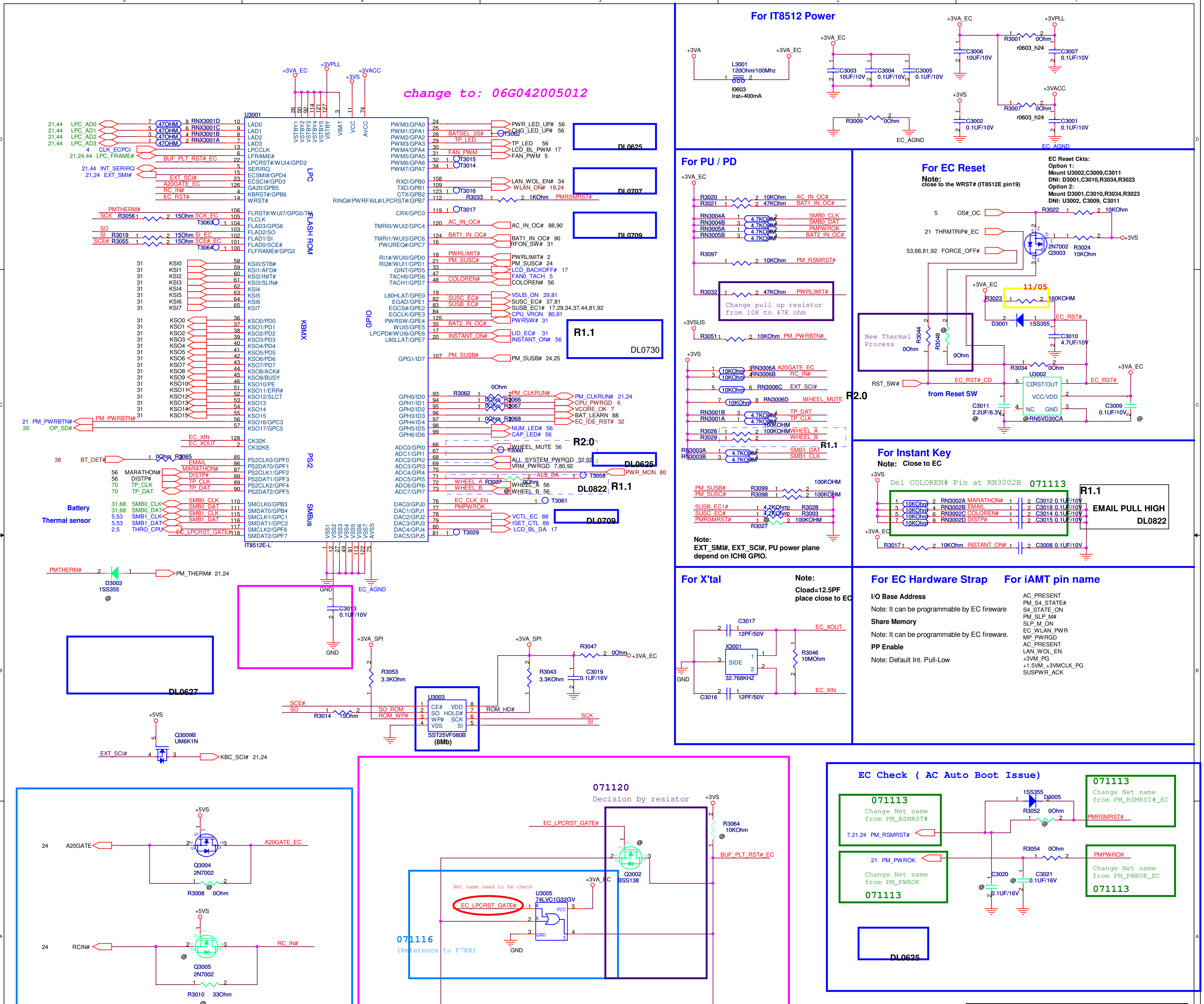
Title : NEWCARD

ASUSTeK COMPUTER INC

Engineer: Miller / Daniel

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 29 of 94


change to: 06G042005012
U3001
IT8512E-L
LPC
FLASH ROM
KBMX
GPIO
PS/2
SMBus
Battery
Thermal sensor
PWR_LED_UP# 56
CHG_LED_UP# 56
AC_IN_OC# 88,90
BATT1_IN_OC# 90
PM_SUSB# 24,25
PM_CLKRUN# 21,24
PWR_MON 80
KBC_SCI# 21,24
PM_THERM# 21,24
DL0625
DL0707
DL0709
DL0730
DL0822
DL0627
R1.1
R2.0
U3003
SST25VF080B
(8Mb)
Q3009B
UM6K1N
For IT8512 Power
L3001
120Ohm/100Mhz
l0603
Irat=400mA
EC_AGND
For PU / PD
Change pull up resistor
from 10K to 47K ohm
New Thermal
Process
11/05
For EC Reset
close to the WRST# (IT8512E pin19)
from Reset SW
U3002
RN5VD30CA
For Instant Key
Close to EC
Del COLOREN# Pin at RN3002B
071113
EMAIL PULL HIGH
For X'tal
X3001
32.768KHZ
For EC Hardware Strap
For iAMT pin name
071120
Decision by resistor
Net name need to check
EC_LPCRST_GATE#
U3005
74LVC1G32GV
Q3002
BSS138
071116
(Reference to F7KR)
Q3004
2N7002
Q3005
2N7002
EC Check (AC Auto Boot Issue)
071113
Change Net name
from PM_RSMRST#
Change Net name
from PM_RSMRST#_EC
Change Net name
from PM_PWROK
Change Net name
from PM_PWROK_EC
071113
DL0625

Note:
close to the WRST# (IT8512E pin19)

EC Reset Ckts:
Option 1:
Mount U3002,C3009,C3011
DNI: D3001,C3010,R3034,R3023
Option 2:
Mount D3001,C3010,R3034,R3023
DNI: U3002, C3009, C3011

Note: Close to EC

Note:
EXT_SMI#, EXT_SCI#, PU power plane
depend on ICH8 GPIO.

Note:
Cload=12.5PF
place close to EC

I/O Base Address

Note: It can be programmable by EC fireware

Share Memory

Note: It can be programmable by EC fireware.

PP Enable

Note: Default Int. Pull-Low

AC_PRESENT
PM_S4_STATE#
S4_STATE_ON
PM_SLP_M#
SLP_M_ON
EC_WLAN_PWR
MP_PWRGD
AC_PRESENT
LAN_WOL_EN
+3VM_PG
+1.5VM_+3VMCLK_PG
SUSPWR_ACK

ASUSTeK COMPUTER INC. NB1

Title : EC_IT8512

Engineer: Miller / Daniel

Size: Custom
Project Name: F70SL
Rev: 1.0

Date: Monday, November 03, 2008
Sheet 30 of 94

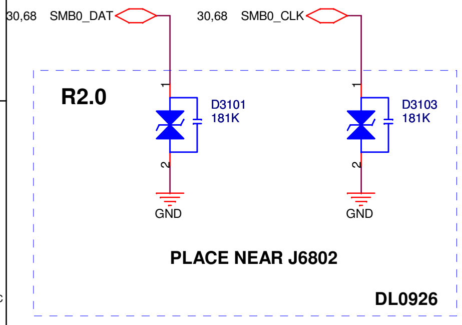
For Battery

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.

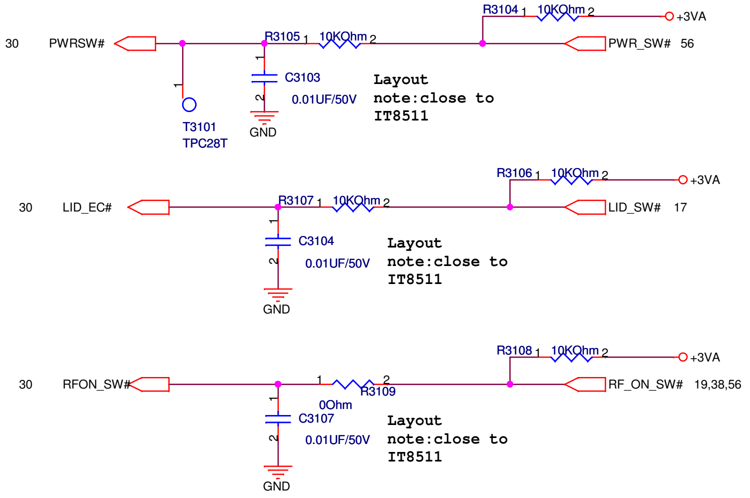

30,68 SMB0_DAT
30,68 SMB0_CLK
R2.0
D3101
181K
D3103
181K
GND
GND
PLACE NEAR J6802
DL0926

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

For Switch


30 PWRSW#
R3104 10KOhm
+3VA
R3105 10KOhm
PWR_SW# 56
C3103
0.01UF/50V
T3101
TPC28T
GND
30 LID_EC#
R3106 10KOhm
+3VA
R3107 10KOhm
LID_SW# 17
C3104
0.01UF/50V
GND
30 RFON_SW#
R3108 10KOhm
+3VA
R3109
0Ohm
RF_ON_SW# 19,38,56
C3107
0.01UF/50V
GND

Layout note:close to IT8511

Layout note:close to IT8511

Layout note:close to IT8511

PWR SWITCH

LID SWITCH

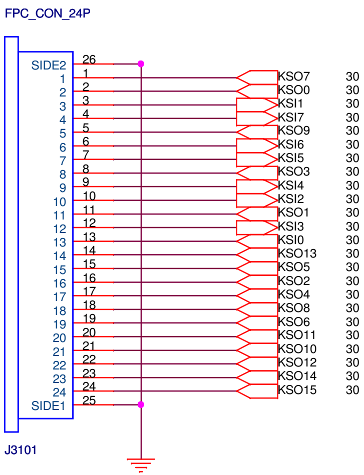
RF SWITCH

Note:

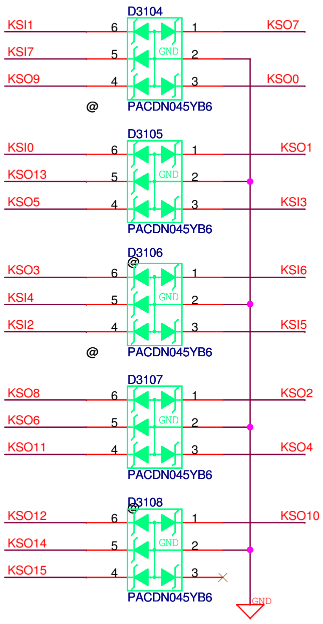
This LID_EC# is a signal from inverter board, it is easy to cause high voltage damage when plugging inverter board connector to M/B with AC present. It needed to add bidirectional diode to protect this pin.

For External PS/2 I/F

For Keyboard


FPC_CON_24P
SIDE2
SIDE1
J3101
GND
KSO7 30
KSO0 30
KSI1 30
KSI7 30
KSO9 30
KSI6 30
KSI5 30
KSO3 30
KSI4 30
KSI2 30
KSO1 30
KSI3 30
KSI0 30
KSO13 30
KSO5 30
KSO2 30
KSO4 30
KSO8 30
KSO6 30
KSO11 30
KSO10 30
KSO12 30
KSO14 30
KSO15 30

EMI recommandation. To protect KBC destroy by ESD. Need put between KB connector and KBC, and close to the connector as possible.


D3104
KSI1
KSI7
KSO9
KSO7
KSO0
PACDN045YB6
D3105
KSI0
KSO13
KSO5
KSO1
KSI3
PACDN045YB6
D3106
KSO3
KSI4
KSI2
KSI6
KSI5
PACDN045YB6
D3107
KSO8
KSO6
KSO11
KSO2
KSO4
PACDN045YB6
D3108
KSO12
KSO14
KSO15
KSO10
PACDN045YB6
GND
@

@

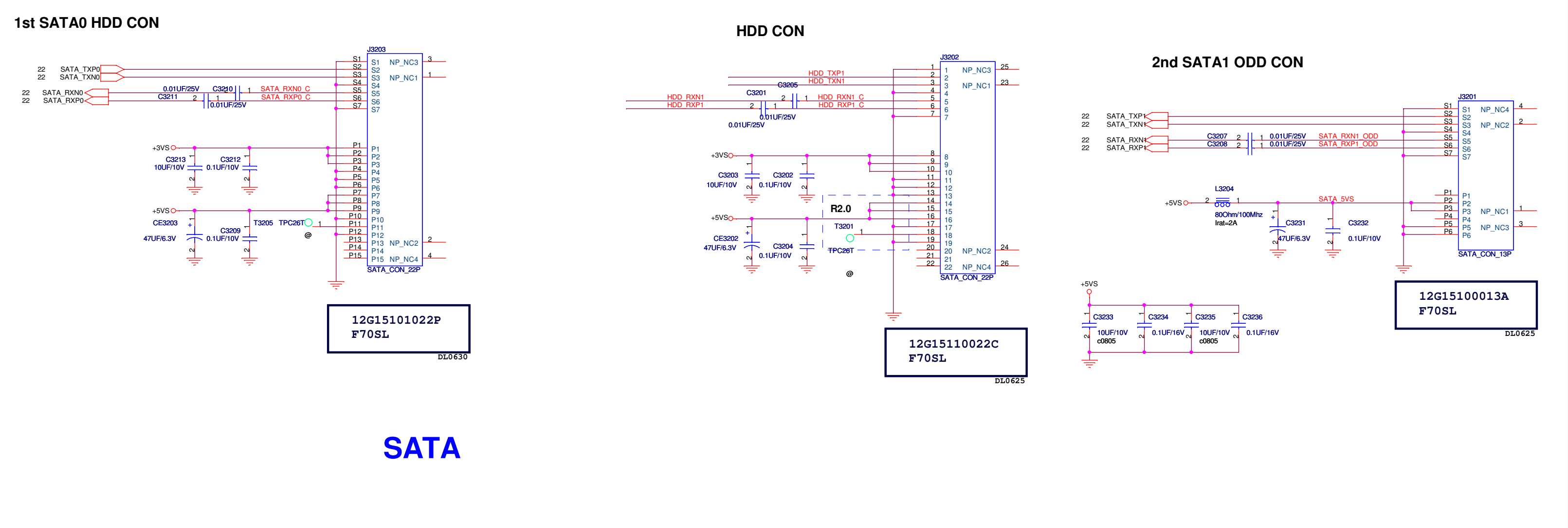
Each IC needs 2 vias to ground.

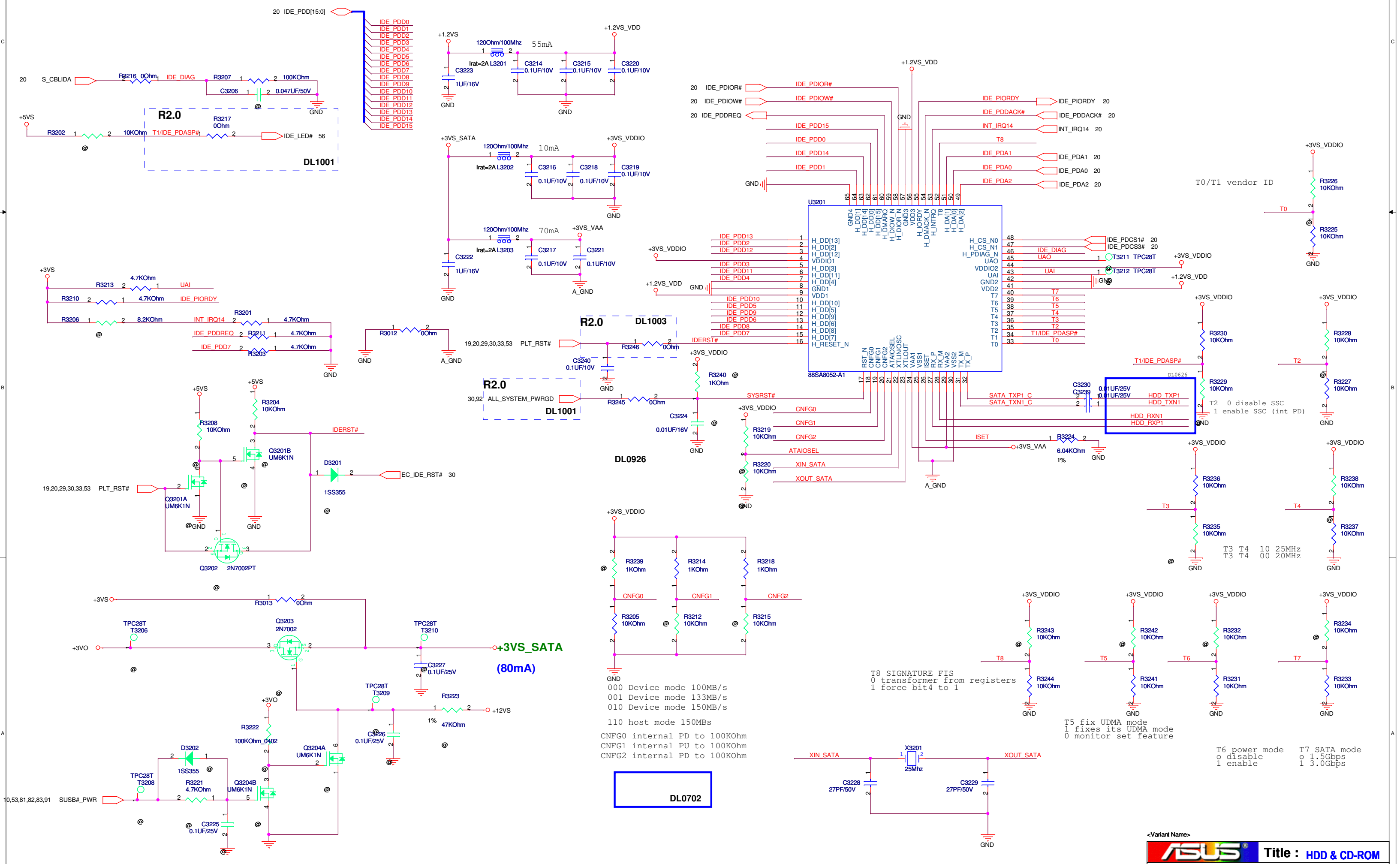
R1.1
12G182102402
F70SL
DL0810

DL0625

<Variant Name>

Title : KB&ISA ROM		
ASUSTeK COMPUTER INC. NB1	**Engineer:** *Miller / Daniel*	
Size Custom	Project Name F70SL	Rev 1.0
Date: Monday, November 03, 2008	Sheet 31 of 94	


1st SATA0 HDD CON
HDD CON
2nd SATA1 ODD CON
SATA
J3203
SATA_CON_22P
12G15101022P
F70SL
DL0630
SATA_TXP0
SATA_TXN0
SATA_RXN0
SATA_RXP0
SATA_RXN0_C
SATA_RXP0_C
C3210
C3211
0.01UF/25V
C3213
10UF/10V
C3212
0.1UF/10V
CE3203
47UF/6.3V
C3209
0.1UF/10V
T3205
TPC26T
+3VS
+5VS
NP_NC3
NP_NC1
NP_NC2
NP_NC4
J3202
SATA_CON_22P
12G15110022C
F70SL
DL0625
HDD_TXP1
HDD_TXN1
HDD_RXN1
HDD_RXP1
HDD_RXN1_C
HDD_RXP1_C
C3201
C3205
0.01UF/25V
C3203
10UF/10V
C3202
0.1UF/10V
CE3202
47UF/6.3V
C3204
0.1UF/10V
R2.0
T3201
TPC26T
J3201
SATA_CON_13P
12G15100013A
F70SL
DL0625
SATA_TXP1
SATA_TXN1
SATA_RXN1
SATA_RXP1
C3207
C3208
0.01UF/25V
SATA_RXN1_ODD
SATA_RXP1_ODD
L3204
80Ohm/100Mhz
Irat=2A
SATA_5VS
C3231
47UF/6.3V
C3232
0.1UF/10V
C3233
10UF/10V
c0805
C3234
0.1UF/16V
C3235
10UF/10V
c0805
C3236
0.1UF/16V


