PROJECT N10I

Revision 2008/04/24

Revision History

R1.0	SR	2008/01

SMB Signals

Host	Name	Devices	Address
Chipset	SMBCK,SMBDA	ICH7-M	0001 000X b
		ADT7473(Thermal)	0101 110X b
		ICS954310(Clock Genertor)	D2h
		DDR2 SO-DIMM	A0h

Power States

STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+*VALWAYSP	+*V	+*VS	Clocks
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3(Suspend to RAM)	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4(Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5/Soft OFF	LOW	LOW	LOW	ON	OFF	OFF	OFF

PCI Devices

Bus#	Device#	Function#	REQ/GNT#	IDSEL	APIC Interrupts	Device Function
Bus0	Device00	Function0				Intel 945GMS Host Bridge
Bus0	Device02	Function0				VGA-Comptible Controller
Bus0	Device1C	Function0				PCI to PCI Bridge
Bus0	Device27	Function0			A#	Azalia Controller
Bus0	Device29	Function0			H#	Intel UHCI USB Cotroller
Bus0	Device29	Function1			D#	Intel UHCI USB Cotroller
Bus0	Device29	Function2			C#	Intel UHCI USB Cotroller
Bus0	Device29	Function3			A#	Intel UHCI USB Cotroller
Bus0	Device29	Function7			H#	Intel EHCI USB Cotroller
Bus0	Device31	Function1			C#	PATA
Bus0	Device31	Function2			B#	SATA
Bus5	Device08	Function0		AD17	B#	CarBus Brige

Voltage Rail

Net Name	Voltage	On During These ACPI States	Description
+3VAO,+3VA,+3VALWAYS_P	+3.3V	S0 - S5	Always ON.
+5VCHG	+5V		
+VCC_RTC	+5V		
+3VO,+3VSUS,+3VALWAYS	+3V	S0,S3,S4*,S5*	Power supply for ICH7M, RTL8111B.
+5VO,+5VSUS	+5V		
+1.8VO,+1.8V	+1.8V	S0 - S3	Power supply for 945GMS,DDRII,ICH7M,M38857 R5C801.
+3V	+3V		
+5V	+5V		
+1.05VO,+VCCP	+1.05V	S0	0.9V DDR2 termination voltage
+1.5VO,+1.5VS	+1.5V		Core voltage for processor
+0.9VO,+0.9VS	+0.9V		
+2.5VO,+2.5VS,VCCA3GBG	+2.5VS		
VCCALVDS,VCCSYNC,VCCTXLVDS			
+3VS	+3V		
+5VS	+5V		
+VCORE_O,+VCORE	Variable		

ASUSTeK COMPUTER INC

Title : Table of Contens

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

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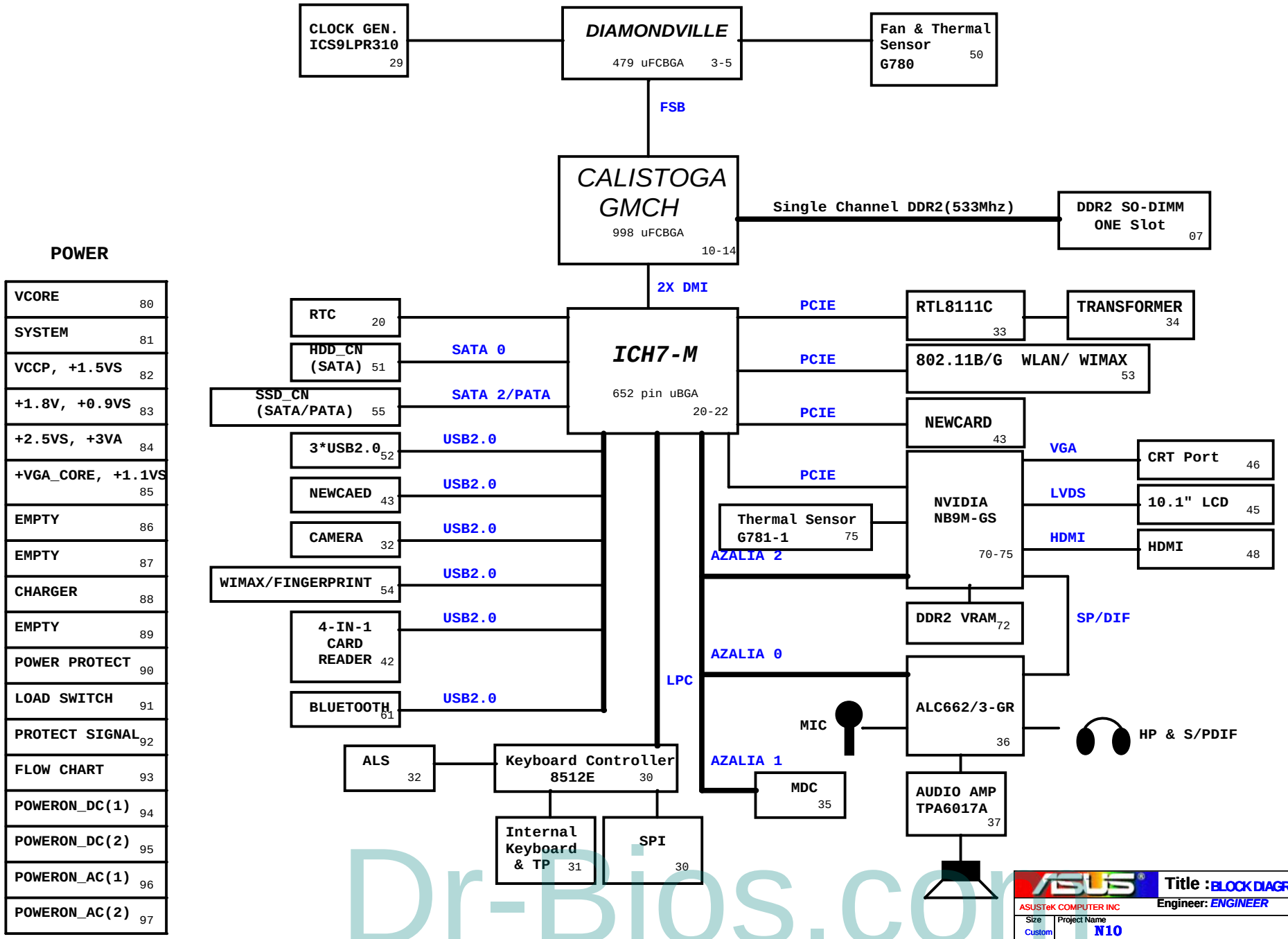
DIAMONDVILLE/CALISTOGA(945GSE) BLOCK DIAGRAM



POWER

VCORE	80
SYSTEM	81
VCCP, +1.5VS	82
+1.8V, +0.9VS	83
+2.5VS, +3VA	84
+VGA_CORE, +1.1VS	85
EMPTY	86
EMPTY	87
CHARGER	88
EMPTY	89
POWER PROTECT	90
LOAD SWITCH	91
PROTECT SIGNAL	92
FLOW CHART	93
POWERON_DC(1)	94
POWERON_DC(2)	95
POWERON_AC(1)	96
POWERON_AC(2)	97

ASUSTeK COMPUTER INC

Title : BLOCK DIAGRAM

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

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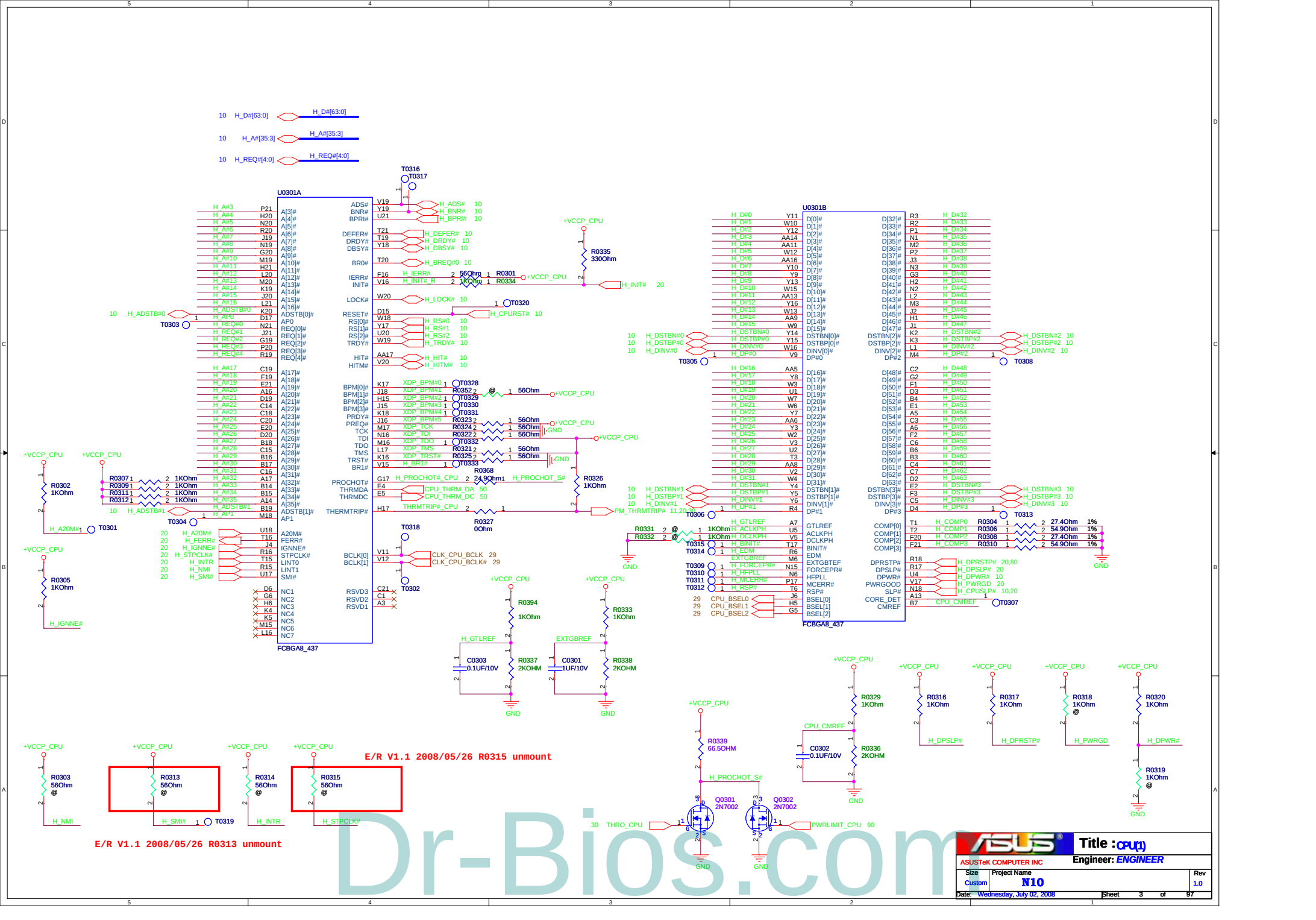
H_D#[63:0]
H_A#[35:3]
H_REQ#[4:0]
U0301A
FCBGA8_437
U0301B
FCBGA8_437
E/R V1.1 2008/05/26 R0315 unmount
E/R V1.1 2008/05/26 R0313 unmount
Title : CPU(1)
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Size: Custom
Project Name: N10
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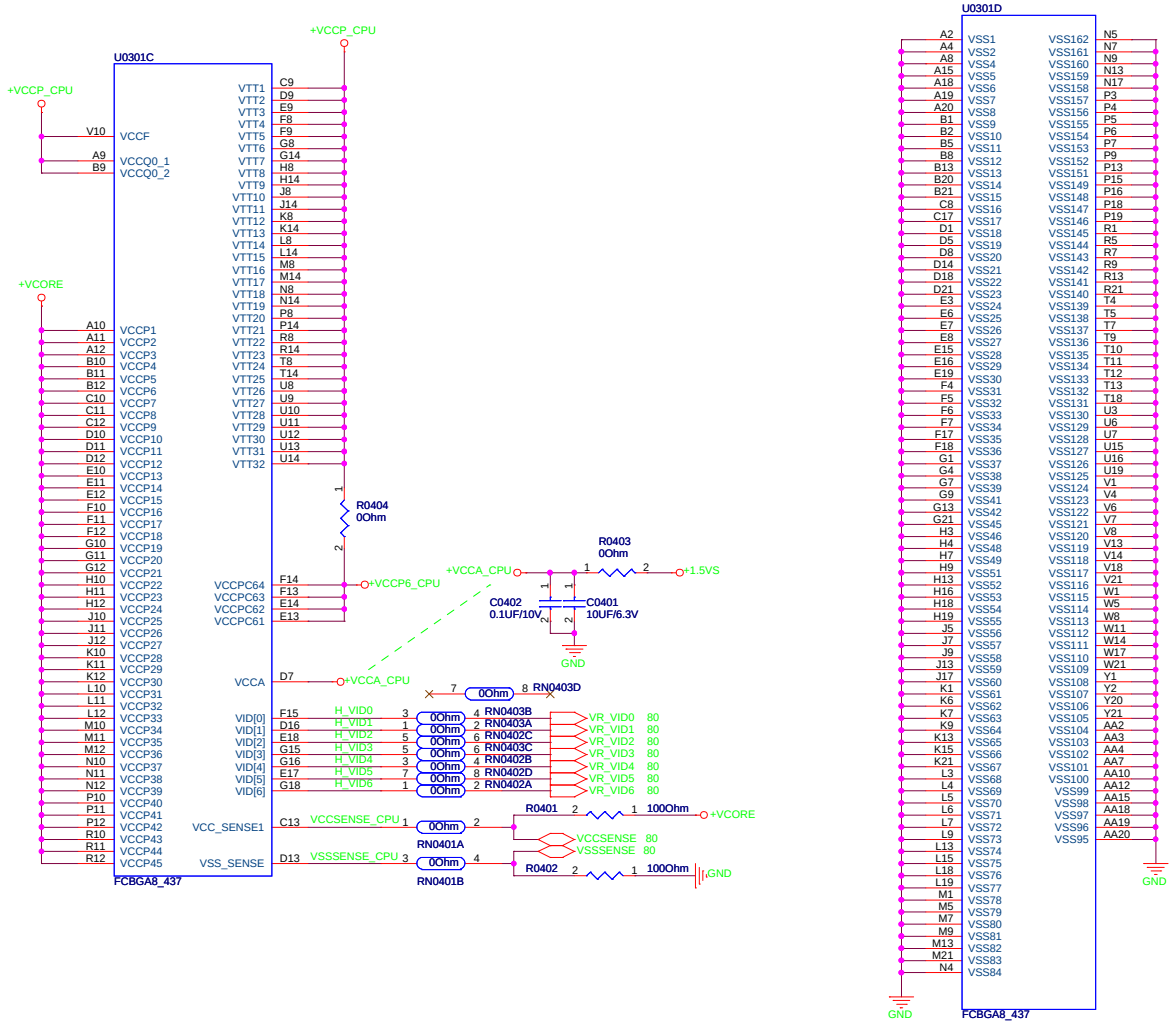

ASUSTeK COMPUTER INC	Title : CPU(2)	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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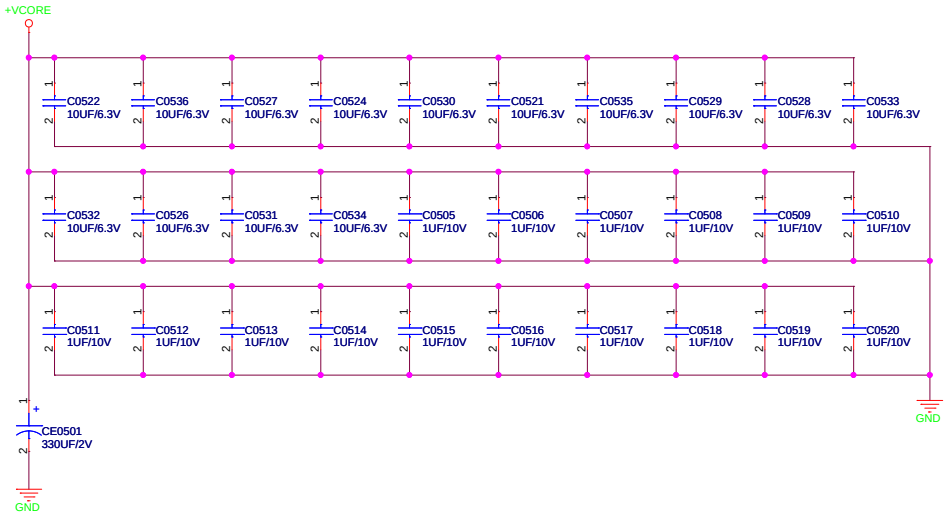
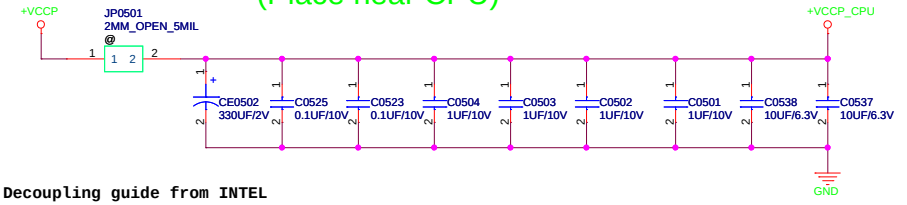


+VCCP Decoupling Capacitor (Place near CPU)



Decoupling guide from INTEL

VCORE	1uF/10V	* 16pcs for CPU
	10uF/6.3V	*14pcs for CPU
	330uF/2V	* 1pcs for CPU
VCCP	0.1uF	* 2pcs for CPU
	1uF	* 4 pcs for CPU
	10uF	* 2 pcs for CPU
	330uF	* 1pcs for CPU

ASUSTeK COMPUTER INC	Title : CPU CAPS	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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ASUSTeK COMPUTER INC	Title : EMPTY		
	Engineer: ENGINEER		
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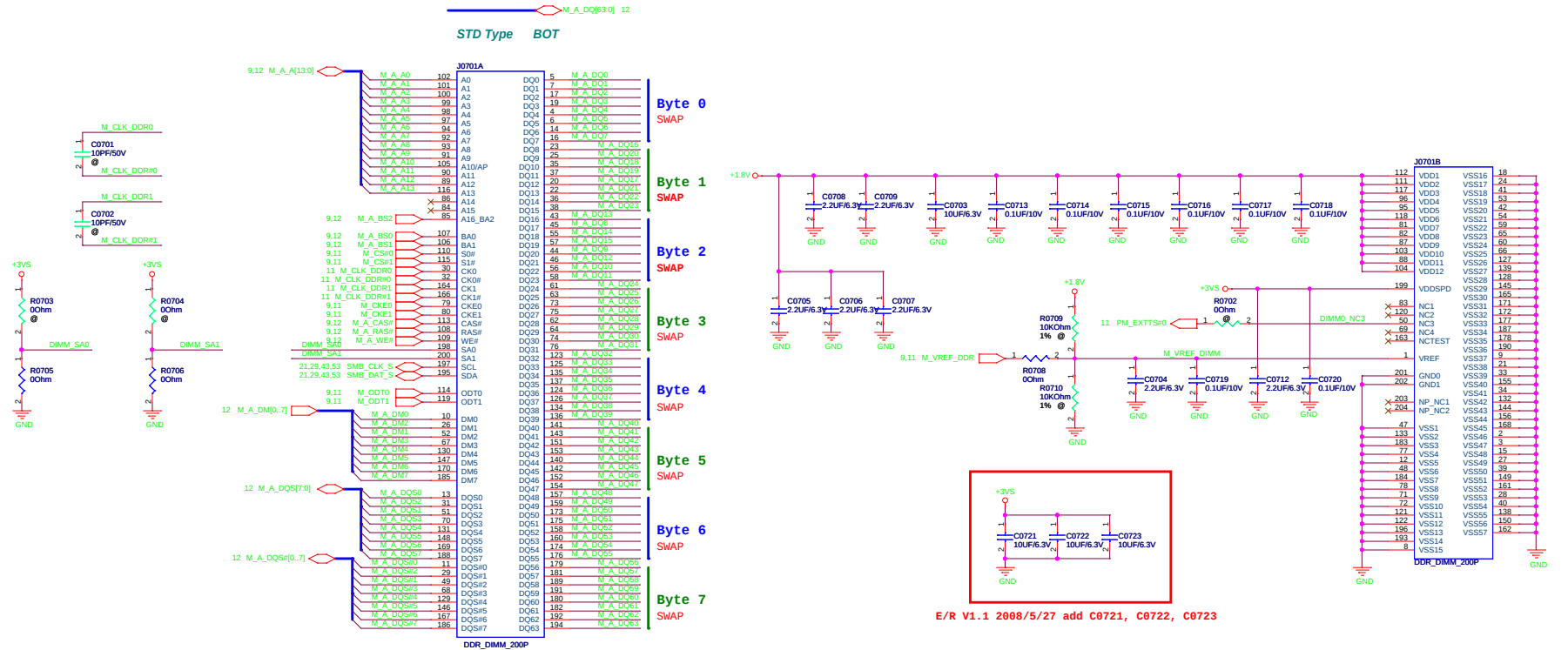

ASUSTeK COMPUTER INC	Title : DIMM	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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ASUSTeK COMPUTER INC	Title : EMPTY		
	Engineer: ENGINEER		
Size: Custom	Project Name: N10		Rev: 1.0
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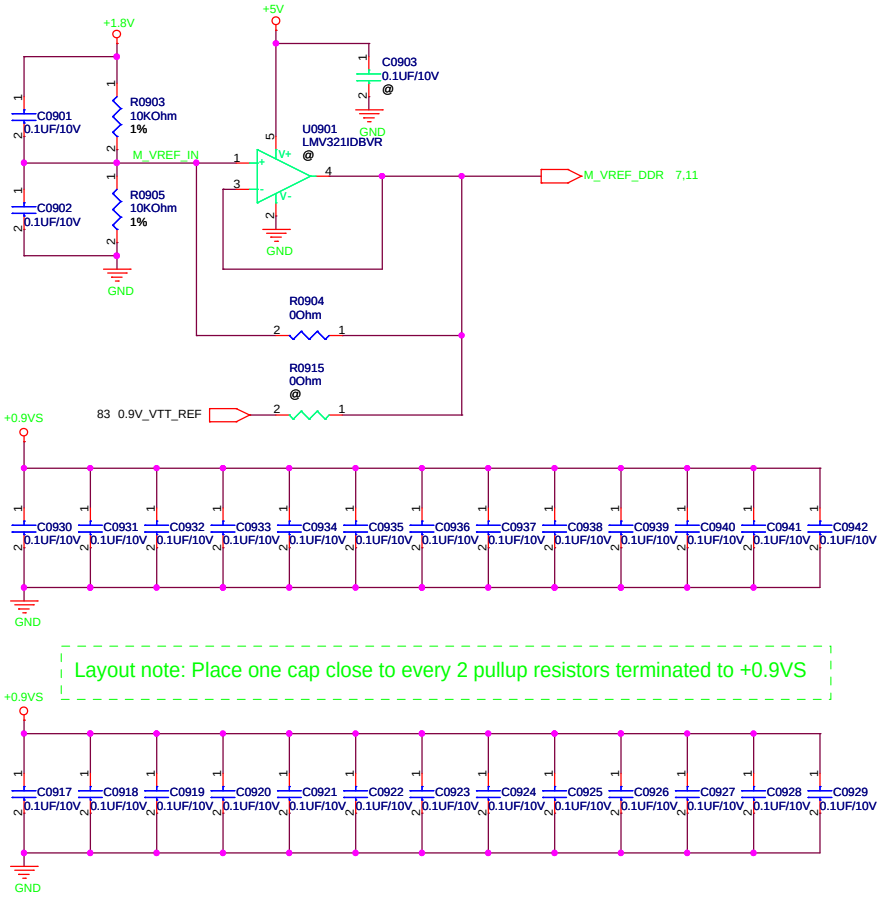
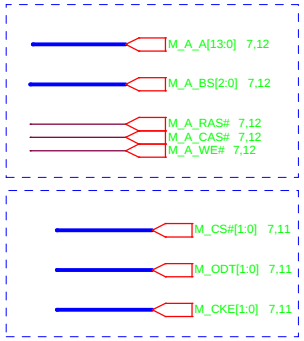
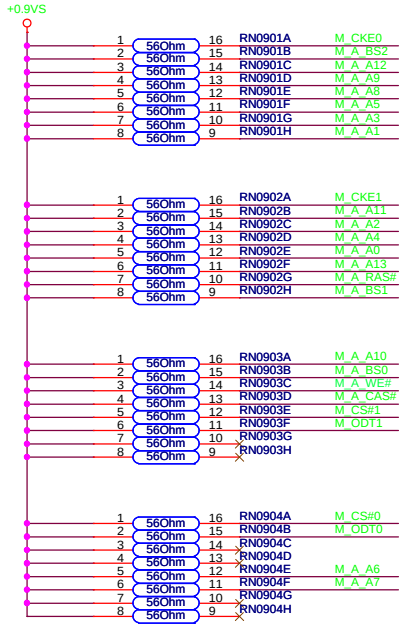


+0.9VS can be controlled to 0.9V or 0.9VS.
Remind PWR EE to reserve SUSB# and SUSC#



HAD SWAPED



ASUSTeK COMPUTER INC

Title : DDR2 TERM

Engineer: ENGINEER

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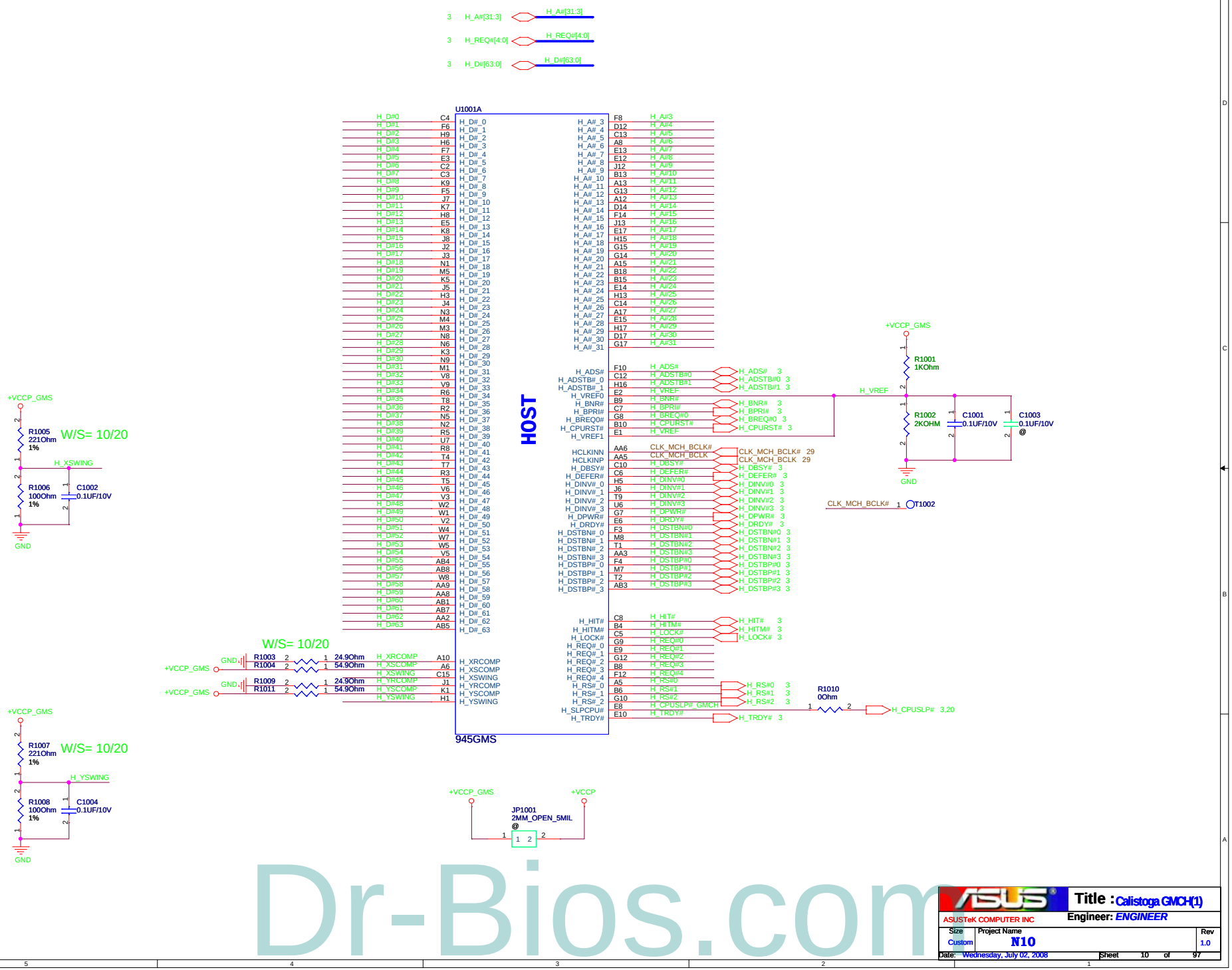
3 H_A#[31:3]
H_A#[31:3]
3 H_REQ#[4:0]
H_REQ#[4:0]
3 H_D#[63:0]
H_D#[63:0]
U1001A
HOST
945GMS
H_D#0 C4
H_D#1 F6
H_D#2 H9
H_D#3 H6
H_D#4 F7
H_D#5 E3
H_D#6 C2
H_D#7 C3
H_D#8 K9
H_D#9 F5
H_D#10 J7
H_D#11 K7
H_D#12 H8
H_D#13 E5
H_D#14 K8
H_D#15 J8
H_D#16 J2
H_D#17 J3
H_D#18 N1
H_D#19 M5
H_D#20 K5
H_D#21 J5
H_D#22 H3
H_D#23 J4
H_D#24 N3
H_D#25 M4
H_D#26 M3
H_D#27 N8
H_D#28 N6
H_D#29 K3
H_D#30 N9
H_D#31 M1
H_D#32 V8
H_D#33 V9
H_D#34 R6
H_D#35 T8
H_D#36 R2
H_D#37 N5
H_D#38 N2
H_D#39 R5
H_D#40 U7
H_D#41 R8
H_D#42 T4
H_D#43 T7
H_D#44 R3
H_D#45 T5
H_D#46 V6
H_D#47 V3
H_D#48 W2
H_D#49 W1
H_D#50 V2
H_D#51 W4
H_D#52 W7
H_D#53 W5
H_D#54 V5
H_D#55 AB4
H_D#56 AB8
H_D#57 W8
H_D#58 AA9
H_D#59 AA8
H_D#60 AB1
H_D#61 AB7
H_D#62 AA2
H_D#63 AB5
H_A#_3 F8
H_A#_4 D12
H_A#_5 C13
H_A#_6 A8
H_A#_7 E13
H_A#_8 E12
H_A#_9 J12
H_A#_10 B13
H_A#_11 A13
H_A#_12 G13
H_A#_13 A12
H_A#_14 D14
H_A#_15 F14
H_A#_16 J13
H_A#_17 E17
H_A#_18 H15
H_A#_19 G15
H_A#_20 G14
H_A#_21 A15
H_A#_22 B18
H_A#_23 B15
H_A#_24 E14
H_A#_25 H13
H_A#_26 C14
H_A#_27 A17
H_A#_28 E15
H_A#_29 H17
H_A#_30 D17
H_A#_31 G17
H_A#3
H_A#4
H_A#5
H_A#6
H_A#7
H_A#8
H_A#9
H_A#10
H_A#11
H_A#12
H_A#13
H_A#14
H_A#15
H_A#16
H_A#17
H_A#18
H_A#19
H_A#20
H_A#21
H_A#22
H_A#23
H_A#24
H_A#25
H_A#26
H_A#27
H_A#28
H_A#29
H_A#30
H_A#31
H_ADS# F10
H_ADSTB#_0 C12
H_ADSTB#_1 H16
H_VREF0 E2
H_BNR# B9
H_BPRI# C7
H_BREQ0# G8
H_CPURST# B10
H_VREF1 E1
H_ADS#
H_ADSTB#0
H_ADSTB#1
H_VREF
H_BNR#
H_BPRI#
H_BREQ#0
H_CPURST#
HCLKINN AA6
HCLKINP AA5
H_DBSY# C10
H_DEFER# C6
H_DINV#_0 H5
H_DINV#_1 J6
H_DINV#_2 T9
H_DINV#_3 U6
H_DPWR# G7
H_DRDY# E6
H_DSTBN#_0 F3
H_DSTBN#_1 M8
H_DSTBN#_2 T1
H_DSTBN#_3 AA3
H_DSTBP#_0 F4
H_DSTBP#_1 M7
H_DSTBP#_2 T2
H_DSTBP#_3 AB3
CLK_MCH_BCLK#
CLK_MCH_BCLK
H_DBSY#
H_DEFER#
H_DINV#0
H_DINV#1
H_DINV#2
H_DINV#3
H_DPWR#
H_DRDY#
H_DSTBN#0
H_DSTBN#1
H_DSTBN#2
H_DSTBN#3
H_DSTBP#0
H_DSTBP#1
H_DSTBP#2
H_DSTBP#3
H_HIT# C8
H_HITM# B4
H_LOCK# C5
H_REQ#_0 G9
H_REQ#_1 E9
H_REQ#_2 G12
H_REQ#_3 B8
H_REQ#_4 F12
H_RS#_0 A5
H_RS#_1 B6
H_RS#_2 G10
H_SLPCPU# E8
H_TRDY# E10
H_HIT#
H_HITM#
H_LOCK#
H_REQ#0
H_REQ#1
H_REQ#2
H_REQ#3
H_REQ#4
H_RS#0
H_RS#1
H_RS#2
H_CPUSLP# 3,20
H_TRDY#
H_XRCOMP A10
H_XSCOMP A6
H_XSWING C15
H_YRCOMP J1
H_YSCOMP K1
H_YSWING H1
H_XRCOMP
H_XSCOMP
H_XSWING
H_YRCOMP
H_YSCOMP
H_YSWING
W/S= 10/20
R1003 24.9Ohm
R1004 54.9Ohm
R1009 24.9Ohm
R1011 54.9Ohm
GND
+VCCP_GMS
R1001 1KOhm
R1002 2KOHM
C1001 0.1UF/10V
C1003 0.1UF/10V @
H_VREF
CLK_MCH_BCLK# 1 T1002
R1010 0Ohm
R1005 221Ohm 1%
R1006 100Ohm 1%
C1002 0.1UF/10V
H_XSWING
R1007 221Ohm 1%
R1008 100Ohm 1%
C1004 0.1UF/10V
H_YSWING
JP1001 2MM_OPEN_5MIL @
+VCCP
Title : Calistoga GMCH(1)
ASUSTeK COMPUTER INC
Engineer: ENGINEER
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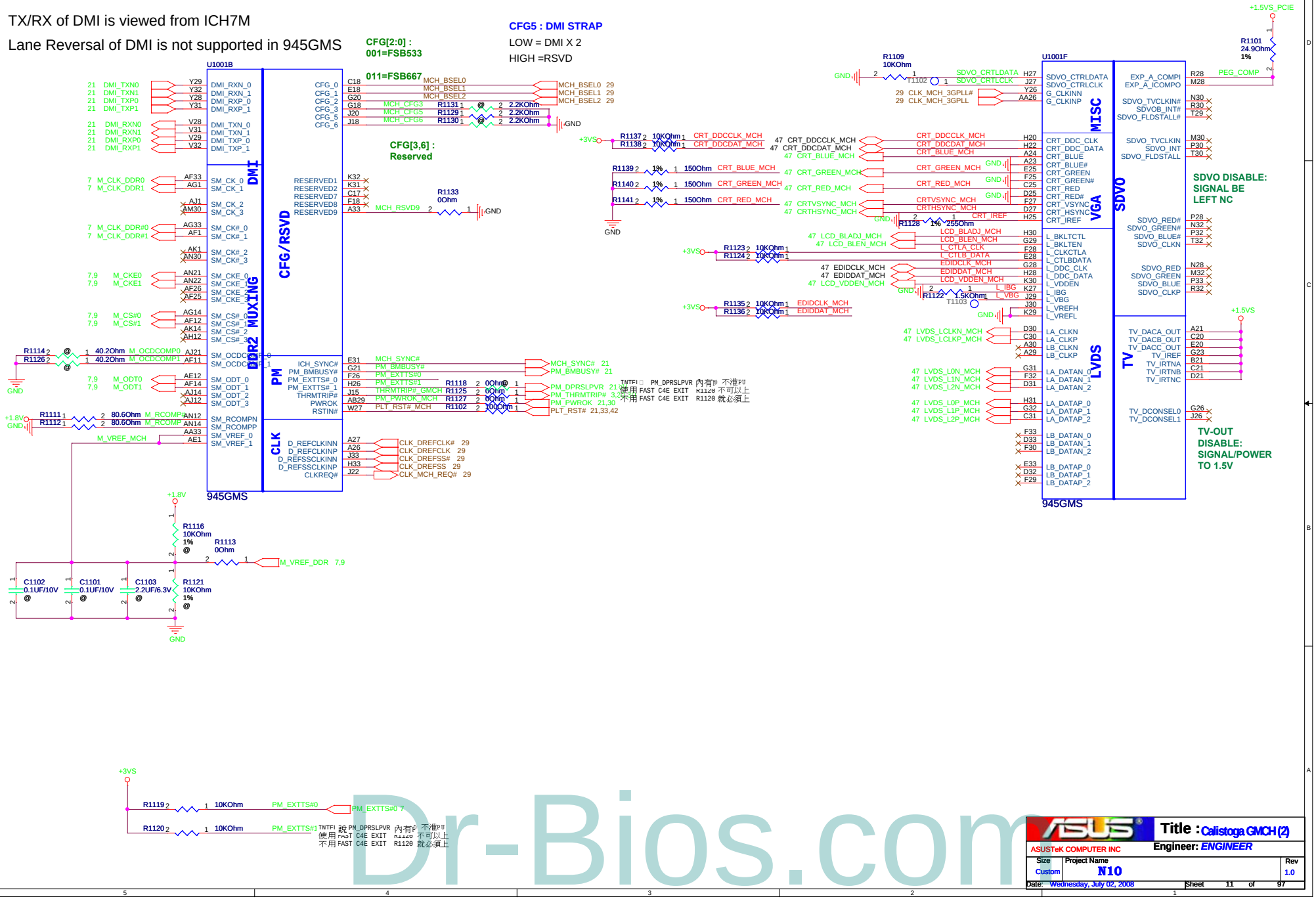
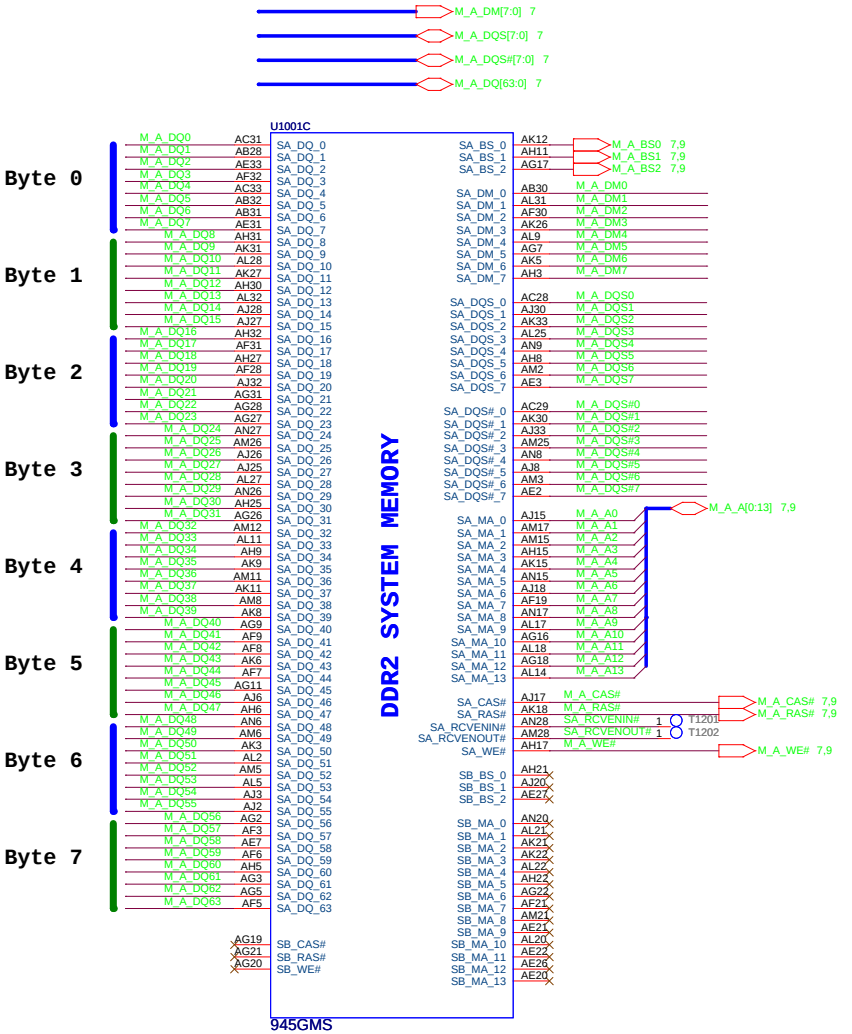
TX/RX of DMI is viewed from ICH7M