IDE_PDD[15:0]
IDE_PDD0 … IDE_PDD15
S_CBLIDA
R3216 0Ohm
IDE_DIAG
R3207 100KOhm
C3206 0.047UF/50V
R2.0
R3217 0Ohm
R3202 10KOhm
T1/IDE_PDASP#
IDE_LED# 56
DL1001
+1.2VS
120Ohm/100Mhz
L3201
Irat=2A
55mA
C3223 1UF/16V
C3214 0.1UF/10V
C3215 0.1UF/10V
C3220 0.1UF/10V
+1.2VS_VDD
+3VS_SATA
120Ohm/100Mhz
L3202
10mA
C3216 0.1UF/10V
C3218 0.1UF/10V
C3219 0.1UF/10V
+3VS_VDDIO
L3203
70mA
C3222 1UF/16V
C3217 0.1UF/10V
C3221 0.1UF/10V
+3VS_VAA
A_GND
R3213 4.7KOhm UAI
R3210 4.7KOhm IDE_PIORDY
R3206 8.2KOhm INT_IRQ14
R3201 4.7KOhm
R3211 IDE_PDDREQ 4.7KOhm
R3203 IDE_PDD7 4.7KOhm
R3012 0Ohm
PLT_RST#
R2.0 DL1003
R3246 0Ohm
IDERST#
C3240 0.1UF/10V
R2.0
ALL_SYSTEM_PWRGD
DL1001
R3245 0Ohm
IDE_PDIOR#
IDE_PDIOW#
IDE_PDDREQ
IDE_PIORDY
IDE_PDDACK#
INT_IRQ14
IDE_PDA1
IDE_PDA0
IDE_PDA2
U3201
88SA8052-A1
IDE_PDCS1#
IDE_PDCS3#
T3211 TPC28T
T3212 TPC28T
T1/IDE_PDASP#
SYSRST#
CNFG0
CNFG1
CNFG2
ATAIOSEL
XIN_SATA
XOUT_SATA
ISET
R3224 6.04KOhm 1%
C3230
C3239
0.01UF/25V
SATA_TXP1_C
SATA_TXN1_C
HDD_TXP1
HDD_TXN1
HDD_RXN1
HDD_RXP1
DL0926
R3240 1KOhm
C3224 0.01UF/16V
R3219 10KOhm
R3220 10KOhm
T0/T1 vendor ID
R3226 10KOhm
R3225 10KOhm
R3230 10KOhm
R3229 10KOhm
R3228 10KOhm
R3227 10KOhm
T2 0 disable SSC
    1 enable SSC (int PD)
R3236 10KOhm
R3235 10KOhm
R3238 10KOhm
R3237 10KOhm
T3 T4 10 25MHz
T3 T4 00 20MHz
R3204 10KOhm
R3208 10KOhm
Q3201B UM6K1N
Q3201A UM6K1N
D3201 1SS355
EC_IDE_RST# 30
Q3202 2N7002PT
R3013 0Ohm
Q3203 2N7002
TPC28T T3206
TPC28T T3210
+3VO
+3VS_SATA
(80mA)
C3227 0.1UF/25V
TPC28T T3209
R3223 47KOhm 1%
+12VS
R3222 100KOhm_0402
Q3204A UM6K1N
C3226 0.1UF/25V
D3202 1SS355
TPC28T T3208
R3221 4.7KOhm
Q3204B UM6K1N
SUSB#_PWR
C3225 0.1UF/25V
DL0926
R3239 1KOhm
R3214 1KOhm
R3218 1KOhm
R3205 10KOhm
R3212 10KOhm
R3215 10KOhm
000 Device mode 100MB/s
001 Device mode 133MB/s
010 Device mode 150MB/s
110 host mode 150MBs
CNFG0 internal PD to 100KOhm
CNFG1 internal PU to 100KOhm
CNFG2 internal PD to 100KOhm
DL0702
T8 SIGNATURE FIS
0 transformer from registers
1 force bit4 to 1
R3243 10KOhm
R3244 10KOhm
R3242 10KOhm
R3241 10KOhm
R3232 10KOhm
R3231 10KOhm
R3234 10KOhm
R3233 10KOhm
T5 fix UDMA mode
1 fixes its UDMA mode
0 monitor set feature
T6 power mode
0 disable
1 enable
T7 SATA mode
0 1.5Gbps
1 3.0Gbps
X3201 25Mhz
C3228 27PF/50V
C3229 27PF/50V

<Variant Name>

ASUS

Title : HDD & CD-ROM

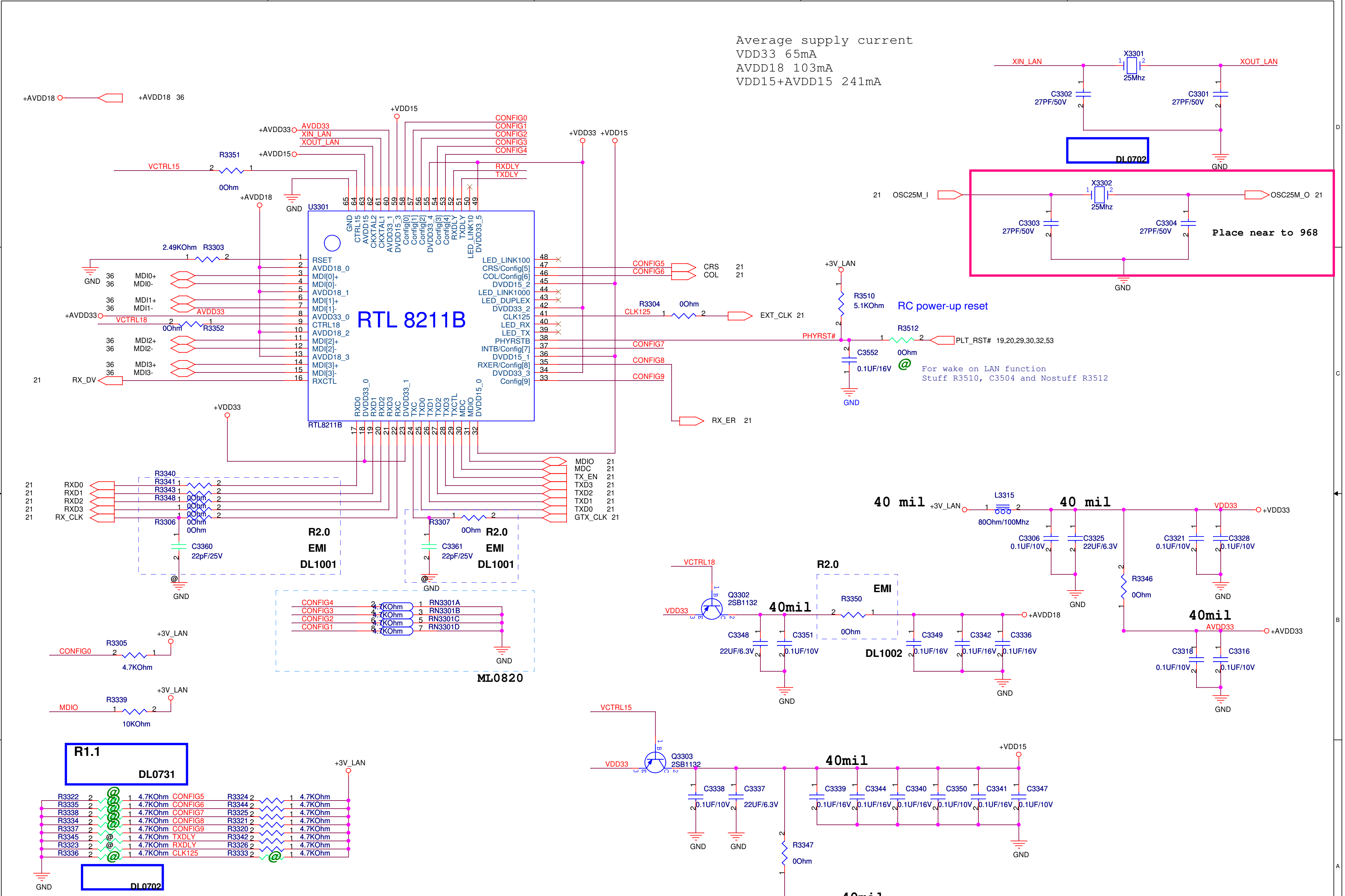
ASUSTeK COMPUTER INC

Engineer: Miller / Daniel

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 32 of 94

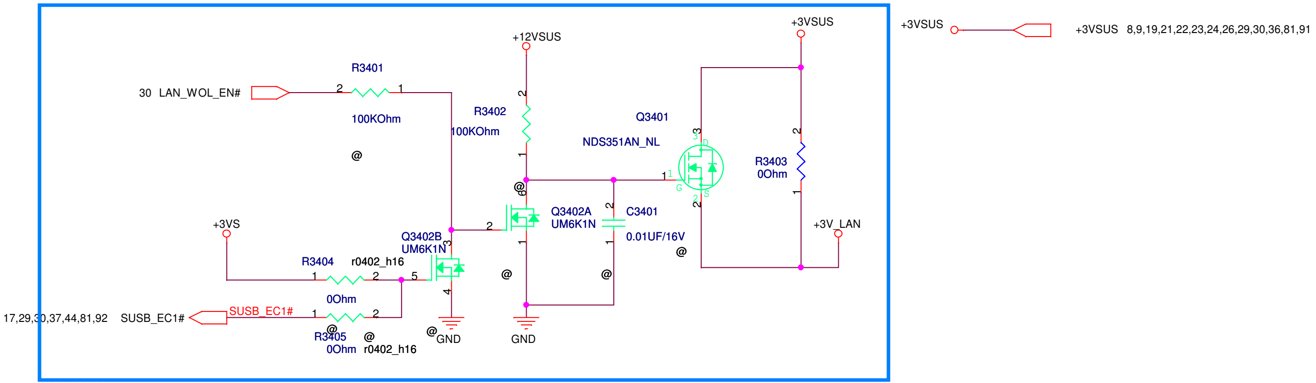
Average supply current
VDD33 65mA
AVDD18 103mA
VDD15+AVDD15 241mA


U3301
RTL 8211B
RTL8211B
RSET
AVDD18_0
MDI[0]+
MDI[0]-
AVDD18_1
MDI[1]+
MDI[1]-
AVDD33_0
CTRL18
AVDD18_2
MDI[2]+
MDI[2]-
AVDD18_3
MDI[3]+
MDI[3]-
RXCTL
LED_LINK100
CRS/Config[5]
COL/Config[6]
DVDD15_2
LED_LINK1000
LED_DUPLEX
DVDD33_2
CLK125
LED_RX
LED_TX
PHYRSTB
INTB/Config[7]
DVDD15_1
RXER/Config[8]
DVDD33_3
Config[9]
GND
CTRL15
AVDD15
CKXTAL2
CKXTAL1
AVDD33_1
DVDD15_3
Config[0]
Config[1]
Config[2]
DVDD33_4
Config[3]
Config[4]
RXDLY
TXDLY
LED_LINK10
DVDD33_5
RXD0
DVDD33_0
RXD1
RXD2
RXD3
RXC
DVDD33_1
TXC
TXD0
TXD1
TXD2
TXD3
TXCTL
MDC
MDIO
DVDD15_0
+AVDD18
+AVDD18 36
+VDD15
+AVDD33
AVDD33
XIN_LAN
XOUT_LAN
CONFIG0
CONFIG1
CONFIG2
CONFIG3
CONFIG4
+VDD33 +VDD15
R3351
VCTRL15
0Ohm
+AVDD15
RXDLY
TXDLY
+AVDD18
2.49KOhm R3303
GND
MDI0+
MDI0-
MDI1+
MDI1-
VCTRL18
R3352
0Ohm
MDI2+
MDI2-
MDI3+
MDI3-
RX_DV
CONFIG5
CONFIG6
CRS 21
COL 21
R3304 0Ohm
CLK125
EXT_CLK 21
PHYRST#
CONFIG7
CONFIG8
CONFIG9
RX_ER 21
+3V_LAN
R3510
5.1KOhm
RC power-up reset
R3512
0Ohm
PLT_RST# 19,20,29,30,32,53
C3552
0.1UF/16V
For wake on LAN function
Stuff R3510, C3504 and Nostuff R3512
XIN_LAN
X3301
25Mhz
XOUT_LAN
C3302
27PF/50V
C3301
27PF/50V
DL0702
21 OSC25M_I
X3302
25Mhz
OSC25M_O 21
C3303
27PF/50V
C3304
27PF/50V
Place near to 968
MDIO 21
MDC 21
TX_EN 21
TXD3 21
TXD2 21
TXD1 21
TXD0 21
GTX_CLK 21
RXD0
RXD1
RXD2
RXD3
RX_CLK
R3340
R3341
R3343
R3348
R3306
0Ohm
C3360
22pF/25V
R2.0
EMI
DL1001
R3307
0Ohm
C3361
22pF/25V
CONFIG4
CONFIG3
CONFIG2
CONFIG1
4.7KOhm
RN3301A
RN3301B
RN3301C
RN3301D
ML0820
CONFIG0
R3305
4.7KOhm
MDIO
R3339
10KOhm
R1.1
DL0731
R3322
R3335
R3338
R3334
R3337
R3345
R3323
R3336
CONFIG5
CONFIG6
CONFIG7
CONFIG8
CONFIG9
TXDLY
RXDLY
CLK125
R3324
R3344
R3325
R3321
R3320
R3342
R3326
R3333
DL0702
40 mil
L3315
80Ohm/100Mhz
40 mil
VDD33
+VDD33
C3306
0.1UF/10V
C3325
22UF/6.3V
C3321
0.1UF/10V
C3328
0.1UF/10V
R3346
0Ohm
VCTRL18
Q3302
2SB1132
VDD33
40mil
R2.0
EMI
R3350
0Ohm
+AVDD18
C3348
22UF/6.3V
C3351
0.1UF/10V
DL1002
C3349
0.1UF/16V
C3342
0.1UF/16V
C3336
0.1UF/16V
40mil
AVDD33
+AVDD33
C3318
0.1UF/10V
C3316
0.1UF/10V
VCTRL15
Q3303
2SB1132
VDD33
40mil
+VDD15
C3338
0.1UF/10V
C3337
22UF/6.3V
C3339
C3344
C3340
C3350
C3341
C3347
0.1UF/16V
0.1UF/10V
R3347
0Ohm
40mil
+AVDD15
C3343
10UF/6.3V
C3345
0.1UF/10V
C3346
0.1UF/10V
GND

EN-0055974 For Page33 LAN linking slow issue BOM change 20071227
(1)RXDLY pull high
(2)RX_CLK and Data R3327,R3328,R3329,R3330,R3332 and R3331, change to 0 ohm
(3)TXDLY Pull high
(4)Delete C3307

ASUSTECH CO.,LTD.	Title : Giga LAN RTL8211B	
	Engineer: Miller / Daniel	
Size Custom	Project Name F70SL	Rev 1.1
Date: Monday, November 03, 2008	Sheet 33 of 94	

For Energy V4.0



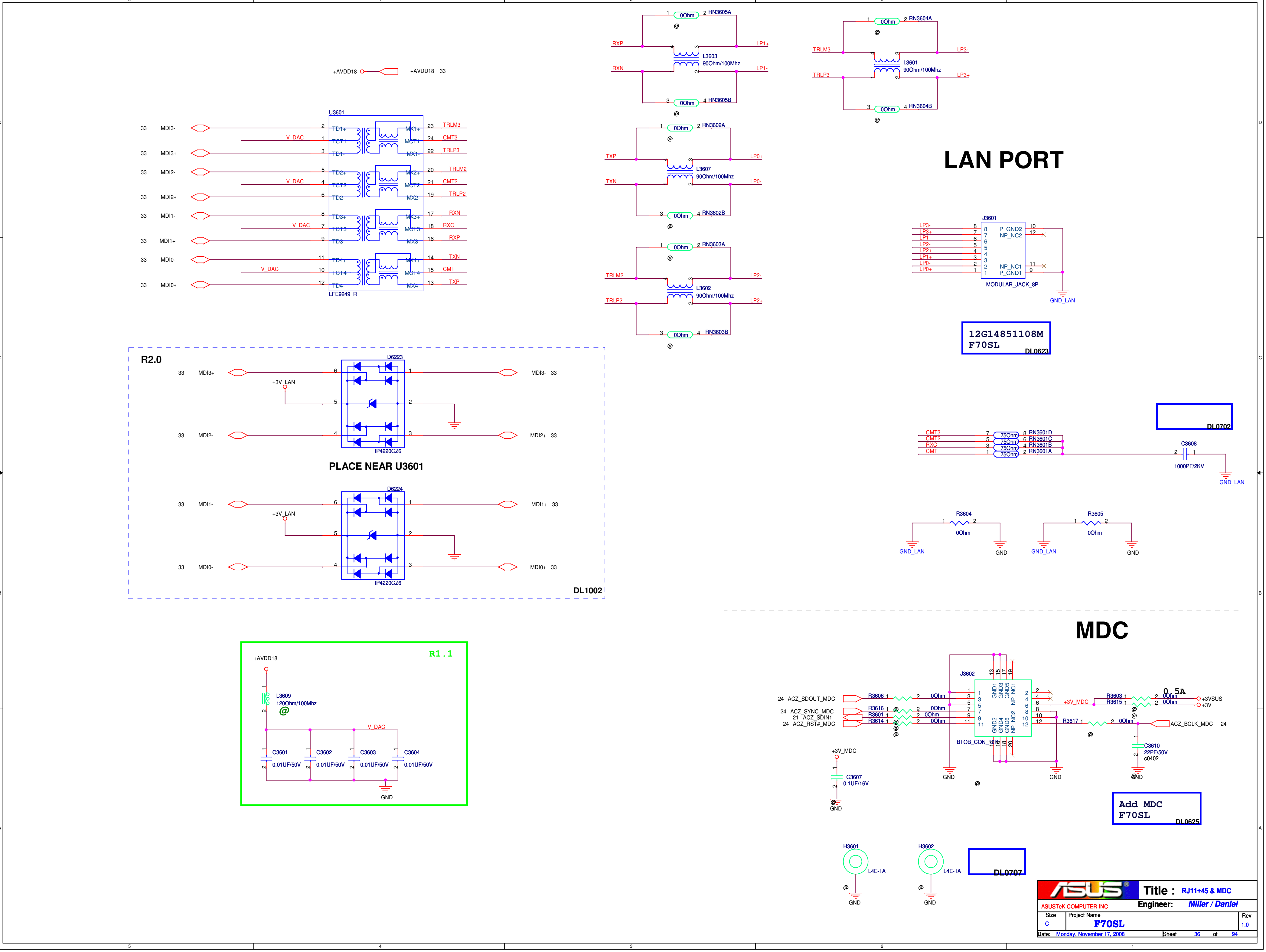
+12VSUS
+3VSUS
+3VSUS
+3VSUS 8,9,19,21,22,23,24,26,29,30,36,81,91
R3401
30 LAN_WOL_EN#
100KOhm
R3402
100KOhm
Q3401
NDS351AN_NL
R3403
0Ohm
Q3402A
UM6K1N
C3401
0.01UF/16V
+3V_LAN
+3VS
Q3402B
UM6K1N
R3404
r0402_h16
0Ohm
17,29,30,37,44,81,92 SUSB_EC1#
SUSB_EC1#
R3405
0Ohm
r0402_h16
GND
GND

R20_0912

<Variant Name>

ASUSTeK COMPUTER INC	**Title : ENERGY STAR**	
	Engineer: *Miller / Daniel*	
Size Custom	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 34 of 94	

ASUSTeK Computer INC	**Title :** BLANK	
	Engineer: *Miller / Daniel*	
Size B	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 35 of 94	


LAN PORT
MDC
R2.0
R1.1
PLACE NEAR U3601
+AVDD18
+AVDD18 33
U3601
LFE9249_R
33 MDI3-
33 MDI3+
33 MDI2-
33 MDI2+
33 MDI1-
33 MDI1+
33 MDI0-
33 MDI0+
V_DAC
TD1+
TCT1
TD1-
TD2+
TCT2
TD2-
TD3+
TCT3
TD3-
TD4+
TCT4
TD4-
MX1+
MCT1
MX1-
MX2+
MCT2
MX2-
MX3+
MCT3
MX3-
MX4+
MCT4
MX4-
TRLM3
CMT3
TRLP3
TRLM2
CMT2
TRLP2
RXN
RXC
RXP
TXN
CMT
TXP
RN3605A
RN3605B
L3603
90Ohm/100Mhz
RXP
RXN
LP1+
LP1-
RN3602A
RN3602B
L3607
TXP
TXN
LP0+
LP0-
RN3603A
RN3603B
L3602
TRLM2
TRLP2
LP2-
LP2+
RN3604A
RN3604B
L3601
TRLM3
TRLP3
LP3-
LP3+
0Ohm
@
J3601
P_GND2
NP_NC2
NP_NC1
P_GND1
MODULAR_JACK_8P
GND_LAN
12G14851108M
F70SL
DL0623
DL0702
CMT3
CMT2
RXC
CMT
75Ohm
RN3601D
RN3601C
RN3601B
RN3601A
C3608
1000PF/2KV
GND_LAN
R3604
R3605
0Ohm
GND_LAN
GND
D6223
D6224
IP4220CZ6
+3V_LAN
MDI3- 33
MDI2+ 33
MDI1+ 33
MDI0+ 33
DL1002
L3609
120Ohm/100Mhz
C3601
C3602
C3603
C3604
0.01UF/50V
V_DAC
GND
J3602
BTOB_CON_12P
GND1
GND3
GND5
NP_NC1
GND2
GND4
GND6
NP_NC2
24 ACZ_SDOUT_MDC
24 ACZ_SYNC_MDC
21 ACZ_SDIN1
24 ACZ_RST#_MDC
R3606
R3616
R3601
R3614
R3603
R3615
R3617
0.5A
+3VSUS
+3V
+3V_MDC
ACZ_BCLK_MDC 24
C3610
22PF/50V
c0402
+3V_MDC
C3607
0.1UF/16V
Add MDC
F70SL
DL0625
H3601
H3602
L4E-1A
DL0707

ASUS

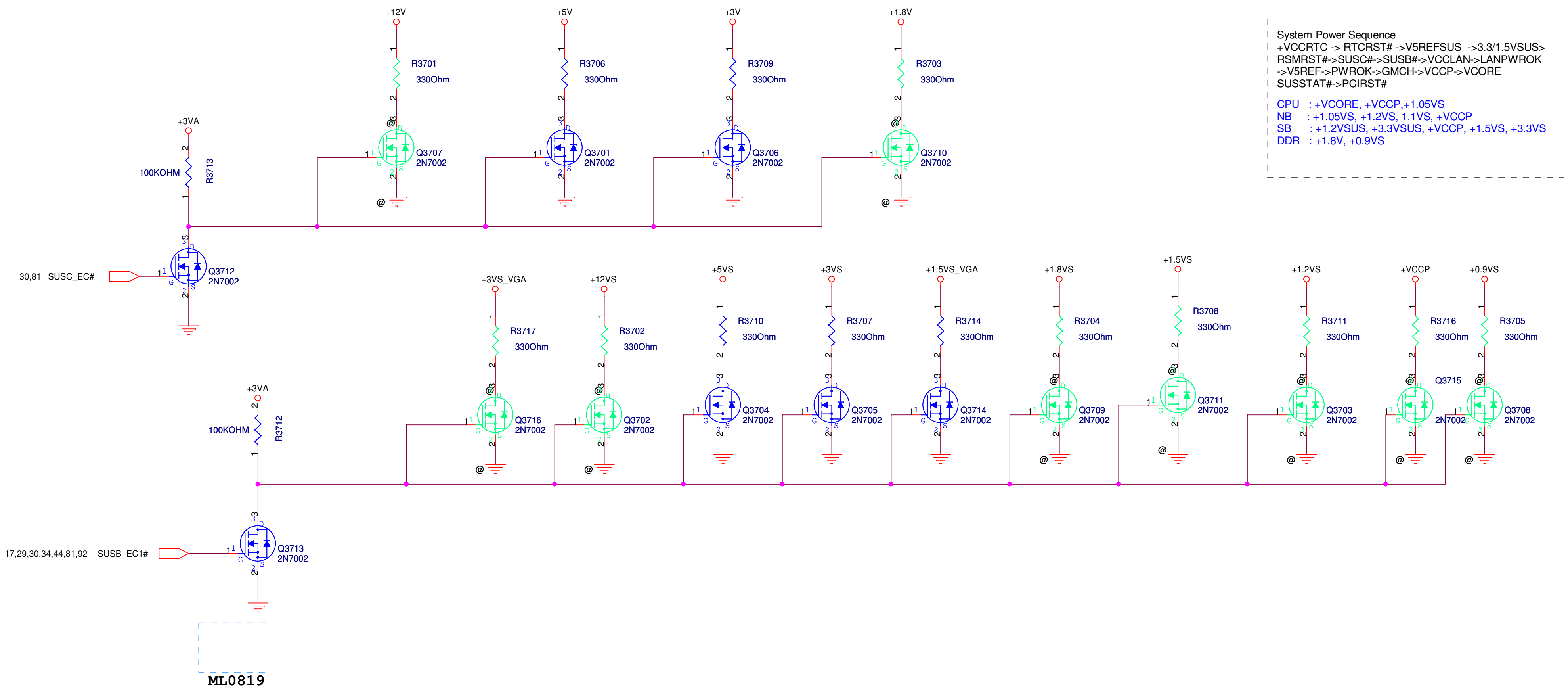
Title : RJ11+45 & MDC

ASUSTeK COMPUTER INC

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 17, 2008 Sheet 36 of 94


+12V
R3701
330Ohm
Q3707
2N7002
+5V
R3706
330Ohm
Q3701
2N7002
+3V
R3709
330Ohm
Q3706
2N7002
+1.8V
R3703
330Ohm
Q3710
2N7002
+3VA
100KOHM
R3713
30,81 SUSC_EC#
Q3712
2N7002
+3VS_VGA
R3717
330Ohm
Q3716
2N7002
+12VS
R3702
330Ohm
Q3702
2N7002
+5VS
R3710
330Ohm
Q3704
2N7002
+3VS
R3707
330Ohm
Q3705
2N7002
+1.5VS_VGA
R3714
330Ohm
Q3714
2N7002
+1.8VS
R3704
330Ohm
Q3709
2N7002
+1.5VS
R3708
330Ohm
Q3711
2N7002
+1.2VS
R3711
330Ohm
Q3703
2N7002
+VCCP
R3716
330Ohm
Q3715
2N7002
+0.9VS
R3705
330Ohm
Q3708
2N7002
+3VA
100KOHM
R3712
17,29,30,34,44,81,92 SUSB_EC1#
Q3713
2N7002
ML0819

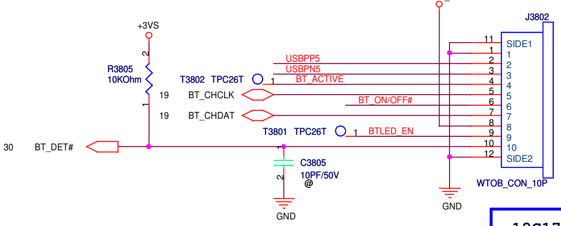
System Power Sequence
+VCCRTC -> RTCRST# ->V5REFSUS ->3.3/1.5VSUS>
RSMRST#->SUSC#->SUSB#->VCCLAN->LANPWROK
->V5REF->PWROK->GMCH->VCCP->VCORE
SUSSTAT#->PCIRST#

CPU : +VCORE, +VCCP,+1.05VS
NB : +1.05VS, +1.2VS, 1.1VS, +VCCP
SB : +1.2VSUS, +3.3VSUS, +VCCP, +1.5VS, +3.3VS
DDR : +1.8V, +0.9VS

<Variant Name>

ASUSTeK COMPUTER INC
Title : DISCHARGE CKT
Engineer: Miller / Daniel
Size Custom
Project Name F70SL
Rev 1.0
Date: Monday, November 03, 2008
Sheet 37 of 94

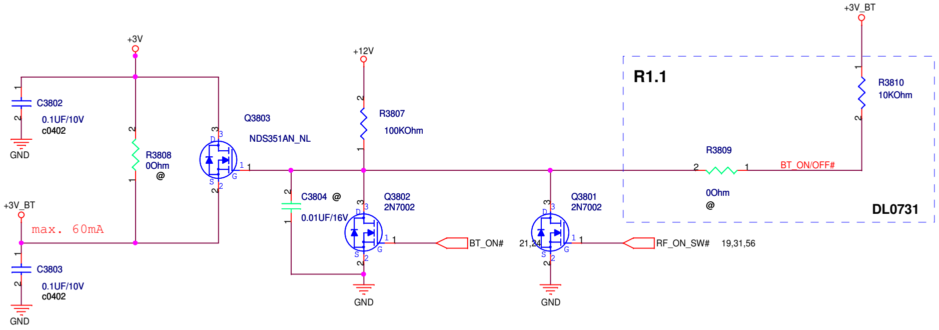
For Bluetooth



+3V_BT
J3802
+3VS
R3805
10KOhm
USBPP5
USBPN5
BT_ACTIVE
T3802 TPC26T
19 BT_CHCLK
BT_ON/OFF#
19 BT_CHDAT
T3801 TPC26T
BTLED_EN
30 BT_DET#
C3805
10PF/50V
@
GND
GND
SIDE1
1
2
3
4
5
6
7
8
9
10
SIDE2
11
12
WTOB_CON_10P

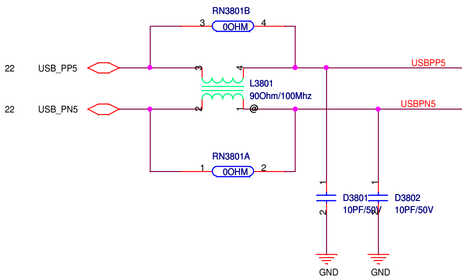
12G171010104
F70SL

ML0617



+3V
C3802
0.1UF/10V
c0402
GND
R3808
0Ohm
@
Q3803
NDS351AN_NL
+12V
R3807
100KOhm
+3V_BT
max. 60mA
C3803
0.1UF/10V
c0402
GND
C3804 @
0.01UF/16V
Q3802
2N7002
BT_ON#
21,24
GND
Q3801
2N7002
RF_ON_SW#
19,31,56
GND
R1.1
R3810
10KOhm
R3809
0Ohm
@
BT_ON/OFF#
DL0731

DL0707



RN3801B
3
0OHM
4
22 USB_PP5
L3801
90Ohm/100Mhz
@
USBPP5
22 USB_PN5
USBPN5
RN3801A
1
0OHM
2
D3801
10PF/50V
D3802
10PF/50V
GND
GND

<Variant Name>

Title : BT

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 38 of 94

DL0619

<Variant Name>

Title : **SWITCH**

ASUSTeK COMPUTER INC

Engineer: ***Miller / Daniel***

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 39 of 94

Delete R5C833

DL0626

<Variant Name>

ASUSTeK COMPUTER INC. NB1

Title : R5C833(1)

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 40 of 94

Delete R5C833

DL0626

ASUSTeK COMPUTER INC. NB1

Title : R5C833(2)

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 41 of 94

ASUSTeK COMPUTER INC. NB1	**Title :**	CardReader Conn.
	Engineer:	*Miller / Daniel*
Size C	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 42 of 94	

D

C

B

A

<Variant Name>

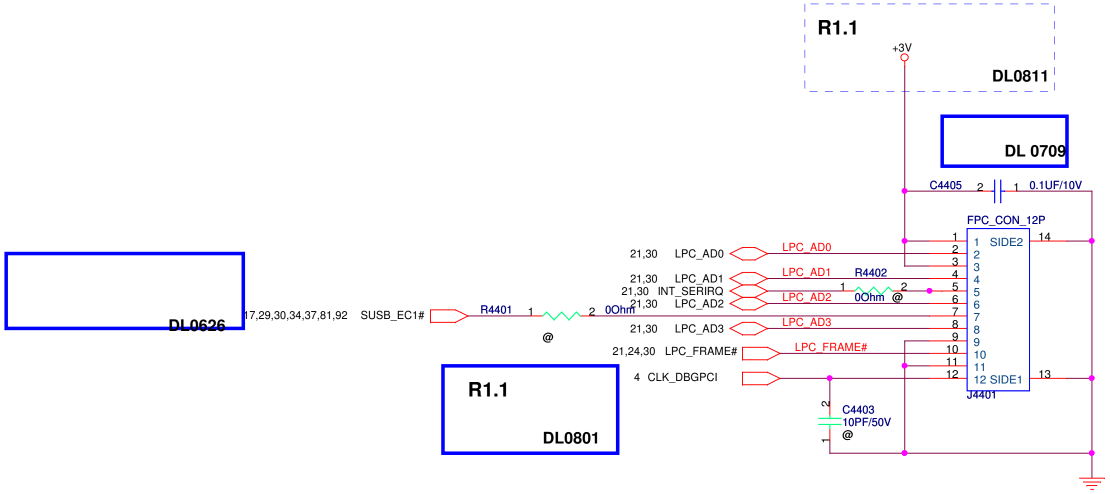
ASUSTeK COMPUTER INC

Title N/A

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 43 of 94


R1.1
+3V
DL0811
DL 0709
C4405
2
1
0.1UF/10V
FPC_CON_12P
21,30 LPC_AD0
LPC_AD0
21,30 LPC_AD1
LPC_AD1
R4402
21,30 INT_SERIRQ
1
2
21,30 LPC_AD2
LPC_AD2
0Ohm
@
21,30 LPC_AD3
LPC_AD3
21,24,30 LPC_FRAME#
LPC_FRAME#
4 CLK_DBGPCI
DL0626
17,29,30,34,37,81,92 SUSB_EC1#
R4401
1
2
0Ohm
@
R1.1
DL0801
C4403
10PF/50V
@
1 SIDE2
2
3
4
5
6
7
8
9
10
11
12 SIDE1
14
13
J4401

ASUSTeK COMPUTER INC. NB1

Title : debug

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 44 of 94

ASUSTeK COMPUTER INC	Title : N/A Engineer: Miller / Daniel	
Size C	Project Name F70SL	Rev 1.0
Date: Monday, November 03, 2008	Sheet 45 of 94	

ASUSTeK COMPUTER INC

Title : N/A

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 46 of 94

Title : N/A

ASUSTeK COMPUTER INC

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008

ASUSTeK COMPUTER INC

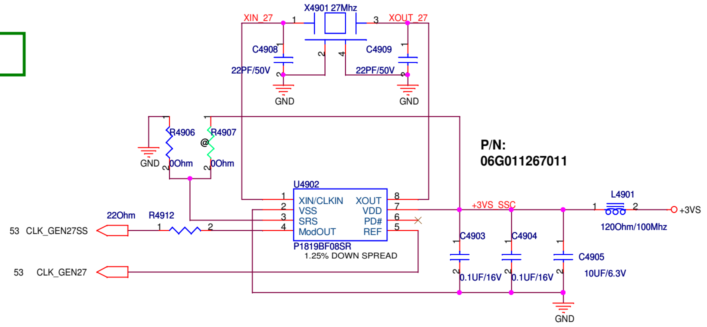
Title : N/A

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 48 of 94

XTAL_IN , XTAL_OUT
3.3V tolerance


X4901 27Mhz
XIN_27
XOUT_27
1
3
2
4
C4908
22PF/50V
C4909
22PF/50V
GND
GND
R4906
0Ohm
R4907
0Ohm
@
GND
U4902
XIN/CLKIN
VSS
SRS
ModOUT
XOUT
VDD
PD#
REF
1
2
3
4
8
7
6
5
P1819BF08SR
1.25% DOWN SPREAD
22Ohm
R4912
53 CLK_GEN27SS
53 CLK_GEN27
+3VS_SSC
C4903
0.1UF/16V
C4904
0.1UF/16V
C4905
10UF/6.3V
GND
L4901
120Ohm/100Mhz
+3VS

P/N:
06G011267011

ASUSTeK COMPUTER INC

Title : DACs/CLK
Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008
Sheet 49 of 94

ASUSTeK COMPUTER INC

Title : N/A

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 50 of 94

ASUSTeK COMPUTER INC

Title : N/A

Engineer: Miller / Daniel

Size: C

Project Name: **F70SL**

Rev: 1.0

Date: Monday, November 03, 2008

Sheet 51 of 94

DL0611

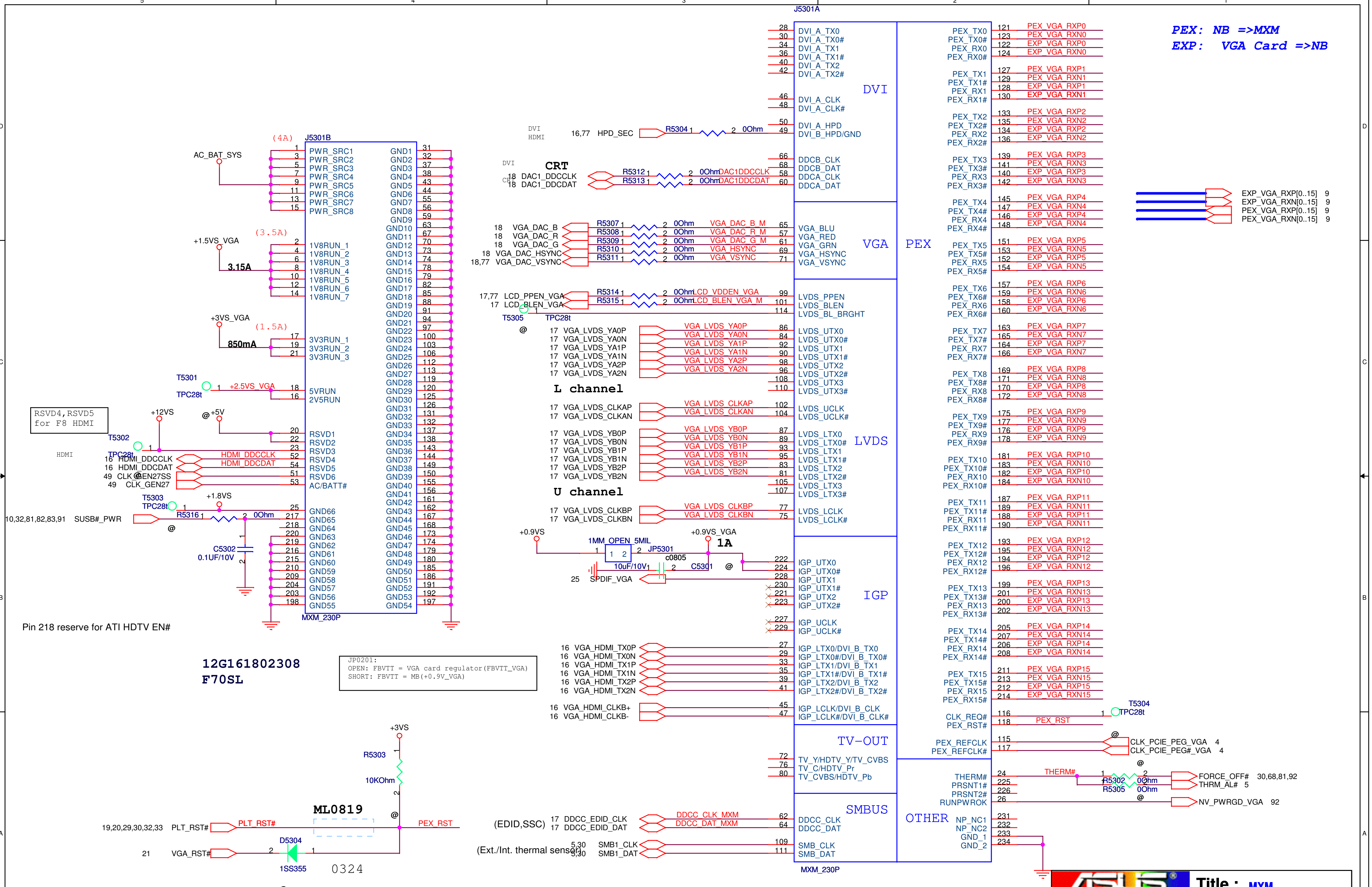
ASUSTeK COMPUTER INC

Title : N/A

Engineer: Miller / Daniel

Size	Project Name	Rev
C	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 52 of 94


PEX: NB =>MXM
EXP: VGA Card =>NB
J5301A
J5301B
(4A)
AC_BAT_SYS
PWR_SRC1
PWR_SRC2
PWR_SRC3
PWR_SRC4
PWR_SRC5
PWR_SRC6
PWR_SRC7
PWR_SRC8
(3.5A)
+1.5VS_VGA
3.15A
1V8RUN_1
1V8RUN_2
1V8RUN_3
1V8RUN_4
1V8RUN_5
1V8RUN_6
1V8RUN_7
+3VS_VGA
(1.5A)
850mA
3V3RUN_1
3V3RUN_2
3V3RUN_3
T5301
TPC28t
+2.5VS_VGA
5VRUN
2V5RUN
RSVD4,RSVD5
for F8 HDMI
+12VS
+5V
T5302
TPC28t
HDMI
HDMI_DDCCLK
HDMI_DDCDAT
CLK_GEN27SS
CLK_GEN27
RSVD1
RSVD2
RSVD3
RSVD4
RSVD5
RSVD6
AC/BATT#
T5303
TPC28t
+1.8VS
10,32,81,82,83,91 SUSB#_PWR
R5316
0Ohm
C5302
0.1UF/10V
GND1 … GND66
MXM_230P
Pin 218 reserve for ATI HDTV EN#
DVI
HDMI
16,77 HPD_SEC
R5304
0Ohm
CRT
18 DAC1_DDCCLK
18 DAC1_DDCDAT
R5312
R5313
0Ohm
DAC1DDCCLK
DAC1DDCDAT
18 VGA_DAC_B
18 VGA_DAC_R
18 VGA_DAC_G
18 VGA_DAC_HSYNC
18,77 VGA_DAC_VSYNC
R5307
R5308
R5309
R5310
R5311
VGA_DAC_B_M
VGA_DAC_R_M
VGA_DAC_G_M
VGA_HSYNC
VGA_VSYNC
17,77 LCD_PPEN_VGA
17 LCD_BLEN_VGA
R5314
R5315
LCD_VDDEN_VGA
LCD_BLEN_VGA_M
T5305
TPC28t
17 VGA_LVDS_YA0P
17 VGA_LVDS_YA0N
17 VGA_LVDS_YA1P
17 VGA_LVDS_YA1N
17 VGA_LVDS_YA2P
17 VGA_LVDS_YA2N
L channel
17 VGA_LVDS_CLKAP
17 VGA_LVDS_CLKAN
17 VGA_LVDS_YB0P
17 VGA_LVDS_YB0N
17 VGA_LVDS_YB1P
17 VGA_LVDS_YB1N
17 VGA_LVDS_YB2P
17 VGA_LVDS_YB2N
U channel
17 VGA_LVDS_CLKBP
17 VGA_LVDS_CLKBN
+0.9VS
1MM_OPEN_5MIL
JP5301
+0.9VS_VGA
1A
c0805
10uF/10V
C5301
25 SPDIF_VGA
JP0201:
OPEN: FBVTT = VGA card regulator(FBVTT_VGA)
SHORT: FBVTT = MB(+0.9V_VGA)
16 VGA_HDMI_TX0P
16 VGA_HDMI_TX0N
16 VGA_HDMI_TX1P
16 VGA_HDMI_TX1N
16 VGA_HDMI_TX2P
16 VGA_HDMI_TX2N
16 VGA_HDMI_CLKB+
16 VGA_HDMI_CLKB-
+3VS
R5303
10KOhm
ML0819
19,20,29,30,32,33 PLT_RST#
PLT_RST#
PEX_RST
21 VGA_RST#
D5304
1SS355
0324
(EDID,SSC)
17 DDCC_EDID_CLK
17 DDCC_EDID_DAT
DDCC_CLK_MXM
DDCC_DAT_MXM
(Ext./Int. thermal sensor)
5,30 SMB1_CLK
5,30 SMB1_DAT
DVI
DVI_A_TX0
DVI_A_TX0#
DVI_A_TX1
DVI_A_TX1#
DVI_A_TX2
DVI_A_TX2#
DVI_A_CLK
DVI_A_CLK#
DVI_A_HPD
DVI_B_HPD/GND
DDCB_CLK
DDCB_DAT
DDCA_CLK
DDCA_DAT
VGA
VGA_BLU
VGA_RED
VGA_GRN
VGA_HSYNC
VGA_VSYNC
LVDS
LVDS_PPEN
LVDS_BLEN
LVDS_BL_BRGHT
LVDS_UTX0 … LVDS_UTX3#
LVDS_UCLK
LVDS_UCLK#
LVDS_LTX0 … LVDS_LTX3#
LVDS_LCLK
LVDS_LCLK#
IGP
IGP_UTX0 … IGP_UTX2#
IGP_UCLK
IGP_UCLK#
IGP_LTX0/DVI_B_TX0 … IGP_LTX2#/DVI_B_TX2#
IGP_LCLK/DVI_B_CLK
IGP_LCLK#/DVI_B_CLK#
TV-OUT
TV_Y/HDTV_Y/TV_CVBS
TV_C/HDTV_Pr
TV_CVBS/HDTV_Pb
SMBUS
DDCC_CLK
DDCC_DAT
SMB_CLK
SMB_DAT
PEX
PEX_TX0 … PEX_TX15#
PEX_RX0 … PEX_RX15#
PEX_VGA_RXP0 … PEX_VGA_RXN15
EXP_VGA_RXP0 … EXP_VGA_RXN15
CLK_REQ#
PEX_RST#
T5304
TPC28t
PEX_RST
PEX_REFCLK
PEX_REFCLK#
CLK_PCIE_PEG_VGA 4
CLK_PCIE_PEG#_VGA 4
EXP_VGA_RXP[0..15] 9
EXP_VGA_RXN[0..15] 9
PEX_VGA_RXP[0..15] 9
PEX_VGA_RXN[0..15] 9
OTHER
THERM#
PRSNT1#
PRSNT2#
RUNPWROK
NP_NC1
NP_NC2
GND_1
GND_2
R5302
R5305
0Ohm
FORCE_OFF# 30,68,81,92
THRM_AL# 5
NV_PWRGD_VGA 92
MXM_230P