Lane Reversal of DMI is not supported in 945GMS





ASUSTeK COMPUTER INC	Title : Calistoga GMCH (3)	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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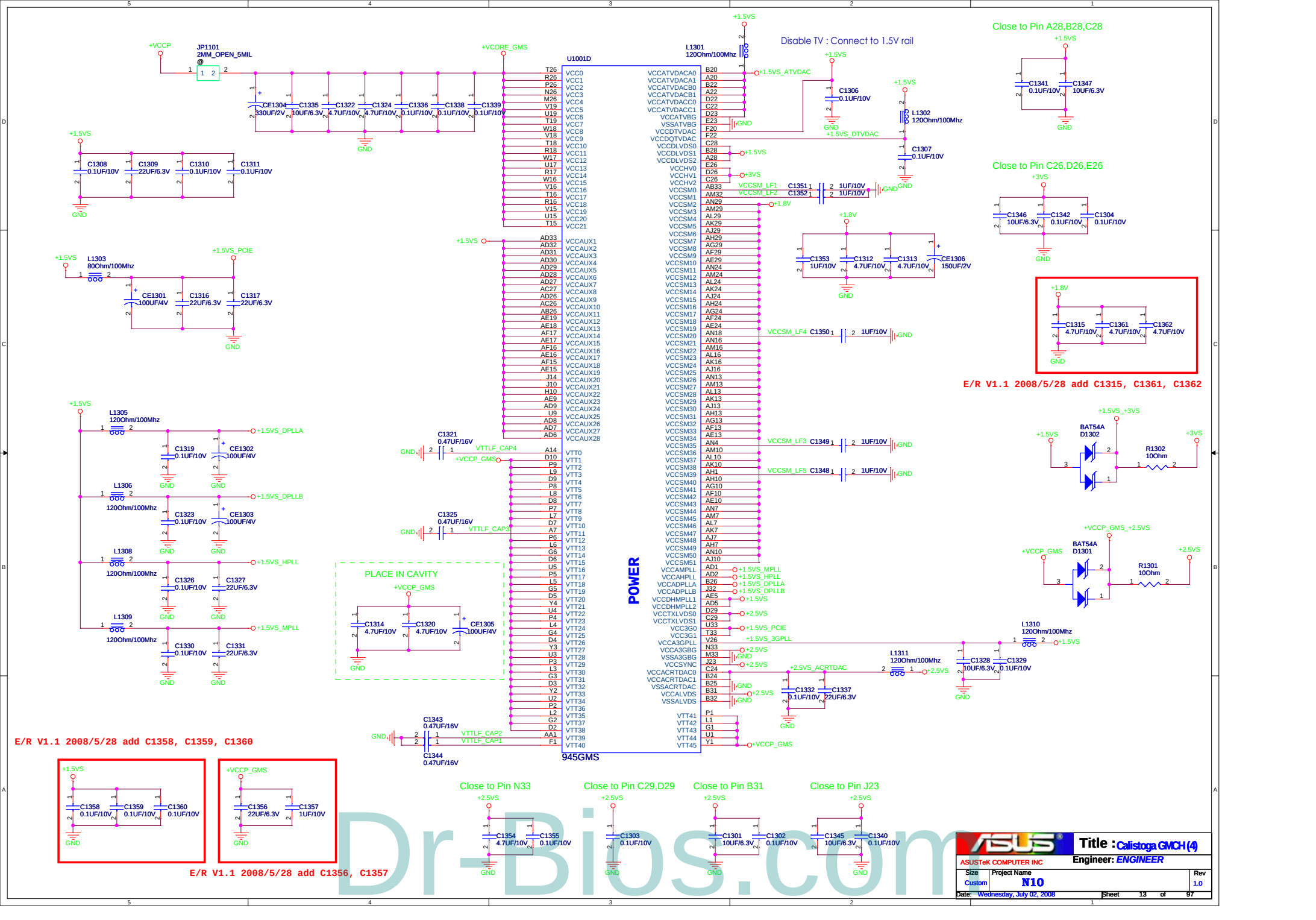
U1001D
945GMS
POWER
Disable TV : Connect to 1.5V rail
Close to Pin A28,B28,C28
Close to Pin C26,D26,E26
Close to Pin N33
Close to Pin C29,D29
Close to Pin B31
Close to Pin J23
PLACE IN CAVITY
E/R V1.1 2008/5/28 add C1315, C1361, C1362
E/R V1.1 2008/5/28 add C1358, C1359, C1360
E/R V1.1 2008/5/28 add C1356, C1357
Dr-Bios.com
Title : Calistoga GMCH (4)
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Project Name N10
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Date: Wednesday, July 02, 2008
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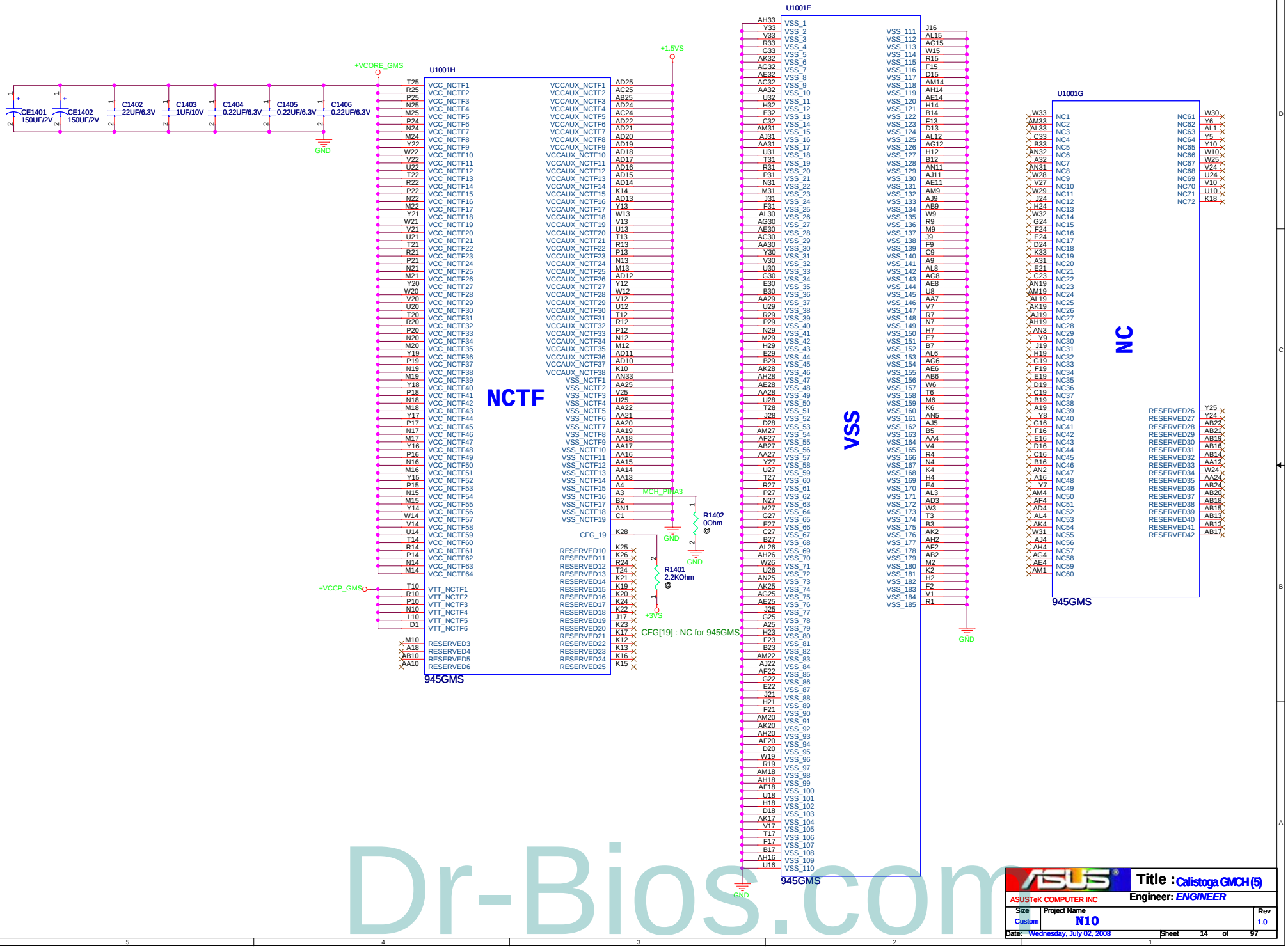

Title :	Calistoga GMCH (5)
ASUSTeK COMPUTER INC	Engineer: ENGINEER
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ASUSTeK COMPUTER INC	Title : EMPTY			
	Engineer: ENGINEER			
Size: A	Project Name: N10			Rev: 1.0
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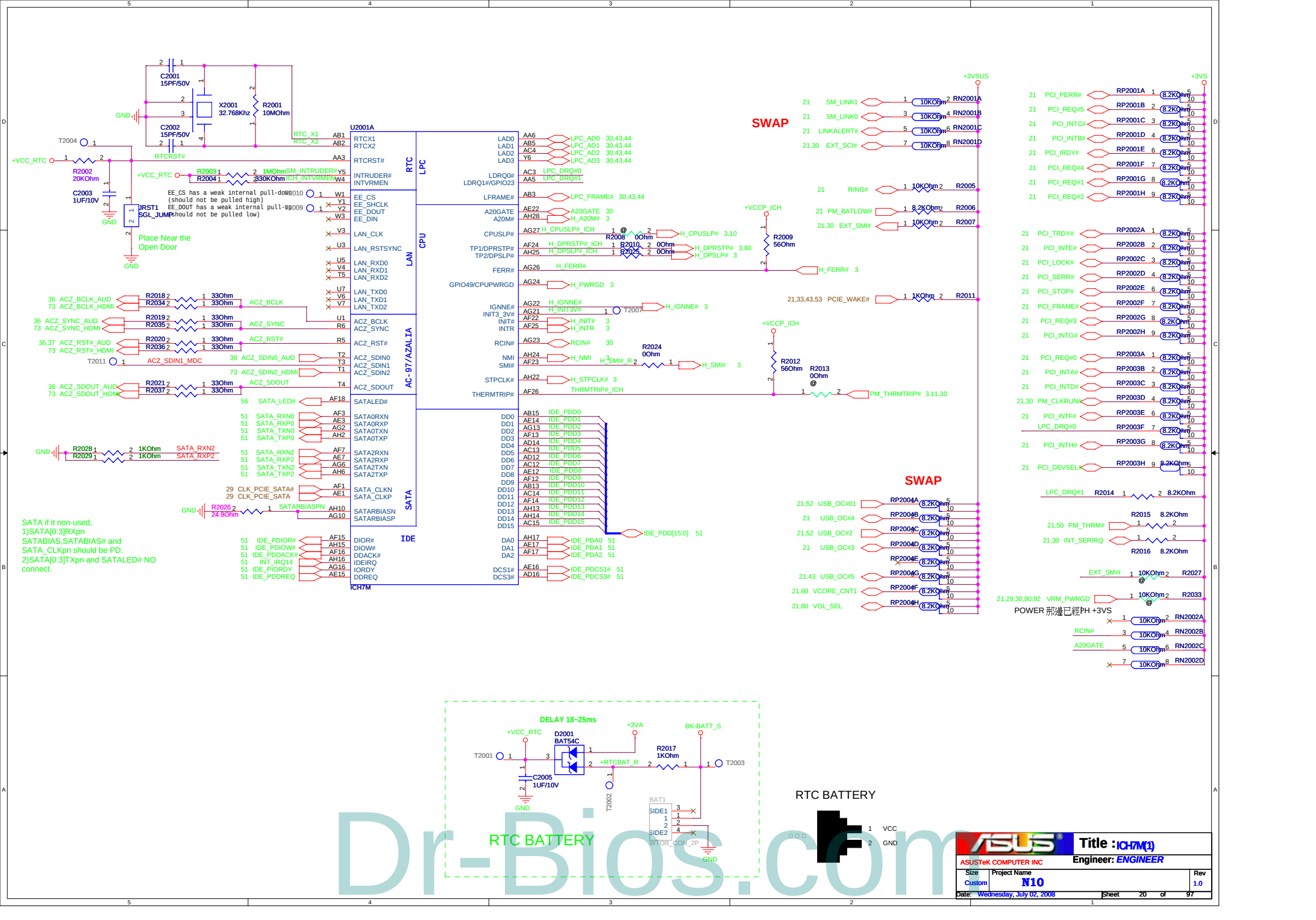
C2001 15PF/50V
X2001 32.768Khz
R2001 10MOhm
C2002 15PF/50V
RTC_X1
RTC_X2
RTCRST#
R2002 20KOhm
C2003 1UF/10V
JRST1 SGL_JUMP
Place Near the Open Door
EE_CS has a weak internal pull-down
(should not be pulled high)
EE_DOUT has a weak internal pull-up
(should not be pulled low)
R2003 1MOhm SM_INTRUDER#
R2004 330KOhm ICH_INTVRMEN
U2001A
RTCX1
RTCX2
RTCRST#
INTRUDER#
INTVRMEN
EE_CS
EE_SHCLK
EE_DOUT
EE_DIN
LAN_CLK
LAN_RSTSYNC
LAN_RXD0
LAN_RXD1
LAN_RXD2
LAN_TXD0
LAN_TXD1
LAN_TXD2
ACZ_BCLK
ACZ_SYNC
ACZ_RST#
ACZ_SDIN0
ACZ_SDIN1
ACZ_SDIN2
ACZ_SDOUT
SATALED#
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA2RXN
SATA2RXP
SATA2TXN
SATA2TXP
SATA_CLKN
SATA_CLKP
SATARBIASN
SATARBIASP
DIOR#
DIOW#
DDACK#
IDEIRQ
IORDY
DDREQ
RTC
LPC
CPU
LAN
AC-97/AZALIA
SATA
IDE
ICH7M
LAD0
LAD1
LAD2
LAD3
LDRQ0#
LDRQ1#/GPIO23
LFRAME#
A20GATE
A20M#
CPUSLP#
TP1/DPRSTP#
TP2/DPSLP#
FERR#
GPIO49/CPUPWRGD
IGNNE#
INIT3_3V#
INIT#
INTR
RCIN#
NMI
SMI#
STPCLK#
THERMTRIP#
DD0
DD1
DD2
DD3
DD4
DD5
DD6
DD7
DD8
DD9
DD10
DD11
DD12
DD13
DD14
DD15
DA0
DA1
DA2
DCS1#
DCS3#
SWAP
SM_LINK1
SM_LINK0
LINKALERT#
EXT_SCI#
RING#
PM_BATLOW#
EXT_SMI#
PCIE_WAKE#
USB_OC#01
USB_OC#4
USB_OC#2
USB_OC#3
USB_OC#5
VCORE_CNT1
VOL_SEL
SWAP
PCI_PERR#
PCI_REQ#5
PCI_INTC#
PCI_INTB#
PCI_IRDY#
PCI_REQ#4
PCI_REQ#1
PCI_REQ#2
PCI_TRDY#
PCI_INTE#
PCI_LOCK#
PCI_SERR#
PCI_STOP#
PCI_FRAME#
PCI_REQ#3
PCI_INTG#
PCI_REQ#0
PCI_INTA#
PCI_INTD#
PM_CLKRUN#
PCI_INTF#
LPC_DRQ#0
PCI_INTH#
PCI_DEVSEL#
LPC_DRQ#1
PM_THRM#
INT_SERIRQ
EXT_SMI#
VRM_PWRGD
POWER 那邊已經PH +3VS
RCIN#
A20GATE
SATA_RXN2
SATA_RXP2
SATA_TXN2
SATA_TXP2
SATA_RXN0
SATA_RXP0
SATA_TXN0
SATA_TXP0
SATA_LED#
CLK_PCIE_SATA#
CLK_PCIE_SATA
SATA if it non-used,
1)SATA[0:3]RXpn
SATABIAS,SATABIAS# and
SATA_CLKpn should be PD.
2)SATA[0:3]TXpn and SATALED# NO
connect.
DELAY 18~25ms
D2001 BAT54C
R2017 1KOhm
C2005 1UF/10V
BK-BATT_S
RTC BATTERY
VCC
GND
Title : ICH7M(1)
ASUSTeK COMPUTER INC
Engineer: ENGINEER
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ICH7 Boot BIOS select
GNT#5 GNT#4
LPC 11 1 1 (default)
PCI 10 1 0
SPI 01 0 1
GNT#3 without PD, if NOT top-block swap(inter high)

PCIE TX/RX 方向命名是以ICH7M 爲中心

TX/RX of DMI is viewed from ICH7M
Lane Reversal of DMI is not supported in 945GMS

U2001B

PCI
AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7 AD8 AD9 AD10 AD11 AD12 AD13 AD14 AD15 AD16 AD17 AD18 AD19 AD20 AD21 AD22 AD23 AD24 AD25 AD26 AD27 AD28 AD29 AD30 AD31
REQ0# GNT0# REQ1# GNT1# REQ2# GNT2# REQ3# GNT3# REQ4#/GPIO22 GNT4#/GPIO48 GPIO1/REQ5# GPIO17/GNT5#
C/BE0# C/BE1# C/BE2# C/BE3#
IRDY# PAR PCIRST# DEVSEL# PERR# PLOCK# SERR# STOP# TRDY# FRAME#
PLTRST# PCICLK PME#

PCI_GNT#0 PCI_REQ#0 20 T2109
PCI_GNT#1 PCI_REQ#1 20 T2101
PCI_GNT#2 PCI_REQ#2 20 T2102
PCI_GNT#3 PCI_REQ#3 20 R2101 1 @ 2 1KOhm GND
PCI_GNT#4 PCI_REQ#4 20 R2105 1 @ 2 1KOhm GND
PCI_GNT#5 PCI_REQ#5 20 R2106 1 @ 2 1KOhm GND
PCI_IRDY# 20
PCI_RST# 1 T2108
PCI_DEVSEL# 20
PCI_PERR# 20
PCI_LOCK# 20
PCI_SERR# 20
PCI_STOP# 20
PCI_TRDY# 20
PCI_FRAME# 20
PLT_RST# PLT_RST# 11,33,42 CLK_ICHPCI 29 PCI_PME#
2 R2116 1 10KOhm @ +3VS
E/R 20080519

Interrupt I/F
PIRQA# PIRQB# PIRQC# PIRQD#
GPIO2/PIRQE# GPIO3/PIRQF# GPIO4/PIRQG# GPIO5/PIRQH#
20 PCI_INTA# 20 PCI_INTB# 20 PCI_INTC# 20 PCI_INTD#
PCI_INTE# 20 PCI_INTF# 20 PCI_INTG# 20 PCI_INTH# 20

MISC
RSVD_1 RSVD_2 RSVD_3 RSVD_4 RSVD_5
RSVD_6 RSVD_7 RSVD_8 RSVD_9 MCH_SYNC#
T2117 T2118 T2119 T2120 T2121 AE5 AD5 AG4 AH4 AD9
AE9 T2105 AG8 T2106 AH8 T2107 F21 ICH_TP3 1 R2104 1KOhm @ 2 GND AH20 MCH_SYNC# 11

ICH7M

U2001D

PCI-Express
PERn1 PERp1 PETn1 PETp1
PERn2 PERp2 PETn2 PETp2
PERn3 PERp3 PETn3 PETp3
PERn4 PERp4 PETn4 PETp4
PERn5 PERp5 PETn5 PETp5
PERn6 PERp6 PETn6 PETp6
33 PCIE_RXN1_LAN 33 PCIE_RXP1_LAN 33 PCIE_TXN1_LAN 33 PCIE_TXP1_LAN
PCIE_RXN1_LAN F26 PCIE_RXP1_LAN F25
C2101 1 2 0.1UF/10V PCIE_TXN1_C E28
C2102 1 2 0.1UF/10V PCIE_TXP1_C E27
53 PCIE_RXN2_MINICARD 53 PCIE_RXP2_MINICARD 53 PCIE_TXN2_MINICARD 53 PCIE_TXP2_MINICARD
PCIE_RXN2_MINICARD H26 PCIE_RXP2_MINICARD H25
C2103 1 2 0.1UF/10V PCIE_TXN2_C G28
C2104 1 2 0.1UF/10V PCIE_TXP2_C G27
70 PCIE_RXN3_VGA 70 PCIE_RXP3_VGA 70 PCIE_TXN3_VGA 70 PCIE_TXP3_VGA
PCIE_RXN3_VGA K26 PCIE_RXP3_VGA K25
C2108 1 2 0.1UF/10V PCIE_TXN3_C J28
C2109 1 2 0.1UF/10V PCIE_TXP3_C J27
43 PCIE_RXN4_NEWCARD 43 PCIE_RXP4_NEWCARD 43 PCIE_TXN4_NEWCARD 43 PCIE_TXP4_NEWCARD
PCIE_RXN4_NEWCARD M26 PCIE_RXP4_NEWCARD M25
C2105 1 2 0.1UF/10V PCIE_TXN4_C L28
C2106 1 2 0.1UF/10V PCIE_TXP4_C L27

Direct Media Interface
DMI0RXN DMI0RXP DMI0TXN DMI0TXP
DMI1RXN DMI1RXP DMI1TXN DMI1TXP
DMI2RXN DMI2RXP DMI2TXN DMI2TXP
DMI3RXN DMI3RXP DMI3TXN DMI3TXP
V26 V25 U28 U27 DMI_RXN0 11 DMI_RXP0 11 DMI_TXN0 11 DMI_TXP0 11
Y26 Y25 W28 W27 DMI_RXN1 11 DMI_RXP1 11 DMI_TXN1 11 DMI_TXP1 11
AB26 AB25 AA28 AA27
AD25 AD24 AC28 AC27
DMI_CLKN AE28 CLK_PCIE_ICH# 29
DMI_CLKP AE27 CLK_PCIE_ICH 29
DMI_ZCOMP C25 DMI_ZCOMP 2 R2102 24.9Ohm 1 +1.5VS_PCIE_ICH
DMI_IRCOMP D25

USB
SPI_CLK SPI_CS# SPI_ARB SPI_MOSI SPI_MISO
OC0# OC1# OC2# OC3# OC4# OC5#/GPIO29 OC6#/GPIO30 OC7#/GPIO31
USBP0N USBP0P USBP1N USBP1P USBP2N USBP2P USBP3N USBP3P USBP4N USBP4P USBP5N USBP5P USBP6N USBP6P USBP7N USBP7P
USBRBIAS# USBRBIAS
F1 F2 G4 G3 H1 H2 J4 J3 K1 K2 L4 L5 M1 M2 N4 N3 USB_PN0 52 USB_PP0 52 USB_PN1 52 USB_PP1 52 USB_PN2 52 USB_PP2 52 USB_PN3 32 USB_PP3 32 USB_PN4 31,53 USB_PP4 31,53 USB_PN5 43 USB_PP5 43 USB_PN6 42 USB_PP6 42 USB_PN7 61 USB_PP7 61
D2 USBRBIAS 1 2 GND R2103 22.6Ohm
D1

SPI_CS# SPI_MOSI SPI_MISO
R2141 0Ohm +3V_SPI
R2142 0Ohm
RN2101A2 RN2101B4 RN2101C6 RN2101D8 10KOhm
20,52 USB_OC#0 R2129 1 2 0Ohm
USB_OC#1 USB_OC#2 USB_OC#3 USB_OC#4 USB_OC#5 VCORE_CNT1 VOL_SEL
20,52 USB_OC#1 20,52 USB_OC#2 20 USB_OC#3 20 USB_OC#4 20,43 USB_OC#5 20,80 VCORE_CNT1 20,80 VOL_SEL
E/R 20080514 (超頻)

ICH7M

E/R V1.1 2008/5/28 R2137 100k ohm change to 10k ohm
P/R V2.0 2008/7/01 when mount R2151 --> N10J
P/R V2.0 2008/7/01 when mount R2152 --> N10E

SPKR signal has a weak internal pull down. If the signal is sampled high, this indicates that the system is strapped to the " No Reboot" mode.