12G161802308
F70SL

12G161802308
F70SL

ASUSTeK COMPUTER INC. NB1	Title : MXM	
	Engineer: Miller / Daniel	
Size: Custom	Project Name: F70SL	Rev: 1.0
Date: Monday, November 03, 2008	Sheet 53 of 94	

5 4 3 2 1

D C B A

Title : BLANK

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 54 of 94

ASUSTeK COMPUTER INC. NB1

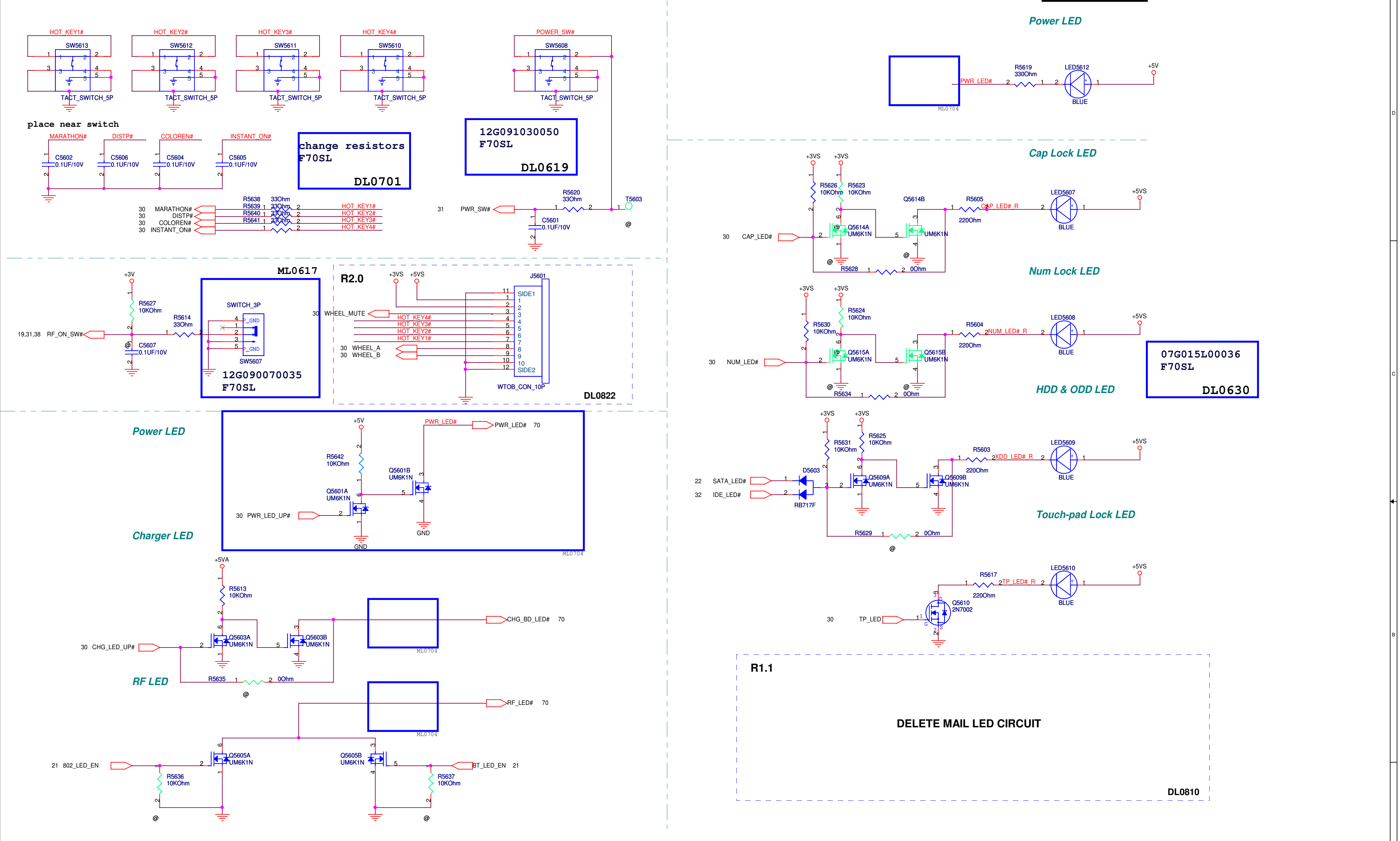
Title : SS STRAPS

Engineer: *Miller / Daniel*

Size Custom	Project Name **F70SL**	Rev 1.0

Date: Monday, November 03, 2008 Sheet 55 of 94

Main Board


HOT_KEY1#
SW5613
TACT_SWITCH_5P
HOT_KEY2#
SW5612
TACT_SWITCH_5P
HOT_KEY3#
SW5611
TACT_SWITCH_5P
HOT_KEY4#
SW5610
TACT_SWITCH_5P
POWER_SW#
SW5608
TACT_SWITCH_5P
place near switch
MARATHON#
C5602 0.1UF/10V
DISTP#
C5606 0.1UF/10V
COLOREN#
C5604 0.1UF/10V
INSTANT_ON#
C5605 0.1UF/10V
change resistors F70SL
DL0701
12G091030050
F70SL
DL0619
R5638 33Ohm
R5639 33Ohm
R5640 33Ohm
R5641 33Ohm
30 MARATHON#
30 DISTP#
30 COLOREN#
30 INSTANT_ON#
HOT_KEY1#
HOT_KEY2#
HOT_KEY3#
HOT_KEY4#
31 PWR_SW#
R5620 33Ohm
C5601 0.1UF/10V
T5603
ML0617
+3V
R5627 10KOhm
R5614 33Ohm
19,31,38 RF_ON_SW#
C5607 0.1UF/10V
SWITCH_3P
P_GND
SW5607
12G090070035
F70SL
R2.0
+3VS
+5VS
J5601
30 WHEEL_MUTE
HOT_KEY4#
HOT_KEY3#
HOT_KEY2#
HOT_KEY1#
30 WHEEL_A
30 WHEEL_B
SIDE1
SIDE2
WTOB_CON_10P
DL0822
Power LED
Charger LED
+5V
PWR_LED#
PWR_LED# 70
R5642 10KOhm
Q5601B UM6K1N
Q5601A UM6K1N
30 PWR_LED_UP#
GND
ML0704
+5VA
R5613 10KOhm
Q5603A UM6K1N
Q5603B UM6K1N
30 CHG_LED_UP#
CHG_BD_LED# 70
R5635 0Ohm
RF LED
RF_LED# 70
Q5605A UM6K1N
Q5605B UM6K1N
21 802_LED_EN
BT_LED_EN 21
R5636 10KOhm
R5637 10KOhm
Power LED
PWR_LED#
R5619 330Ohm
LED5612
BLUE
+5V
ML0704
Cap Lock LED
+3VS
R5626 10KOhm
R5623 10KOhm
Q5614B
Q5614A UM6K1N
UM6K1N
R5605 220Ohm
CAP_LED#_R
LED5607
BLUE
+5VS
30 CAP_LED#
R5628 0Ohm
Num Lock LED
R5630 10KOhm
R5624 10KOhm
Q5615A UM6K1N
Q5615B UM6K1N
R5604 220Ohm
NUM_LED#_R
LED5608
BLUE
30 NUM_LED#
R5634 0Ohm
07G015L00036
F70SL
DL0630
HDD & ODD LED
R5631 10KOhm
R5625 10KOhm
D5603
RB717F
22 SATA_LED#
32 IDE_LED#
Q5609A UM6K1N
Q5609B UM6K1N
R5603 220Ohm
XDD_LED#_R
LED5609
BLUE
R5629 0Ohm
Touch-pad Lock LED
R5617 220Ohm
TP_LED#_R
LED5610
BLUE
Q5610 2N7002
30 TP_LED
R1.1
DELETE MAIL LED CIRCUIT
DL0810

ASUSTeK COMPUTER INC. NB1

Title : <Title>

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Tuesday, November 18, 2008 Sheet 56 of 94

D

C

B

A

Title : +1.2VSUS

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 57 of 94

Title : NA

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	X71C	1.0

Date: Monday, November 03, 2008

Title : **EMI**

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 59 of 94

Delete SPIF215A

DL0626

ASUSTeK COMPUTER INC. NB1	**Title :** USB SATA adapter	
	Engineer: *Miller / Daniel*	
Size C	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 60 of 94	

DL0616

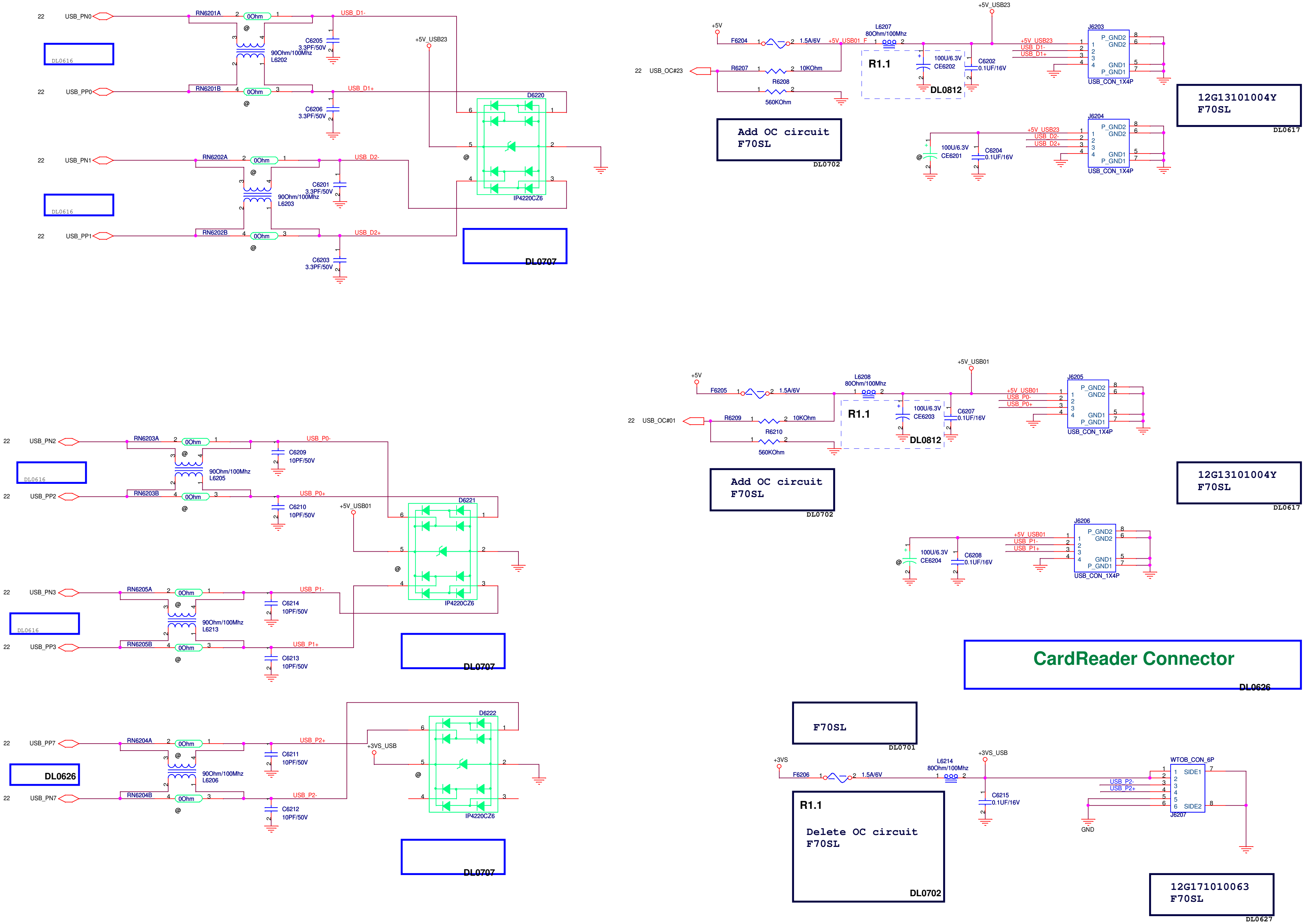
ASUSTeK COMPUTER INC. NB1

Title : **USB HUB**

Engineer: ***Miller / Daniel***

Size	Project Name	Rev
B	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 61 of 94


22 USB_PN0
RN6201A
0Ohm
USB_D1-
C6205
3.3PF/50V
90Ohm/100Mhz
L6202
22 USB_PP0
RN6201B
0Ohm
USB_D1+
C6206
3.3PF/50V
+5V_USB23
D6220
IP4220CZ6
22 USB_PN1
RN6202A
0Ohm
USB_D2-
C6201
3.3PF/50V
90Ohm/100Mhz
L6203
22 USB_PP1
RN6202B
0Ohm
USB_D2+
C6203
3.3PF/50V
DL0616
DL0616
DL0707
+5V
F6204
1.5A/6V
+5V_USB01_F
L6207
80Ohm/100Mhz
+5V_USB23
22 USB_OC#23
R6207
10KOhm
R6208
560KOhm
R1.1
100U/6.3V
CE6202
C6202
0.1UF/16V
DL0812
J6203
+5V_USB23
USB_D1-
USB_D1+
P_GND2
GND2
GND1
P_GND1
USB_CON_1X4P
Add OC circuit
F70SL
DL0702
12G13101004Y
F70SL
DL0617
J6204
+5V_USB23
USB_D2-
USB_D2+
100U/6.3V
CE6201
C6204
0.1UF/16V
USB_CON_1X4P
+5V_USB01
+5V
F6205
1.5A/6V
L6208
80Ohm/100Mhz
22 USB_OC#01
R6209
10KOhm
R6210
560KOhm
R1.1
100U/6.3V
CE6203
C6207
0.1UF/16V
DL0812
J6205
+5V_USB01
USB_P0-
USB_P0+
USB_CON_1X4P
Add OC circuit
F70SL
DL0702
12G13101004Y
F70SL
DL0617
J6206
+5V_USB01
USB_P1-
USB_P1+
100U/6.3V
CE6204
C6208
0.1UF/16V
USB_CON_1X4P
22 USB_PN2
RN6203A
0Ohm
USB_P0-
C6209
10PF/50V
90Ohm/100Mhz
L6205
22 USB_PP2
RN6203B
0Ohm
USB_P0+
C6210
10PF/50V
+5V_USB01
D6221
IP4220CZ6
DL0616
22 USB_PN3
RN6205A
0Ohm
USB_P1-
C6214
10PF/50V
90Ohm/100Mhz
L6213
22 USB_PP3
RN6205B
0Ohm
USB_P1+
C6213
10PF/50V
DL0616
DL0707
CardReader Connector
DL0626
22 USB_PP7
RN6204A
0Ohm
USB_P2+
C6211
10PF/50V
90Ohm/100Mhz
L6206
22 USB_PN7
RN6204B
0Ohm
USB_P2-
C6212
10PF/50V
DL0626
+3VS_USB
D6222
IP4220CZ6
DL0707
F70SL
DL0701
+3VS
F6206
1.5A/6V
L6214
80Ohm/100Mhz
+3VS_USB
C6215
0.1UF/16V
R1.1
Delete OC circuit
F70SL
DL0702
WTOB_CON_6P
USB_P2-
USB_P2+
SIDE1
SIDE2
J6207
GND
12G171010063
F70SL
DL0627

<Variant Name>

ASUS

Title : USB CONN

ASUSTeK COMPUTER INC

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	**F70SL**	1.0

Date: Thursday, November 13, 2008 Sheet 62 of 94

ASUSTeK COMPUTER INC. NB1

Title : BLANK

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 63 of 94

D

C

B

A

ASUSTeK COMPUTER INC. NB1

Title : BLANK

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 64 of 94

<Variant Name>

Title : NC

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 65 of 94

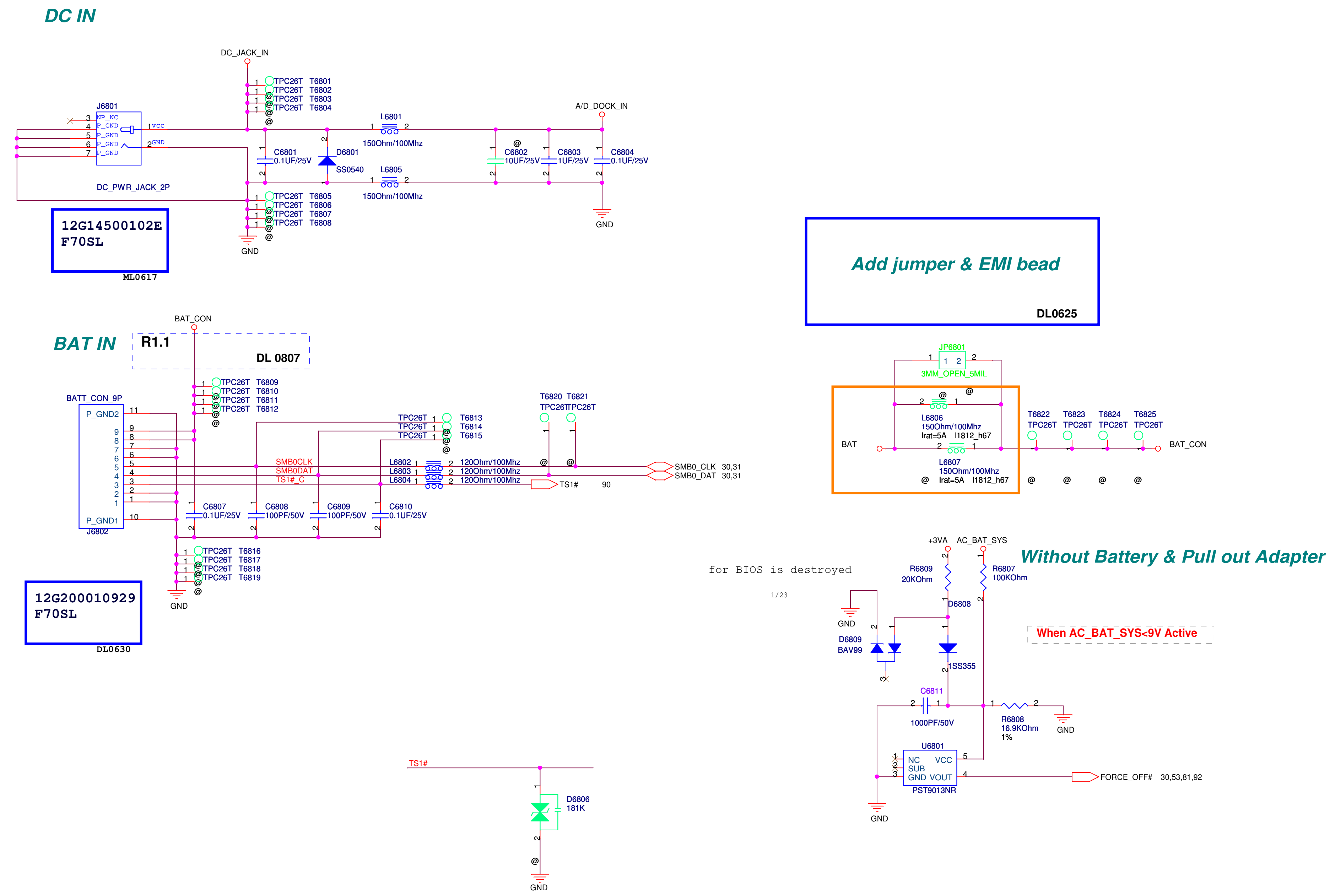
Title : BLANK

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 67 of 94


DC IN
DC_JACK_IN
J6801
NP_NC
P_GND
P_GND
P_GND
P_GND
VCC
GND
DC_PWR_JACK_2P
TPC26T T6801
TPC26T T6802
TPC26T T6803
TPC26T T6804
L6801
150Ohm/100Mhz
A/D_DOCK_IN
C6801
0.1UF/25V
D6801
SS0540
L6805
150Ohm/100Mhz
C6802
10UF/25V
C6803
1UF/25V
C6804
0.1UF/25V
TPC26T T6805
TPC26T T6806
TPC26T T6807
TPC26T T6808
GND
GND
12G14500102E
F70SL
ML0617
Add jumper & EMI bead
DL0625
BAT_CON
BAT IN
R1.1
DL 0807
BATT_CON_9P
P_GND2
P_GND1
J6802
TPC26T T6809
TPC26T T6810
TPC26T T6811
TPC26T T6812
TPC26T T6813
TPC26T T6814
TPC26T T6815
T6820 T6821
TPC26T TPC26T
SMB0CLK
SMB0DAT
TS1#_C
L6802
L6803
L6804
120Ohm/100Mhz
120Ohm/100Mhz
120Ohm/100Mhz
SMB0_CLK 30,31
SMB0_DAT 30,31
TS1# 90
C6807
0.1UF/25V
C6808
100PF/50V
C6809
100PF/50V
C6810
0.1UF/25V
TPC26T T6816
TPC26T T6817
TPC26T T6818
TPC26T T6819
GND
12G200010929
F70SL
DL0630
JP6801
3MM_OPEN_5MIL
L6806
150Ohm/100Mhz
Irat=5A I1812_h67
BAT
L6807
150Ohm/100Mhz
Irat=5A I1812_h67
T6822 T6823 T6824 T6825
TPC26T TPC26T TPC26T TPC26T
BAT_CON
+3VA
AC_BAT_SYS
Without Battery & Pull out Adapter
for BIOS is destroyed
1/23
R6809
20KOhm
R6807
100KOhm
D6808
GND
D6809
BAV99
1SS355
When AC_BAT_SYS<9V Active
C6811
1000PF/50V
R6808
16.9KOhm
1%
GND
U6801
NC VCC
SUB
GND VOUT
PST9013NR
FORCE_OFF# 30,53,81,92
GND
TS1#
D6806
181K
GND