SWAP

U2001C

SMB
SMB_CLK SMB_DAT LINKALERT# SMLINK0 SMLINK1
20 LINKALERT# 20 SM_LINK0 20 SM_LINK1

SATA GPIO
GPIO21/SATA0GP GPIO19/SATA1GP GPIO36/SATA2GP GPIO37/SATA3GP
AF19 ICH_GPIO21 AH18 ICH_GPIO19 AH19 ICH_GPIO36 AE19 PCB_ID0
RN2102C5 RN2102A2 RN2102B4 RN2102D8 10KOhm +3VS

Clocks
RI# SPKR SUS_STAT# SYS_RST# SUSCLK
RING# SB_SPKR SUS_STAT# SYSRST#
T2130 20 RING# 36 SB_SPKR T2128 SUS_STAT# SYSRST# +3VSUS R2114 10KOhm R2139 0Ohm 31 PM_SYSRST#
CLK14 CLK48
AC1 B2 CLK_ICH14 29 CLK_USB48 29
C20 SUS_CLK 1 T2125

MGT
SLP_S3# SLP_S4# SLP_S5# PWROK GPIO16/DPRSLPVR TP0/BATLOW# PWRBTN# LAN_RST# RSMRST#
B24 PM_SUSB# D23 PM_SUSC# F22 SLP_S5# T2129 AA4 PM_PWROK_ICH AC22 PM_DPRSLPVR_R C21 C23 C19 Y4
PM_SUSB# 30 PM_SUSC# 30
R2137 2 1 10KOhm GND
R2135 1 2 0Ohm PM_PWROK 11,30
R2140 1 2 0Ohm PM_DPRSLPVR 11,80
PM_BATLOW# 20
PM_PWRBTN# 30
R2138 1 2 100Ohm GND
R2133 1 2 0Ohm PLT_RST#
ICHLAN_RST#
PM_RSMRST#_ICH
R2143 1 2 100Ohm PM_RSMRST# 30

SYS GPIO
SMBALERT#/GPIO11 GPIO18/STPPCI# GPIO20/STPCPU# GPIO26 GPIO27 GPIO28 GPIO32/CLKRUN# GPIO33/AZ_DOCK_EN# GPIO34/AZ_DOCK_RST# WAKE# SERIRQ THRM# VRMPWRGD
AB18 GPIO0/BM_BUSY# B23 AC20 AF21 A21 B21 E23 AG18 AC19 U2 F20 AH21 AF20 AD22
SMB_ALERT# R2115 10KOhm
29 STP_PCI# 29,80 STP_CPU#
56 WLAN_LED R2144 0Ohm WLAN_LED_ICH
53 WLAN_ON 56,61 BT_ON
20,30 PM_CLKRUN#
T2122 1 ICH_GPIO33 56 BT_LED
20,33,43,53 PCIE_WAKE# 20,30 INT_SERIRQ
30 PM_THERM# R2132 0Ohm @
20,50 PM_THRM# 29,30 EC_CLK_EN R2130 0Ohm
80,92 VRM_PWRGD R2131 0Ohm @ 2 1 T2123 ICH_GPIO6 ICH_GPIO7
R2128 100KOhm @ R2125 10KOhm GND +3VS
VRM_PWRGD_ICH

GPIO
GPIO6 GPIO7 GPIO8 GPIO9 GPIO10 GPIO12 GPIO13 GPIO14 GPIO15 GPIO24 GPIO25 GPIO35 GPIO38 GPIO39
AC21 AC18 E21 E20 A20 F19 E19 R4 E22 R3 D20 AD21 AD20 AE20
ICH_GPIO6 ICH_GPIO7 ICH_GPIO9 ICH_GPIO10 EXT_SCI# ICH_GPIO13 ICH_GPIO14 ICH_GPIO15 DETECT_MODE FP_ON ICH_GPIO35 PCB_ID1 PCB_ID2
T2134 T2126 EXT_SCI# 20,30 T2135 T2136 R2134 1 10KOhm +3VSUS FP_ON 31 T2132
R2136 10KOhm GND

ICH7M

GPIO[25] is a reserved signal.
The signal has a weak internal pull-up and should not be pulled low

POWER 那邊已經PH +3Vs
R2128 如果上會形成分壓

20,30 EXT_SMI# +3VS

E/R V1.1 2008/5/28 R2136 100k ohm change to 10k ohm
P/R V2.0 2008/6/29 GPIO25 change to FP_ON

+3VSUS R2151 10KOhm DETECT_MODE R2152 10KOhm @ GND

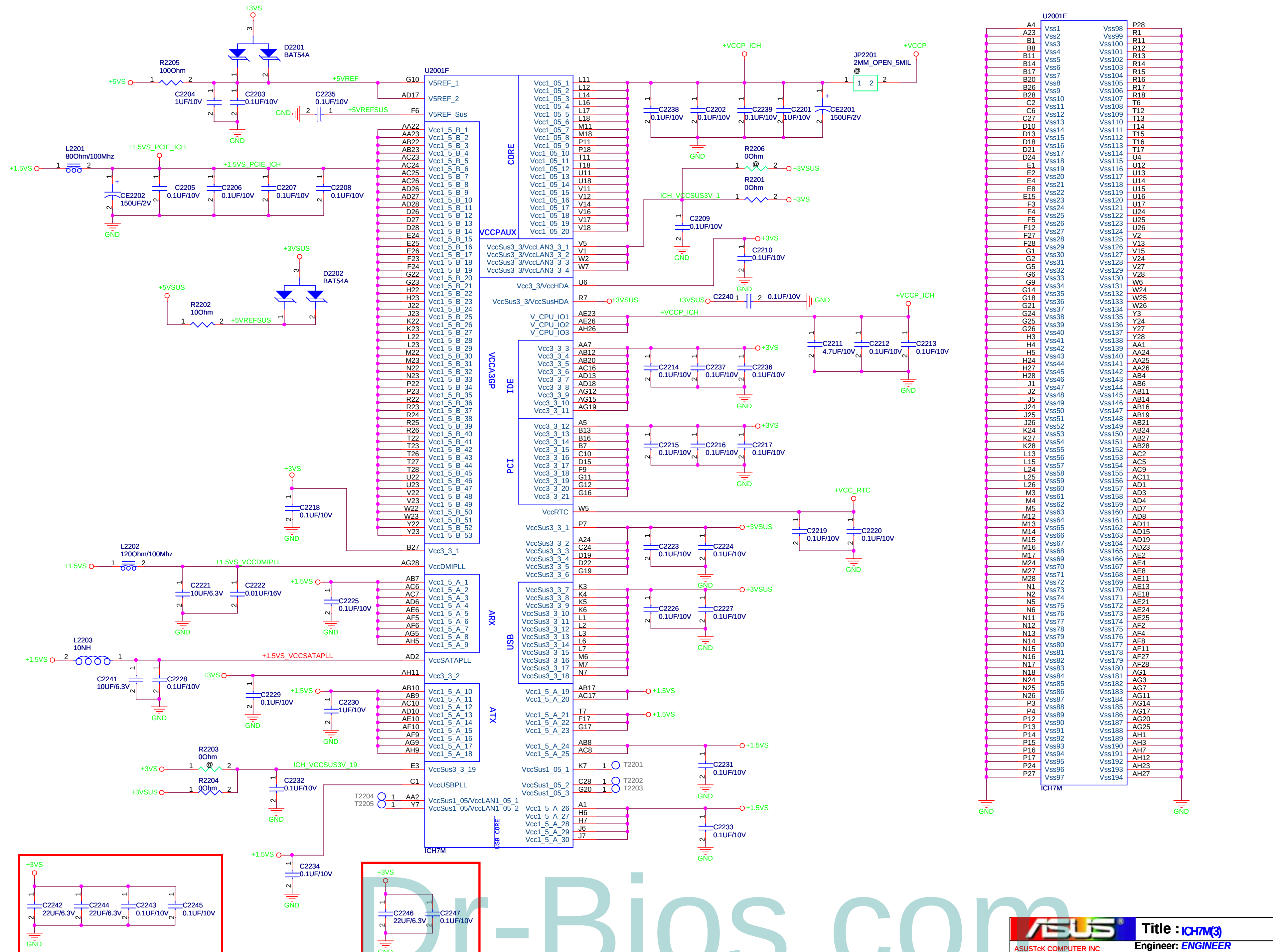
ICH7 GPIO	PCB_ID
GPIO39	PCB_ID2
GPIO38	PCB_ID1
GPIO37	PCB_ID0

PCB_ID2 R2149 10KOhm @ R2150 10KOhm
PCB_ID1 R2147 10KOhm @ R2148 10KOhm
PCB_ID0 R2145 10KOhm @ R2146 10KOhm
+3VS GND

+3V U2101 VCC A B GND Y NC7SZ08P5X C2107 0.1UF/10V GND
PLT_RST# GND
BUF_PLT_RST# 30,43,51,70
7,29,43,53 SMB_DAT_S
R2127 1 @ 2 0Ohm
R2109 10KOhm GND

+3VS +3VSUS
7,29,43,53 SMB_CLK_S
R2120 2.2KOhm R2123 2.2KOhm
Q2101A UM6K1N SMB_CLK
R2121 2.2KOhm R2122 2.2KOhm
Q2101B UM6K1N SMB_DAT

Title : ICH7M(2)
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Size: Custom | Project Name: N10 | Rev: 1.0
Date: Wednesday, July 02, 2008 | Sheet 21 of 97

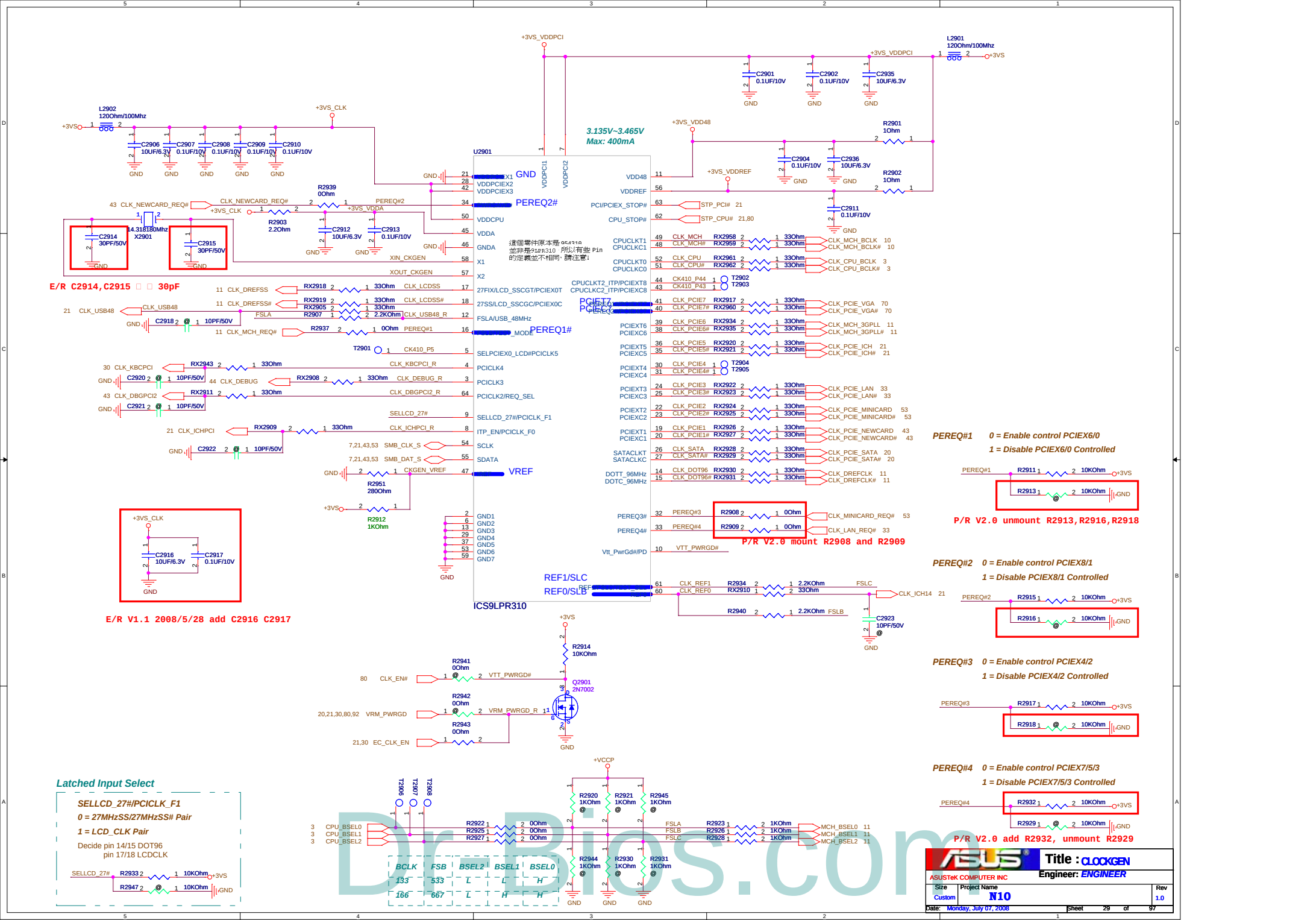


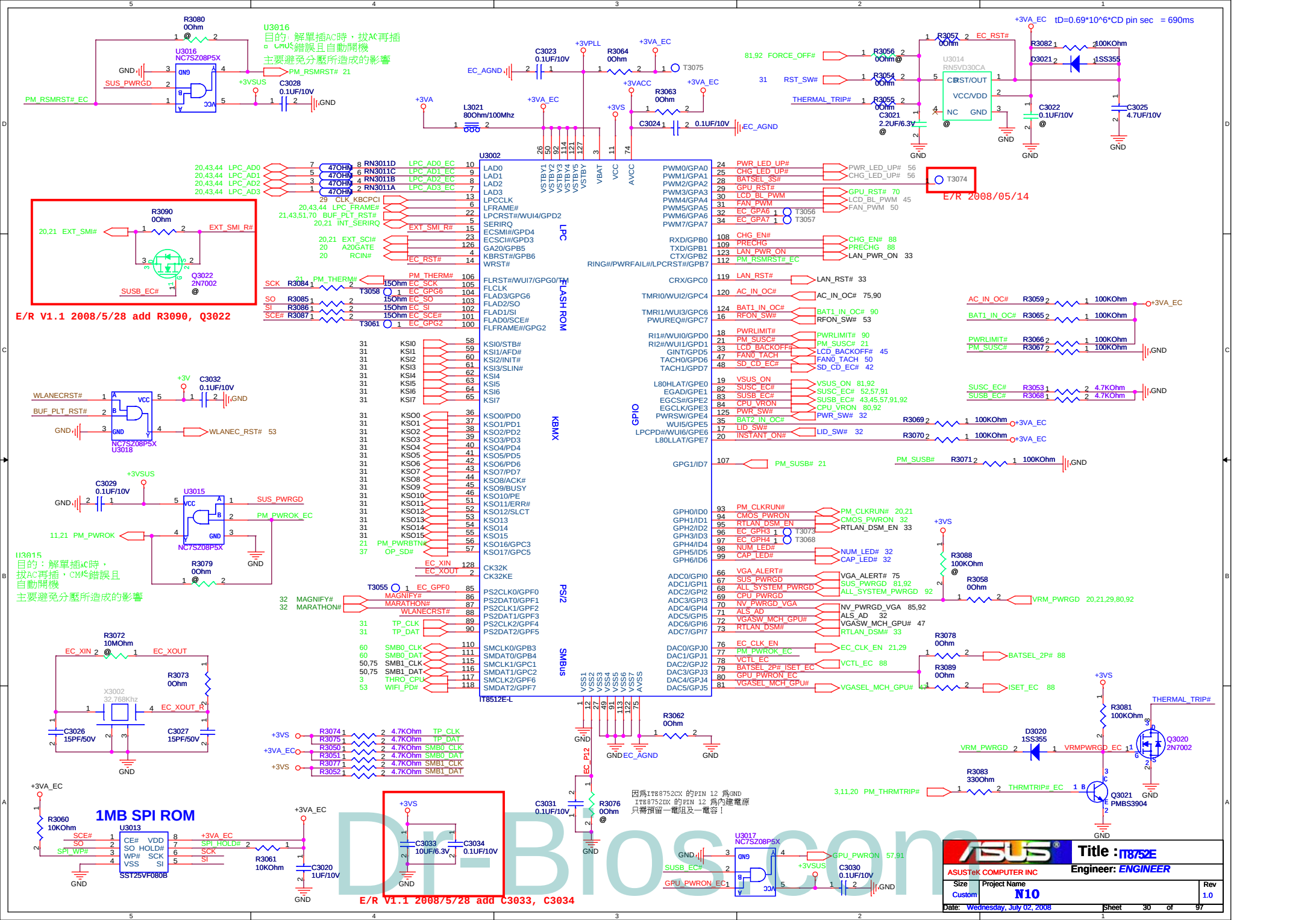
E/R V1.1 2008/5/28 add C2242, C2243, C2244, C2245

E/R V1.1 2008/5/28 add C2246, C2247

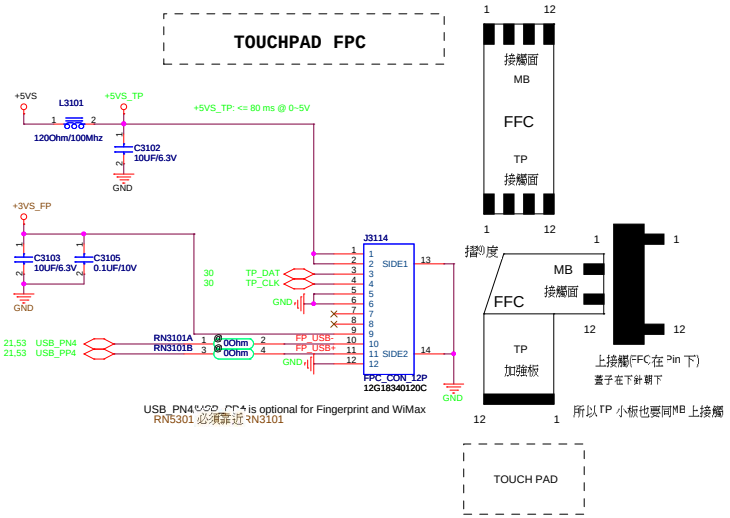
ASUSTeK COMPUTER INC	Title : ICH7M(3)		
	Engineer: ENGINEER		
Size: Custom	Project Name: N10		Rev: 1.0
Date: Wednesday, July 02, 2008		Sheet 22 of 97	

Title : EMPTY		
Engineer: ENGINEER		
ASUSTeK COMPUTER INC		
Size: A	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 28 of 97	

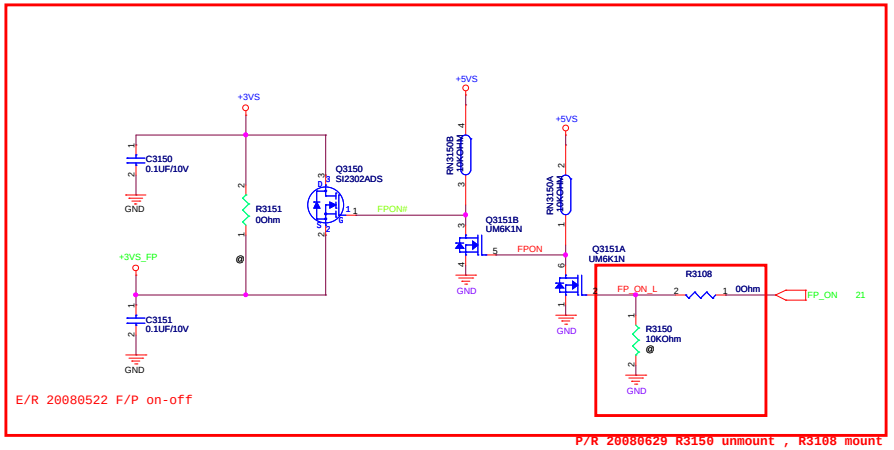

U2901
ICS9LPR310
+3VS_VDDPCI
3.135V~3.465V
Max: 400mA
+3VS_VDD48
+3VS_VDDREF
+3VS_CLK
+3VS_VDDA
PEREQ2#
PEREQ1#
VREF
REF1/SLC
REF0/SLB
CLK_NEWCARD_REQ#
14.318180Mhz
X2901
XIN_CKGEN
XOUT_CKGEN
CLK_DREFSS
CLK_DREFSS#
CLK_USB48
CLK_MCH_REQ#
CLK_KBCPCI
CLK_DEBUG
CLK_DBGPCI2
CLK_ICHPCI
SMB_CLK_S
SMB_DAT_S
CKGEN_VREF
CLK_MCH
CLK_CPU
CK410_P44
CK410_P43
CLK_PCIE7
CLK_PCIE6
CLK_PCIE5
CLK_PCIE4
CLK_PCIE3
CLK_PCIE2
CLK_PCIE1
CLK_SATA
CLK_DOT96
PEREQ#3
PEREQ#4
VTT_PWRGD#
CLK_REF1
CLK_REF0
CLK_ICH14
CLK_EN#
VTT_PWRGD#
VRM_PWRGD
VRM_PWRGD_R
EC_CLK_EN
CPU_BSEL0
CPU_BSEL1
CPU_BSEL2
MCH_BSEL0
MCH_BSEL1
MCH_BSEL2
FSLA
FSLB
FSLC
E/R C2914,C2915 □ □ 30pF
E/R V1.1 2008/5/28 add C2916 C2917
P/R V2.0 mount R2908 and R2909
P/R V2.0 unmount R2913,R2916,R2918
P/R V2.0 add R2932, unmount R2929
PEREQ#1 0 = Enable control PCIEX6/0
1 = Disable PCIEX6/0 Controlled
PEREQ#2 0 = Enable control PCIEX8/1
1 = Disable PCIEX8/1 Controlled
PEREQ#3 0 = Enable control PCIEX4/2
1 = Disable PCIEX4/2 Controlled
PEREQ#4 0 = Enable control PCIEX7/5/3
1 = Disable PCIEX7/5/3 Controlled
Latched Input Select
SELLCD_27#/PCICLK_F1
0 = 27MHzSS/27MHzSS# Pair
1 = LCD_CLK Pair
Decide pin 14/15 DOT96
pin 17/18 LCDCLK
BCLK FSB BSEL2 BSEL1 BSEL0
133 533 L L H
166 667 L H H
Title : CLOCKGEN
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Project Name N10
Rev 1.0
Date: Monday, July 07, 2008
Sheet 29 of 97


U3016
目的：解單插AC時，拔AC再插
CMOS錯誤且自動開機
主要避免分壓所造成的影響
U3015
目的：解單插AC時，
拔AC再插，CMOS錯誤且
自動開機
主要避免分壓所造成的影響
E/R V1.1 2008/5/28 add R3090, Q3022
E/R 2008/05/14
1MB SPI ROM
SST25VF080B
U3013
U3002
IT8512E-L
LPC
FLASH ROM
KBMX
GPIO
PS/2
SMBus
E/R V1.1 2008/5/28 add C3033, C3034
因爲ITE8752CX 的PIN 12 爲GND
ITE8752DX 的PIN 12 爲內建電源
只需預留一電阻及一電容！
tD=0.69*10^6*CD pin sec = 690ms
Title : IT8752E
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Project Name
N10
Rev
1.0
Date: Wednesday, July 02, 2008
Sheet 30 of 97

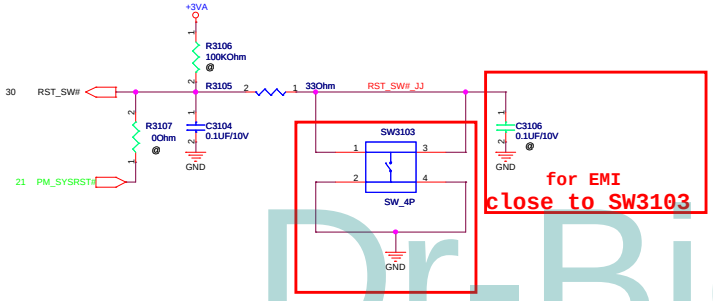
TOUCHPAD FPC

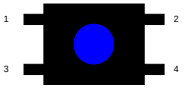


製作FFC 時要提醒ME標示TP/MB 文字面以利組裝

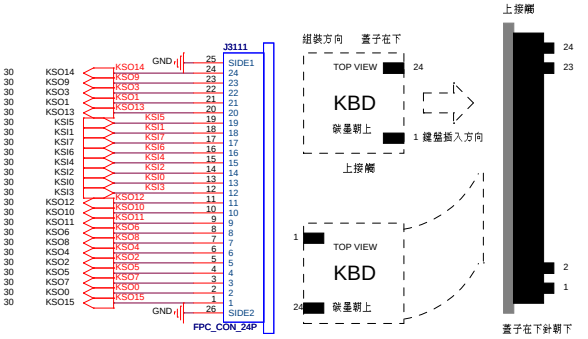


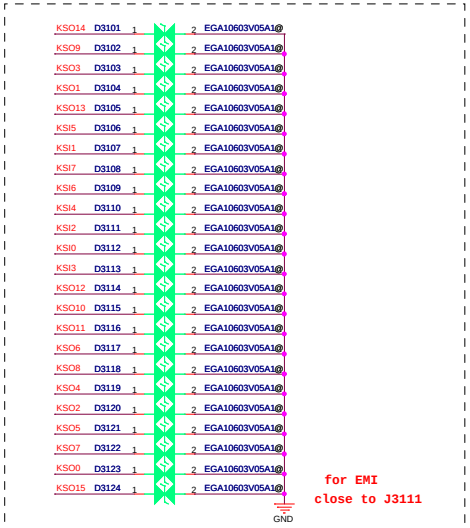
RESET BUTTON





INTERNAL KEYBOARD





爲使Layout 簡潔ESD在BOM可改成同包裝0603電容

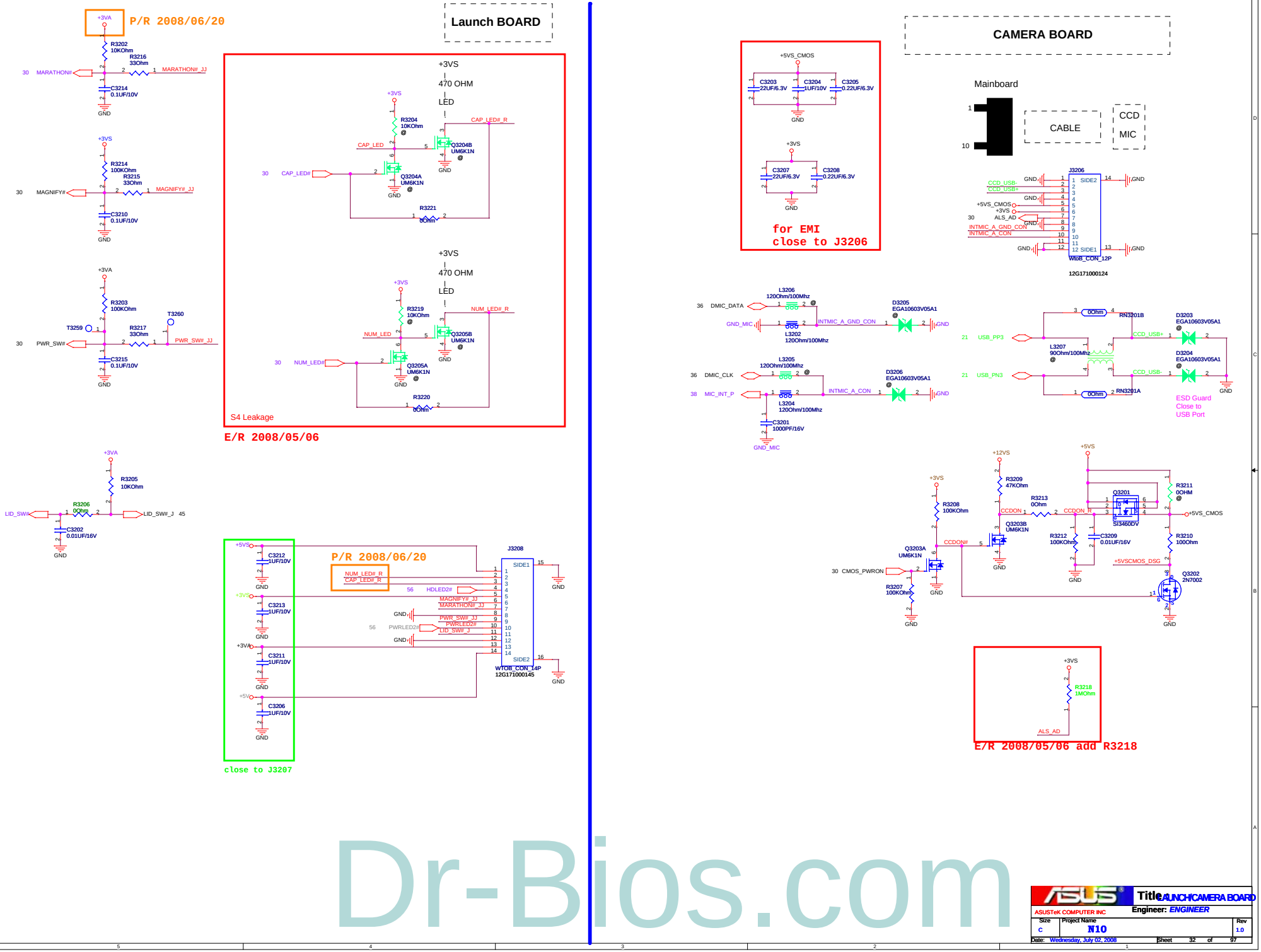
ASUSTeK COMPUTER INC

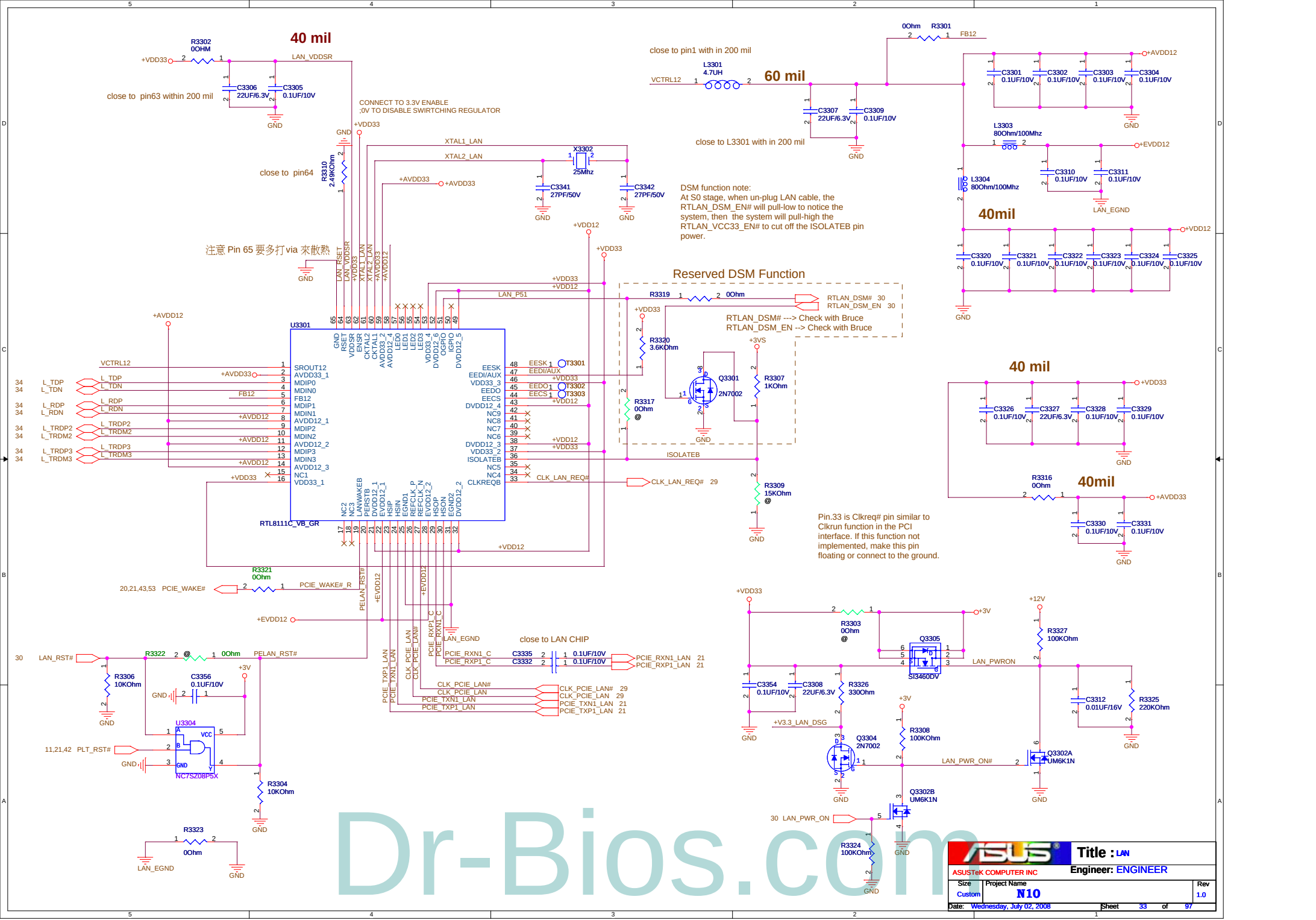
Title : KEYBOARD

Engineer: ENGINEER

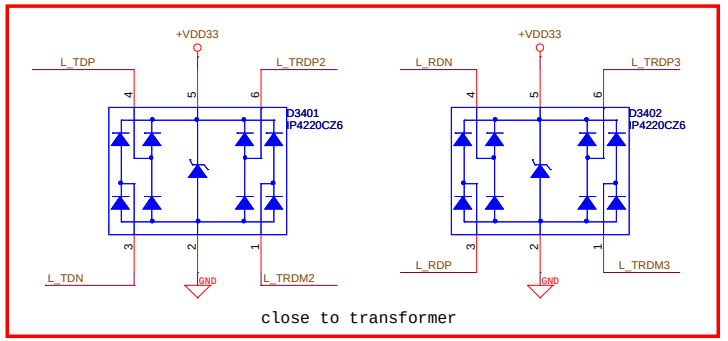
Size	Project Name	Rev
C	N10	1.0

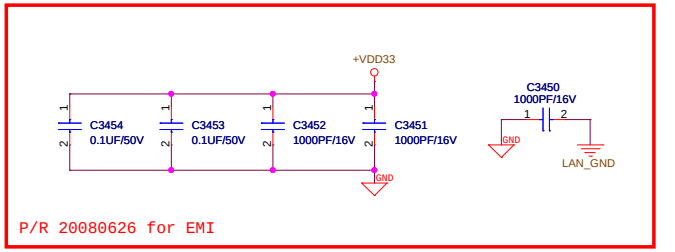
Date: Wednesday, July 02, 2008 Sheet 31 of 97

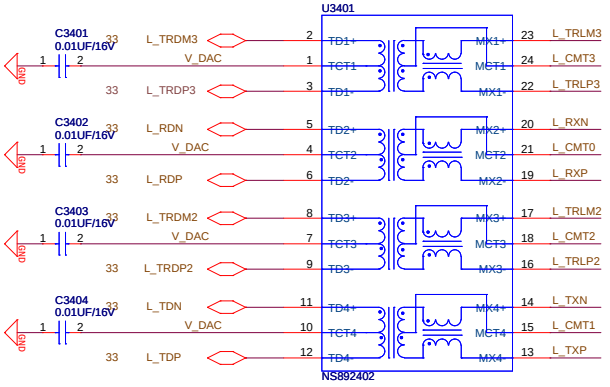

Launch BOARD
P/R 2008/06/20
+3VA
R3202 10KOhm
R3216 33Ohm
30 MARATHON#
MARATHON#_JJ
C3214 0.1UF/10V
GND
+3VS
R3214 100KOhm
R3215 33Ohm
30 MAGNIFY#
MAGNIFY#_JJ
C3210 0.1UF/10V
R3203 100KOhm
T3259
T3260
R3217 33Ohm
30 PWR_SW#
PWR_SW#_JJ
C3215 0.1UF/10V
R3205 10KOhm
R3206 0Ohm
LID_SW#
LID_SW#_J 45
C3202 0.01UF/16V
+3VS
470 OHM
LED
R3204 10KOhm
CAP_LED
CAP_LED#_R
Q3204B UM6K1N
30 CAP_LED#
Q3204A UM6K1N
R3221 0Ohm
R3219 10KOhm
NUM_LED
NUM_LED#_R
Q3205B UM6K1N
30 NUM_LED#
Q3205A UM6K1N
R3220 0Ohm
S4 Leakage
E/R 2008/05/06
C3212 1UF/10V
C3213 1UF/10V
C3211 1UF/10V
C3206 1UF/10V
P/R 2008/06/20
NUM_LED#_R
CAP_LED#_R
56 HDLED#
MAGNIFY#_JJ
MARATHON#_JJ
PWR_SW#_JJ
56 PWRLED2#
LID_SW#_J
J3208
SIDE1
SIDE2
WTOB_CON_14P
12G171000145
close to J3207
CAMERA BOARD
+5VS_CMOS
C3203 22UF/6.3V
C3204 1UF/10V
C3205 0.22UF/6.3V
C3207 22UF/6.3V
C3208 0.22UF/6.3V
for EMI
close to J3206
Mainboard
CABLE
CCD
MIC
J3206
CCD_USB-
CCD_USB+
+5VS_CMOS
+3VS
30 ALS_AD
INTMIC_A_GND_CON
INTMIC_A_CON
SIDE1
SIDE2
WTOB_CON_12P
12G171000124
36 DMIC_DATA
GND_MIC
L3206 120Ohm/100Mhz
D3205 EGA10603V05A1
INTMIC_A_GND_CON
L3202 120Ohm/100Mhz
36 DMIC_CLK
38 MIC_INT_P
L3205 120Ohm/100Mhz
D3206 EGA10603V05A1
INTMIC_A_CON
L3204 120Ohm/100Mhz
C3201 1000PF/16V
21 USB_PP3
21 USB_PN3
L3207 90Ohm/100Mhz
RN3201B
RN3201A
0Ohm
D3203 EGA10603V05A1
D3204 EGA10603V05A1
CCD_USB+
CCD_USB-
ESD Guard Close to USB Port
+12VS
+5VS
R3209 47KOhm
R3213 0Ohm
CCDON
CCDON#
Q3203B UM6K1N
Q3203A UM6K1N
30 CMOS_PWRON
R3207 100KOhm
R3208 100KOhm
R3212 100KOhm
C3209 0.01UF/16V
Q3201 Si3460DV
R3211 0OHM
R3210 100Ohm
+5VSCMOS_DSG
Q3202 2N7002
R3218 1MOhm
ALS_AD
E/R 2008/05/06 add R3218
Dr-Bios.com
ASUSTeK COMPUTER INC
Title: LAUNCH/CAMERA BOARD
Engineer: ENGINEER
Size: C
Project Name: N10
Rev: 1.0
Date: Wednesday, July 02, 2008
Sheet 32 of 97


40 mil
R3302 0OHM
+VDD33
LAN_VDDSR
C3306 22UF/6.3V
C3305 0.1UF/10V
close to pin63 within 200 mil
GND
CONNECT TO 3.3V ENABLE
;0V TO DISABLE SWIRTCHING REGULATOR
close to pin64
R3310 2.49KOhm
XTAL1_LAN
XTAL2_LAN
X3302 25Mhz
C3341 27PF/50V
C3342 27PF/50V
+AVDD33
+VDD12
注意 Pin 65 要多打via 來散熱
LAN_RSET
LAN_P51
U3301
RTL8111C_VB_GR
SROUT12
AVDD33_1
MDIP0
MDIN0
FB12
MDIP1
MDIN1
AVDD12_1
MDIP2
MDIN2
AVDD12_2
MDIP3
MDIN3
AVDD12_3
NC1
VDD33_1
EESK
EEDI/AUX
VDD33_3
EEDO
EECS
DVDD12_4
NC9
NC8
NC7
NC6
DVDD12_3
VDD33_2
ISOLATEB
NC5
NC4
CLKREQB
VCTRL12
L_TDP
L_TDN
L_RDP
L_RDN
L_TRDP2
L_TRDM2
L_TRDP3
L_TRDM3
R3319 0Ohm
RTLAN_DSM# 30
RTLAN_DSM_EN 30
RTLAN_DSM# ---> Check with Bruce
RTLAN_DSM_EN --> Check with Bruce
Reserved DSM Function
R3320 3.6KOhm
R3317 0Ohm @
Q3301 2N7002
R3307 1KOhm
+3VS
ISOLATEB
CLK_LAN_REQ#
CLK_LAN_REQ# 29
R3309 15KOhm @
Pin.33 is Clkreq# pin similar to Clkrun function in the PCI interface. If this function not implemented, make this pin floating or connect to the ground.
DSM function note:
At S0 stage, when un-plug LAN cable, the RTLAN_DSM_EN# will pull-low to notice the system, then the system will pull-high the RTLAN_VCC33_EN# to cut off the ISOLATEB pin power.
close to pin1 with in 200 mil
L3301 4.7UH
VCTRL12
60 mil
close to L3301 with in 200 mil
0Ohm R3301
FB12
C3307 22UF/6.3V
C3309 0.1UF/10V
C3301 0.1UF/10V
C3302 0.1UF/10V
C3303 0.1UF/10V
C3304 0.1UF/10V
+AVDD12
L3303 80Ohm/100Mhz
L3304 80Ohm/100Mhz
C3310 0.1UF/10V
C3311 0.1UF/10V
+EVDD12
LAN_EGND
40mil
C3320 0.1UF/10V
C3321 0.1UF/10V
C3322 0.1UF/10V
C3323 0.1UF/10V
C3324 0.1UF/10V
C3325 0.1UF/10V
C3326 0.1UF/10V
C3327 22UF/6.3V
C3328 0.1UF/10V
C3329 0.1UF/10V
R3316 0Ohm
C3330 0.1UF/10V
C3331 0.1UF/10V
R3321 0Ohm
20,21,43,53 PCIE_WAKE#
PCIE_WAKE#_R
PELAN_RST#
close to LAN CHIP
PCIE_RXN1_C
PCIE_RXP1_C
C3335 0.1UF/10V
C3332 0.1UF/10V
PCIE_RXN1_LAN 21
PCIE_RXP1_LAN 21
CLK_PCIE_LAN#
CLK_PCIE_LAN
PCIE_TXN1_LAN
PCIE_TXP1_LAN
CLK_PCIE_LAN# 29
CLK_PCIE_LAN 29
PCIE_TXN1_LAN 21
PCIE_TXP1_LAN 21
30 LAN_RST#
R3322 @ 0Ohm
R3306 10KOhm
C3356 0.1UF/10V
U3304
NC7SZ08P5X
11,21,42 PLT_RST#
R3304 10KOhm
R3323 0Ohm
LAN_EGND
R3303 0Ohm @
Q3305 SI3460DV
LAN_PWRON
C3354 0.1UF/10V
C3308 22UF/6.3V
R3326 330Ohm
+V3.3_LAN_DSG
Q3304 2N7002
R3308 100KOhm
LAN_PWR_ON#
Q3302A UM6K1N
Q3302B UM6K1N
30 LAN_PWR_ON
R3324 100KOhm
R3327 100KOhm
C3312 0.01UF/16V
R3325 220KOhm
+12V
+3V
Title : LAN
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Size Custom
Project Name N10
Rev 1.0
Date: Wednesday, July 02, 2008
Sheet 33 of 97

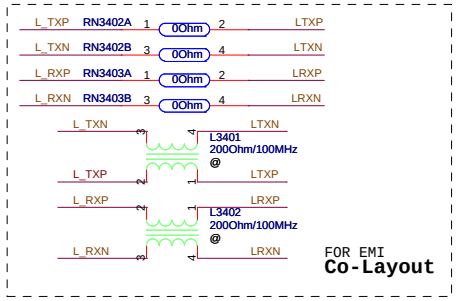
P/R 20080630 SWAP D3401(pin1,pin6) and D3402(pin3,pin4)

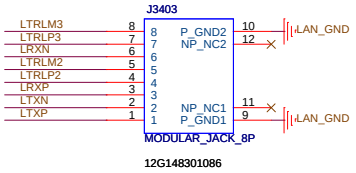


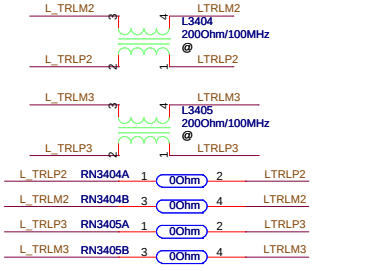


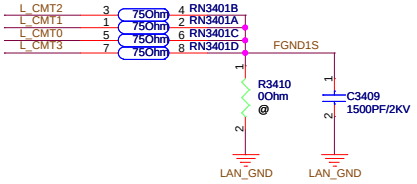


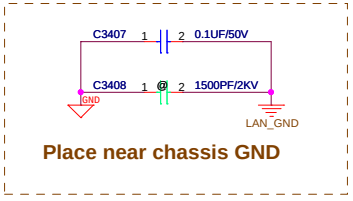
Transformer close to J3401

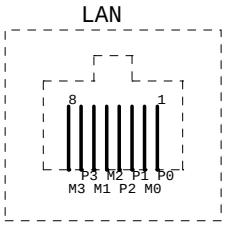






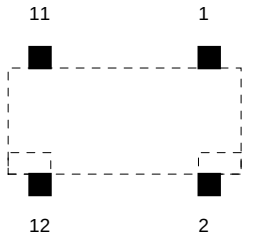






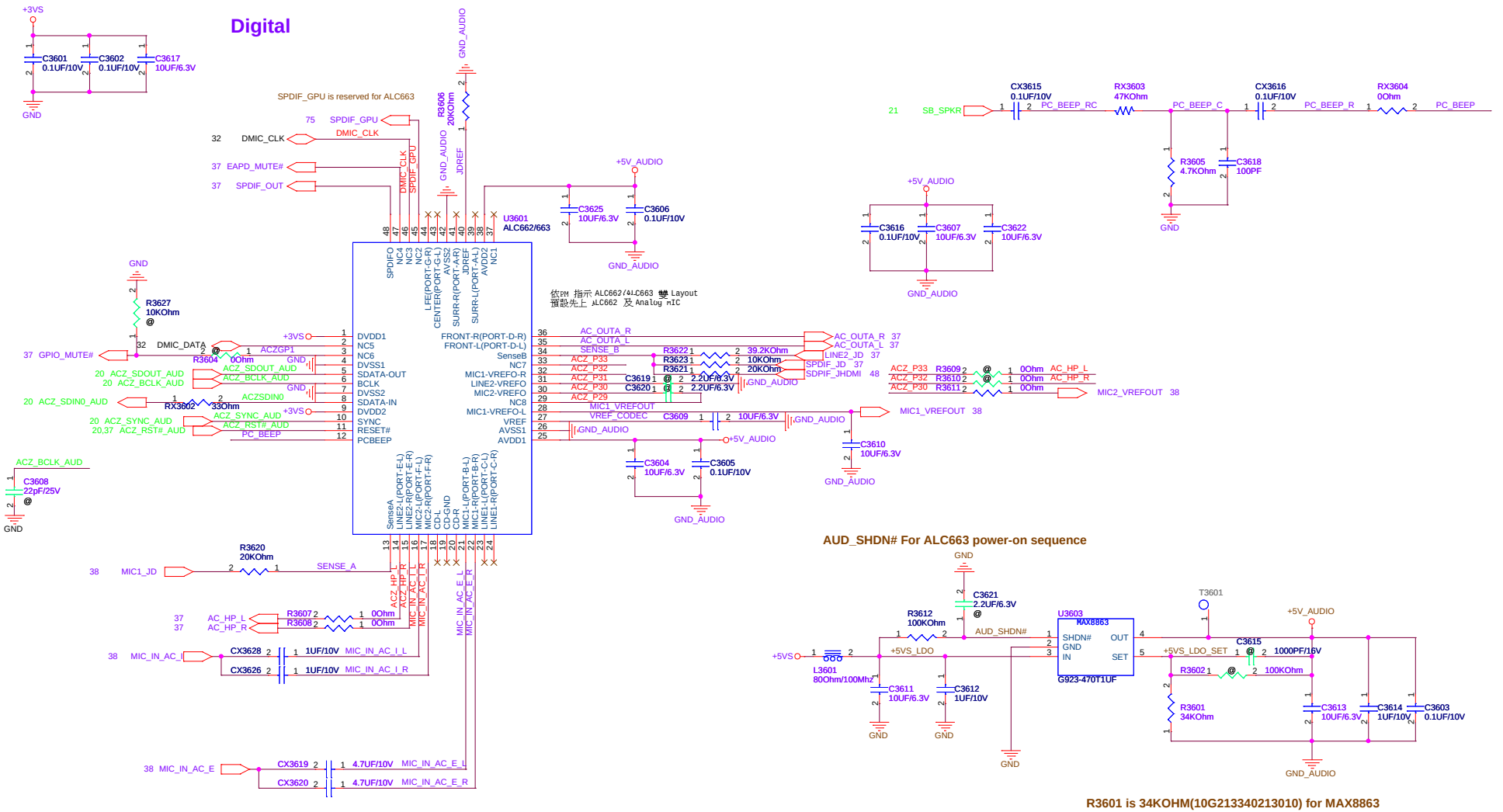
ASUSTeK COMPUTER INC	Title : LAN	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 34 of 97	

MDC

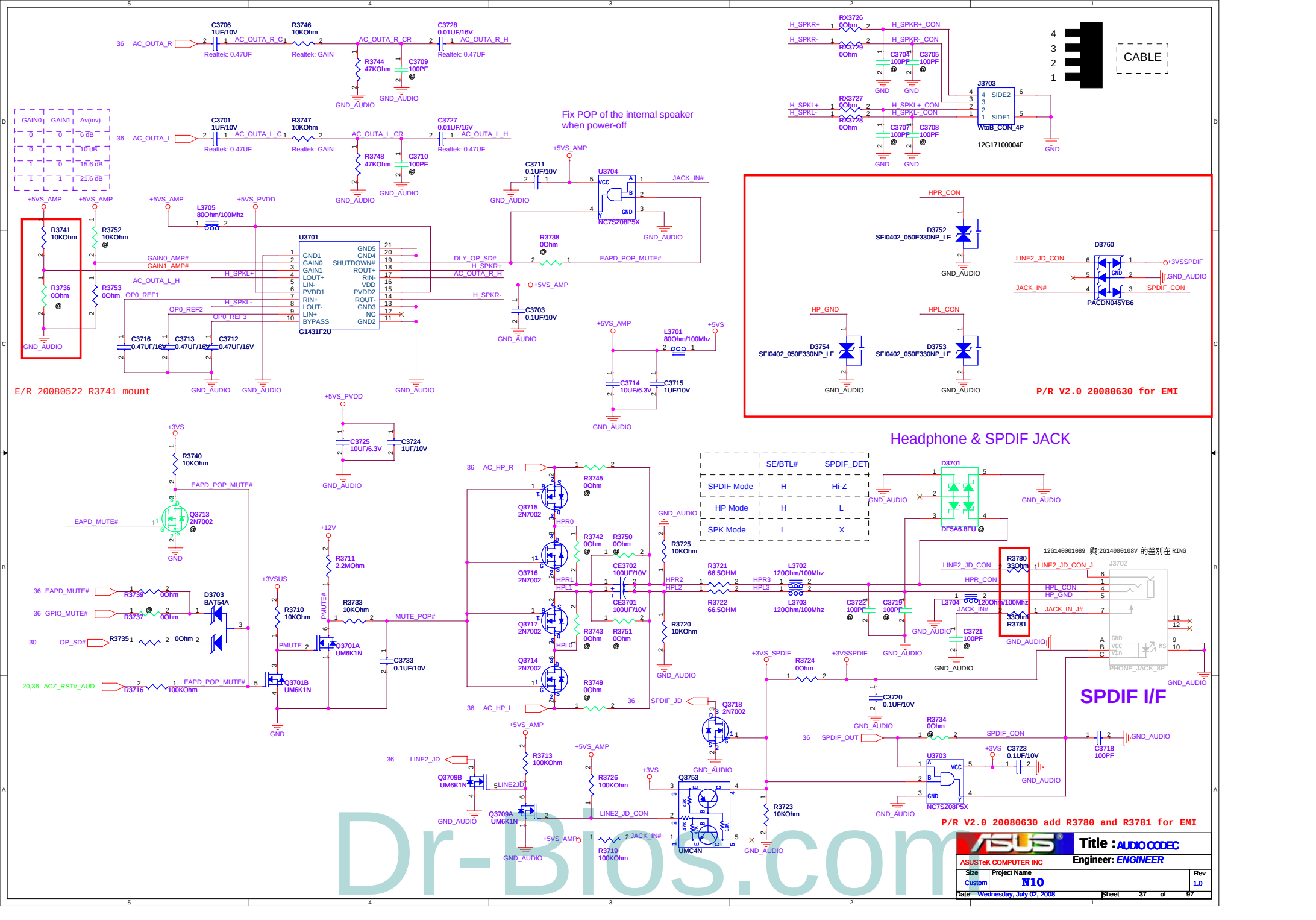


ASUSTeK COMPUTER INC	Title : MDC	
	Engineer: ENGINEER	
Size: A	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 35 of 97	

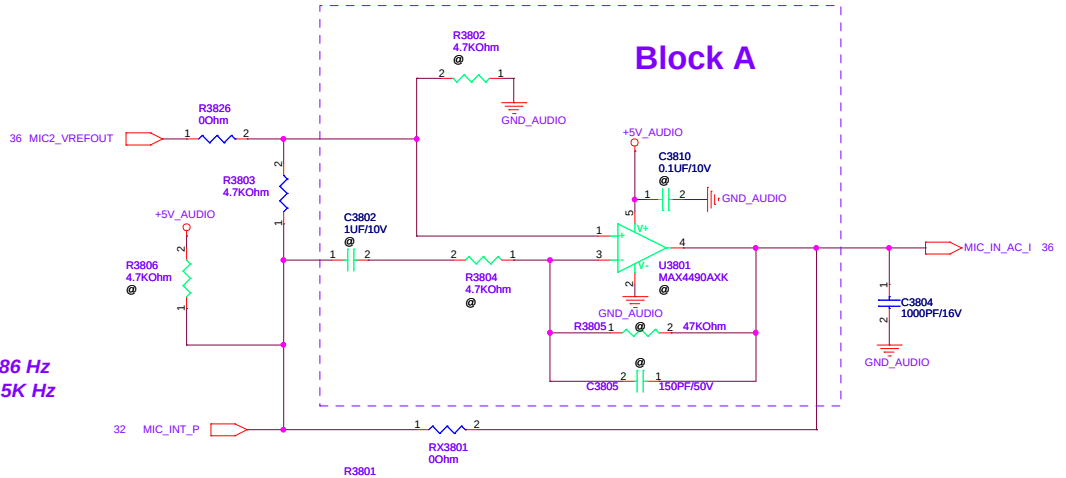
Digital



Title :	AUDIO CODEC
ASUSTeK COMPUTER INC	Engineer: ENGINEER
Size: Custom	Project Name: N10
Rev:	1.0
Date: Wednesday, July 02, 2008	Sheet 36 of 97

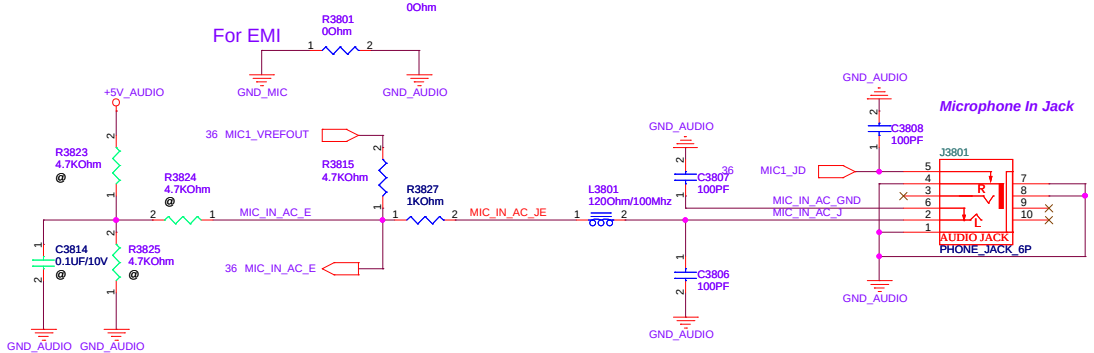

Fix POP of the internal speaker when power-off
E/R 20080522 R3741 mount
P/R V2.0 20080630 for EMI
Headphone & SPDIF JACK
SPDIF I/F
P/R V2.0 20080630 add R3780 and R3781 for EMI
CABLE
SE/BTL# SPDIF_DET
SPDIF Mode H Hi-Z
HP Mode H L
SPK Mode L X
12G140001089 與 2G14000108V 的差別在 RING
Title : AUDIO CODEC
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Project Name N10
Rev 1.0
Date: Wednesday, July 02, 2008
Sheet 37 of 97

Internal MIC Pre-Amplifier



(Microphone)FL = 33.86 Hz
(Microphone)FH = 22.5K Hz

External MIC



ASUSTeK COMPUTER INC	Title : MICROPHONE	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 38 of 97	

Title : EMPTY		
ASUSTeK COMPUTER INC	Engineer: ENGINEER	
Size: A	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 39 of 97	

xD Pin-assignment

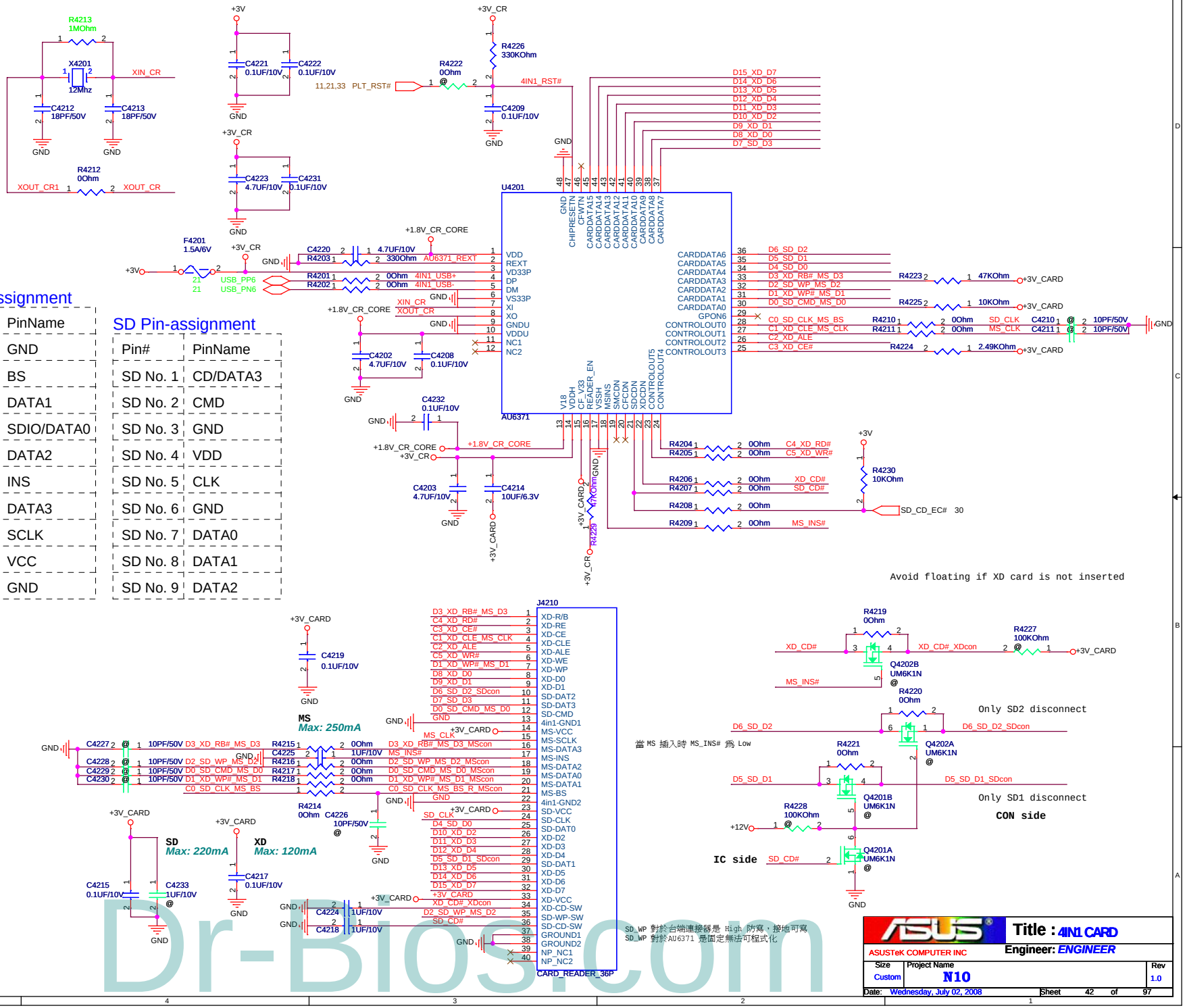
Pin#	PinName
Xd No. 0	CD
Xd No. 1	GND
Xd No. 2	R/-B
Xd No. 3	-RE
Xd No. 4	-CE
Xd No. 5	CLE
Xd No. 6	ALE
Xd No. 7	-WE
Xd No. 8	-WP
Xd No. 9	GND
Xd No.10	D0
Xd No.11	D1
Xd No.12	D2
Xd No.13	D3
Xd No.14	D4
Xd No.15	D5
Xd No.16	D6
Xd No.17	D7
Xd No.18	VCC

MS Pin-assignment

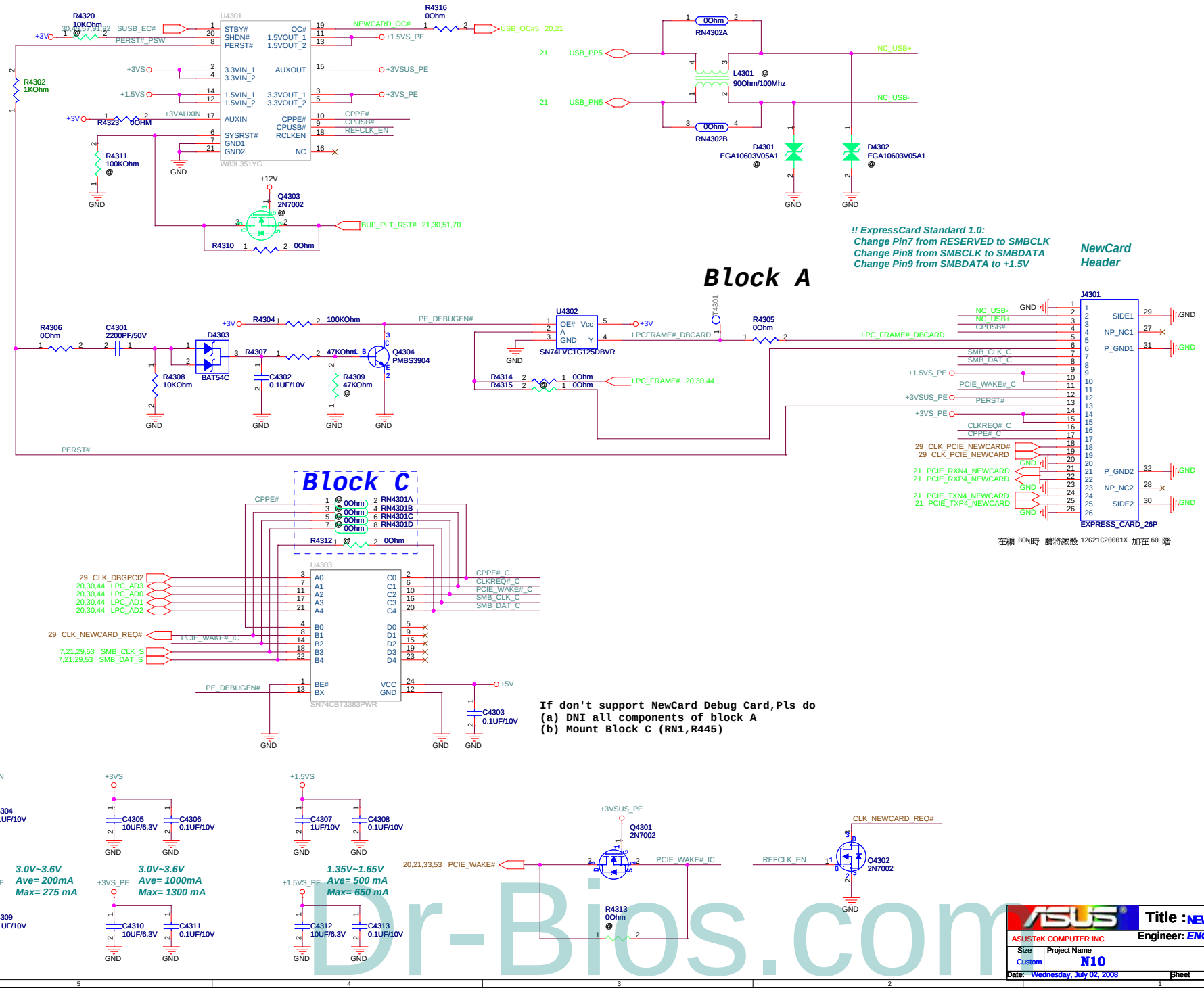
Pin#	PinName
MS No. 1	GND
MS No. 2	BS
MS No. 3	DATA1
MS No. 4	SDIO/DATA0
MS No. 5	DATA2
MS No. 6	INS
MS No. 7	DATA3
MS No. 8	SCLK
MS No. 9	VCC
MS No.10	GND

SD Pin-assignment

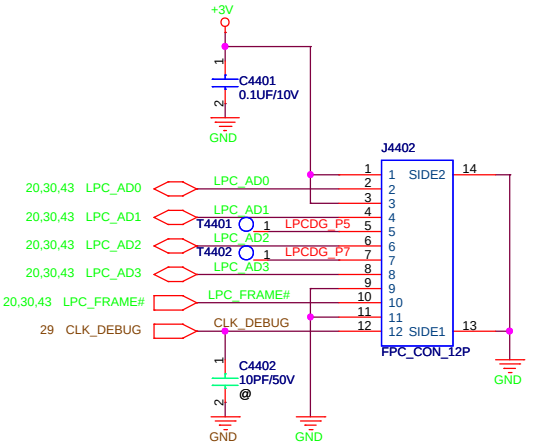
Pin#	PinName
SD No. 1	CD/DATA3
SD No. 2	CMD
SD No. 3	GND
SD No. 4	VDD
SD No. 5	CLK
SD No. 6	GND
SD No. 7	DATA0
SD No. 8	DATA1
SD No. 9	DATA2



Title :	4IN1 CARD
ASUSTeK COMPUTER INC	Engineer: ENGINEER
Size: Custom	Project Name: N10
Rev:	1.0
Date: Wednesday, July 02, 2008	Sheet 42 of 97