<Variant Name>

ASUS

Title : DC & BAT IN

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 68 of 94

5 4 3 2 1

D C B A

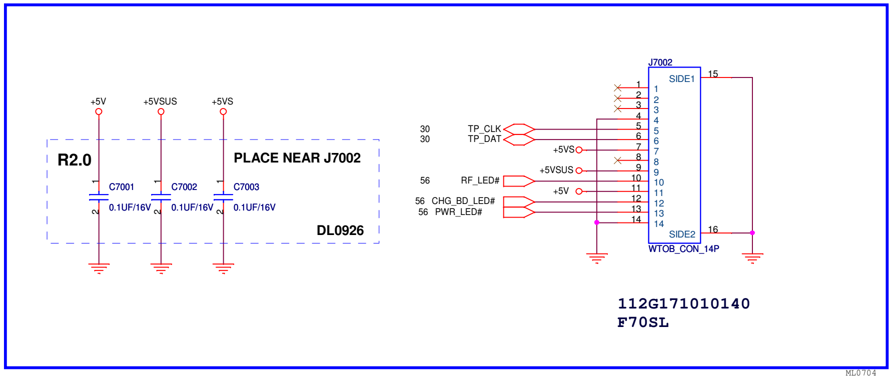
Title : BLANK

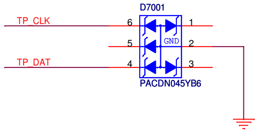
ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 69 of 94


+5V
+5VSUS
+5VS
R2.0
PLACE NEAR J7002
C7001
0.1UF/16V
C7002
0.1UF/16V
C7003
0.1UF/16V
1
2
DL0926
J7002
SIDE1
SIDE2
15
16
1 2 3 4 5 6 7 8 9 10 11 12 13 14
30 TP_CLK
30 TP_DAT
+5VS
+5VSUS
56 RF_LED#
+5V
56 CHG_BD_LED#
56 PWR_LED#
WTOB_CON_14P
112G171010140
F70SL
ML0704


TP_CLK
TP_DAT
D7001
6
5
4
1
2
3
GND
PACDN045YB6

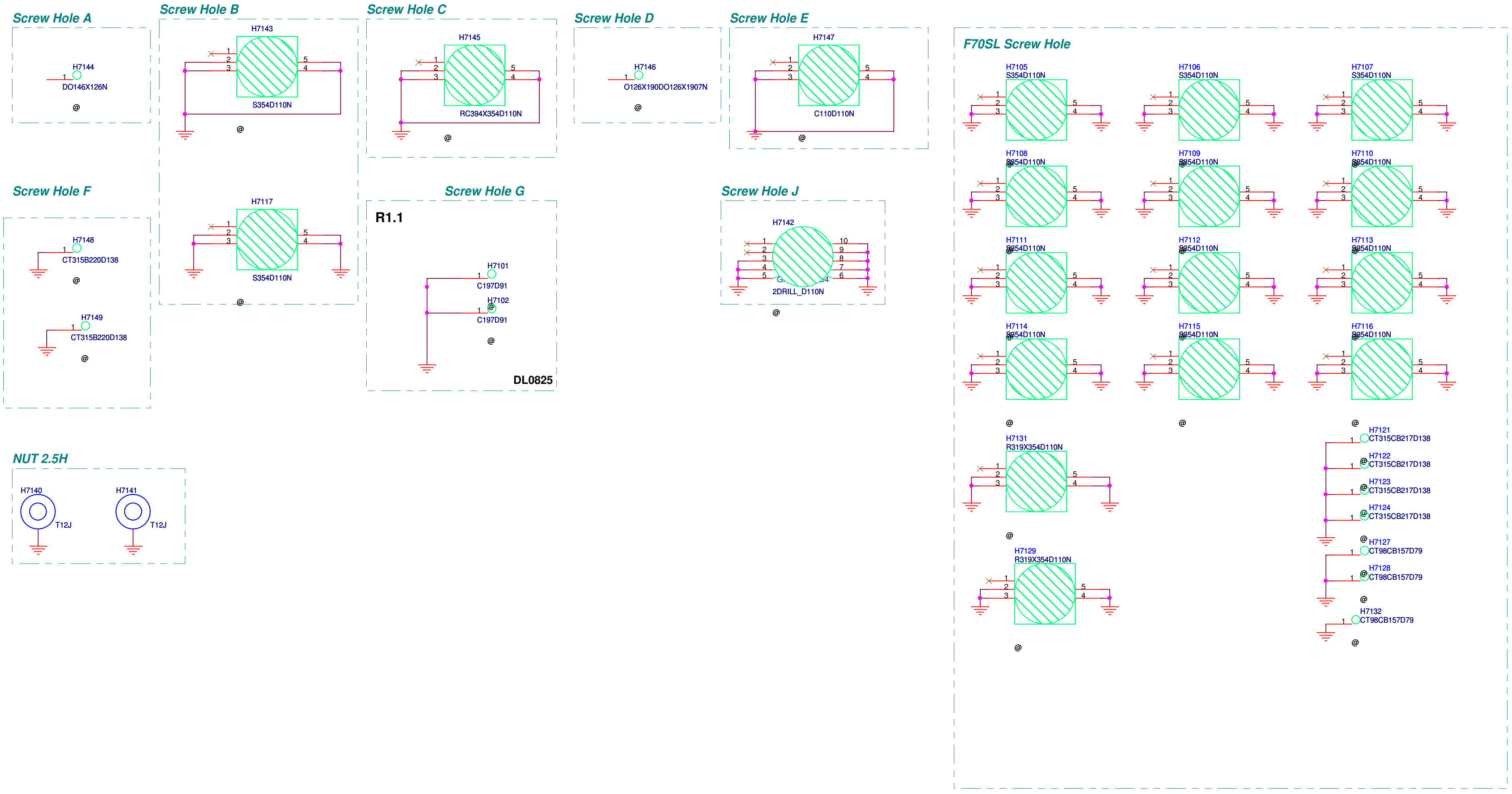
Title : TP CON

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 70 of 94


Screw Hole A
H7144
DO146X126N
Screw Hole B
H7143
S354D110N
H7117
S354D110N
Screw Hole C
H7145
RC394X354D110N
Screw Hole D
H7146
O126X190DO126X1907N
Screw Hole E
H7147
C110D110N
Screw Hole F
H7148
CT315B220D138
H7149
CT315B220D138
Screw Hole G
R1.1
H7101
C197D91
H7102
C197D91
DL0825
Screw Hole J
H7142
2DRILL_D110N
NUT 2.5H
H7140
T12J
H7141
T12J
F70SL Screw Hole
H7105
S354D110N
H7106
S354D110N
H7107
S354D110N
H7108
S354D110N
H7109
S354D110N
H7110
S354D110N
H7111
S354D110N
H7112
S354D110N
H7113
S354D110N
H7114
S354D110N
H7115
S354D110N
H7116
S354D110N
H7131
R319X354D110N
H7129
R319X354D110N
H7121
CT315CB217D138
H7122
CT315CB217D138
H7123
CT315CB217D138
H7124
CT315CB217D138
H7127
CT98CB157D79
H7128
CT98CB157D79
H7132
CT98CB157D79

ASUSTeK COMPUTER INC. NB1

Title : SCREW hole

Engineer: Miller / Daniel

Size	Project Name	Rev
C	F70SL	1.0

Date: Wednesday, November 19, 2008 Sheet 71 of 94

D C B A

Title : BLANK

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 72 of 94

5 4 3 2 1

D C B A

Title : BLANK

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 73 of 94

1.080926 Add C7001,C7002,C7003,D7001 for EMI on Page 70
2.080926 Add C3238 for EMI on Page 32
3.080926 place D3101,D3103 near J6802 for EMI on Page 31
4.080926 Add C8040 near R8001 for EMI on Page 80
5.080930 Modify Page 32
6.080930 Add wheel_mute pin on Page 56
7.081002 Add R3350,R3351,R3352 for EMI on Page 33

Title : BLANK

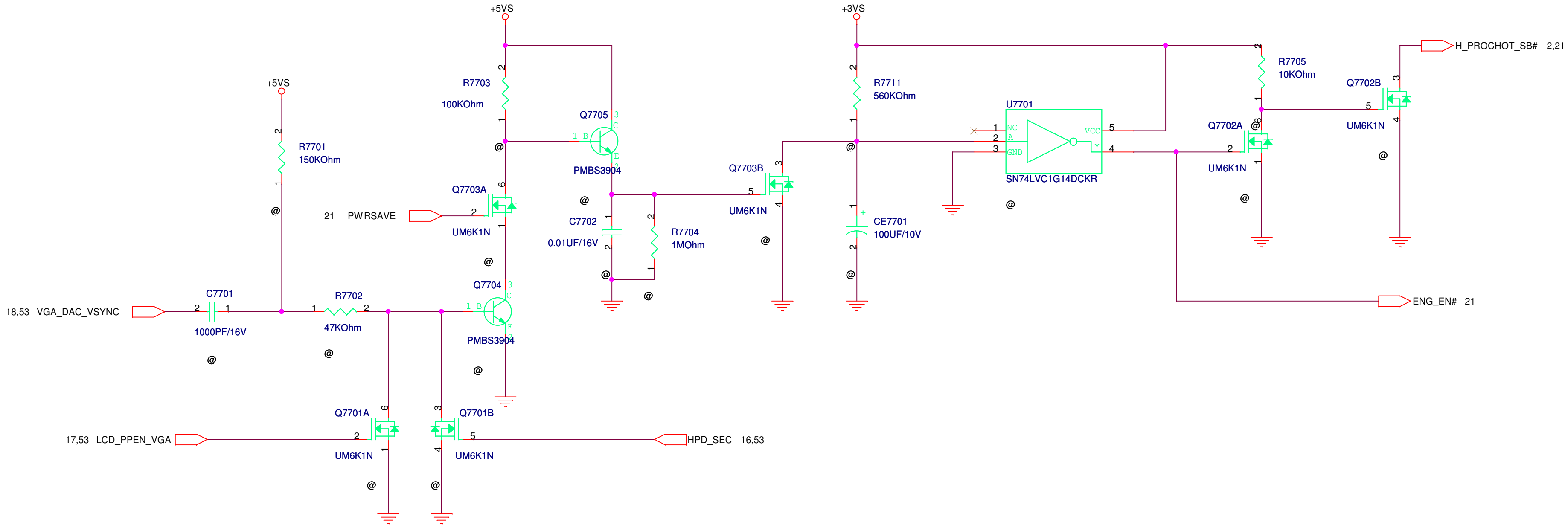
ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 75 of 94

ASUSTeK COMPUTER INC	**Title :** Energy Star	
	Engineer: *Miller / Daniel*	
Size Custom	Project Name **F70SL**	Rev 2.1
Date: Monday, November 03, 2008	Sheet 76 of 94	


+5VS
R7703
100KOhm
Q7705
PMBS3904
+3VS
R7711
560KOhm
U7701
SN74LVC1G14DCKR
NC
A
GND
VCC
Y
R7705
10KOhm
Q7702B
UM6K1N
H_PROCHOT_SB# 2,21
Q7702A
UM6K1N
+5VS
R7701
150KOhm
21 PWRSAVE
Q7703A
UM6K1N
C7702
0.01UF/16V
R7704
1MOhm
Q7703B
UM6K1N
CE7701
100UF/10V
ENG_EN# 21
18,53 VGA_DAC_VSYNC
C7701
1000PF/16V
R7702
47KOhm
Q7704
PMBS3904
Q7701A
UM6K1N
Q7701B
UM6K1N
17,53 LCD_PPEN_VGA
HPD_SEC 16,53

<Variant Name>

ASUS

Title : Battery Saving

ASUSTeK COMPUTER INC

Engineer: *Miller / Daniel*

Size	Project Name	Rev
Custom	**F70SL**	2.1

Date: Monday, November 03, 2008 Sheet 77 of 94

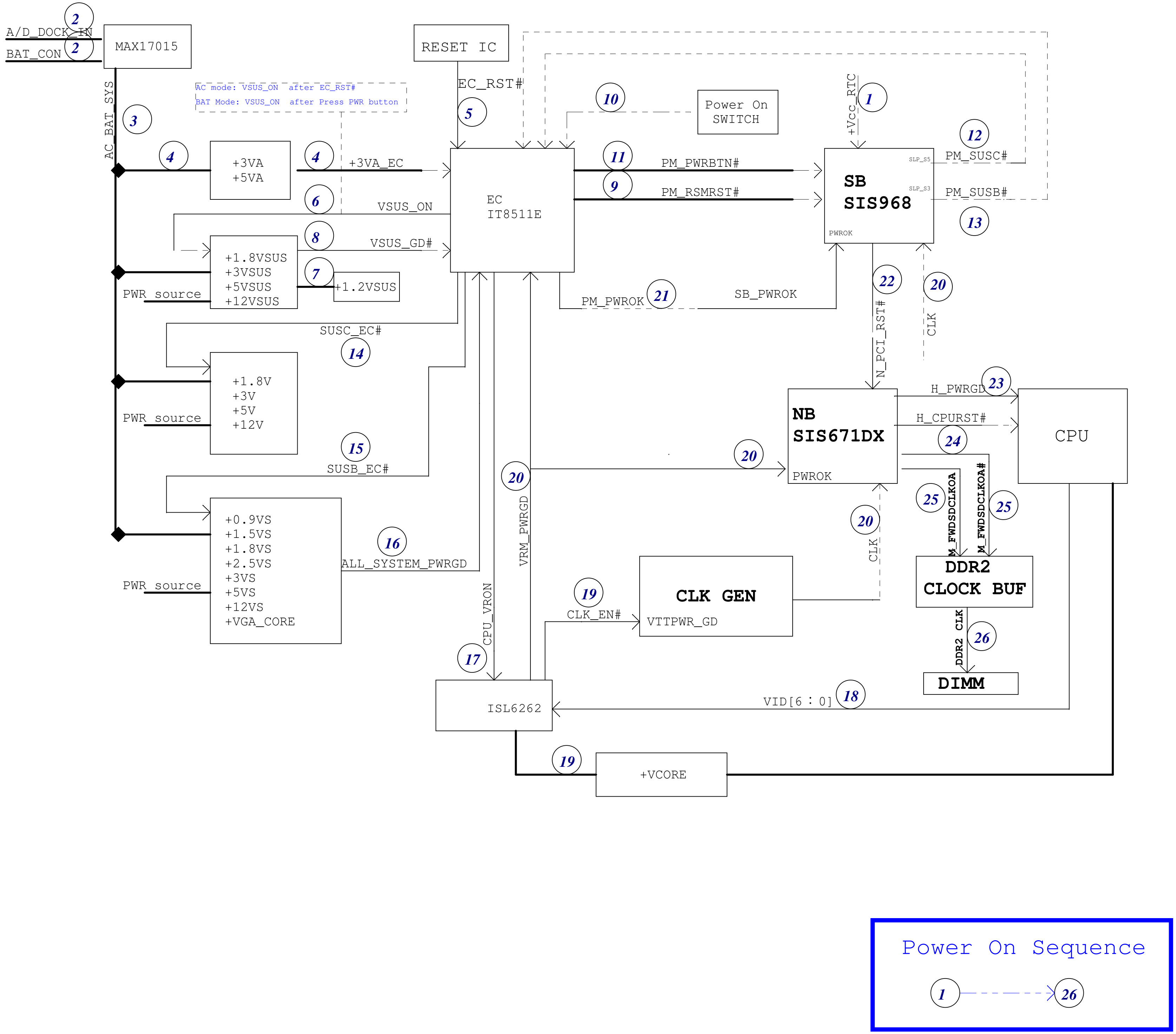
Title : BLANK

ASUSTeK COMPUTER INC. NB1

Engineer: *Miller / Daniel*

Size	Project Name	Rev
A	**F70SL**	1.0

Date: Monday, November 03, 2008 Sheet 78 of 94


A/D_DOCK_IN
BAT_CON
2
2
MAX17015
AC_BAT_SYS
3
AC mode: VSUS_ON after EC_RST#
BAT Mode: VSUS_ON after Press PWR button
RESET IC
EC_RST#
5
10
Power On
SWITCH
+Vcc_RTC
1
12
PM_SUSC#
SLP_S5
SLP_S3
PM_SUSB#
13
SB
SIS968
PWROK
4
+3VA
+5VA
4
+3VA_EC
6
VSUS_ON
EC
IT8511E
11
PM_PWRBTN#
9
PM_RSMRST#
8
VSUS_GD#
+1.8VSUS
+3VSUS
+5VSUS
+12VSUS
7
+1.2VSUS
PWR_source
PM_PWROK
21
SB_PWROK
22
N_PCI_RST#
20
CLK
SUSC_EC#
14
+1.8V
+3V
+5V
+12V
PWR_source
15
SUSB_EC#
H_PWRGD
23
H_CPURST#
24
CPU
NB
SIS671DX
PWROK
20
20
VRM_PWRGD
25
M_FWDSDCLKOA
M_FWDSDCLKOA#
25
20
CLK
+0.9VS
+1.5VS
+1.8VS
+2.5VS
+3VS
+5VS
+12VS
+VGA_CORE
PWR_source
16
ALL_SYSTEM_PWRGD
CPU_VRON
DDR2
CLOCK BUF
19
CLK_EN#
CLK GEN
VTTPWR_GD
DDR2 CLK
26
DIMM
17
ISL6262
VID[6:0]
18
19
+VCORE
Power On Sequence
1
26