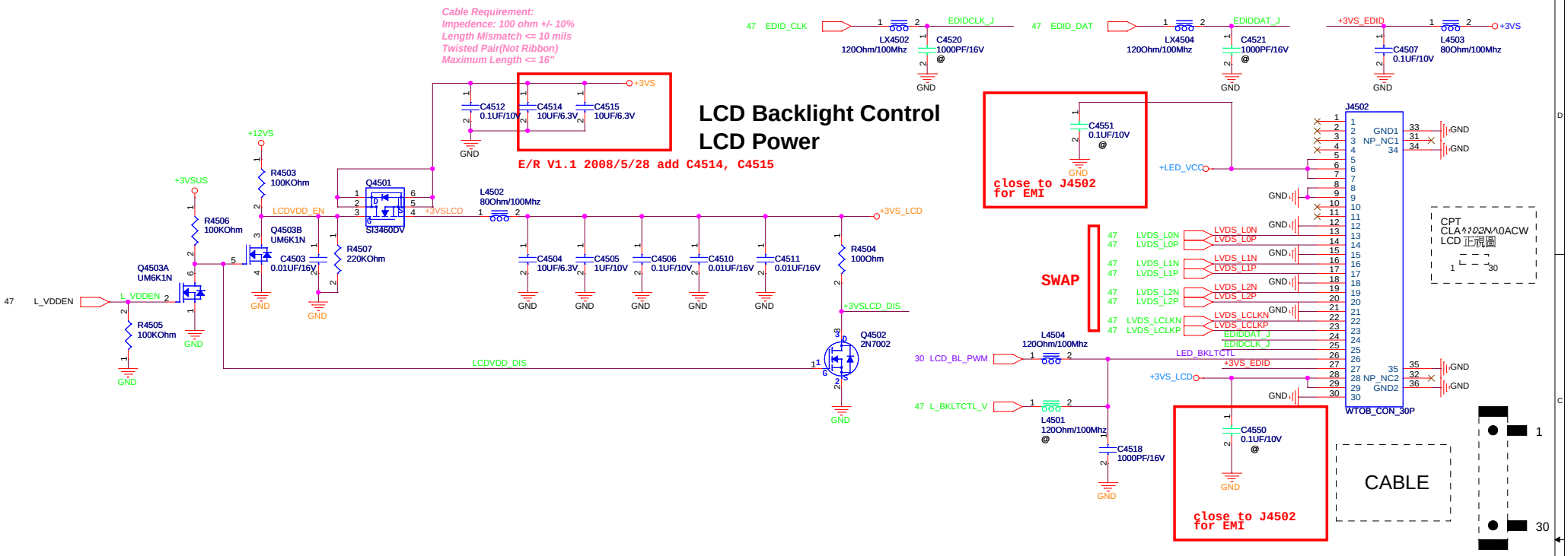

Block A
Block C
!! ExpressCard Standard 1.0:
Change Pin7 from RESERVED to SMBCLK
Change Pin8 from SMBCLK to SMBDATA
Change Pin9 from SMBDATA to +1.5V
NewCard Header
If don't support NewCard Debug Card,Pls do
(a) DNI all components of block A
(b) Mount Block C (RN1,R445)
3.0V~3.6V Ave= 200mA Max= 275 mA
3.0V~3.6V Ave= 1000mA Max= 1300 mA
1.35V~1.65V Ave= 500 mA Max= 650 mA
Title : NEWCARD
ASUSTeK COMPUTER INC
Engineer: ENGINEER
Project Name N10
Rev 1.0
Date: Wednesday, July 02, 2008
Sheet 43 of 97

LPC DEBUG PORT



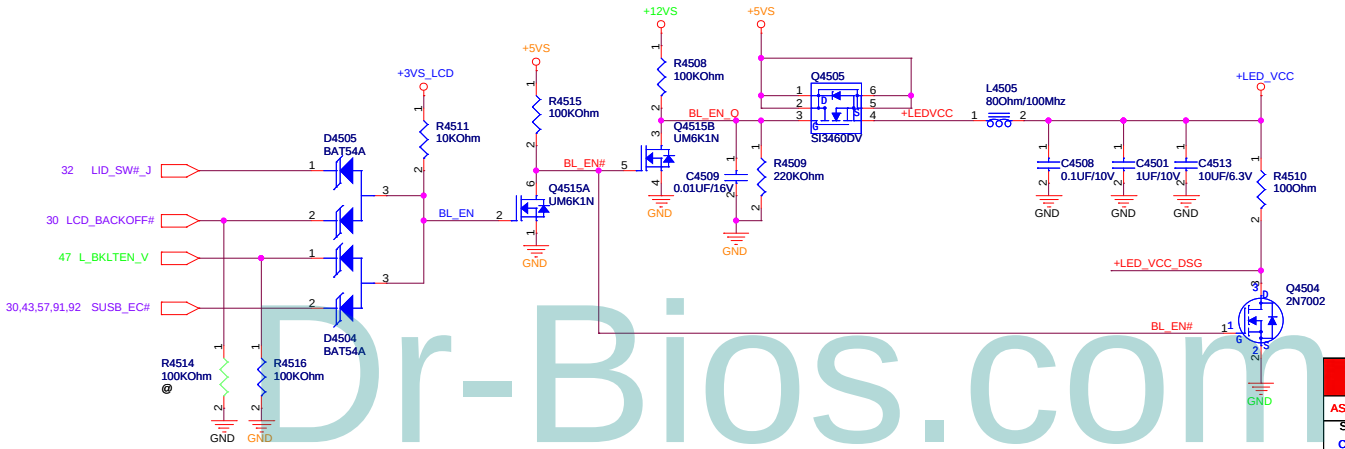
ASUSTeK COMPUTER INC	Title : LPC DEBUG	
	Engineer: ENGINEER	
Size: B	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 44 of 97	

LCD LVDS Interface



Backlight Interface

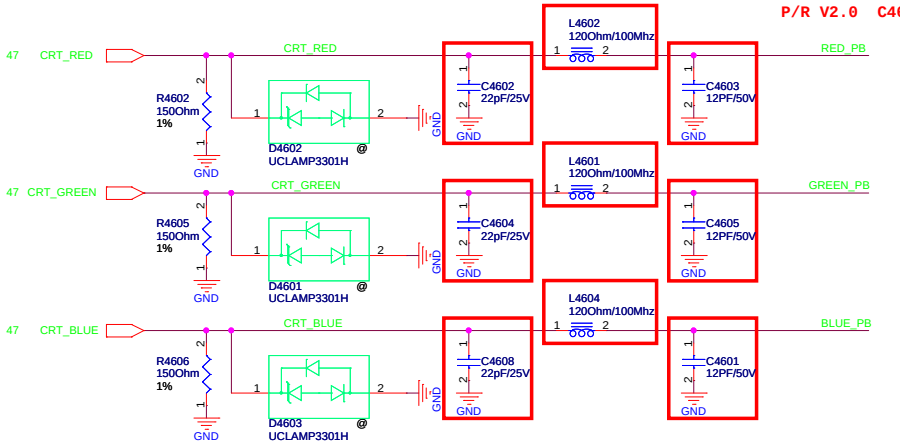
BIOS
BACK_OFF#:When user push "Fn+F7" button, BIOS active this pin to turn off back light.

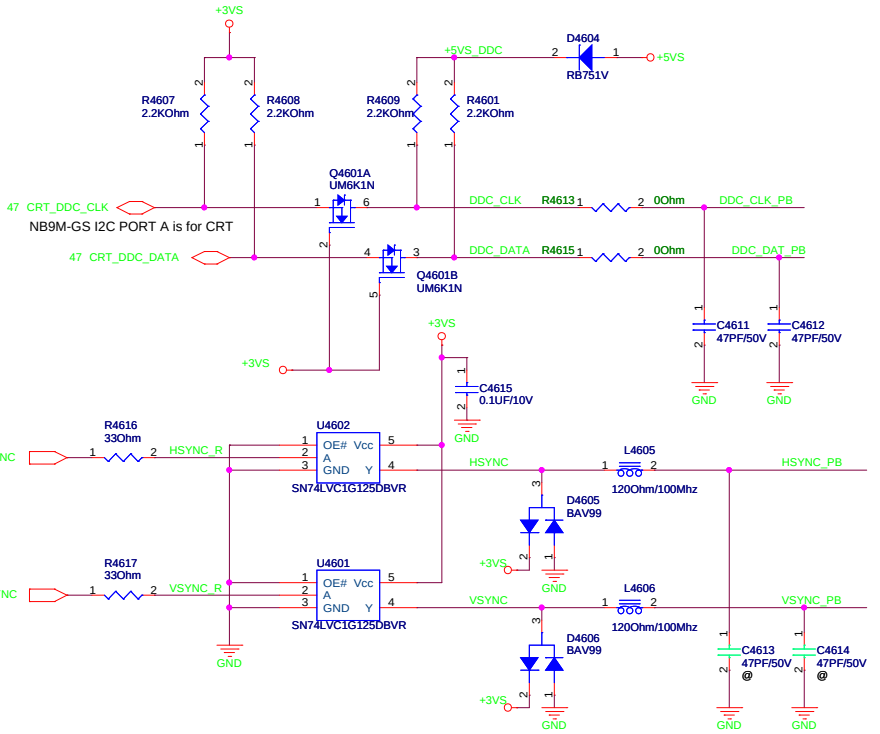


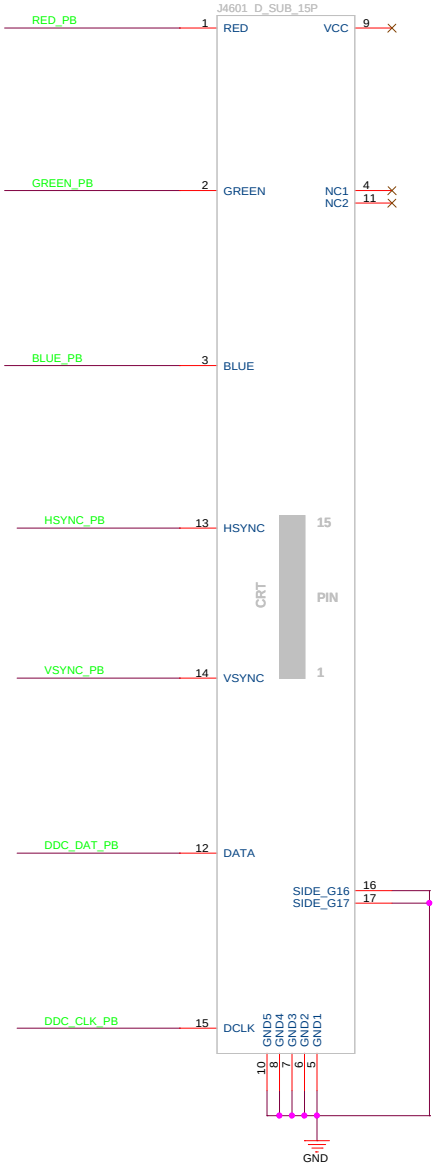
ASUSTeK COMPUTER INC	Title : LVDS & INVERTER	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 45 of 97	

P/R V2.0 L4601,L4602,L4604 change to P/N:09G023681002 (0.068UH/300mA 0603 5%)

P/R V2.0 C4601,C4602,C4603,C4604,C4605,C4608 change to P/N:11G232010004150 (10pF 0402)







Unidirectional buffers (high impedance buffers) are required on both HSYNC and VSYNC to prevent potential electrical overstress and illegal operation of the GMCH, since some display monitors may attempt to drive HSYNC and VSYNC signals back to GMCH.

ASUSTek COMPUTER INC	Title : CRT	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
Date: Monday, July 07, 2008	Sheet 46 of 97	

LCD/BL Enable Switch

E/R V1.1 2008/5/28 add R4753,R4754

MCH

GPU

LVDS Switch

MCH

GPU

E/R V1.1 2008/5/28 add C4715

E/R V1.1 2008/5/28 add C4713, C4714

CRT RGB Switch

DAC_SEL
L: Dx=S1x (MCH)
H: Dx=S2x (GPU)

EDID Switch

MCH

GPU

CRT DDC Switch

MCH

GPU

BL PWM Switch

MCH

GPU

VGASW_MCH_GPU#=High INTEL OFF(2,3)

VGASW_MCH_GPU#=Low ON(1,3) NB9M-GS

N10
TOP

ON(1,3)

OFF(2,3)

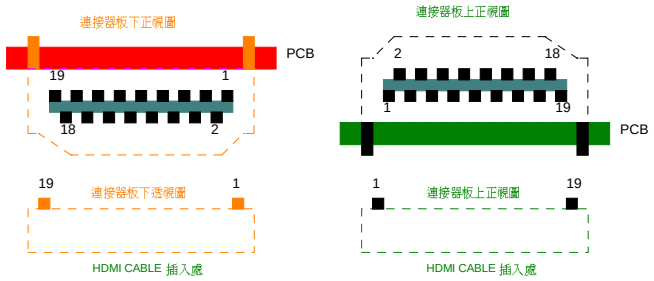
CRT SYNC Switch

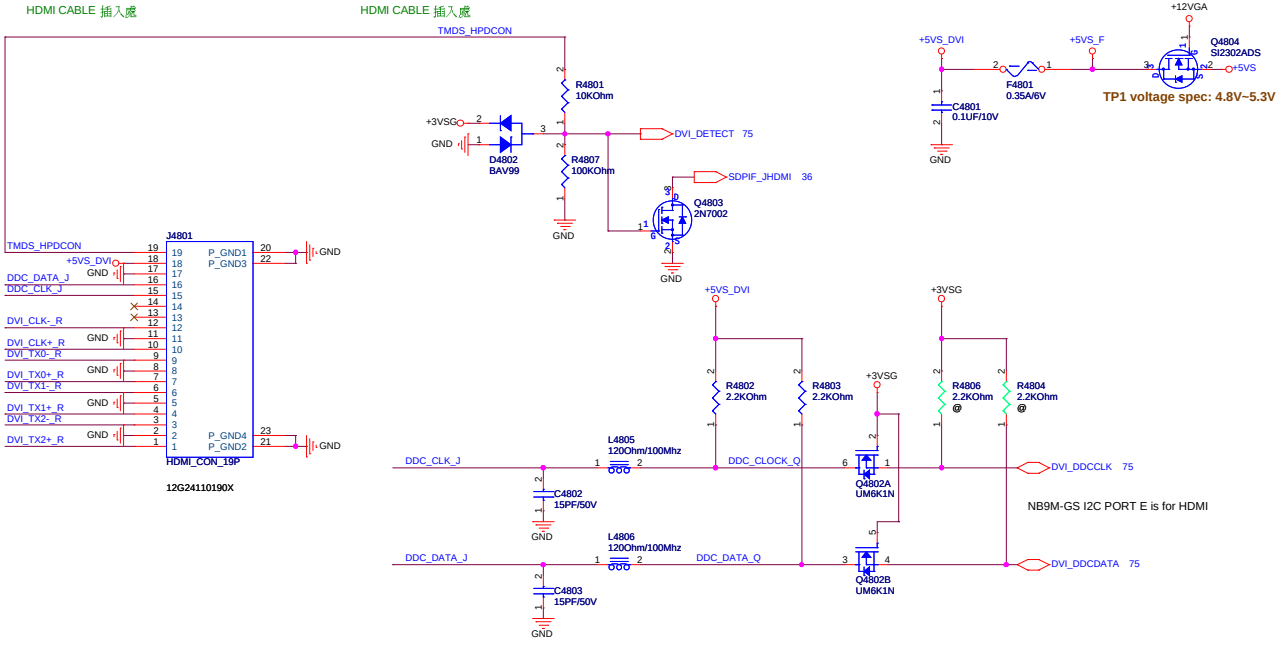
MCH

GPU

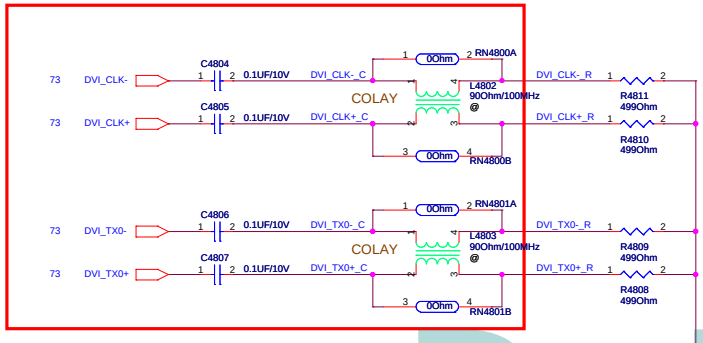
P/R V2.0 2008/7/01 change +3VS to +3VA, umount R4718

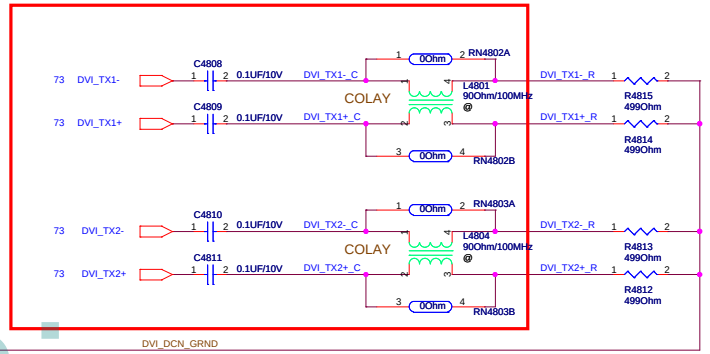
Title :	Hybrid-Switch
ASUSTeK COMPUTER INC. NB1	Engineer: C.W._Lin
Size: Custom	Project Name: H17
Rev: 1.0	
Date: Wednesday, July 02, 2008	Sheet 47 of 97

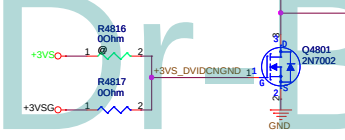




E/R V1.1 20080526 for EMI







ASUSTeK COMPUTER INC

Title : HDMI

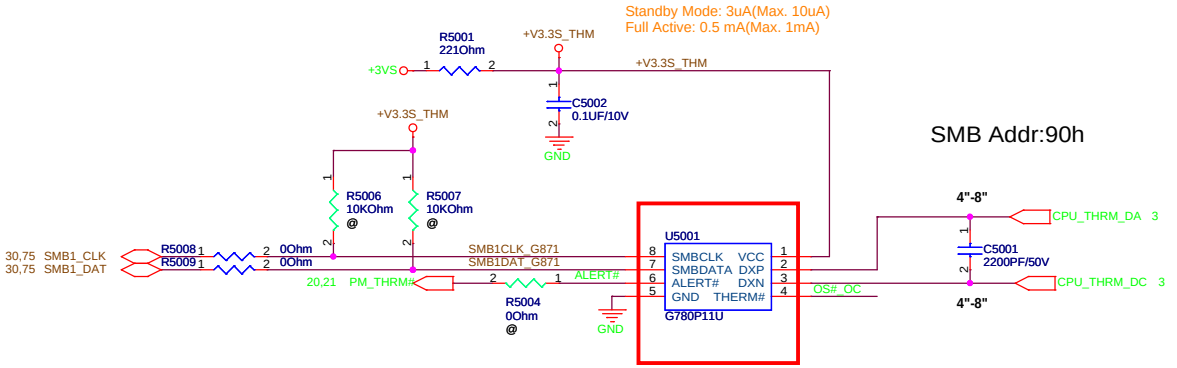
Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

Date: Wednesday, July 02, 2008 Sheet 48 of 97

ASUSTeK COMPUTER INC	Title : EMPTY			
	Engineer: ENGINEER			
Size: A	Project Name: N10			Rev: 1.0
Date: Wednesday, July 02, 2008		Sheet 49 of 97		

Thermal Sensor



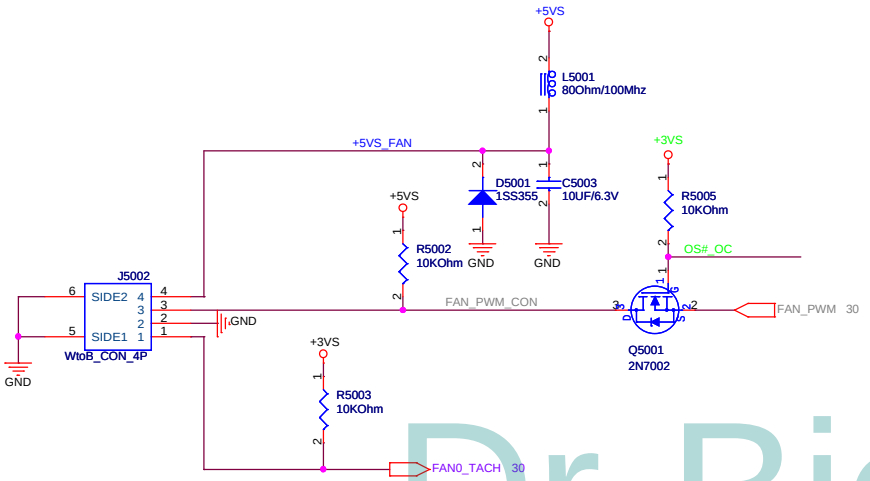
U5001 於3OM變更P/N:06G023064020 E/R 2008/05/19

Route H_THERMDA and H_THERMDC on the same layer

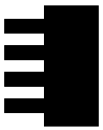
----------OTHER SIGNALS
12 mils
==========GND
10 mils
=========H_THERMDA(10 mils)
10 mils
=========H_THERMDC(10 mils)
10 mils
=========GND
12 mils
----------OTHER SIGNALS

Avoid BPSB,Power

FAN connector



TOP



FAN

ASUSTeK COMPUTER INC

Title : THER-SENSOR/FAN

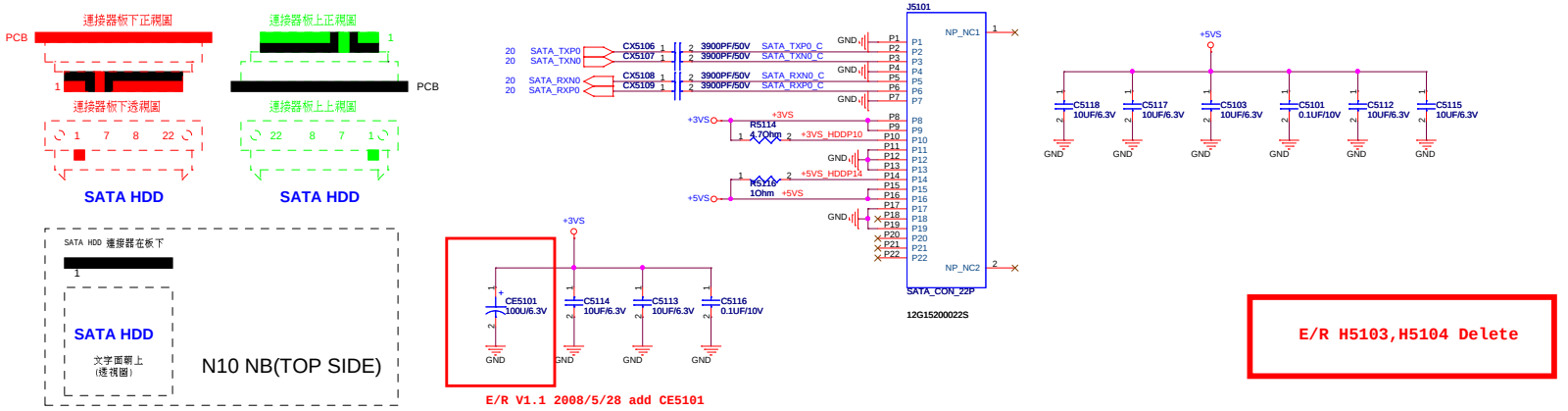
Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

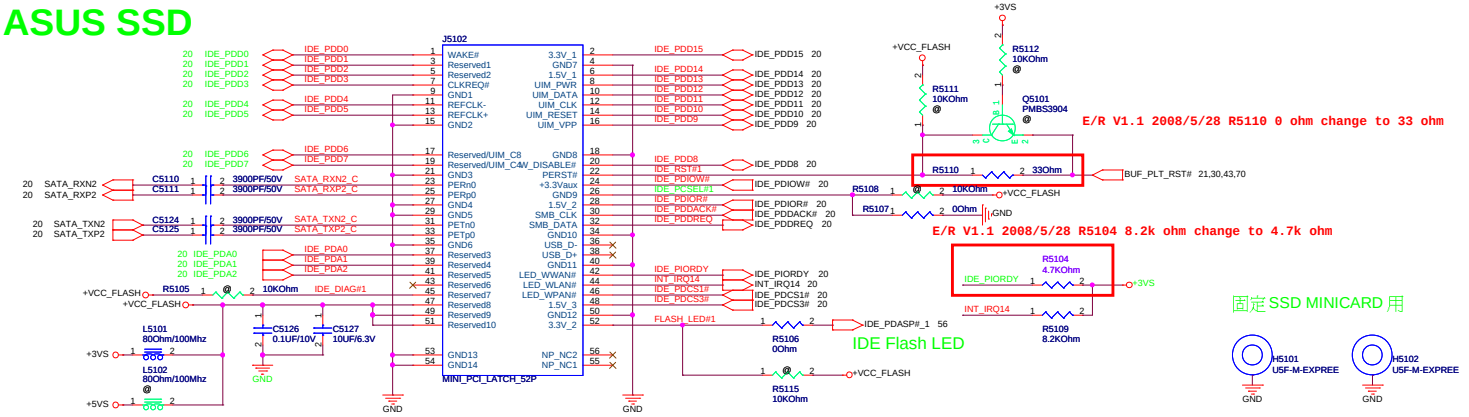
Date: Wednesday, July 02, 2008 Sheet 50 of 97

SATA HDD

J5101 變更P/N:12G15200022S (DIP)

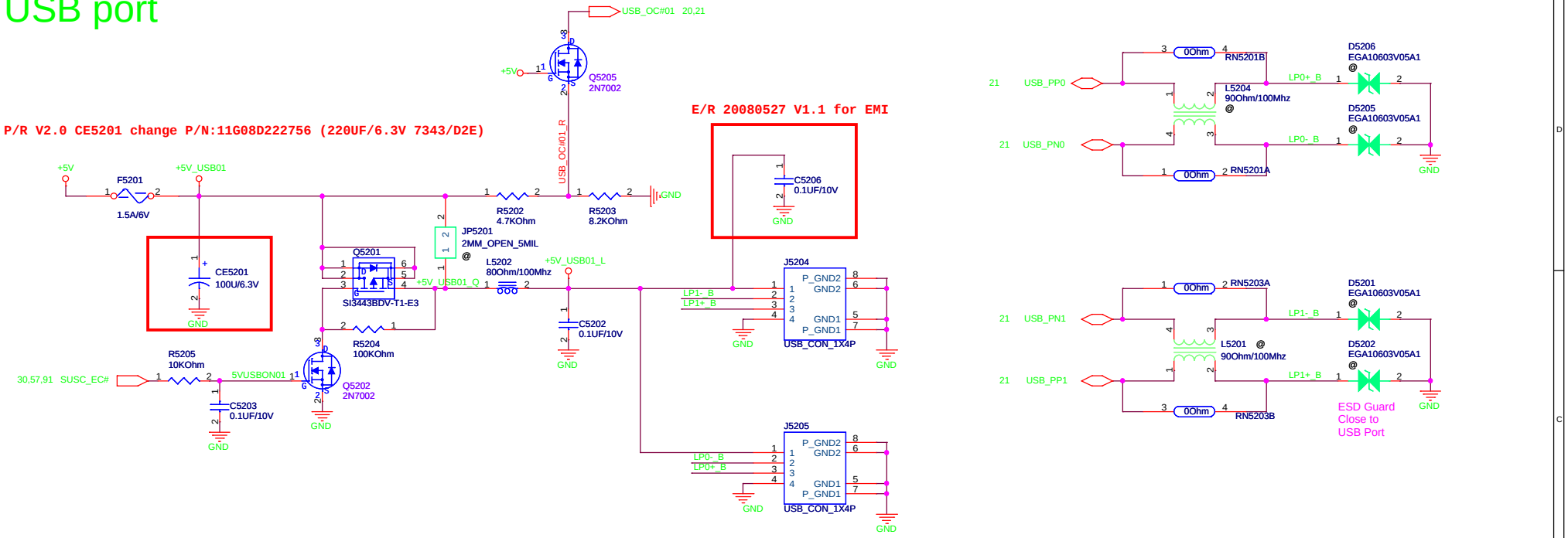


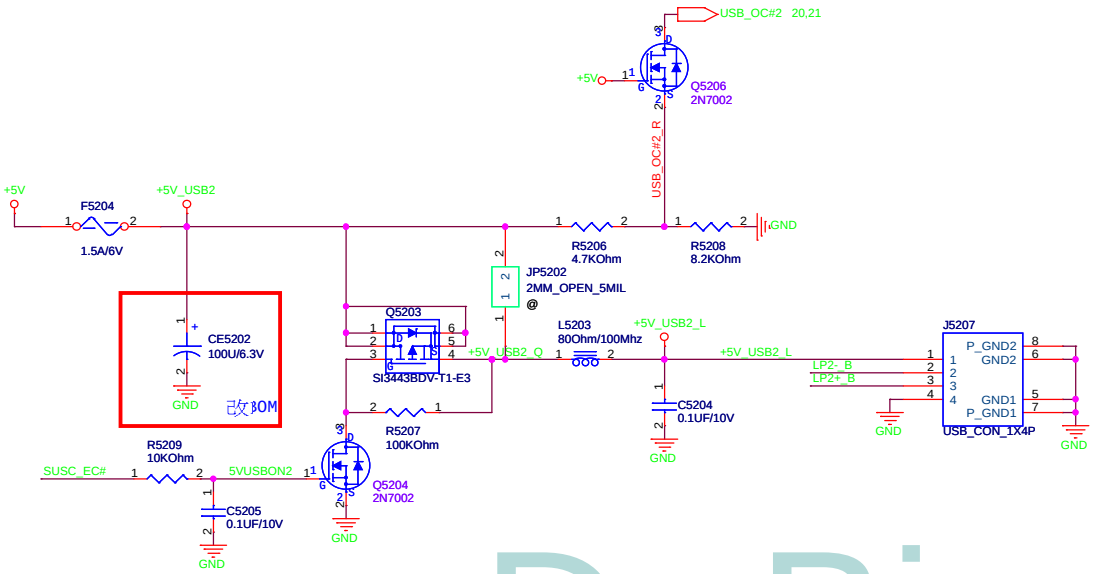
ASUS SSD

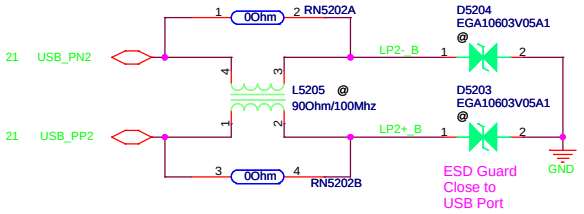


ASUSTeK COMPUTER INC	Title : HDD		
	Engineer: ENGINEER		
Size: C	Project Name: N10		Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 51 of 97		

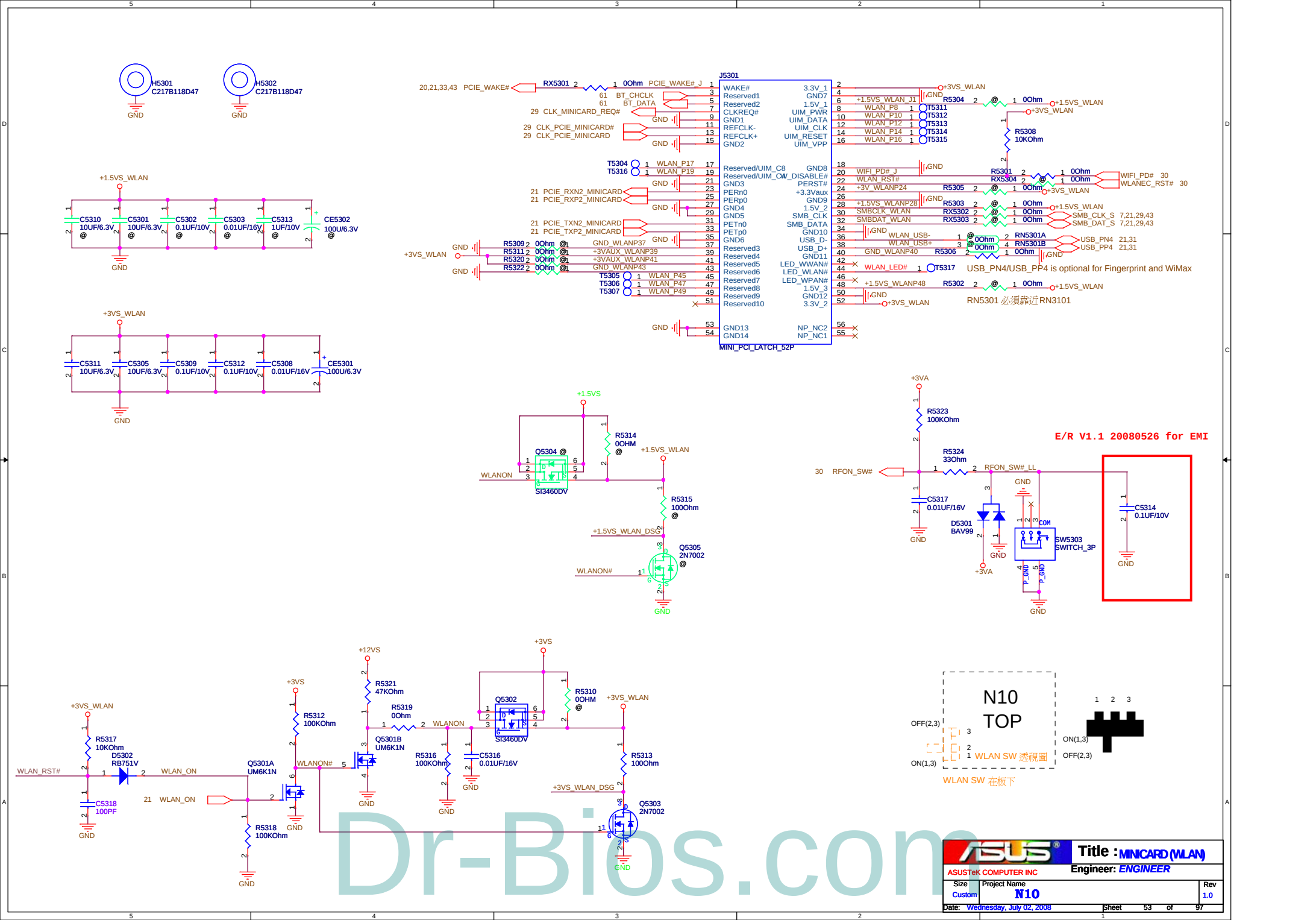
USB port







ASUSTeK COMPUTER INC	Title : USB CONN
	Engineer: ENGINEER
Size: Custom	Project Name: N10
	Rev: 1.0
Date: Monday, July 07, 2008	Sheet 52 of 97


H5301
C217B118D47
H5302
C217B118D47
GND
+1.5VS_WLAN
C5310 10UF/6.3V @
C5301 10UF/6.3V @
C5302 0.1UF/10V @
C5303 0.01UF/16V @
C5313 1UF/10V @
CE5302 100U/6.3V @
+3VS_WLAN
C5311 10UF/6.3V
C5305 10UF/6.3V
C5309 0.1UF/10V
C5312 0.1UF/10V
C5308 0.01UF/16V
CE5301 100U/6.3V
J5301
MINI_PCI_LATCH_52P
20,21,33,43 PCIE_WAKE#
RX5301 0Ohm PCIE_WAKE#_J
WAKE#
Reserved1
Reserved2
CLKREQ#
GND1
REFCLK-
REFCLK+
GND2
29 CLK_MINICARD_REQ#
29 CLK_PCIE_MINICARD#
29 CLK_PCIE_MINICARD
61 BT_CHCLK
61 BT_DATA
3.3V_1
GND7
1.5V_1
UIM_PWR
UIM_DATA
UIM_CLK
UIM_RESET
UIM_VPP
+1.5VS_WLAN_J1
WLAN_P8
WLAN_P10
WLAN_P12
WLAN_P14
WLAN_P16
T5311
T5312
T5313
T5314
T5315
R5304 0Ohm
R5308 10KOhm
+3VS_WLAN
+1.5VS_WLAN
T5304
T5316
WLAN_P17
WLAN_P19
21 PCIE_RXN2_MINICARD
21 PCIE_RXP2_MINICARD
21 PCIE_TXN2_MINICARD
21 PCIE_TXP2_MINICARD
Reserved/UIM_C8
Reserved/UIM_C4
GND3
PERn0
PERp0
GND4
GND5
PETn0
PETp0
GND6
Reserved3
Reserved4
Reserved5
Reserved6
Reserved7
Reserved8
Reserved9
Reserved10
W_DISABLE#
PERST#
+3.3Vaux
GND9
1.5V_2
SMB_CLK
SMB_DATA
GND10
USB_D-
USB_D+
GND11
LED_WWAN#
LED_WLAN#
LED_WPAN#
1.5V_3
GND12
3.3V_2
GND8
WIFI_PD#_J
WLAN_RST#
+3V_WLANP24
+1.5VS_WLANP28
SMBCLK_WLAN
SMBDAT_WLAN
WLAN_USB-
WLAN_USB+
GND_WLANP40
WLAN_LED#
+1.5VS_WLANP48
GND13
GND14
NP_NC2
NP_NC1
R5301 0Ohm
R5304 0Ohm
R5305 0Ohm
R5303 0Ohm
R5302 0Ohm
R5306 0Ohm
RN5301A 0Ohm
RN5301B 0Ohm
T5317
WIFI_PD# 30
WLANEC_RST# 30
SMB_CLK_S 7,21,29,43
SMB_DAT_S 7,21,29,43
USB_PN4 21,31
USB_PP4 21,31
USB_PN4/USB_PP4 is optional for Fingerprint and WiMax
RN5301 必須靠近RN3101
R5309 0Ohm GND_WLANP37
R5311 0Ohm +3VAUX_WLANP39
R5320 0Ohm +3VAUX_WLANP41
R5322 0Ohm GND_WLANP43
T5305 WLAN_P45
T5306 WLAN_P47
T5307 WLAN_P49
+1.5VS
Q5304 @
SI3460DV
WLANON
R5314 0OHM @
R5315 100Ohm @
+1.5VS_WLAN_DSG
Q5305 2N7002 @
WLANON#
+3VA
R5323 100KOhm
R5324 33Ohm
30 RFON_SW#
RFON_SW#_LL
C5317 0.01UF/16V
D5301 BAV99
SW5303 SWITCH_3P
C5314 0.1UF/10V
E/R V1.1 20080526 for EMI
+12VS
+3VS
R5321 47KOhm
R5319 0Ohm
R5312 100KOhm
Q5301B UM6K1N
Q5301A UM6K1N
Q5302
SI3460DV
R5310 0OHM @
R5316 100KOhm
C5316 0.01UF/16V
R5313 100Ohm
+3VS_WLAN_DSG
Q5303 2N7002
R5317 10KOhm
D5302 RB751V
WLAN_RST#
WLAN_ON
21 WLAN_ON
C5318 100PF
R5318 100KOhm
N10
TOP
OFF(2,3)
ON(1,3)
WLAN SW 透視圖
WLAN SW 在板下
1 2 3
ON(1,3)
OFF(2,3)
Dr-Bios.com
ASUSTeK COMPUTER INC
Title : MINICARD (WLAN)
Engineer: ENGINEER
Size Custom
Project Name N10
Rev 1.0
Date: Wednesday, July 02, 2008
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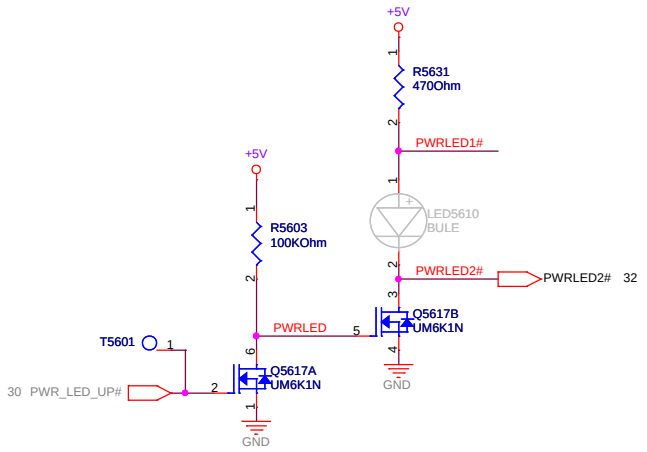
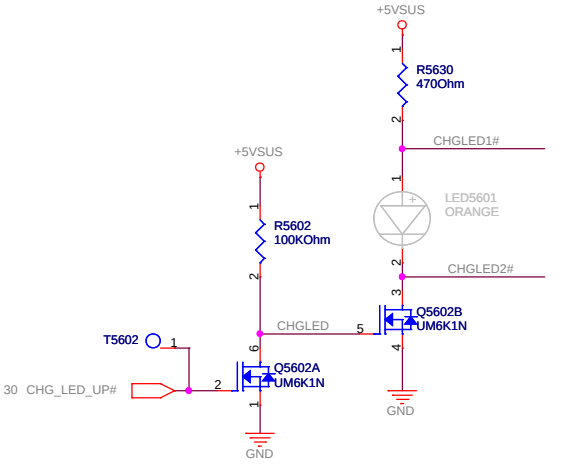
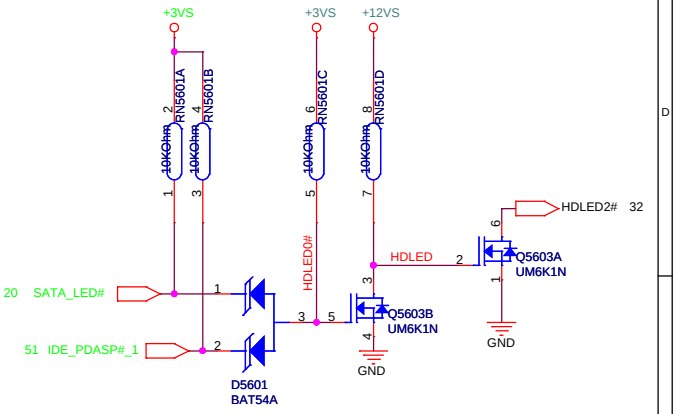
ASUSTek COMPUTER INC	Title : EMPTY		
	Engineer: ENGINEER		
Size: Custom	Project Name: N10		Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 54 of 97		

POWER LED



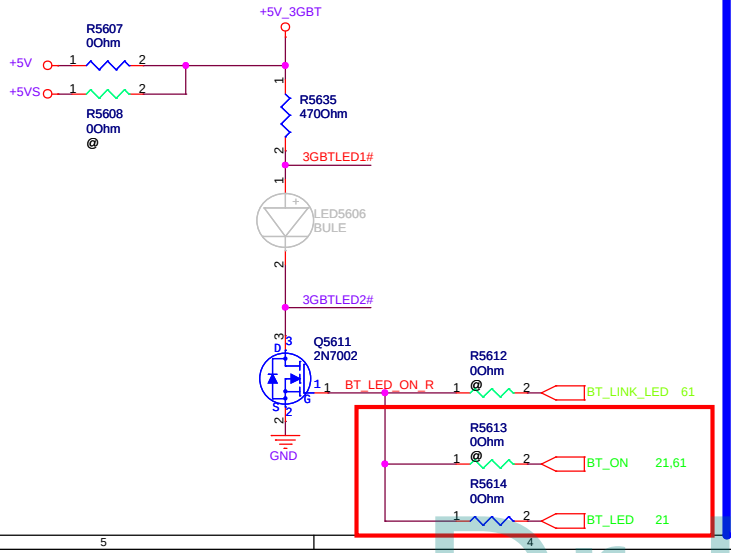
CHARGE LED



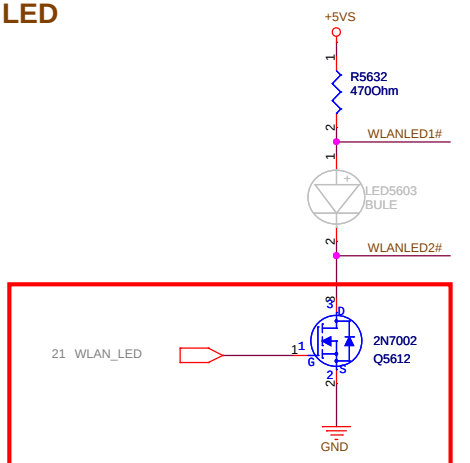


BT LED

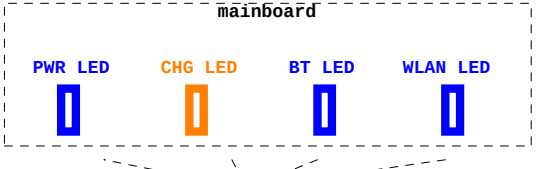
P/R V2.0 2008/6/29 R5613 unmount, R5614 mount

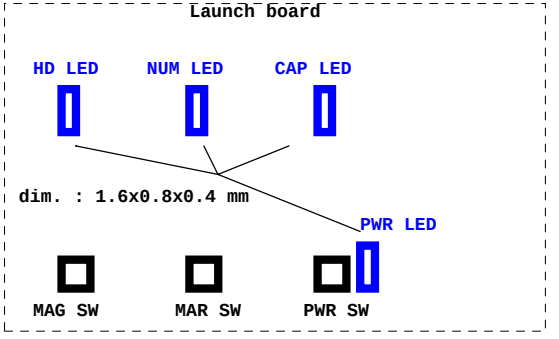


WLAN LED

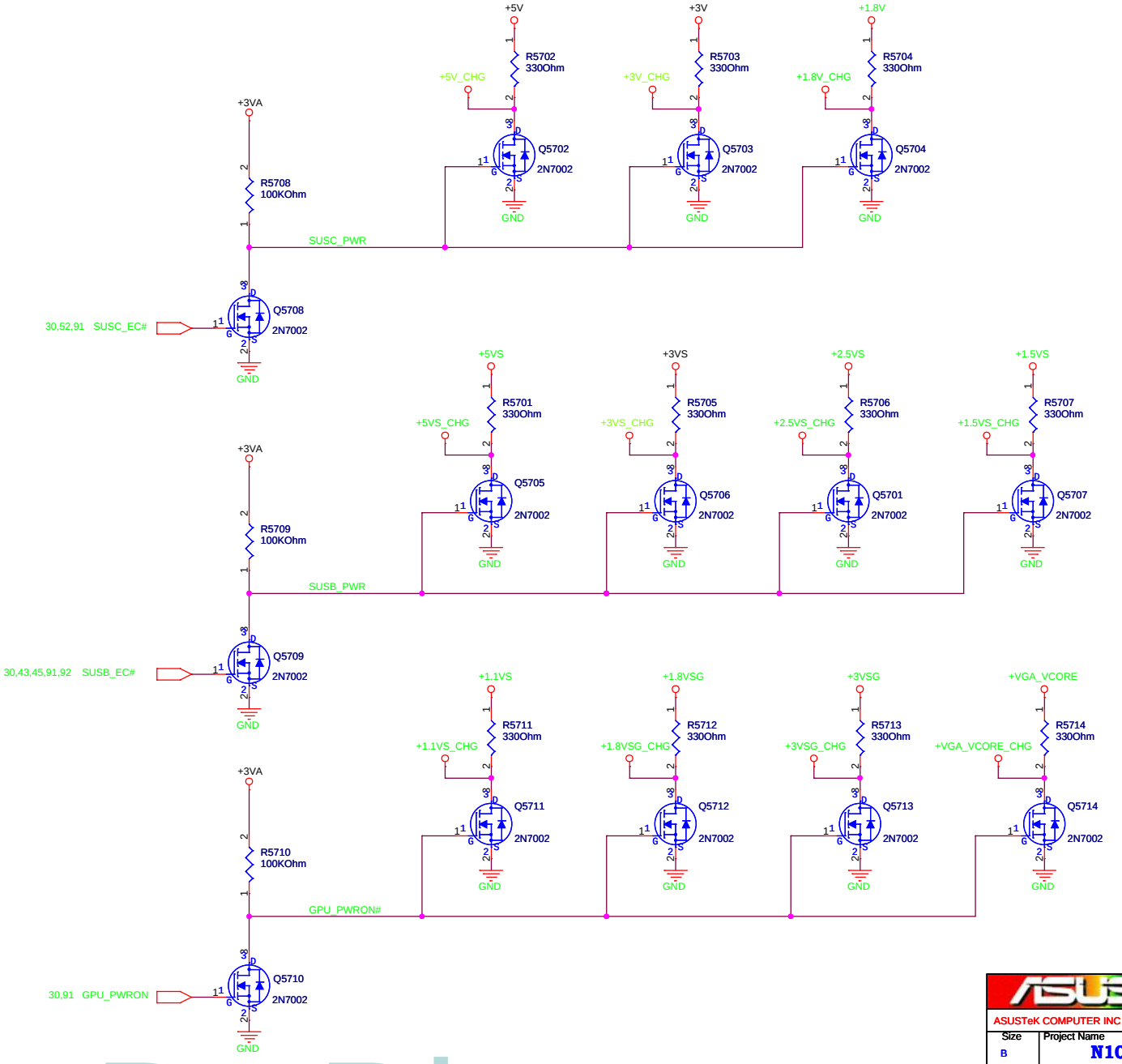


P/R V2.0 2008/6/29 mount Q5612





ASUSTek COMPUTER INC	Title : LED	
	Engineer: ENGINEER	
Size: B	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 56 of 97	



ASUSTeK COMPUTER INC	Title : Discharge Circuit	
	Engineer: ENGINEER	
Size: B	Project Name: N10	Rev: 1.0
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Title :	EMPTY
ASUSTeK COMPUTER INC	Engineer: ENGINEER
Size: B	Project Name: N10
Rev: 1.0	
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Title :	EMPTY
ASUSTeK COMPUTER INC	Engineer: ENGINEER
Size: B	Project Name: N10
Rev: 1.0	
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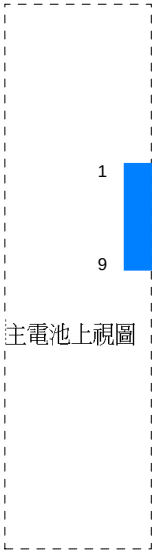
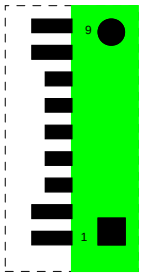
BAT1 JACK

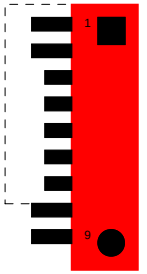
Pin	Signal
1	P+
2	P+
3	CNT1
4	CNT2
5	SMBC
6	SMBD
7	ID
8	GND
9	GND



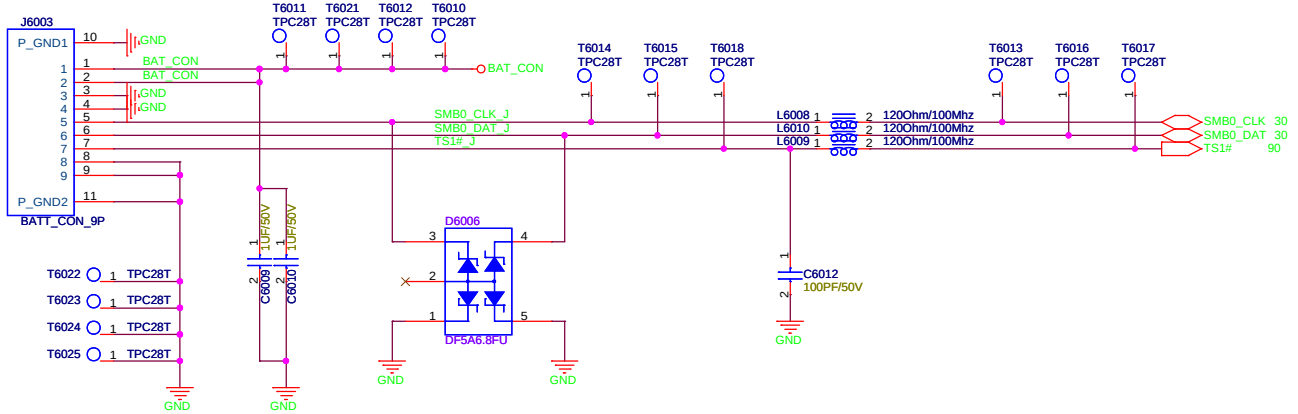
主電池上視圖



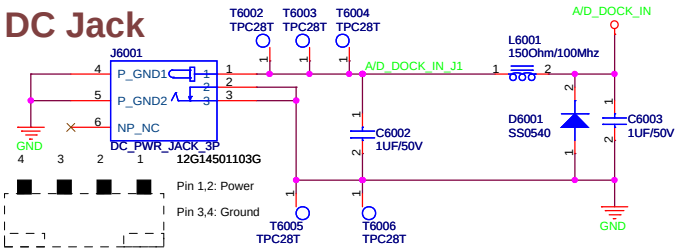
TOP VIEW(板上)



BOT VIEW(板下)



DC Jack



ASUSTeK COMPUTER INC	Title : DC/BATT Conn.	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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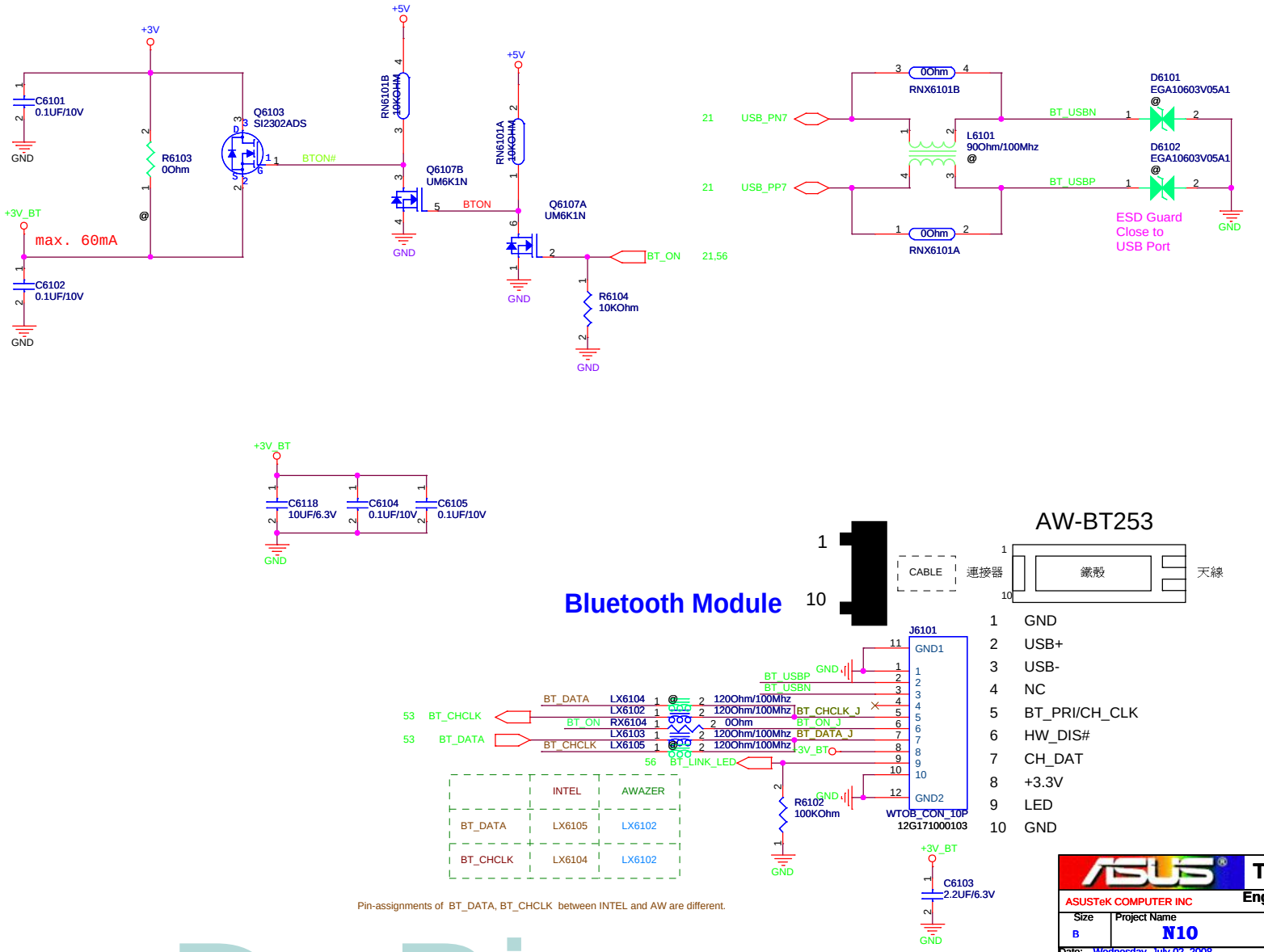
+3V
C6101
0.1UF/10V
GND
R6103
0Ohm
Q6103
SI2302ADS
BTON#
+3V_BT
max. 60mA
C6102
0.1UF/10V
+5V
RN6101B
10KOHM
Q6107B
UM6K1N
BTON
RN6101A
10KOHM
Q6107A
UM6K1N
BT_ON
21,56
R6104
10KOHM
21 USB_PN7
21 USB_PP7
0Ohm
RNX6101B
L6101
90Ohm/100Mhz
@
D6101
EGA10603V05A1
D6102
EGA10603V05A1
BT_USBN
BT_USBP
RNX6101A
ESD Guard
Close to
USB Port
C6118
10UF/6.3V
C6104
0.1UF/10V
C6105
0.1UF/10V
Bluetooth Module
AW-BT253
CABLE
連接器
鐵殼
天線
1 GND
2 USB+
3 USB-
4 NC
5 BT_PRI/CH_CLK
6 HW_DIS#
7 CH_DAT
8 +3.3V
9 LED
10 GND
J6101
GND1
GND2
WTOB_CON_10P
12G171000103
BT_DATA
BT_CHCLK
BT_ON
LX6104
LX6102
RX6104
LX6103
LX6105
120Ohm/100Mhz
0Ohm
BT_CHCLK_J
BT_ON_J
BT_DATA_J
BT_LINK_LED
53 BT_CHCLK
53 BT_DATA
56 BT_LINK_LED
R6102
100KOhm
C6103
2.2UF/6.3V
INTEL
AWAZER
BT_DATA
LX6105
LX6102
BT_CHCLK
LX6104
LX6102
Pin-assignments of BT_DATA, BT_CHCLK between INTEL and AW are different.
Title : BLUETOOTH
Engineer: ENGINEER
ASUSTeK COMPUTER INC
Size B
Project Name N10
Rev 1.0
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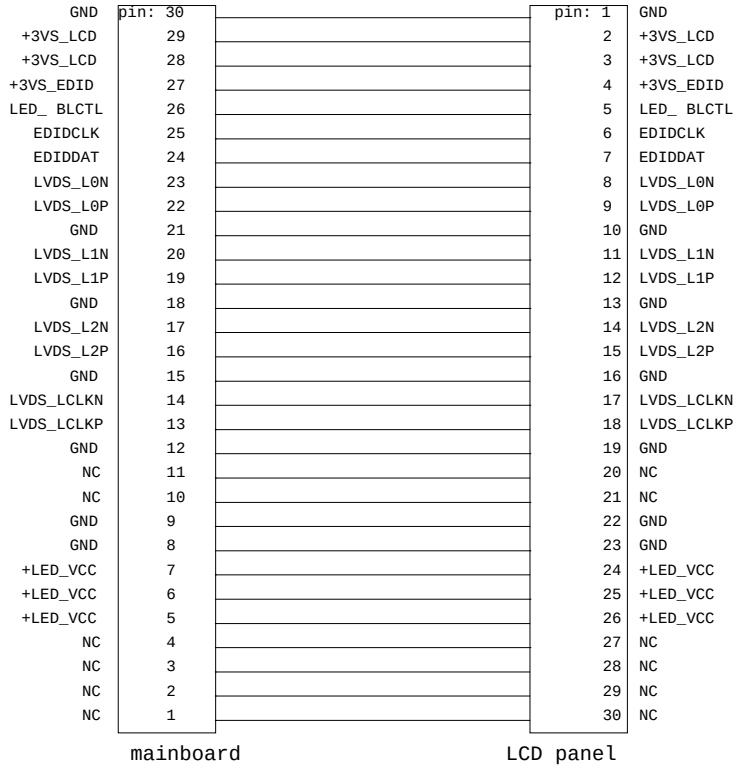

ASUSTeK COMPUTER INC

Title : EMPTY

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

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ASUSTeK COMPUTER INC	Title : EMPTY		
	Engineer: ENGINEER		
Size: Custom	Project Name: N10		Rev: 1.0
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PCI Device	IDSEL#	REQ/GNT#	Interrupts
Chipset (Host to PCI)	AD30 (Internal)		

SM-Bus Device	SM-Bus Address
Clock Generator	1101001x (D2)
SO-DIMM 0	1010000x (A0)
Thermal Sensor (CPU)	1001100x (98)
Thermal Sensor (VGA)	1001101x (9A)

IC	REFERENCE	VENID	DEVID	VERSION	MARK
NB9M-GS			0x06E9		Current Version: A2

ASUSTeK COMPUTER INC

Title : RESOURCE

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

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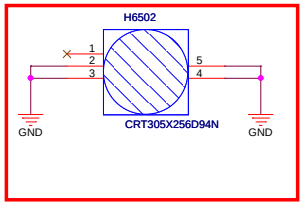
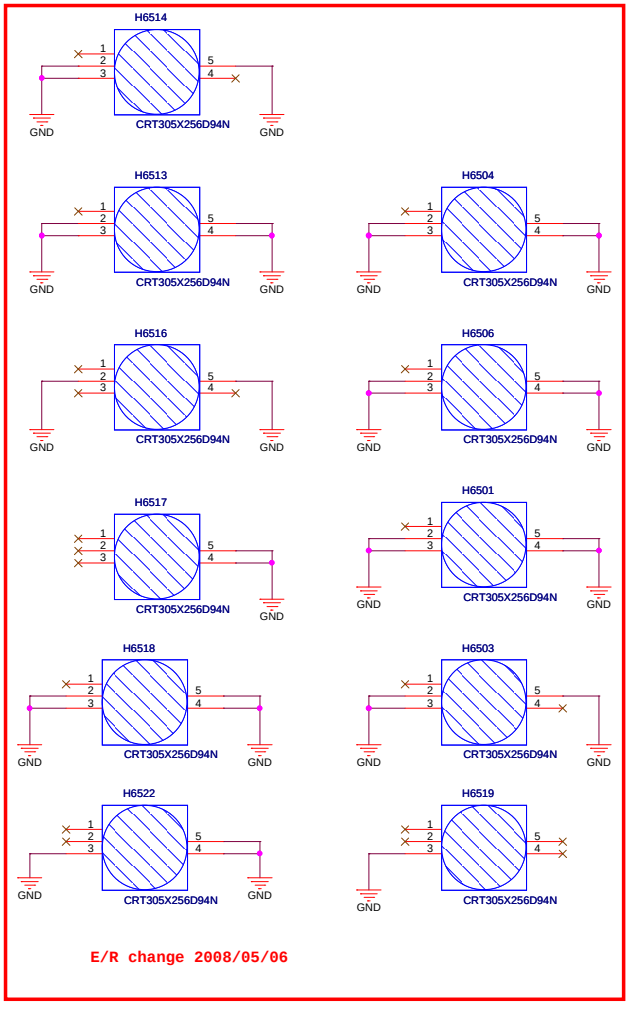
A+E

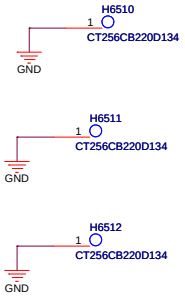


A+B

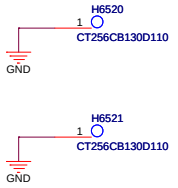


E/R change 2008/05/06

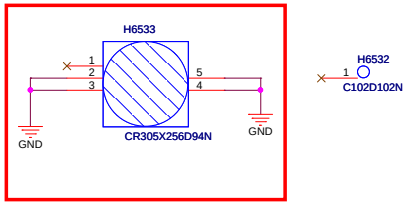
G+H



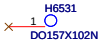
D



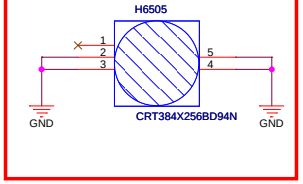
A+A



L



0+B



ASUSTeK COMPUTER INC	Title : ME-SKEWHOLE	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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LVDS CABLE (WTB)

		GND	30	1	GND
		+3VS_LCD	29	2	+3VS_LCD
		+3VS_LCD	28	3	+3VS_LCD
		+3VS_EDID	27	4	+3VS_EDID
		LED_BLCTL	26	5	LED_BLCTL
		EDID_CLK	25	6	EDID_CLK
		EDID_DAT	24	7	EDID_DAT
diff.	100ohm	LVDS_LCLKP	23	8	LVDS_L0N
		LVDS_LCLKN	22	9	LVDS_L0P
		GND	21	10	GND
diff.	100ohm	LVDS_L2P	20	11	LVDS_L1N
		LVDS_L2N	19	12	LVDS_L1P
		GND	18	13	GND
diff.	100ohm	LVDS_L1P	17	14	LVDS_L2N
		LVDS_L1N	16	15	LVDS_L2P
		GND	15	16	GND
diff.	100ohm	LVDS_L0P	14	17	LVDS_LCLKN
		LVDS_L0N	13	18	LVDS_LCLKP
		GND	12	19	GND
		NC	11	20	NC
		NC	10	21	NC
		GND	9	22	GND
		GND	8	23	GND
		+LED_VCC	7	24	+LED_VCC
		+LED_VCC	6	25	+LED_VCC
		+LED_VCC	5	26	+LED_VCC
		NC	4	27	NC
		NC	3	28	NC
		NC	2	29	NC
		NC	1	30	NC

MAINBOARD CONNECT

LCD PANEL CONNECT

P/N: 12G171040305

MIC., CCD, ALS CABLE(WTB)

	GND	1	
diff. 90ohm	CCD_USB-	2	
	CCD_USB+	3	
	GND	4	
	+5VS_CMOS	5	
	+3VS	6	
	ALS_AD	7	
	GND	8	
	INTMIC_A_GND_CON	9	
	INTMIC_A_CON	10	
	GND	11	
	GND	12	

MAINBOARD CONNECT

P/N: 12G171000124

BLUETOOTH CABLE(WTB)

	GND	1		1
diff. 90ohm	BT_USBP	2		2
	BT_USBN	3		3
	NC	4		4
	BT_CHCLK	5		5
	BT_ON	6		6
	BT_DATA	7		7
	+3V_BT	8		8
	BT_LINK_LED	9		9
	GND	10		10

MAINBOARD CONNECT

BlueTooth

P/N: 12G171000103

ASUSTeK COMPUTER INC

Title : EMPTY

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

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LAUNCH CABLE(WTB)

+5V	14	———	14	+5V
+3VA	13	———	13	+3VA
GND	12	———	12	GND
LID_SW#	11	———	11	LID_SW#
PWRLED#	10	———	10	PWRLED#
PWR_SW#	9	———	9	PWR_SW#
GND	8	———	8	GND
MARATHON_SW#	7	———	7	MARATHON_SW#
MAGNIFY_SW#	6	———	6	MAGNIFY_SW#
+3VS	5	———	5	+3VS
HDLED#	4	———	4	HDLED#
NUM_LED#	3	———	3	NUM_LED#
CAP_LED#	2	———	2	CAP_LED#
+5VS	1	———	1	+5VS

MAINBOARD CONNECT

P/N: 12G171000145

LAUNCH BOARD CONNECT

P/N: 12G171030140

MODEM CABLE(WTB)