ASUSTeK COMPUTER INC. NB1

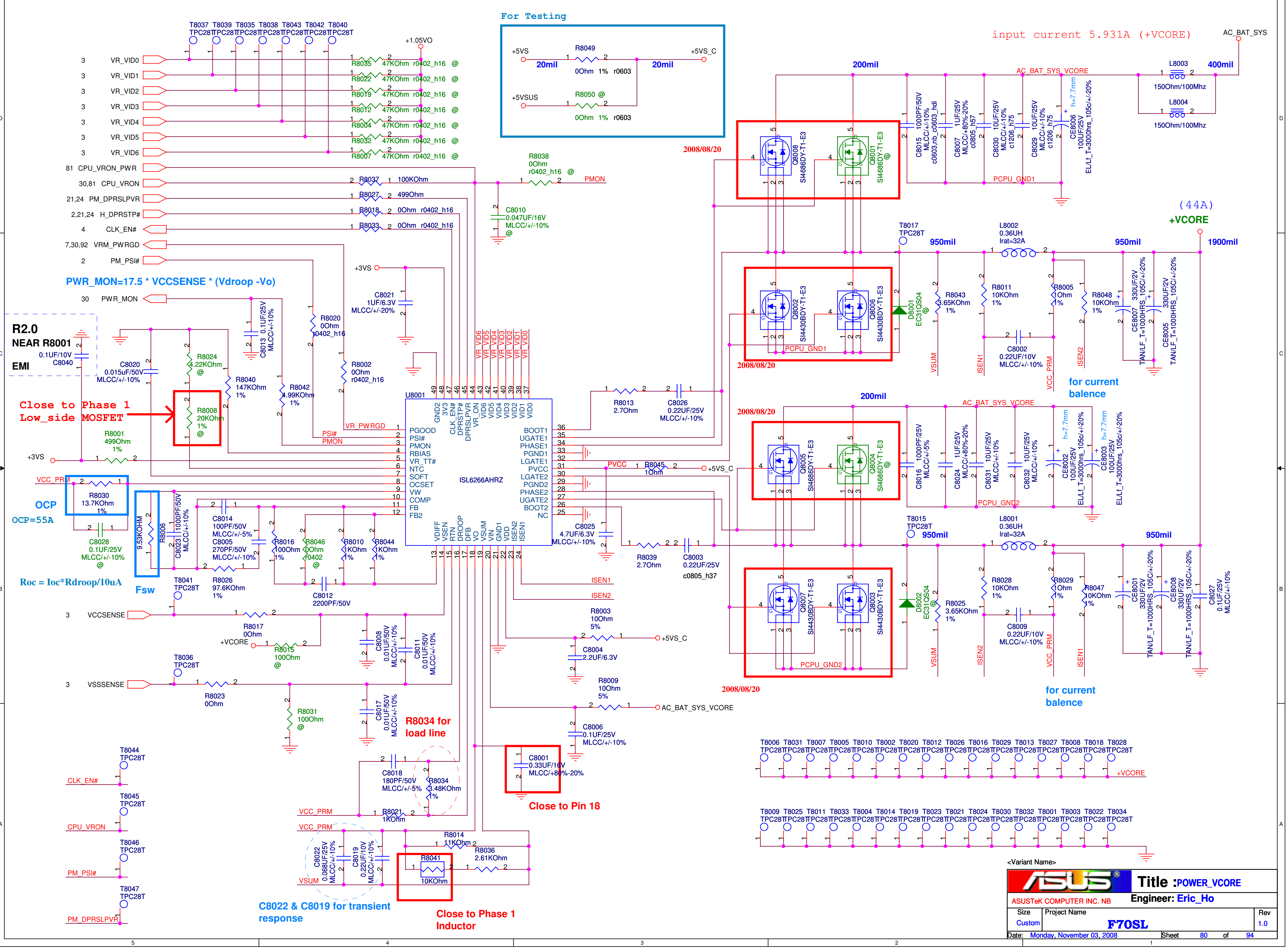
Title : Power sequence

Engineer: *Miller / Daniel*

Size	Project Name	Rev
C	**F70SL**	1.0

Date: Monday, November 03, 2008

Sheet 79 of 94


For Testing
+5VS
R8049
0Ohm 1% r0603
+5VS_C
20mil
+5VSUS
R8050 @
input current 5.931A (+VCORE)
AC_BAT_SYS
AC_BAT_SYS_VCORE
L8003
L8004
150Ohm/100Mhz
400mil
200mil
VR_VID0
VR_VID1
VR_VID2
VR_VID3
VR_VID4
VR_VID5
VR_VID6
CPU_VRON_PWR
CPU_VRON
PM_DPRSLPVR
H_DPRSTP#
CLK_EN#
VRM_PWRGD
PM_PSI#
PWR_MON
+1.05VO
47KOhm r0402_h16 @
R8038 0Ohm r0402_h16 @
PMON
C8010 0.047UF/16V MLCC/+/-10% @
PWR_MON=17.5 * VCCSENSE * (Vdroop -Vo)
R2.0
NEAR R8001
EMI
C8040 0.1UF/10V
Close to Phase 1 Low_side MOSFET
R8008 20KOhm 1% @
R8024 4.22KOhm @
R8040 147KOhm 1%
R8042 4.99KOhm 1%
R8001 499Ohm 1%
+3VS
OCP
OCP=55A
R8030 13.7KOhm 1%
Roc = Ioc*Rdroop/10uA
Fsw
9.53KOHM R8006
U8001
ISL6266AHRZ
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
VCCSENSE
VSSSENSE
R8034 for load line
R8034 3.48KOhm 1%
C8018 180PF/50V
Close to Pin 18
C8001 0.33UF/16V MLCC/+80%-20%
C8022 & C8019 for transient response
R8041 10KOhm
Close to Phase 1 Inductor
R8036 2.61KOhm
R8014 11KOhm
VSUM
ISEN1
ISEN2
Q8008 SI4686DY-T1-E3
Q8001 SI4686DY-T1-E3 @
Q8002 SI4430BDY-T1-E3
Q8006 SI4430BDY-T1-E3
Q8005 SI4686DY-T1-E3
Q8004 SI4686DY-T1-E3 @
Q8007 SI4430BDY-T1-E3
Q8003 SI4430BDY-T1-E3
2008/08/20
D8001 EC31QS04 @
D8002 EC31QS04 @
PCPU_GND1
PCPU_GND2
L8002 0.36UH Irat=32A
L8001 0.36UH Irat=32A
(44A)
+VCORE
1900mil
950mil
for current balence
CE8007 330UF/2V TAN/LF_T=1000HRS_105C/+/-20%
CE8005 330UF/2V TAN/LF_T=1000HRS_105C/+/-20%
CE8001 330UF/2V TAN/LF_T=1000HRS_105C/+/-20%
CE8008 330UF/2V TAN/LF_T=1000HRS_105C/+/-20%
CE8006 100UF/25V EL/LT_T=3000hrs_105c/+/-20%
CE8002 100UF/25V EL/LT_T=3000hrs_105c/+/-20%
CE8003 100UF/25V EL/LT_T=3000hrs_105c/+/-20%
h=7.7mm
R8045 1Ohm
PVCC
C8025 4.7UF/6.3V
R8003 10Ohm 5%
C8004 2.2UF/6.3V
R8009 10Ohm 5%
C8006 0.1UF/25V
VCC_PRM
T8006 T8031 T8007 T8005 T8010 T8002 T8020 T8012 T8026 T8016 T8029 T8013 T8027 T8008 T8018 T8028
T8009 T8025 T8011 T8033 T8004 T8014 T8019 T8023 T8021 T8024 T8030 T8032 T8001 T8003 T8022 T8034
TPC28T
+VCORE

<Variant Name>

ASUSTeK COMPUTER INC. NB

Title : POWER_VCORE

Engineer: Eric_Ho

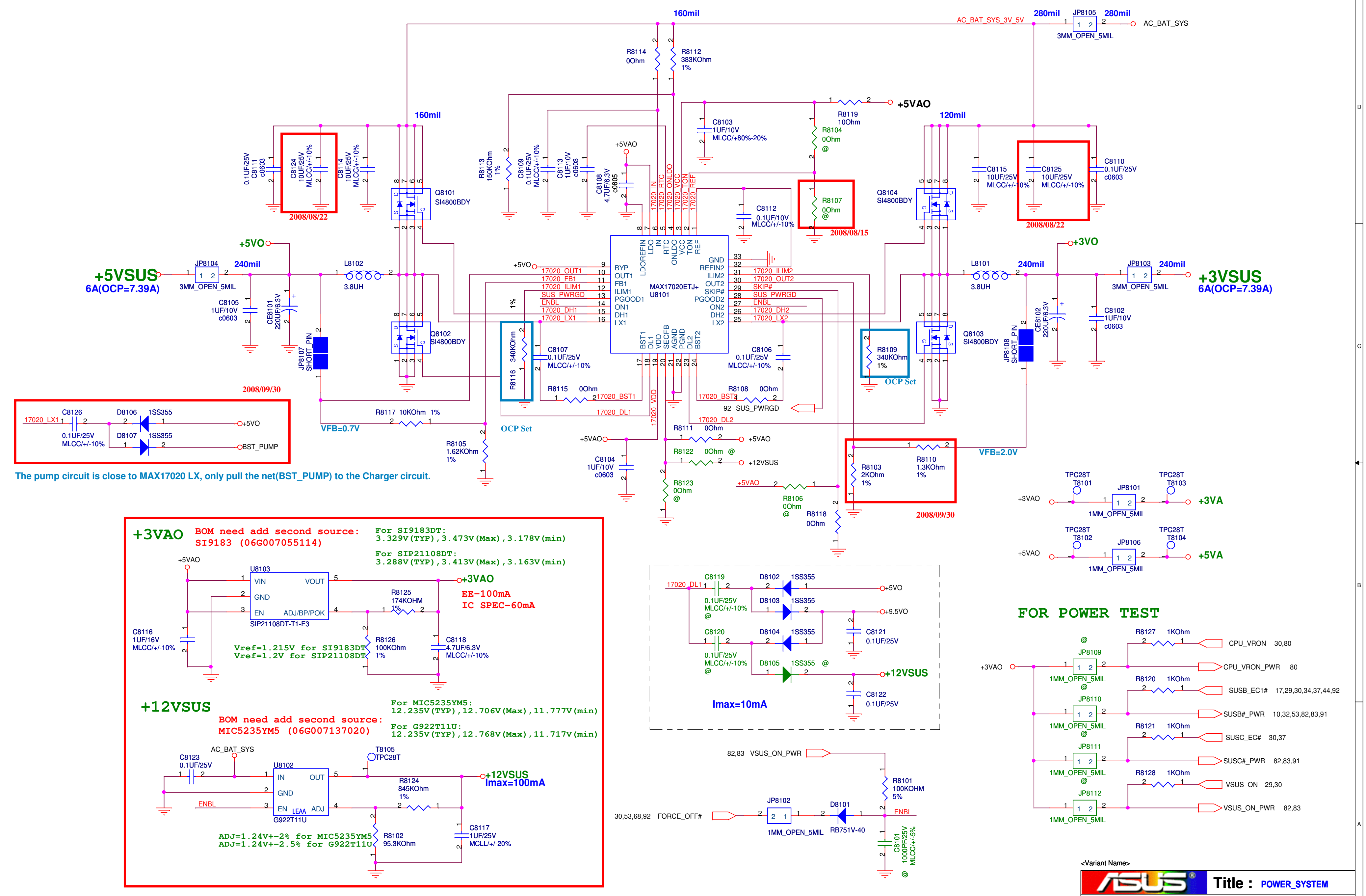
Size: Custom

Project Name: F70SL

Rev: 1.0

Date: Monday, November 03, 2008

Sheet 80 of 94


160mil
AC_BAT_SYS_3V_5V
280mil
JP8105
280mil
AC_BAT_SYS
3MM_OPEN_5MIL
R8114
0Ohm
R8112
383KOhm
1%
R8119
10Ohm
+5VAO
C8103
1UF/10V
MLCC/+80%-20%
R8104
0Ohm
@
160mil
120mil
0.1UF/25V
C8111
c0603
C8124
10UF/25V
MLCC/+/-10%
C8114
10UF/25V
MLCC/+/-10%
2008/08/22
Q8101
SI4800BDY
R8113
150KOhm
1%
C8109
0.1UF/25V
MLCC/+/-10%
C8113
1UF/10V
c0603
C8108
4.7UF/6.3V
c0805
17020_IN
17020_RTC
17020_ONLDO
17020_VCC
17020_TON
17020_REF
C8112
0.1UF/10V
MLCC/+/-10%
R8107
0Ohm
@
2008/08/15
Q8104
SI4800BDY
C8115
10UF/25V
MLCC/+/-10%
C8125
10UF/25V
MLCC/+/-10%
C8110
0.1UF/25V
c0603
2008/08/22
+5VO
+3VO
+5VSUS
6A(OCP=7.39A)
JP8104
3MM_OPEN_5MIL
240mil
L8102
3.8UH
C8105
1UF/10V
c0603
CE8101
220UF/6.3V
JP8107
SHORT_PIN
Q8102
SI4800BDY
BYP
OUT1
FB1
ILIM1
PGOOD1
ON1
DH1
LX1
LDOREFIN
LDO
IN
RTC
ONLDO
VCC
TON
REF
GND
REFIN2
ILIM2
OUT2
SKIP#
PGOOD2
ON2
DH2
LX2
MAX17020ETJ+
U8101
BST1
DL1
VDD
SECFB
AGND
PGND
DL2
BST2
17020_OUT1
17020_FB1
17020_ILIM1
SUS_PWRGD
ENBL
17020_DH1
17020_LX1
17020_ILIM2
17020_OUT2
SKIP#
SUS_PWRGD
ENBL
17020_DH2
17020_LX2
L8101
3.8UH
240mil
JP8103
3MM_OPEN_5MIL
240mil
+3VSUS
6A(OCP=7.39A)
CE8102
220UF/6.3V
JP8108
SHORT_PIN
C8102
1UF/10V
c0603
Q8103
SI4800BDY
R8116
340KOhm
1%
C8107
0.1UF/25V
MLCC/+/-10%
C8106
0.1UF/25V
MLCC/+/-10%
R8109
340KOhm
1%
OCP Set
R8115
0Ohm
17020_BST1
17020_DL1
17020_VDD
R8108
0Ohm
17020_BST2
SUS_PWRGD
17020_DL2
2008/09/30
C8126
17020_LX1
0.1UF/25V
MLCC/+/-10%
D8106
1SS355
+5VO
D8107
1SS355
BST_PUMP
R8117
10KOhm
1%
VFB=0.7V
OCP Set
R8105
1.62KOhm
1%
C8104
1UF/10V
c0603
R8111
0Ohm
+5VAO
R8122
0Ohm
@
+12VSUS
R8123
0Ohm
@
+5VAO
R8106
0Ohm
@
R8118
0Ohm
R8103
2KOhm
1%
R8110
1.3KOhm
1%
VFB=2.0V
2008/09/30
TPC28T
T8101
JP8101
TPC28T
T8103
+3VAO
1MM_OPEN_5MIL
+3VA
TPC28T
T8102
JP8106
TPC28T
T8104
+5VAO
1MM_OPEN_5MIL
+5VA
+3VAO
+5VAO
U8103
VIN
VOUT
GND
EN
ADJ/BP/POK
SIP21108DT-T1-E3
+3VAO
C8116
1UF/16V
MLCC/+/-10%
R8125
174KOHM
1%
R8126
100KOhm
1%
C8118
4.7UF/6.3V
MLCC/+/-10%
+12VSUS
AC_BAT_SYS
C8123
0.1UF/25V
U8102
IN
OUT
GND
EN
LEAA
ADJ
G922T11U
ENBL
T8105
TPC28T
+12VSUS
Imax=100mA
R8124
845KOhm
1%
R8102
95.3KOhm
C8117
1UF/25V
MCLL/+/-20%
C8119
17020_DL1
0.1UF/25V
MLCC/+/-10%
@
D8102
1SS355
+5VO
D8103
1SS355
+9.5VO
C8120
0.1UF/25V
MLCC/+/-10%
@
D8104
1SS355
C8121
0.1UF/25V
D8105
1SS355
@
+12VSUS
C8122
0.1UF/25V
Imax=10mA
82,83 VSUS_ON_PWR
R8101
100KOHM
5%
ENBL
30,53,68,92 FORCE_OFF#
JP8102
1MM_OPEN_5MIL
D8101
RB751V-40
C8101
1000PF/25V
MLCC/+/-5%
@
+3VAO
JP8109
1MM_OPEN_5MIL
R8127
1KOhm
CPU_VRON 30,80
CPU_VRON_PWR 80
JP8110
1MM_OPEN_5MIL
R8120
1KOhm
SUSB_EC1# 17,29,30,34,37,44,92
SUSB#_PWR 10,32,53,82,83,91
JP8111
1MM_OPEN_5MIL
R8121
1KOhm
SUSC_EC# 30,37
SUSC#_PWR 82,83,91
JP8112
1MM_OPEN_5MIL
R8128
1KOhm
VSUS_ON 29,30
VSUS_ON_PWR 82,83

The pump circuit is close to MAX17020 LX, only pull the net(BST_PUMP) to the Charger circuit.

+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)

EE-100mA
IC SPEC-60mA

Vref=1.215V for SI9183DT
Vref=1.2V for SIP21108DT

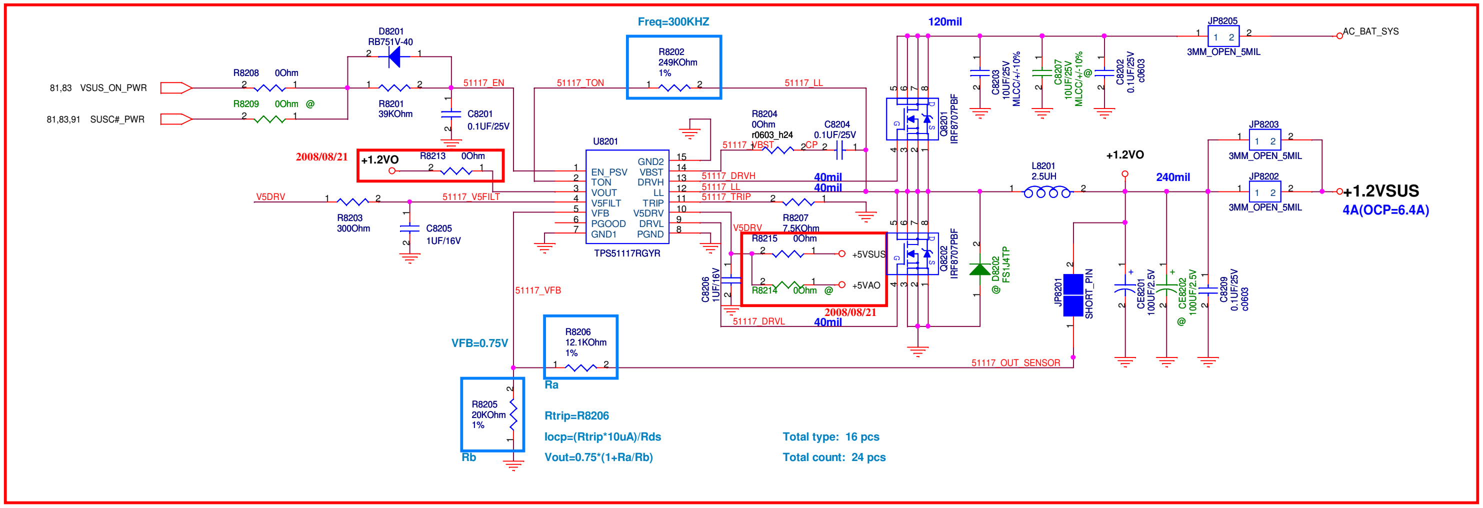
+12VSUS
BOM need add second source:
MIC5235YM5 (06G007137020)

For MIC5235YM5:
12.235V(TYP),12.706V(Max),11.777V(min)
For G922T11U:
12.235V(TYP),12.768V(Max),11.717V(min)

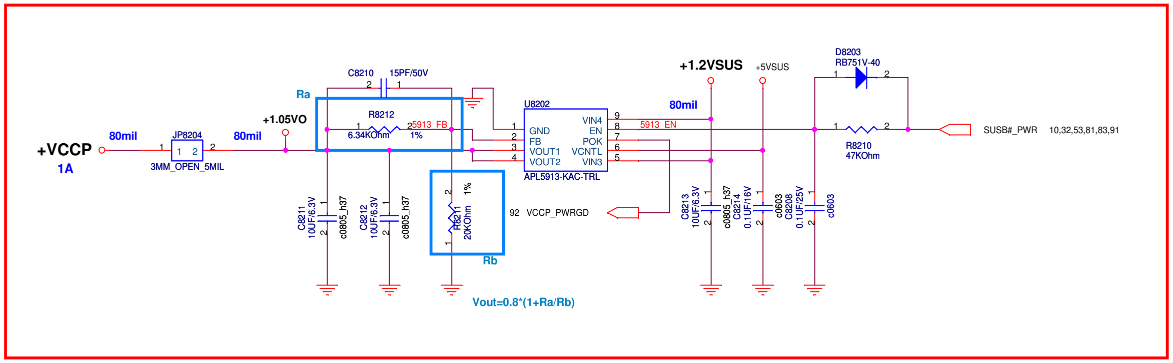
ADJ=1.24V+-2% for MIC5235YM5
ADJ=1.24V+-2.5% for G922T11U

FOR POWER TEST

<Variant Name>
<OrgName>
Title : POWER_SYSTEM
Engineer: Eric_Ho
Size Custom
Project Name F70SL
Rev 1.0
Date: Monday, November 03, 2008
Sheet 81 of 94