RING	1	———		RING
TIP	2	———		TIP

MAINBOARD CONNECT

MODEM CONNECT

FINGER-PRINTER CABLE(FFC)

GND	12	———	12	GND
FP_USB+	11	———	11	FP_USB+
FP_USB-	10	———	10	FP_USB-
+3VS	9	———	9	+3VS
NC	8	———	8	NC
NC	7	———	7	NC
GND	6	———	6	GND
GND	5	———	5	GND
TP_CLK	4	———	4	TP_CLK
TP_DAT	3	———	3	TP_DAT
+5VS_TP	2	———	2	+5VS_TP
+5VS_TP	1	———	1	+5VS_TP

MAINBOARD CONNECT

P/N: 12G18340120C

下接觸

FINGER-PRINTER BOARD CONNECT

P/N: 12G18340120C

下接觸

Touch-Pad CABLE(FFC)

+5VS	12	———	12	+5VS
+5VS	11	———	11	+5VS
TP_DAT	10	———	10	TP_DAT
TP_CLK	9	———	9	TP_CLK
GND	8	———	8	GND
GND	7	———	7	GND
NC	6	———	6	NC
NC	5	———	5	NC
NC	4	———	4	NC
SWL	3	———	3	SWL
SWR	2	———	2	SWR
NC	1	———	1	NC

FINGER-PRINTER BOARD CONNECT

P/N: 12G183301208

上接觸

Touch-Pad BOARD CONNECT

上接觸

ASUSTeK COMPUTER INC	Title : EMPTY	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
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ASUSTeK COMPUTER INC	Title : EMPTY		
	Engineer: ENGINEER		
Size: Custom	Project Name: N10		Rev: 1.0
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1.0 SR(2006/11/29)

ASUSTeK COMPUTER INC	Title : HISTORY	
	Engineer: ENGINEER	
Size: A	Project Name: N10	Rev: 1.0
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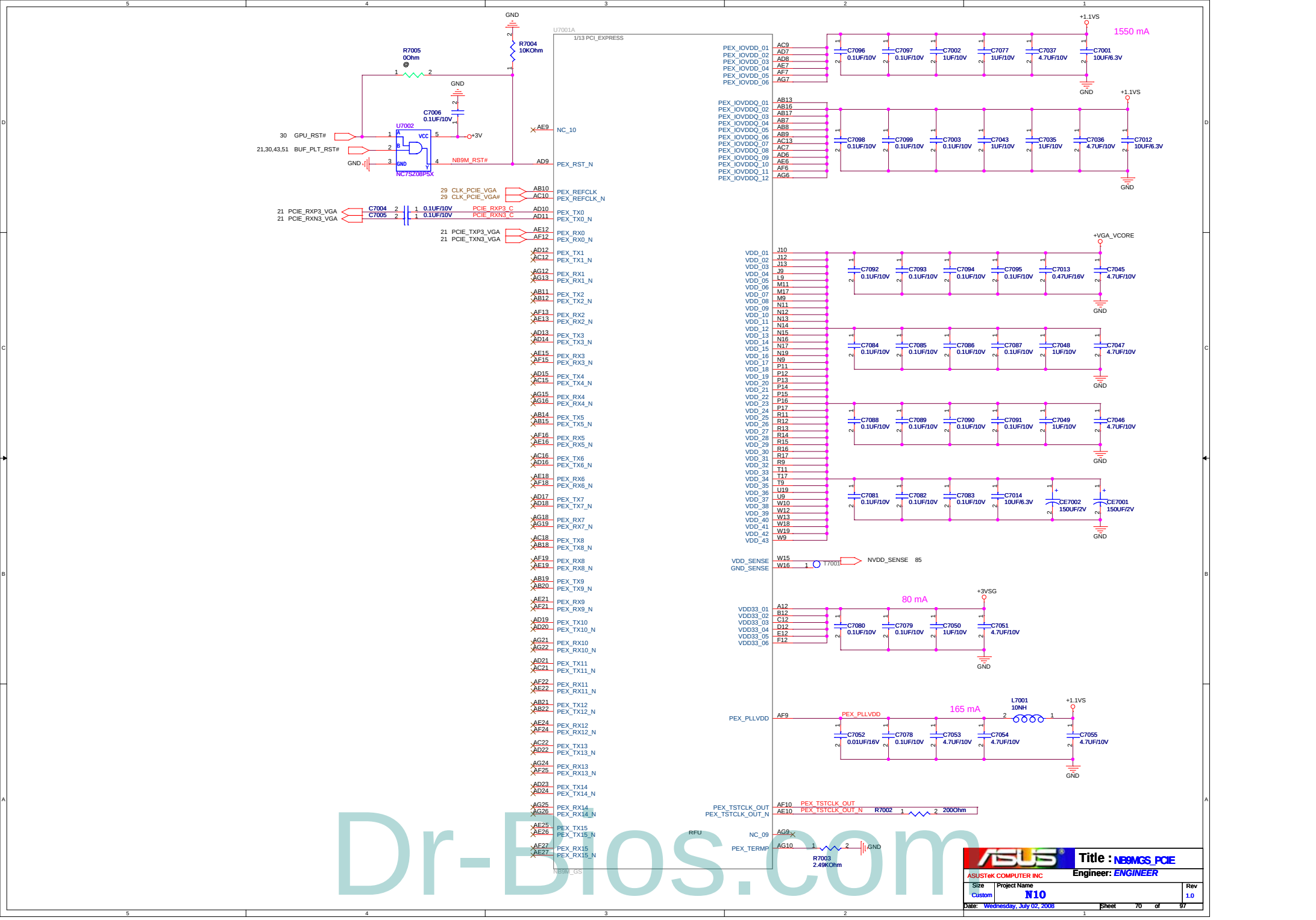
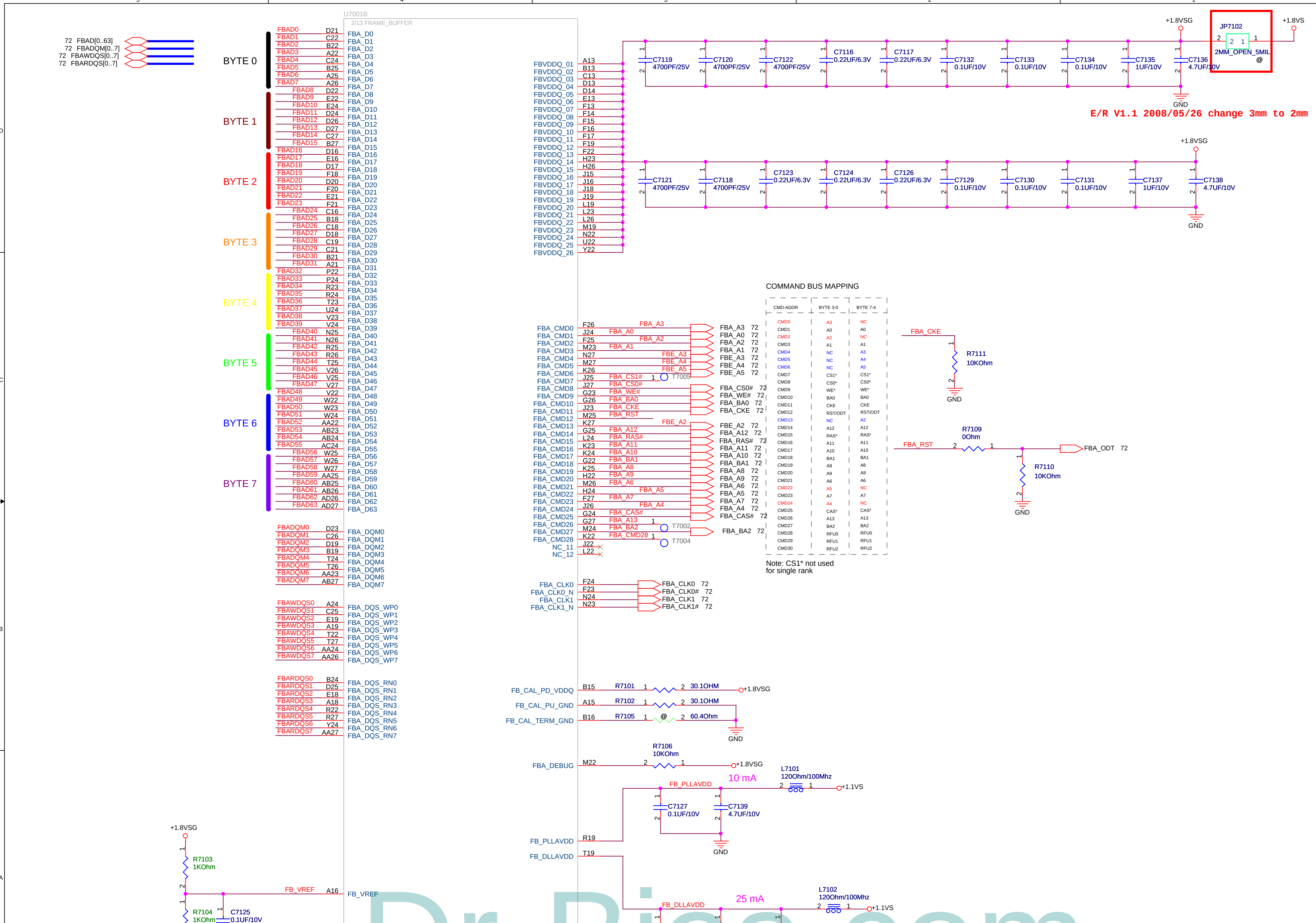


ASUSTeK COMPUTER INC	Title : NB9MGS_PCIE	
	Engineer: ENGINEER	
Size: Custom	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 70 of 97	



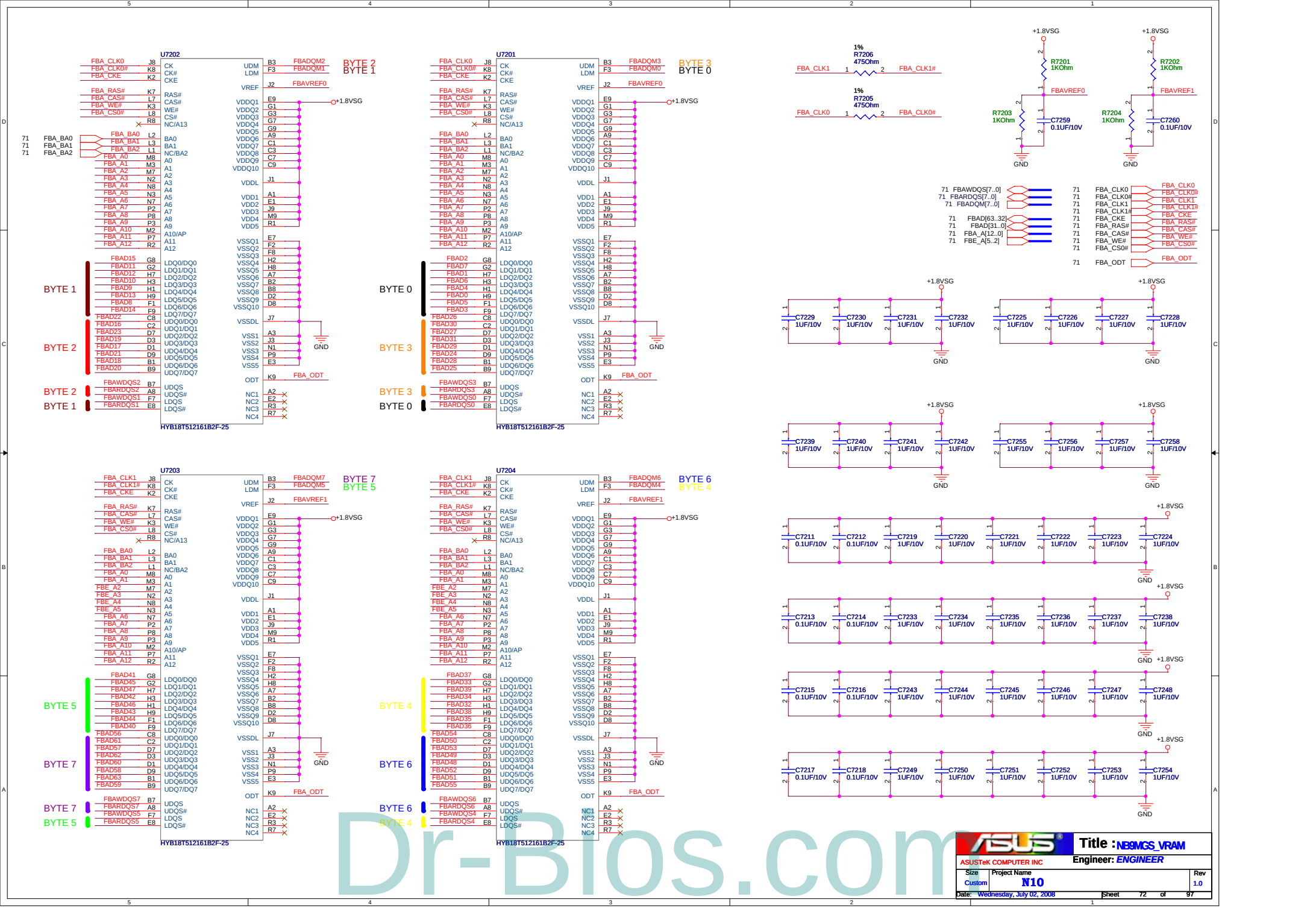
ASUSTeK COMPUTER INC

Title : NB9MGS_FB

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

Date: Wednesday, July 02, 2008 Sheet 71 of 97


U7202
U7201
U7203
U7204
HYB18T512161B2F-25
BYTE 2
BYTE 1
BYTE 0
BYTE 3
BYTE 7
BYTE 5
BYTE 6
BYTE 4
+1.8VSG
GND
1% R7206 475Ohm
1% R7205 475Ohm
R7201 1KOhm
R7202 1KOhm
R7203 1KOhm
R7204 1KOhm
C7259 0.1UF/10V
C7260 0.1UF/10V
FBA_CLK0
FBA_CLK0#
FBA_CLK1
FBA_CLK1#
FBA_CKE
FBA_RAS#
FBA_CAS#
FBA_WE#
FBA_CS0#
FBA_ODT
FBAVREF0
FBAVREF1
C7229 1UF/10V
C7230 1UF/10V
C7231 1UF/10V
C7232 1UF/10V
C7225 1UF/10V
C7226 1UF/10V
C7227 1UF/10V
C7228 1UF/10V
C7239 1UF/10V
C7240 1UF/10V
C7241 1UF/10V
C7242 1UF/10V
C7255 1UF/10V
C7256 1UF/10V
C7257 1UF/10V
C7258 1UF/10V
C7211 0.1UF/10V
C7212 0.1UF/10V
C7219 1UF/10V
C7220 1UF/10V
C7221 1UF/10V
C7222 1UF/10V
C7223 1UF/10V
C7224 1UF/10V
C7213 0.1UF/10V
C7214 0.1UF/10V
C7233 1UF/10V
C7234 1UF/10V
C7235 1UF/10V
C7236 1UF/10V
C7237 1UF/10V
C7238 1UF/10V
C7215 0.1UF/10V
C7216 0.1UF/10V
C7243 1UF/10V
C7244 1UF/10V
C7245 1UF/10V
C7246 1UF/10V
C7247 1UF/10V
C7248 1UF/10V
C7217 0.1UF/10V
C7218 0.1UF/10V
C7249 1UF/10V
C7250 1UF/10V
C7251 1UF/10V
C7252 1UF/10V
C7253 1UF/10V
C7254 1UF/10V
ASUSTeK COMPUTER INC
Title : NB9MGS_VRAM
Engineer: ENGINEER
Size: Custom
Project Name: N10
Rev: 1.0
Date: Wednesday, July 02, 2008
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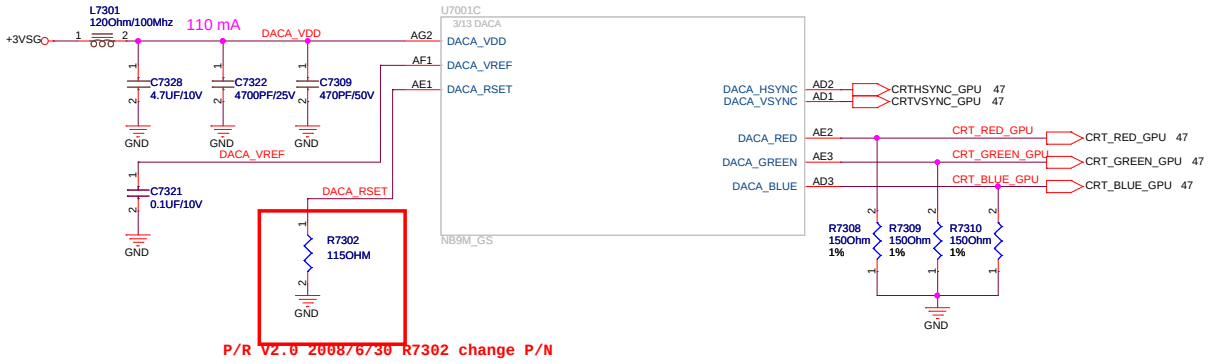
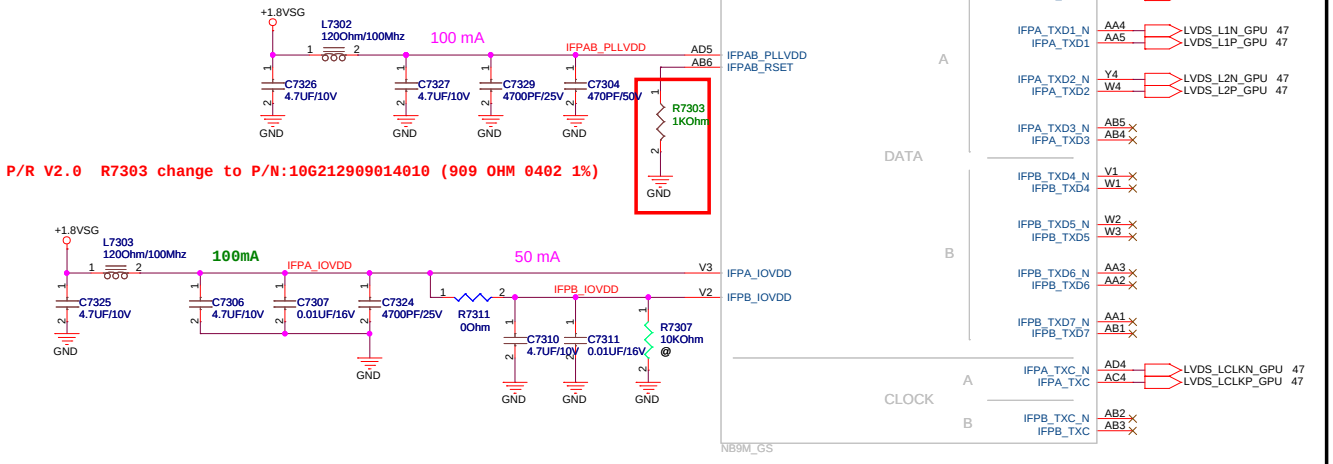
VGA

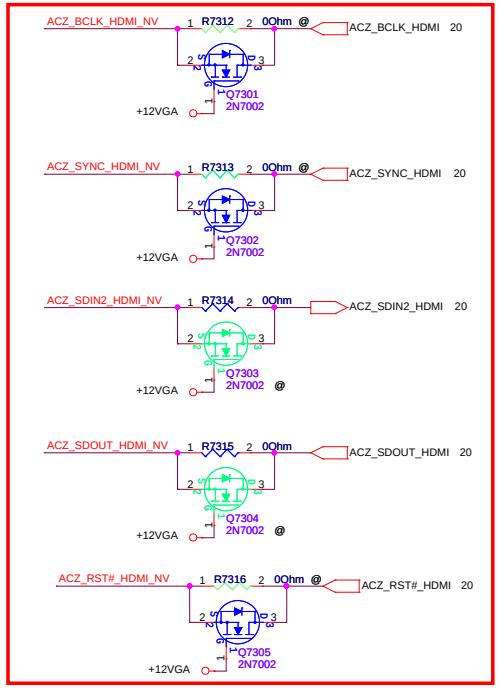


P/R V2.0 20087730 R7302 change P/N

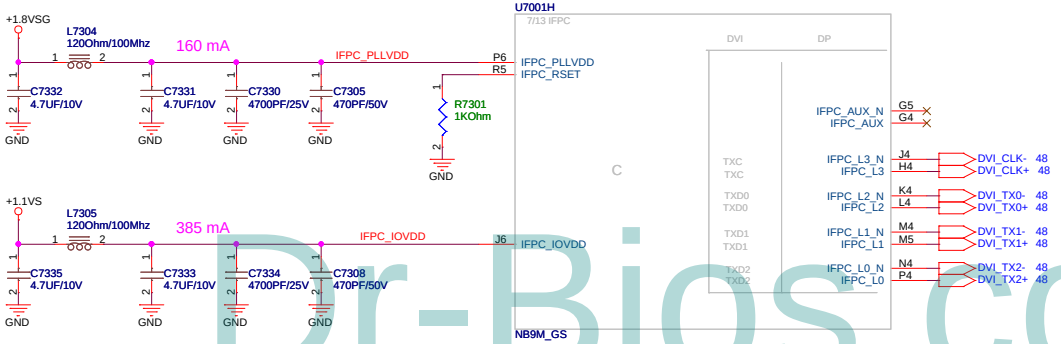
LVDS

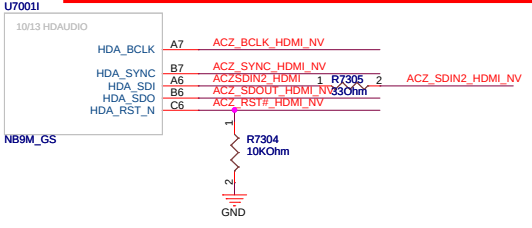


P/R V2.0 R7303 change to P/N:10G212909014010 (909 OHM 0402 1%)



HDMI





ASUSTeK COMPUTER INC

Title : NB9MGS_DISPLAY

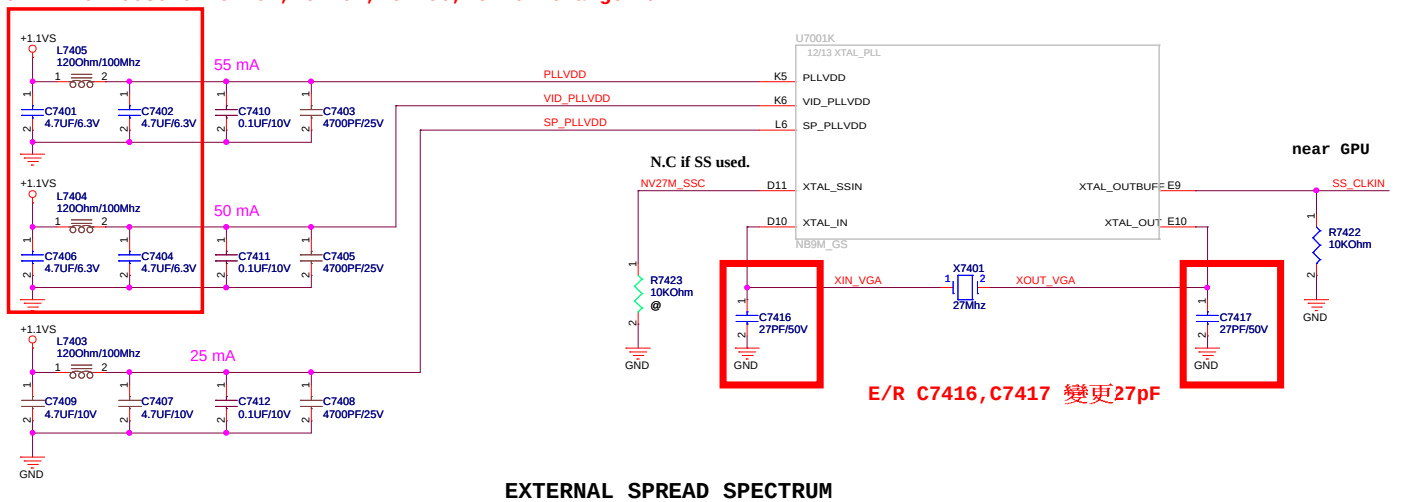
Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

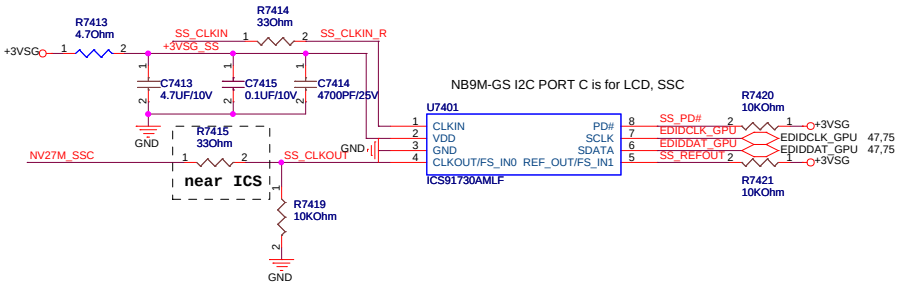
Date: Monday, July 07, 2008 Sheet 73 of 97

Xtal

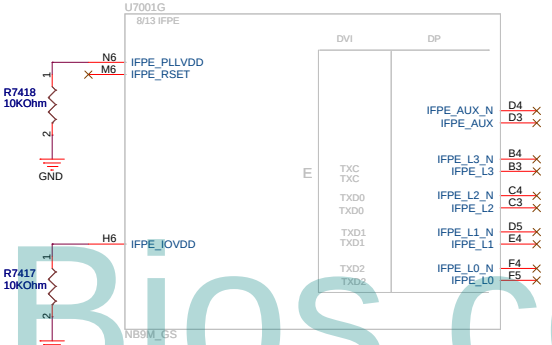
P/R V2.0 20080701 C7401, C7402, C7406, C7404 change P/N

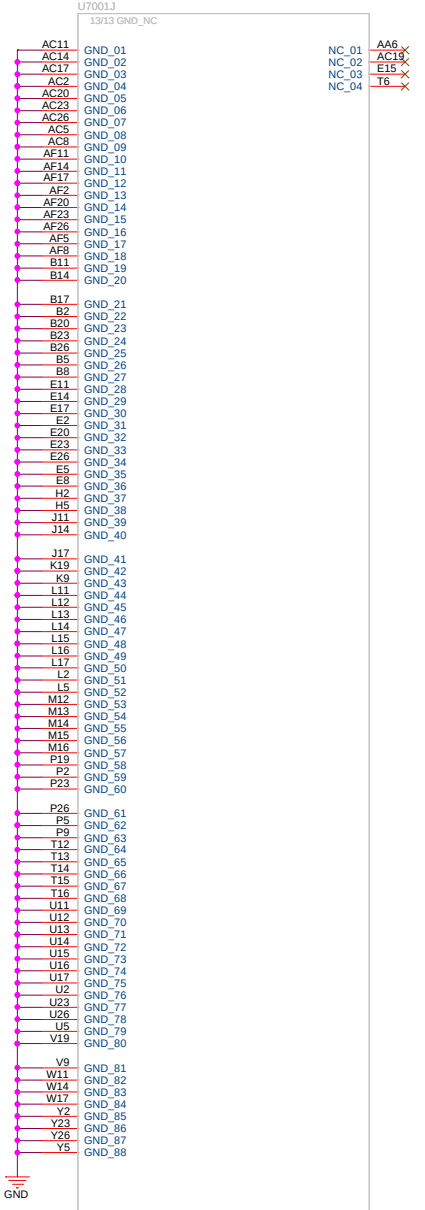


EXTERNAL SPREAD SPECTRUM



Other





ASUSTeK COMPUTER INC

Title : NB9MGS_XTAL

Engineer: ENGINEER

Size	Project Name	Rev
Custom	N10	1.0

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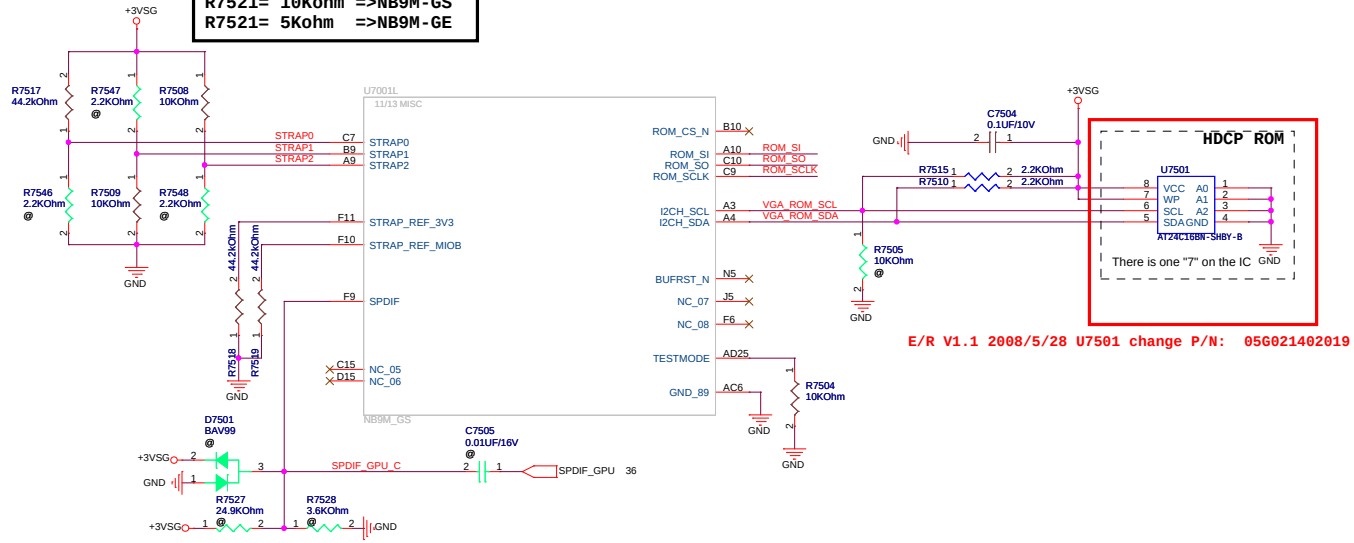
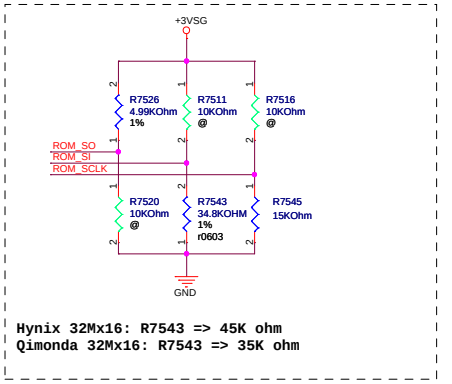
ROM

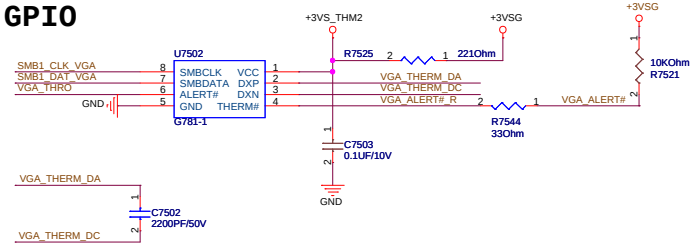
R7521= 10Kohm =>NB9M-GS
R7521= 5Kohm =>NB9M-GE

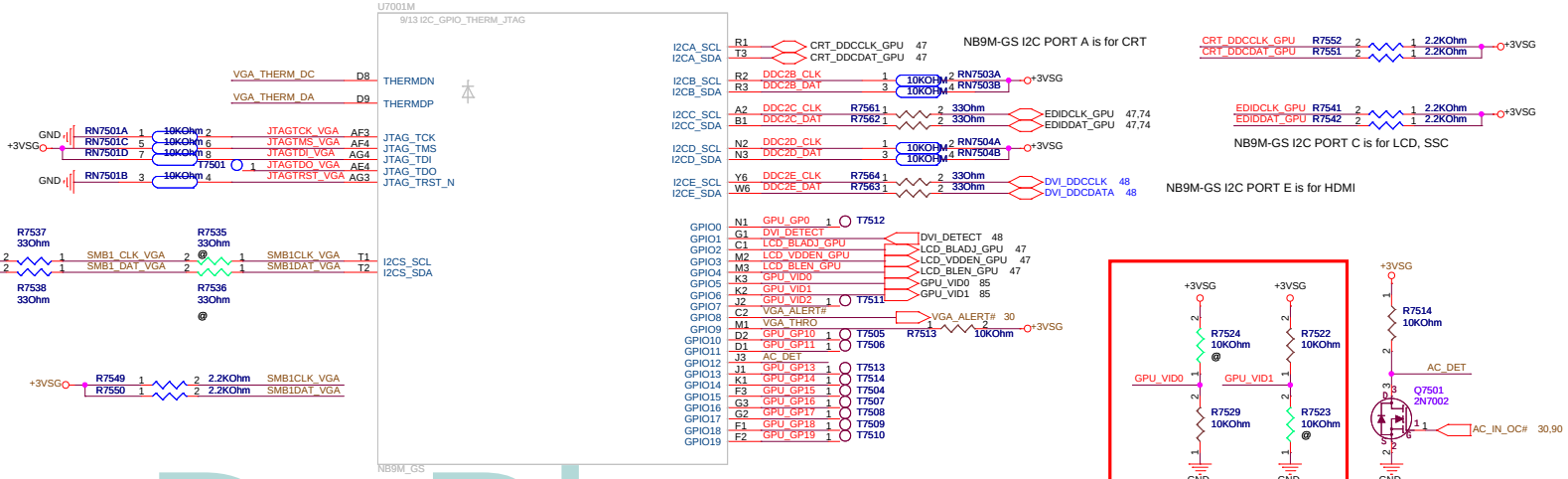




External thermal sensor

GPIO





GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	IN	N/A	N/A
1	IN	N/A	HDMI HOTPLUG
2	OUT	HIGH	PANEL BACKLIGHT PWM
3	OUT	HIGH	PANEL POWER ENABLE
4	OUT	HIGH	PANEL BACKLIGHT ENABLE
5	OUT	N/A	NVVDD VID 0
6	OUT	N/A	NVVDD VID 1
7	OUT	N/A	FBVDD VID 0
8	IN	LOW	THERMAL ALERT
9	OUT	LOW	FAN PWM
10	OUT	N/A	FBVREF SELECT
11	OUT	Low	SLI SYNCO
12	IN	N/A	AC DETECT
13	OUT	N/A	PS CONTROL
14	OUT	N/A	PS CONTROL