Freq=300KHZ
120mil
JP8205
3MM_OPEN_5MIL
AC_BAT_SYS
D8201
RB751V-40
81,83 VSUS_ON_PWR
81,83,91 SUSC#_PWR
R8208 0Ohm
R8209 0Ohm @
R8201
39KOhm
C8201
0.1UF/25V
51117_EN
51117_TON
R8202
249KOhm
1%
51117_LL
C8203
10UF/25V
MLCC/+/-10%
C8207
10UF/25V
MLCC/+/-10%
@
C8202
0.1UF/25V
c0603
Q8201
IRF8707PBF
R8204
0Ohm
r0603_h24
C8204
0.1UF/25V
51117_VBST
CP
2008/08/21
+1.2VO
R8213 0Ohm
U8201
EN_PSV
TON
VOUT
V5FILT
VFB
PGOOD
GND1
GND2
VBST
DRVH
LL
TRIP
V5DRV
DRVL
PGND
TPS51117RGYR
51117_DRVH
51117_LL
51117_TRIP
40mil
40mil
V5DRV
R8203
300Ohm
C8205
1UF/16V
51117_V5FILT
R8207
7.5KOhm
V5DRV
R8215 0Ohm
+5VSUS
R8214 0Ohm @
+5VAO
2008/08/21
C8206
1UF/16V
51117_DRVL
40mil
Q8202
IRF8707PBF
D8202
FS1J4TP
@
+1.2VO
L8201
2.5UH
240mil
JP8201
SHORT_PIN
CE8201
100UF/2.5V
CE8202
100UF/2.5V
@
C8209
0.1UF/25V
c0603
JP8203
3MM_OPEN_5MIL
JP8202
3MM_OPEN_5MIL
+1.2VSUS
4A(OCP=6.4A)
51117_OUT_SENSOR
51117_VFB
VFB=0.75V
R8206
12.1KOhm
1%
Ra
R8205
20KOhm
1%
Rb
Rtrip=R8206
Iocp=(Rtrip*10uA)/Rds
Vout=0.75*(1+Ra/Rb)
Total type: 16 pcs
Total count: 24 pcs

2008/08/15

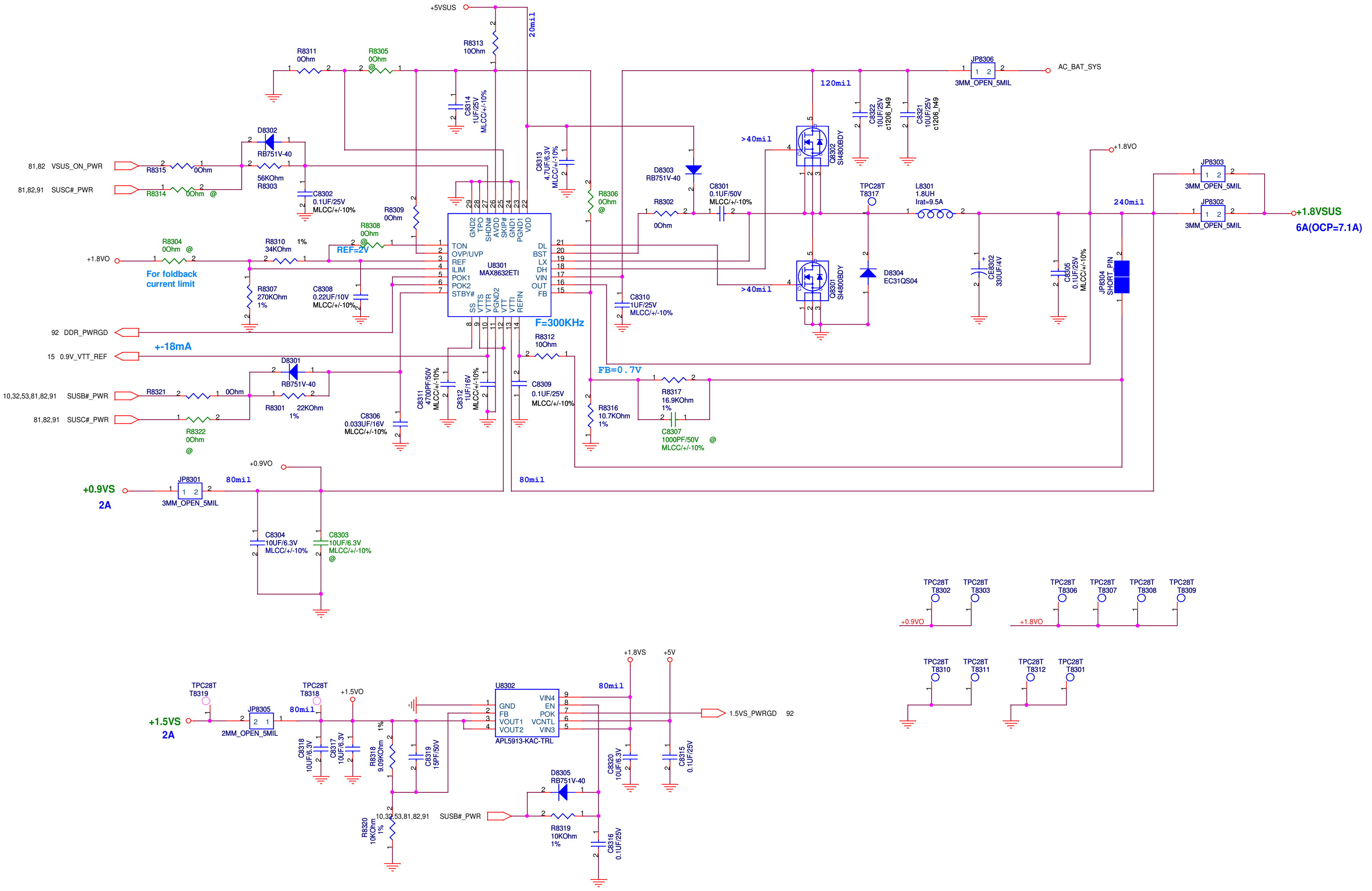

+VCCP
1A
80mil
JP8204
3MM_OPEN_5MIL
80mil
+1.05VO
Ra
C8210 15PF/50V
R8212
6.34KOhm
1%
5913_FB
C8211
10UF/6.3V
c0805_h37
C8212
10UF/6.3V
c0805_h37
R8211
20KOhm
1%
Rb
Vout=0.8*(1+Ra/Rb)
U8202
GND
FB
VOUT1
VOUT2
VIN4
EN
POK
VCNTL
VIN3
APL5913-KAC-TRL
+1.2VSUS
+5VSUS
80mil
5913_EN
92 VCCP_PWRGD
C8213
10UF/6.3V
c0805_h37
C8214
0.1UF/16V
c0603
C8208
0.1UF/25V
c0603
D8203
RB751V-40
R8210
47KOhm
SUSB#_PWR 10,32,53,81,83,91

2008/08/15

Title : POWER_I/O_1.2VS & 1.05VS
<OrgName>
Engineer: Eric_Ho

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 82 of 94


+5VSUS
R8313
10Ohm
20mil
R8311
0Ohm
R8305
0Ohm
@
C8314
1UF/25V
MLCC/+/-10%
JP8306
3MM_OPEN_5MIL
AC_BAT_SYS
120mil
C8322
10UF/25V
c1206_h49
C8321
10UF/25V
c1206_h49
D8302
RB751V-40
81,82 VSUS_ON_PWR
R8315
0Ohm
R8303
56KOhm
81,82,91 SUSC#_PWR
R8314
0Ohm
@
C8302
0.1UF/25V
MLCC/+/-10%
C8313
4.7UF/6.3V
MLCC/+/-10%
R8306
0Ohm
@
D8303
RB751V-40
>40mil
Q8302
SI4800BDY
+1.8VO
JP8303
3MM_OPEN_5MIL
JP8302
3MM_OPEN_5MIL
+1.8VSUS
6A(OCP=7.1A)
240mil
R8309
0Ohm
R8308
0Ohm
@
R8302
0Ohm
C8301
0.1UF/50V
MLCC/+/-10%
TPC28T
T8317
L8301
1.8UH
Irat=9.5A
R8304
0Ohm
@
+1.8VO
R8310
34KOhm
1%
REF=2V
U8301
MAX8632ETI
GND2 TPO SHDN# AVDD SKIP# GND1 PGND1 VDD
TON OVP/UVP REF ILIM POK1 POK2 STBY#
DL BST LX DH VIN OUT FB
SS VTTS VTTR PGND2 VTT VTTI REFIN
For foldback
current limit
R8307
270KOhm
1%
C8308
0.22UF/10V
MLCC/+/-10%
>40mil
Q8301
SI4800BDY
D8304
EC31QS04
CE8302
330UF/4V
C8305
0.1UF/25V
MLCC/+/-10%
JP8304
SHORT_PIN
C8310
1UF/25V
MLCC/+/-10%
F=300KHz
92 DDR_PWRGD
15 0.9V_VTT_REF
+-18mA
D8301
RB751V-40
R8312
10Ohm
FB=0.7V
10,32,53,81,82,91 SUSB#_PWR
R8321
0Ohm
R8301
22KOhm
1%
C8311
4700PF/50V
MLCC/+/-10%
C8312
1UF/16V
MLCC/+/-10%
C8309
0.1UF/25V
MLCC/+/-10%
R8317
16.9KOhm
1%
R8316
10.7KOhm
1%
C8307
1000PF/50V
MLCC/+/-10%
@
81,82,91 SUSC#_PWR
R8322
0Ohm
@
C8306
0.033UF/16V
MLCC/+/-10%
+0.9VO
+0.9VS
2A
JP8301
3MM_OPEN_5MIL
80mil
80mil
C8304
10UF/6.3V
MLCC/+/-10%
C8303
10UF/6.3V
MLCC/+/-10%
@
TPC28T T8302
TPC28T T8303
+0.9VO
TPC28T T8306
TPC28T T8307
TPC28T T8308
TPC28T T8309
+1.8VO
TPC28T T8310
TPC28T T8311
TPC28T T8312
TPC28T T8301
+1.8VS
+5V
TPC28T
T8319
TPC28T
T8318
+1.5VO
U8302
APL5913-KAC-TRL
GND FB VOUT1 VOUT2
VIN4 EN POK VCNTL VIN3
80mil
+1.5VS
2A
JP8305
2MM_OPEN_5MIL
80mil
1.5VS_PWRGD 92
C8318
10UF/6.3V
C8317
10UF/6.3V
R8318
9.09KOhm
1%
C8319
15PF/50V
C8320
10UF/6.3V
C8315
0.1UF/25V
D8305
RB751V-40
10,32,53,81,82,91 SUSB#_PWR
R8319
10KOhm
1%
R8320
10KOhm
1%
C8316
0.1UF/25V

Title : POWER_I/O_DDR & VTT
<OrgName>
Engineer: Eric_Ho

Size	Project Name	Rev
C	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 83 of 94

<Variant Name>

	Title : N/A	
<OrgName>	**Engineer:** Eric_Ho	
Size Custom	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 84 of 94	

<Variant Name>

Title : N/A

ASUSTeK COMPUTER INC. NB

Engineer: Eric_Ho

Size C

Project Name **F70SL**

Rev 1.0

Date: Monday, November 03, 2008

Sheet 85 of 94

<Variant Name>

	Title : N/A
<OrgName>	Engineer: Eric_Ho

Size	Project Name	Rev
B	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 86 of 94

<Variant Name>

Title :N/A		
<OrgName>	Engineer: Eric_Ho	
Size Custom	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 87 of 94	

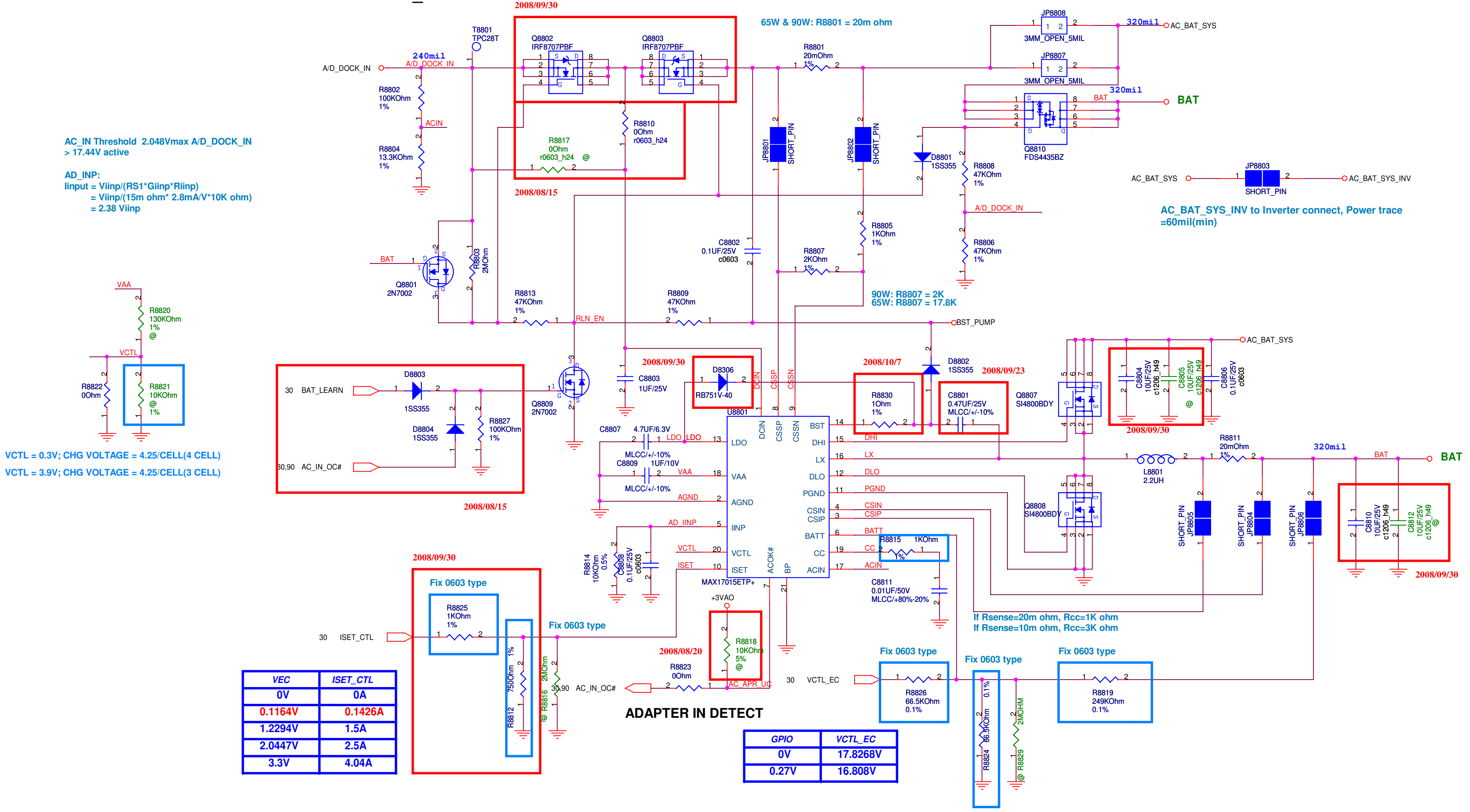
POWER PATH & BAT_LEARN

AC_IN Threshold 2.048Vmax A/D_DOCK_IN
> 17.44V active

AD_INP:
Iinput = Viinp/(RS1*Giinp*Riinp)
= Viinp/(15m ohm* 2.8mA/V*10K ohm)
= 2.38 Viinp

VCTL = 0.3V; CHG VOLTAGE = 4.25/CELL(4 CELL)

VCTL = 3.9V; CHG VOLTAGE = 4.25/CELL(3 CELL)



2008/09/30
T8801
TPC28T
Q8802
IRF8707PBF
Q8803
IRF8707PBF
240mil
A/D_DOCK_IN
A/D_DOCK_IN
R8802
100KOhm
1%
ACIN
R8804
13.3KOhm
1%
R8817
0Ohm
r0603_h24
@
R8810
0Ohm
r0603_h24
2008/08/15
R8801
20mOhm
1%
JP8801
SHORT_PIN
JP8802
SHORT_PIN
JP8808
3MM_OPEN_5MIL
JP8807
3MM_OPEN_5MIL
320mil
AC_BAT_SYS
320mil
BAT
BAT
Q8810
FDS4435BZ
D8801
1SS355
R8808
47KOhm
1%
AC_BAT_SYS
JP8803
SHORT_PIN
AC_BAT_SYS_INV
A/D_DOCK_IN
R8805
1KOhm
1%
R8806
47KOhm
1%
C8802
0.1UF/25V
c0603
R8807
2KOhm
1%
BAT
Q8801
2N7002
R8803
2MOhm
R8813
47KOhm
1%
RLN_EN
R8809
47KOhm
1%
BST_PUMP
VAA
R8820
130KOhm
1%
@
VCTL
R8822
0Ohm
R8821
10KOhm
@
1%
30 BAT_LEARN
D8803
1SS355
D8804
1SS355
R8827
100KOhm
1%
30,90 AC_IN_OC#
2008/08/15
Q8809
2N7002
C8803
1UF/25V
2008/09/30
D8306
RB751V-40
DCIN
CSSP
CSSN
U8801
2008/10/7
D8802
1SS355
2008/09/23
R8830
1Ohm
1%
C8801
0.47UF/25V
MLCC/+/-10%
Q8807
SI4800BDY
C8804
10UF/25V
c1206_h49
C8805
10UF/25V
c1206_h49
@
C8806
0.1UF/25V
c0603
AC_BAT_SYS
2008/09/30
C8807
4.7UF/6.3V
MLCC/+/-10%
C8809
1UF/10V
MLCC/+/-10%
LDO
VAA
AGND
AD_IINP
VCTL
ISET
LDO
VAA
AGND
IINP
VCTL
ISET
DCIN
CSSP
CSSN
ACOK#
BP
BST
DHI
LX
DLO
PGND
CSIN
CSIP
BATT
CC
ACIN
MAX17015ETP+
DHI
LX
DLO
PGND
CSIN
CSIP
BATT
CC
ACIN
R8815
1KOhm
1%
C8811
0.01UF/50V
MLCC/+80%-20%
L8801
2.2UH
R8811
20mOhm
1%
320mil
BAT
BAT
Q8808
SI4800BDY
JP8805
SHORT_PIN
JP8804
SHORT_PIN
JP8806
SHORT_PIN
C8810
10UF/25V
c1206_h49
C8812
10UF/25V
c1206_h49
@
2008/09/30
R8814
10KOhm
0.5%
C8808
0.1UF/25V
c0603
+3VAO
R8818
10KOhm
5%
@
2008/08/20
R8823
0Ohm
AC_APR_UC
30,90 AC_IN_OC#
2008/09/30
Fix 0603 type
R8825
1KOhm
1%
30 ISET_CTL
R8812
750Ohm 1%
R8816
2MOhm
@
Fix 0603 type
30 VCTL_EC
Fix 0603 type
R8826
66.5KOhm
0.1%
Fix 0603 type
R8824
66.5KOhm
0.1%
R8829
2MOHM
@
Fix 0603 type
R8819
249KOhm
0.1%

65W & 90W: R8801 = 20m ohm

90W: R8807 = 2K
65W: R8807 = 17.8K

AC_BAT_SYS_INV to Inverter connect, Power trace =60mil(min)

If Rsense=20m ohm, Rcc=1K ohm
If Rsense=10m ohm, Rcc=3K ohm

VEC	ISET_CTL
0V	0A
0.1164V	0.1426A
1.2294V	1.5A
2.0447V	2.5A
3.3V	4.04A

ADAPTER IN DETECT

GPIO	VCTL_EC
0V	17.8268V
0.27V	16.808V

<Variant Name>

ASUSTeK COMPUTER INC. NB

Title : POWER_CHARGER

Engineer: Eric_Ho

Size C

Project Name F70SL

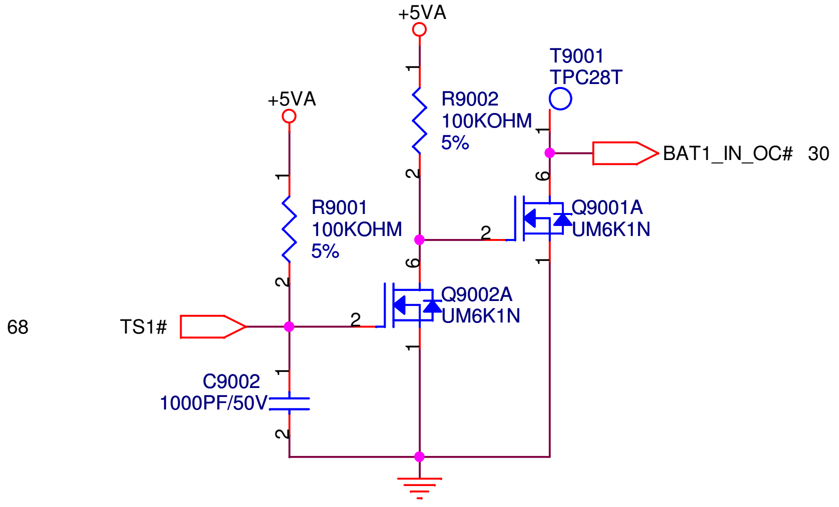
Rev 1.0

Date: Monday, November 03, 2008 Sheet 88 of 94

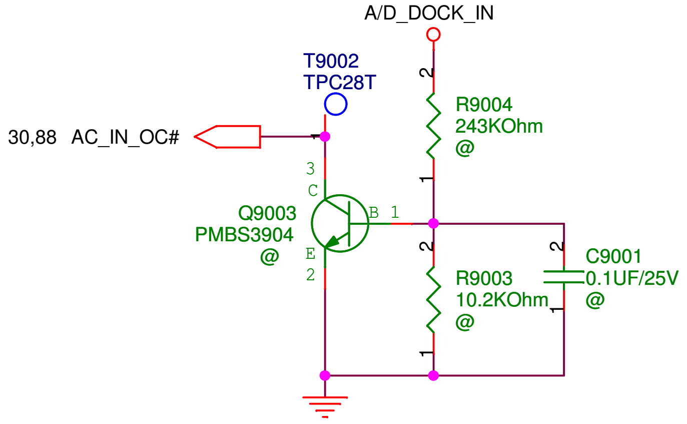
<Variant Name>

	Title : N/A	
<OrgName>	**Engineer:** Eric_Ho	
Size Custom	Project Name **F70SL**	Rev 1.0
Date: Monday, November 03, 2008	Sheet 89 of 94	

BATTERY IN DETECT


+5VA
1
R9002
100KOHM
5%
2
T9001
TPC28T
BAT1_IN_OC# 30
6
Q9001A
UM6K1N
2
1
+5VA
1
R9001
100KOHM
5%
2
6
Q9002A
UM6K1N
68
TS1#
2
1
1
C9002
1000PF/50V
2

ADAPTER IN DETECT


A/D_DOCK_IN
2
R9004
243KOhm
@
1
T9002
TPC28T
30,88 AC_IN_OC#
3
C
Q9003
PMBS3904
@
B 1
E
2
2
R9003
10.2KOhm
@
1
2
C9001
0.1UF/25V
@
1

<Variant Name>

Title : POWER_DETECT

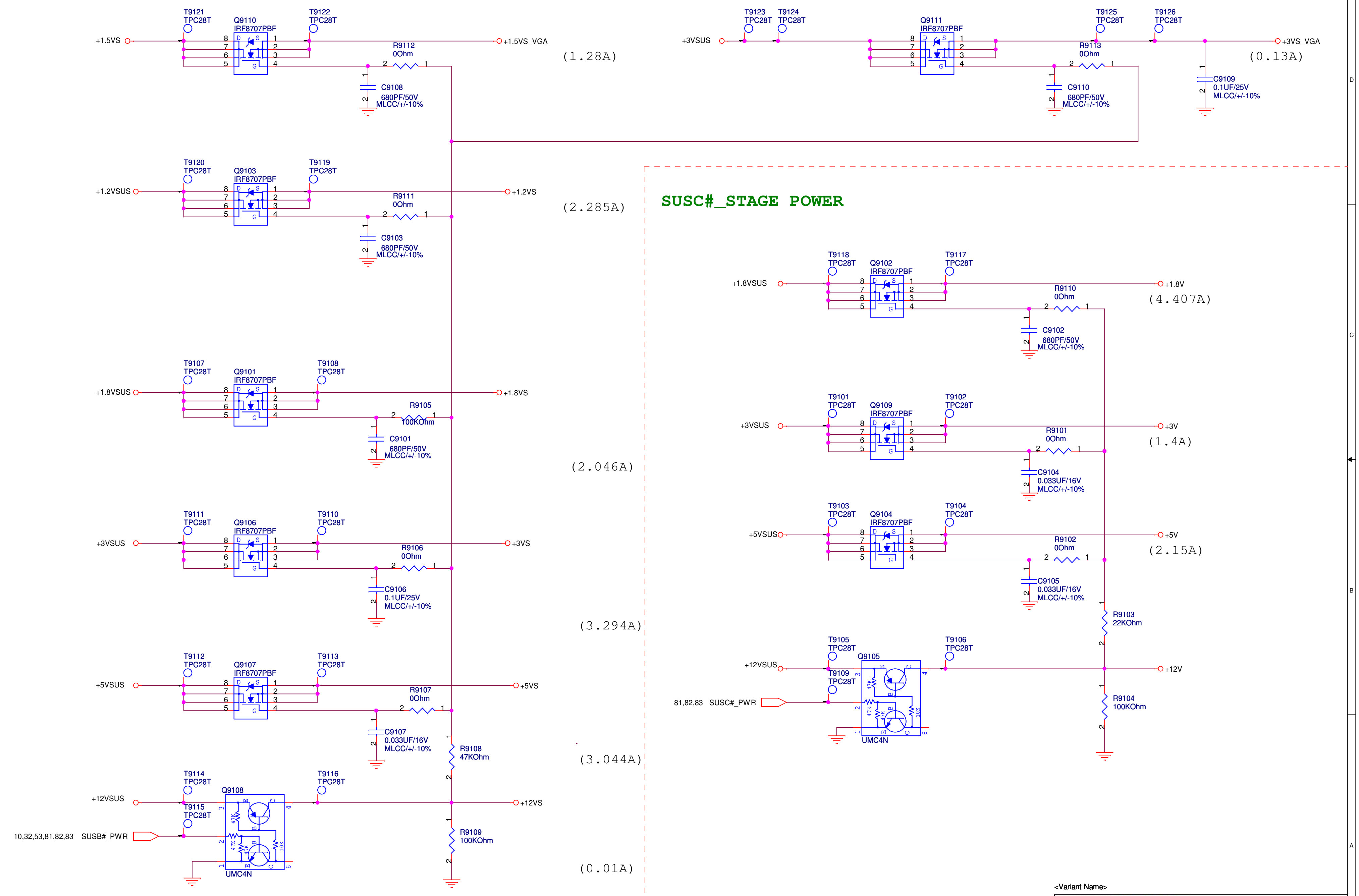
<OrgName>

Engineer: Eric_Ho

Size	Project Name	Rev
A	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 90 of 94

SUSB#_STAGE POWER



T9121 TPC28T
Q9110 IRF8707PBF
T9122 TPC28T
+1.5VS
+1.5VS_VGA
R9112 0Ohm
C9108 680PF/50V MLCC/+/-10%
(1.28A)
T9123 TPC28T
T9124 TPC28T
Q9111 IRF8707PBF
T9125 TPC28T
T9126 TPC28T
+3VSUS
+3VS_VGA
R9113 0Ohm
C9110 680PF/50V MLCC/+/-10%
C9109 0.1UF/25V MLCC/+/-10%
(0.13A)
T9120 TPC28T
Q9103 IRF8707PBF
T9119 TPC28T
+1.2VSUS
+1.2VS
R9111 0Ohm
C9103 680PF/50V MLCC/+/-10%
(2.285A)
T9107 TPC28T
Q9101 IRF8707PBF
T9108 TPC28T
+1.8VSUS
+1.8VS
R9105 100KOhm
C9101 680PF/50V MLCC/+/-10%
(2.046A)
T9111 TPC28T
Q9106 IRF8707PBF
T9110 TPC28T
+3VSUS
+3VS
R9106 0Ohm
C9106 0.1UF/25V MLCC/+/-10%
(3.294A)
T9112 TPC28T
Q9107 IRF8707PBF
T9113 TPC28T
+5VSUS
+5VS
R9107 0Ohm
C9107 0.033UF/16V MLCC/+/-10%
R9108 47KOhm
(3.044A)
T9114 TPC28T
Q9108
T9116 TPC28T
+12VSUS
+12VS
T9115 TPC28T
10,32,53,81,82,83 SUSB#_PWR
47K
10K
UMC4N
R9109 100KOhm
(0.01A)
SUSC#_STAGE POWER
T9118 TPC28T
Q9102 IRF8707PBF
T9117 TPC28T
+1.8VSUS
+1.8V
R9110 0Ohm
C9102 680PF/50V MLCC/+/-10%
(4.407A)
T9101 TPC28T
Q9109 IRF8707PBF
T9102 TPC28T
+3VSUS
+3V
R9101 0Ohm
C9104 0.033UF/16V MLCC/+/-10%
(1.4A)
T9103 TPC28T
Q9104 IRF8707PBF
T9104 TPC28T
+5VSUS
+5V
R9102 0Ohm
C9105 0.033UF/16V MLCC/+/-10%
(2.15A)
R9103 22KOhm
T9105 TPC28T
Q9105
T9106 TPC28T
+12VSUS
+12V
T9109 TPC28T
81,82,83 SUSC#_PWR
47K
10K
UMC4N
R9104 100KOhm

<Variant Name>

Title : POWER_LOAD SWITCH

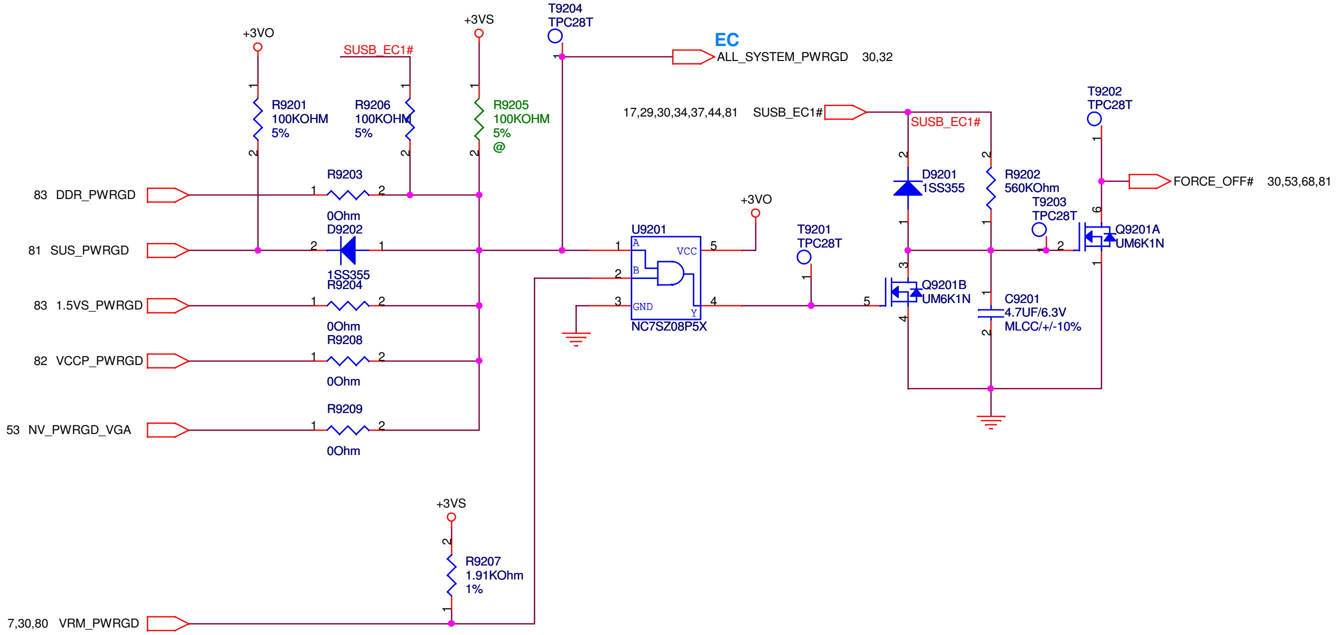
<OrgName>

Engineer: Eric_Ho

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 91 of 94

POWER GOOD DETECTER


+3VO
SUSB_EC1#
+3VS
T9204
TPC28T
EC
ALL_SYSTEM_PWRGD 30,32
R9201
100KOHM
5%
R9206
100KOHM
5%
R9205
100KOHM
5%
@
17,29,30,34,37,44,81 SUSB_EC1#
SUSB_EC1#
T9202
TPC28T
FORCE_OFF# 30,53,68,81
D9201
1SS355
R9202
560KOhm
T9203
TPC28T
Q9201A
UM6K1N
83 DDR_PWRGD
R9203
0Ohm
81 SUS_PWRGD
D9202
1SS355
83 1.5VS_PWRGD
R9204
0Ohm
82 VCCP_PWRGD
R9208
0Ohm
53 NV_PWRGD_VGA
R9209
0Ohm
+3VO
U9201
A
B
VCC
GND
Y
NC7SZ08P5X
T9201
TPC28T
Q9201B
UM6K1N
C9201
4.7UF/6.3V
MLCC/+/-10%
+3VS
R9207
1.91KOhm
1%
7,30,80 VRM_PWRGD

<Variant Name>

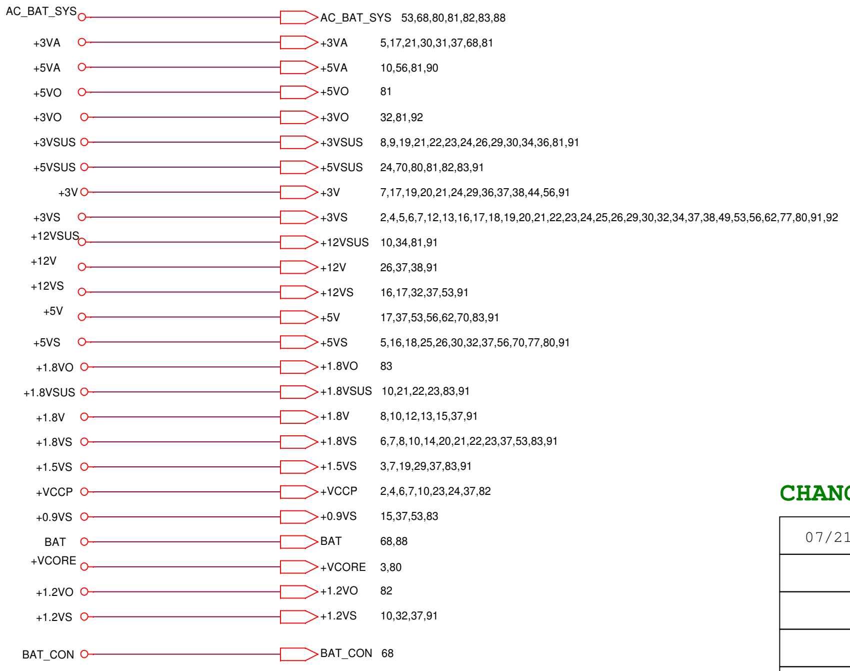
Title : POWER_PROTECT

<OrgName>

Engineer: Eric_Ho

Size	Project Name	Rev
B	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 92 of 94



AC_BAT_SYS	AC_BAT_SYS	53,68,80,81,82,83,88
+3VA	+3VA	5,17,21,30,31,37,68,81
+5VA	+5VA	10,56,81,90
+5VO	+5VO	81
+3VO	+3VO	32,81,92
+3VSUS	+3VSUS	8,9,19,21,22,23,24,26,29,30,34,36,81,91
+5VSUS	+5VSUS	24,70,80,81,82,83,91
+3V	+3V	7,17,19,20,21,24,29,36,37,38,44,56,91
+3VS	+3VS	2,4,5,6,7,12,13,16,17,18,19,20,21,22,23,24,25,26,29,30,32,34,37,38,49,53,56,62,77,80,91,92
+12VSUS	+12VSUS	10,34,81,91
+12V	+12V	26,37,38,91
+12VS	+12VS	16,17,32,37,53,91
+5V	+5V	17,37,53,56,62,70,83,91
+5VS	+5VS	5,16,18,25,26,30,32,37,56,70,77,80,91
+1.8VO	+1.8VO	83
+1.8VSUS	+1.8VSUS	10,21,22,23,83,91
+1.8V	+1.8V	8,10,12,13,15,37,91
+1.8VS	+1.8VS	6,7,8,10,14,20,21,22,23,37,53,83,91
+1.5VS	+1.5VS	3,7,19,29,37,83,91
+VCCP	+VCCP	2,4,6,7,10,23,24,37,82
+0.9VS	+0.9VS	15,37,53,83
BAT	BAT	68,88
+VCORE	+VCORE	3,80
+1.2VO	+1.2VO	82
+1.2VS	+1.2VS	10,32,37,91
BAT_CON	BAT_CON	68

CHANGE LIST

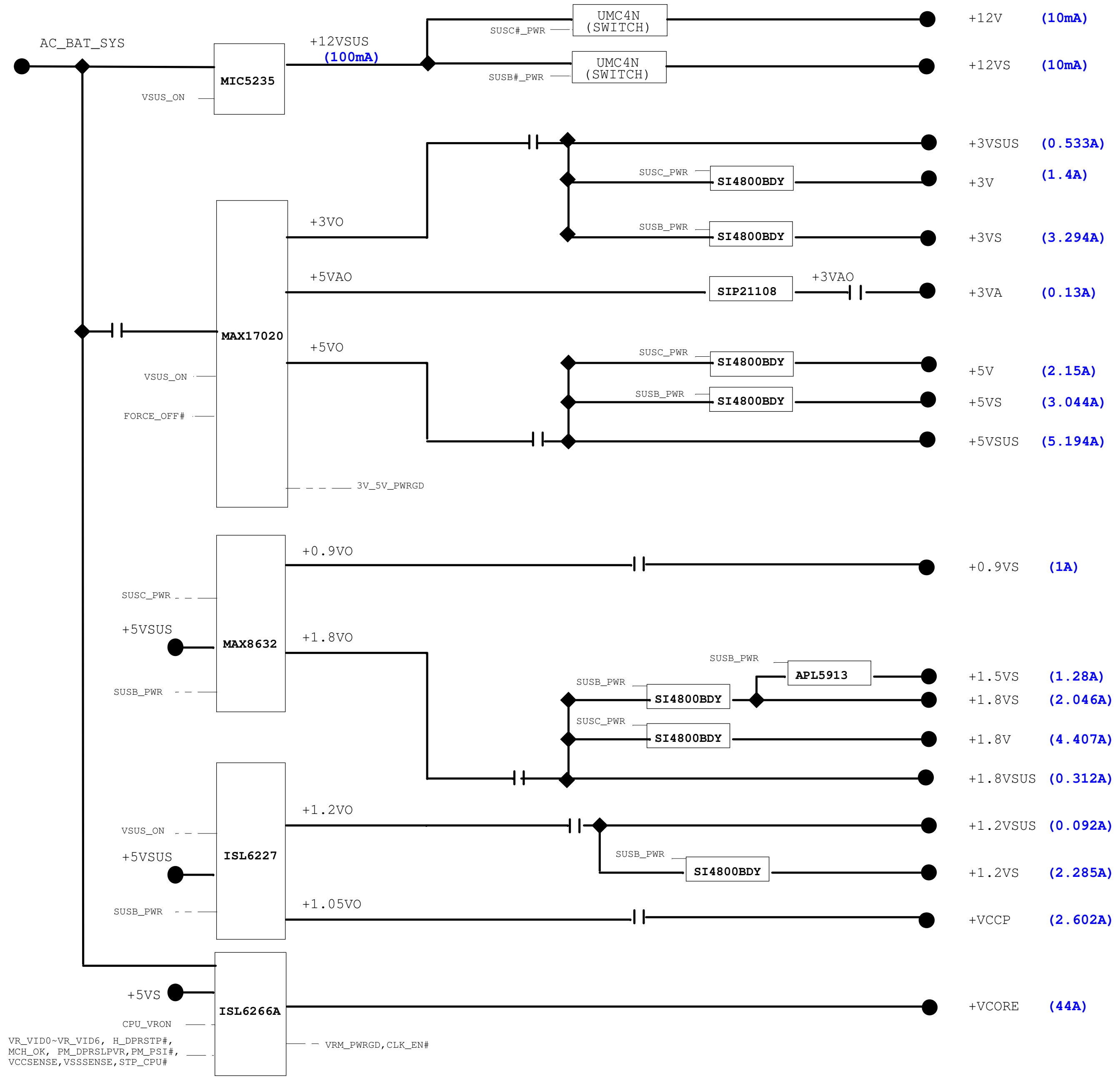
07/21 SR	N/A

<Variant Name>

Title : POWER_SIGNAL
<OrgName>
Engineer: Eric_Ho

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 93 of 94


AC_BAT_SYS
MIC5235
VSUS_ON
+12VSUS
(100mA)
SUSC#_PWR
UMC4N
(SWITCH)
SUSB#_PWR
UMC4N
(SWITCH)
+12V
(10mA)
+12VS
(10mA)
+3VO
+3VSUS
(0.533A)
SUSC_PWR
SI4800BDY
+3V
(1.4A)
SUSB_PWR
SI4800BDY
+3VS
(3.294A)
+5VAO
SIP21108
+3VAO
+3VA
(0.13A)
MAX17020
VSUS_ON
FORCE_OFF#
+5VO
SUSC_PWR
SI4800BDY
+5V
(2.15A)
SUSB_PWR
SI4800BDY
+5VS
(3.044A)
+5VSUS
(5.194A)
3V_5V_PWRGD
MAX8632
SUSC_PWR
+5VSUS
SUSB_PWR
+0.9VO
+0.9VS
(1A)
+1.8VO
SUSB_PWR
APL5913
+1.5VS
(1.28A)
SUSB_PWR
SI4800BDY
+1.8VS
(2.046A)
SUSC_PWR
SI4800BDY
+1.8V
(4.407A)
+1.8VSUS
(0.312A)
ISL6227
VSUS_ON
+5VSUS
SUSB_PWR
+1.2VO
+1.2VSUS
(0.092A)
SUSB_PWR
SI4800BDY
+1.2VS
(2.285A)
+1.05VO
+VCCP
(2.602A)
ISL6266A
+5VS
CPU_VRON
VR_VID0~VR_VID6, H_DPRSTP#,
MCH_OK, PM_DPRSLPVR,PM_PSI#,
VCCSENSE,VSSSENSE,STP_CPU#
VRM_PWRGD,CLK_EN#
+VCORE
(44A)

<Variant Name>

<OrgName>

Title : POWER_FLOWCHART

Engineer: Eric_Ho

Size	Project Name	Rev
Custom	F70SL	1.0

Date: Monday, November 03, 2008 Sheet 94 of 94