E/R V1.1 2008/5/28 add R7529, R7522

Title :	NB9MGS_ROM
ASUSTeK COMPUTER INC	Engineer: ENGINEER
Size: Custom	Project Name: N10
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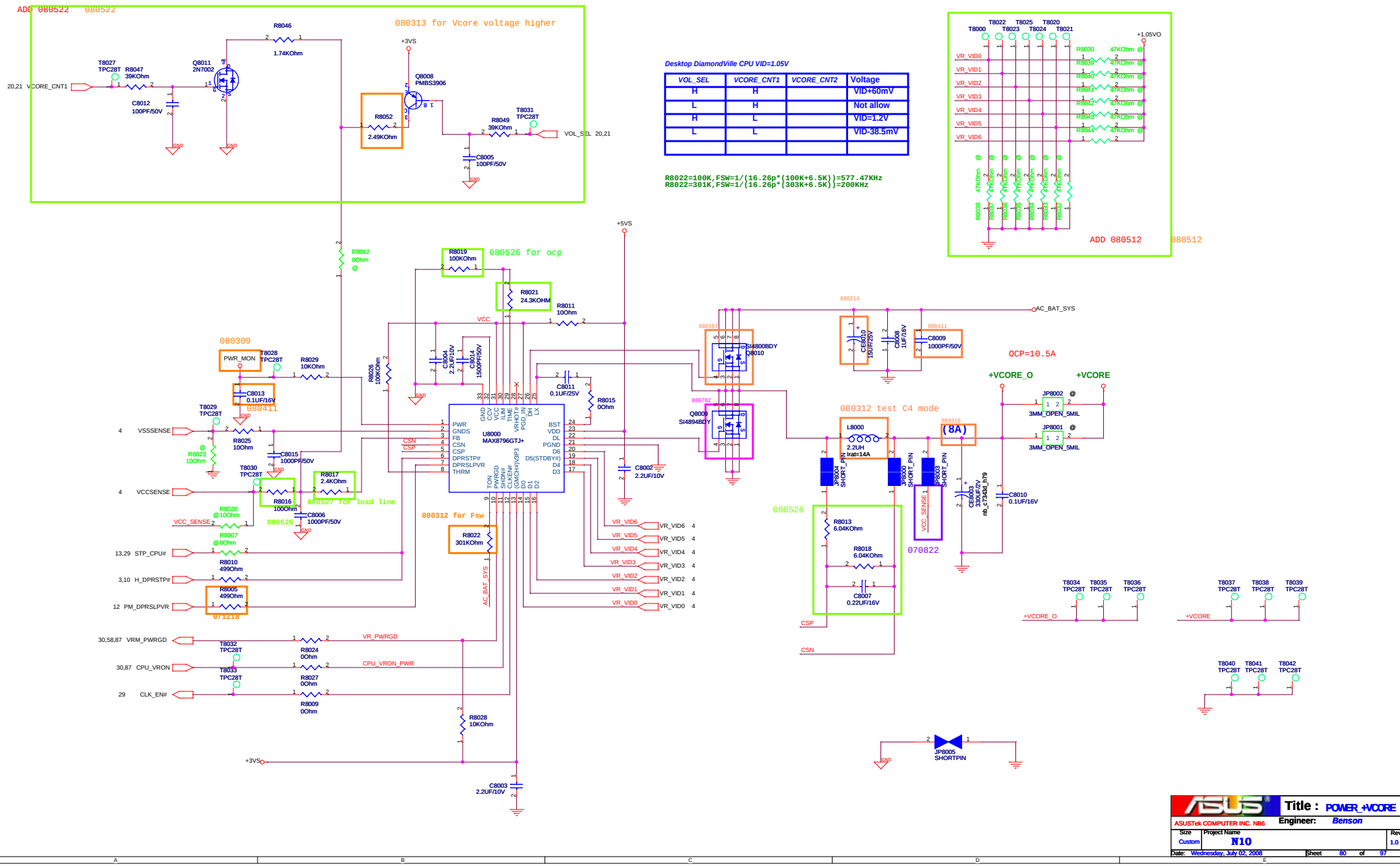
ASUSTeK COMPUTER INC	Title : EMPTY			
	Engineer: ENGINEER			
Size: A	Project Name: N10			Rev: 1.0
Date: Wednesday, July 02, 2008		Sheet 76 of 97		


ADD 080522
080522
080313 for Vcore voltage higher
R8046
1.74KOhm
T8027 TPC28T
R8047 39KOhm
Q8011 2N7002
20,21 VCORE_CNT1
C8012 100PF/50V
+3VS
Q8008 PMBS3906
R8052 2.49KOhm
R8049 39KOhm
T8031 TPC28T
VOL_SEL 20,21
C8005 100PF/50V
Desktop DiamondVille CPU VID=1.05V
VOL_SEL | VCORE_CNT1 | VCORE_CNT2 | Voltage
H | H | | VID+60mV
L | H | | Not allow
H | L | | VID=1.2V
L | L | | VID-38.5mV
R8022=100K,FSW=1/(16.26p*(100K+6.5K))=577.47KHz
R8022=301K,FSW=1/(16.26p*(303K+6.5K))=200KHz
T8000
T8022 T8025 T8020
T8023 T8024 T8021
+1.05VO
VR_VID0
VR_VID1
VR_VID2
VR_VID3
VR_VID4
VR_VID5
VR_VID6
R8030 47KOhm @
R8039 47KOhm @
R8040 47KOhm @
R8041 47KOhm @
R8042 47KOhm @
R8043 47KOhm @
R8044 47KOhm @
R8038 47KOhm @
R8037 47KOhm @
R8036 47KOhm @
R8035 47KOhm @
R8034 47KOhm @
R8033 47KOhm @
R8032 47KOhm @
ADD 080512
080512
R8012 0Ohm @
R8019 100KOhm
080526 for ocp
R8021 24.3KOHM
R8011 10Ohm
VCC
080309
PWR_MON
T8028 TPC28T
R8029 10KOhm
C8013 0.1UF/16V
080411
R8026 100KOhm
C8004 2.2UF/10V
C8014 1500PF/50V
C8011 0.1UF/25V
R8015 0Ohm
+5VS
T8029 TPC28T
4 VSSSENSE
R8025 10Ohm
R8023 10Ohm @
C8015 1000PF/50V
T8030 TPC28T
4 VCCSENSE
R8017 2.4KOhm
R8016 100Ohm
080527 for load line
R8020 @10Ohm
VCC_SENSE
080526
C8006 1000PF/50V
R8007 @0Ohm
080312 for Fsw
R8022 301KOhm
13,29 STP_CPU#
R8010 499Ohm
3,10 H_DPRSTP#
R8005 499Ohm
12 PM_DPRSLPVR
071218
30,58,87 VRM_PWRGD
T8032 TPC28T
R8024 0Ohm
VR_PWRGD
30,87 CPU_VRON
T8033 TPC28T
R8027 0Ohm
CPU_VRON_PWR
29 CLK_EN#
R8009 0Ohm
R8028 10KOhm
+3VS
C8003 2.2UF/10V
U8000 MAX8796GTJ+
PWR
GNDS
FB
CSN
CSP
DPRSTP#
DPRSLPVR
THRM
BST
VDD
DL
PGND
DH
LX
D5(STDBY#)
D4
D3
CSN
CSP
AC_BAT_SYS
VR_VID6 4
VR_VID5 4
VR_VID4 4
VR_VID3 4
VR_VID2 4
VR_VID1 4
VR_VID0 4
080307
Si4800BDY Q8010
080782
Q8009 Si4894BDY
C8002 2.2UF/10V
080214
AC_BAT_SYS
CE8010 150UF/25V
C8008 1UF/16V
080411
C8009 1000PF/50V
OCP=10.5A
+VCORE_O
+VCORE
JP8002 @
3MM_OPEN_5MIL
JP8001 @
3MM_OPEN_5MIL
080312 test C4 mode
L8000 2.2UH Irat=14A
080310
(8A)
JP8004 SHORT_PIN
JP8000 SHORT_PIN
JP8003 SHORT_PIN
VCC_SENSE
CE8003 330UF/2V nb_c7340_h9
C8010 0.1UF/16V
R8013 6.04KOhm
R8018 6.04KOhm
C8007 0.22UF/16V
070822
080526
CSP
CSN
T8034 TPC28T
T8035 TPC28T
T8036 TPC28T
+VCORE_O
T8037 TPC28T
T8038 TPC28T
T8039 TPC28T
+VCORE
T8040 TPC28T
T8041 TPC28T
T8042 TPC28T
JP8005 SHORTPIN
GND
ASUSTek COMPUTER INC. NB6
Title : POWER +VCORE
Engineer: Benson
Size Custom
Project Name N10
Rev 1.0
Date: Wednesday, July 02, 2008
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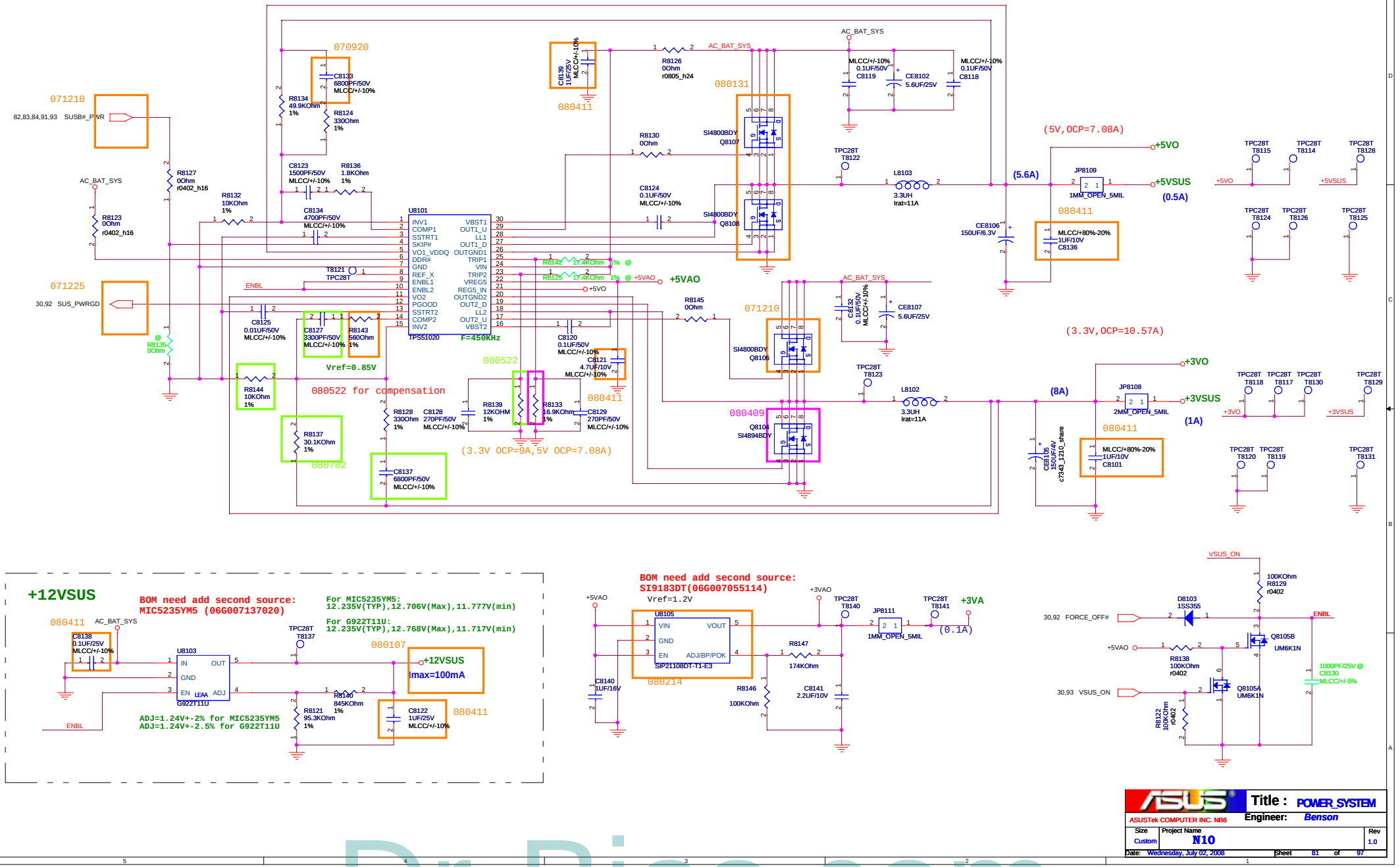

ASUSTek COMPUTER INC. NB6

Title : POWER_SYSTEM

Engineer: Benson

Size	Project Name	Rev
Custom	N10	1.0

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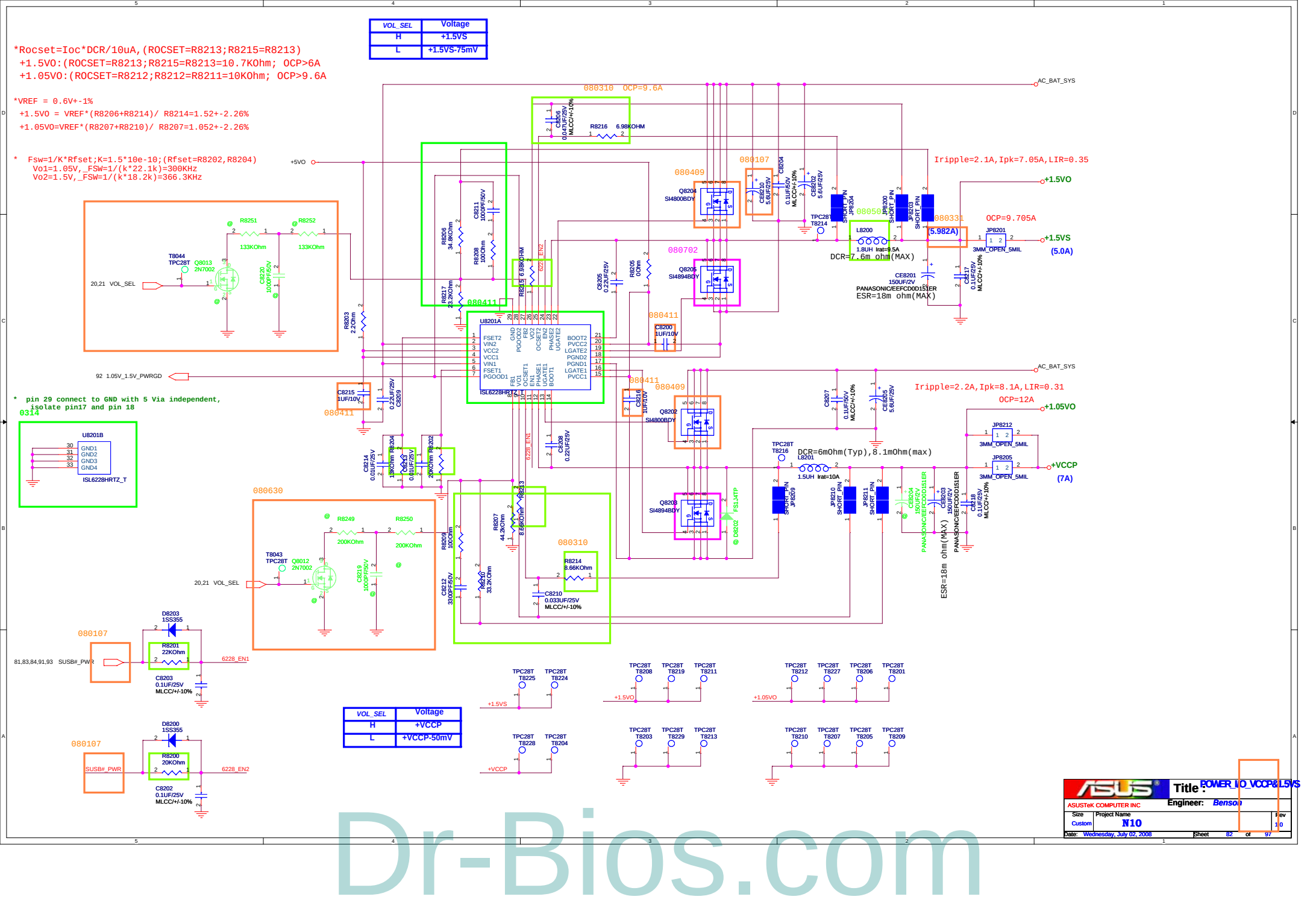
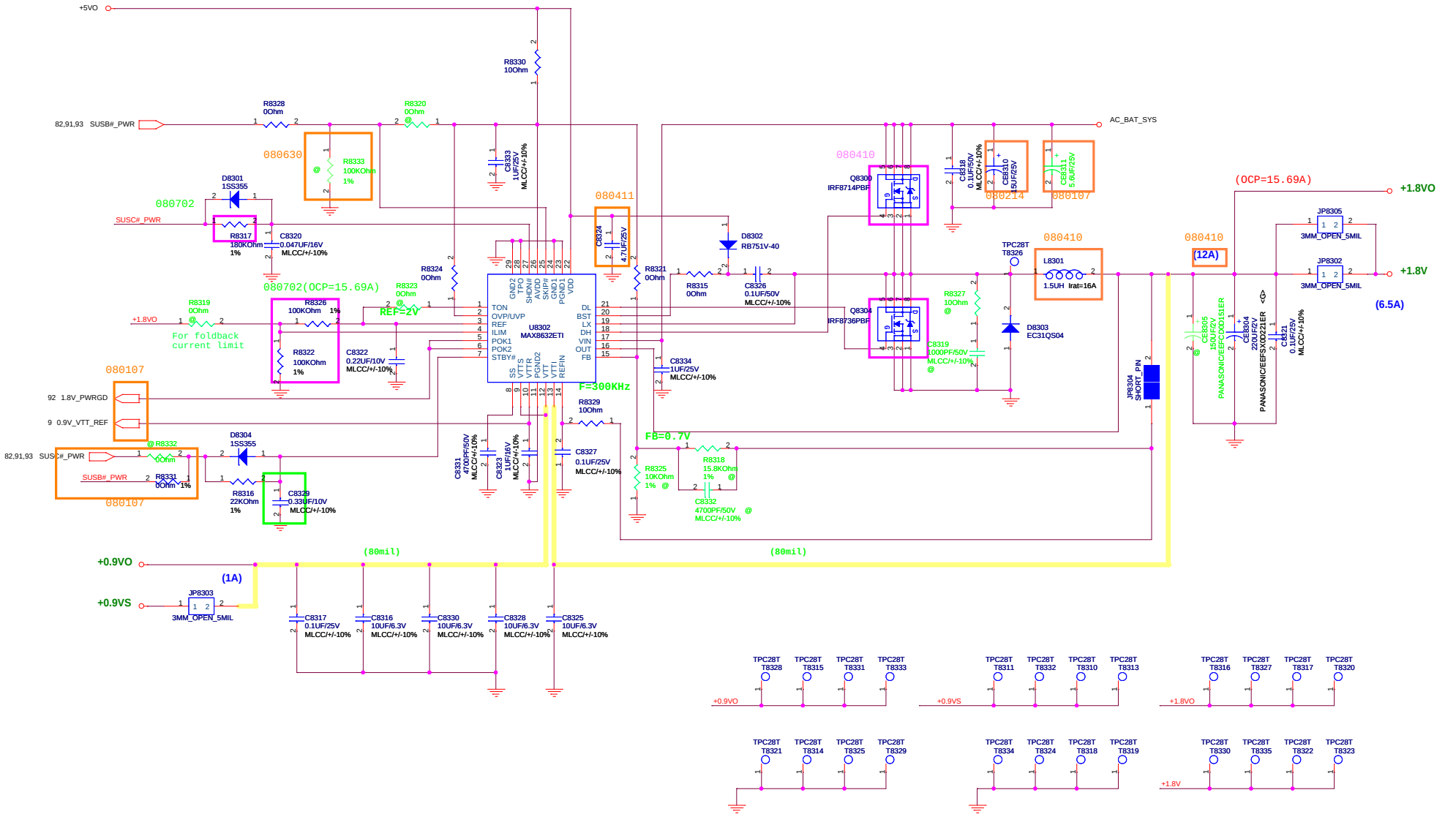


Title:	POWER I/O VCCP&1.5VS
ASUSTeK COMPUTER INC	Engineer: Benson
Size: Custom	Project Name: N10
Rev: 1.0	
Date: Wednesday, July 02, 2008	Sheet 82 of 97



ASUSTeK COMPUTER INC

Title : POWER_I/O_1.8V & 0.9VS

Engineer: Benson

Size	Project Name	Rev
Custom	N10	1.0

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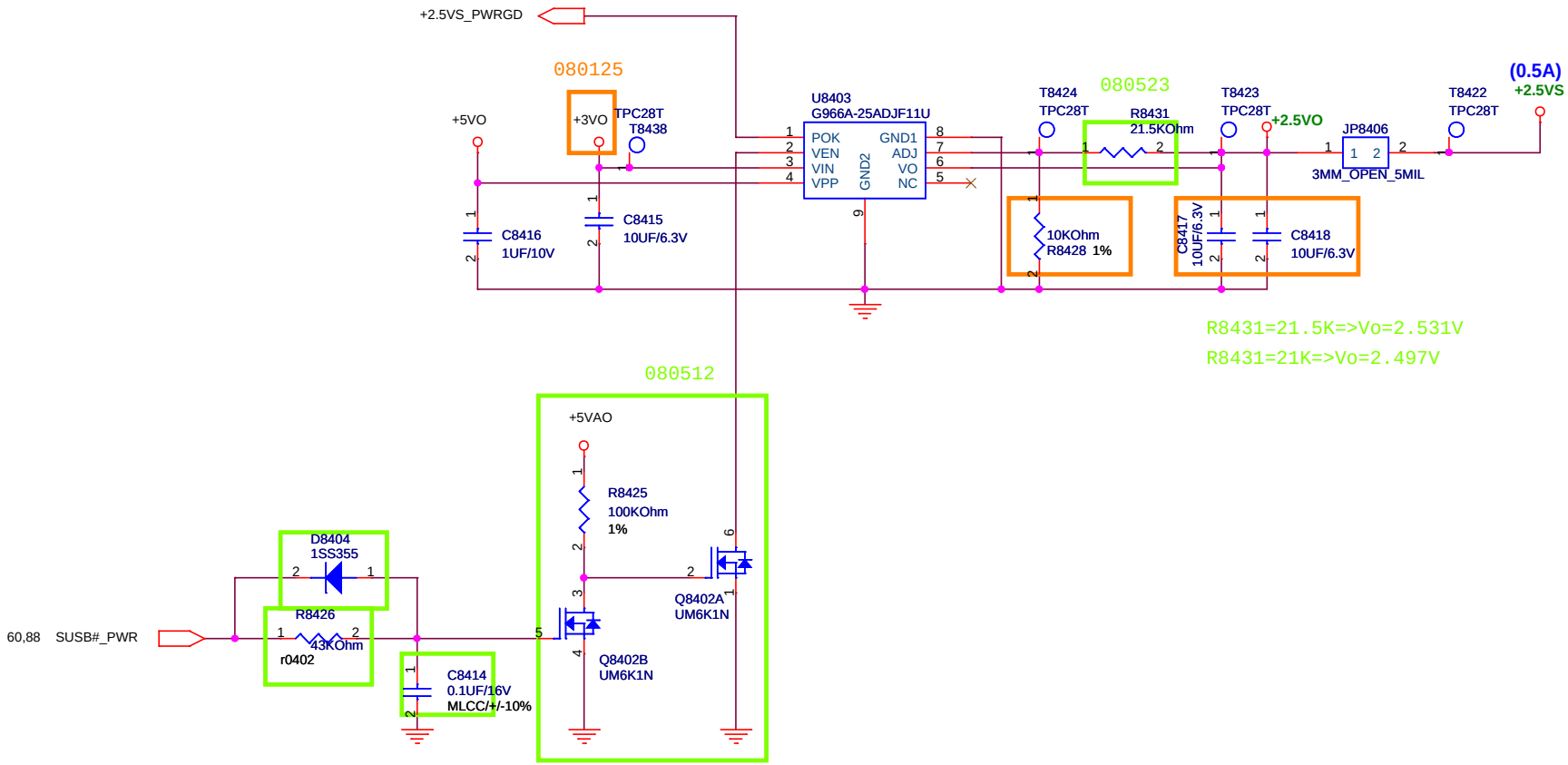
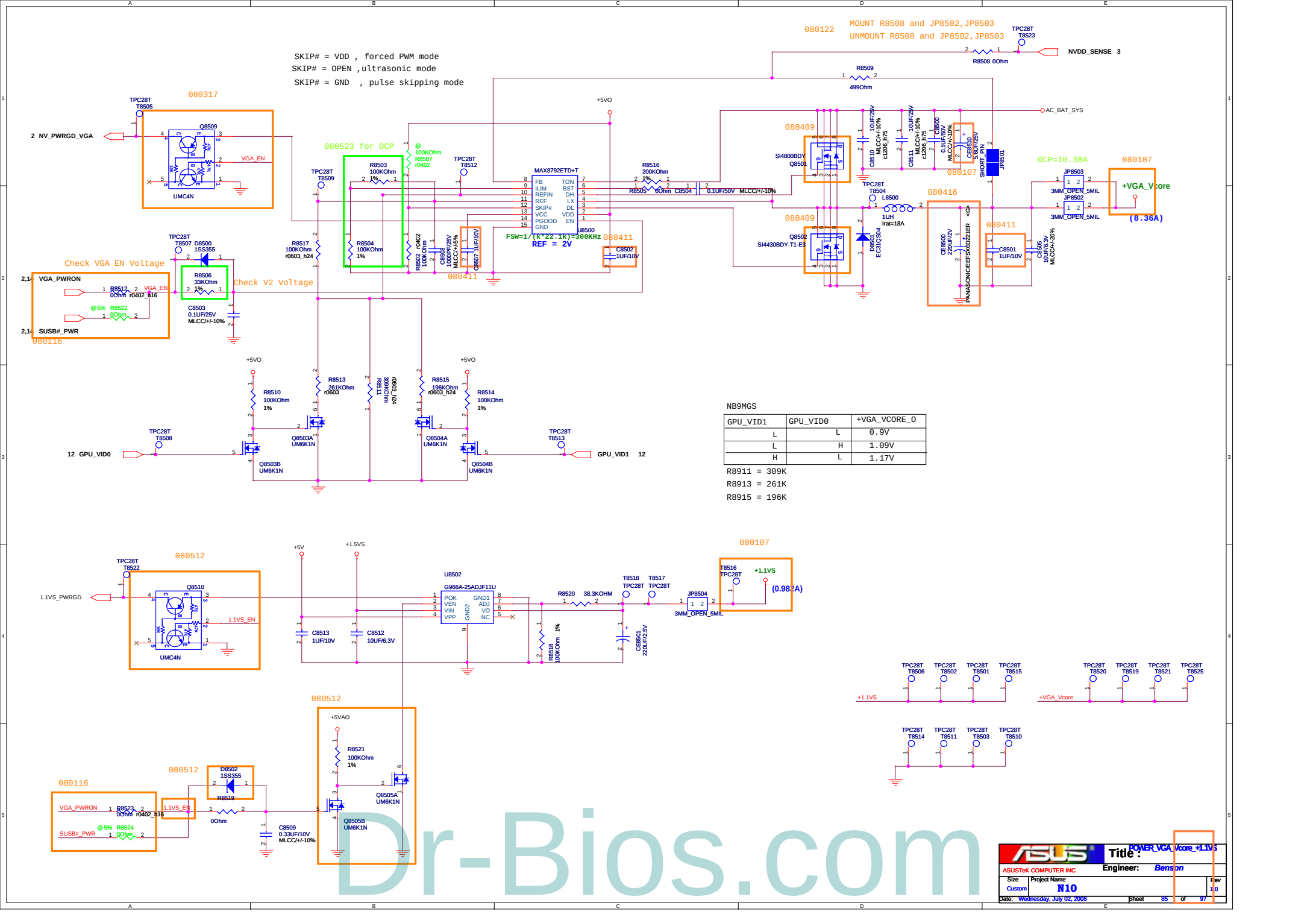
+2.5VS



ASUSTeK COMPUTER INC	Title : POWER_2.5VS&3VA	
	Engineer: Benson	
Size: Custom	Project Name: N10	Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 84 of 97	


080122
MOUNT R8508 and JP8502,JP8503
UNMOUNT R8508 and JP8502,JP8503
SKIP# = VDD , forced PWM mode
SKIP# = OPEN ,ultrasonic mode
SKIP# = GND , pulse skipping mode
080317
080523 for OCP
080409
080107
080416
080411
080116
080512
OCP=10.38A
(8.36A)
(0.98A)
MAX8792ETD+T
FSW=1/(K*22.1k)=300KHz
REF = 2V
NB9MGS
GPU_VID1 | GPU_VID0 | +VGA_VCORE_O
L | L | 0.9V
L | H | 1.09V
H | L | 1.17V
R8911 = 309K
R8913 = 261K
R8915 = 196K
Check VGA EN Voltage
Check V2 Voltage
2 NV_PWRGD_VGA
VGA_EN
VGA_PWRON
SUSB#_PWR
12 GPU_VID0
GPU_VID1 12
1.1VS_PWRGD
1.1VS_EN
AC_BAT_SYS
NVDD_SENSE 3
+VGA_Vcore
+1.1VS
+5VO
+5V
+1.5VS
+5VAO
Dr-Bios.com
ASUSTeK COMPUTER INC
Title : POWER_VGA_Vcore_+1.1VS
Engineer: Benson
Project Name N10
Wednesday, July 02, 2008
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ASUSTeK COMPUTER INC	Title :	POWER_SHUTDOWN#		
	Engineer:	Benson		
Size: A	Project Name: N10			Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 87 of 97			

POWER PATH & BAT_LEARN

for delete BAT_LEARN function

120W&90W:R8801=15mOHM(10G21DR01515110)
65W: R8801=20mOHM(10G21DR02015110)

080214 Snubber

1.10 Ohm,0.1uF/50V(p)
2.4.7Ohm,1uF/50V(s)
3.10 Ohm,1uF/50V

120W: R8832 = 1.82K
90W: R8832 = 6.98K
65W: R8832 = 17.8K

AC_BAT_SYS_INV to Inverter connect,
Power trace =60mil(min),
Put JP8805 close to Q8800

AC_IN Threshold 2.048Vmax A/D_DOCK_IN
> 17.44V active

Adapter Iin(max) = [60mV/Rsense(ADin)]*[1+(Rb/Ra)]
Rsense(ADin)=20m ohm
Ra=R8832=17.8K ohm;Rb=R8843=1K ohm
=> Iin(max)=3.168A
=> Constant Power = 19V * 3.168A = 60.2W

Charge Current Ichg = [240mV/Rsense(CHG)]*[VISET/VAA]
Rsense(CHG)=R8842=10m ohm
VICTL= 3V => Ichg = 2.5A
VICTL= 1.68V => Ichg = 1.4A
Precgarge current=150mA

2.4V<VCTL<4.2V=>3cell=>Vcell =4.2V+(4.2V-VVCTL)/6
3 cell=>VCTL= 3.9V => Vcell = 4.635V
0V<VCTL<1.8V=>4cell=>Vcell =4.2V+(VVCTL/6)
4 cell=>VCTL= 0.3V => Vcell = 4.635V

Mode pin : Vmode > 2.8V (trie to LDO pin) ----> 4 Cells
2.0 > Vmode > 1.6V (floating) ----> 3 Cells
0.8 > Vmode (trie to GND) ----> Learning mode

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

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

(240mV/15mOhm)*VSET/4.2V=ICHG=2.5A--->VSET=0.655

EC not ready OK--->R8836 unmount,others mount

EC ready OK--->unmount R8835.R8830.Q8806.R8844.Q8807.Q8808; mount R8836

MAX17005=>R8831=1MOhm(@)
MAX17015=>R8831=0 Ohm

MAX17015 change MAX17005 List
R8820=100K 0.1%--->0 ohm
R8826=20K 0.1%--->@
R8831=0 ohm--->1.69M ohm
R8833=@--->130K ohm

EC ready OK--->8821=20KOhm,
R8826=20KOhm,R8823=49.9KOHM

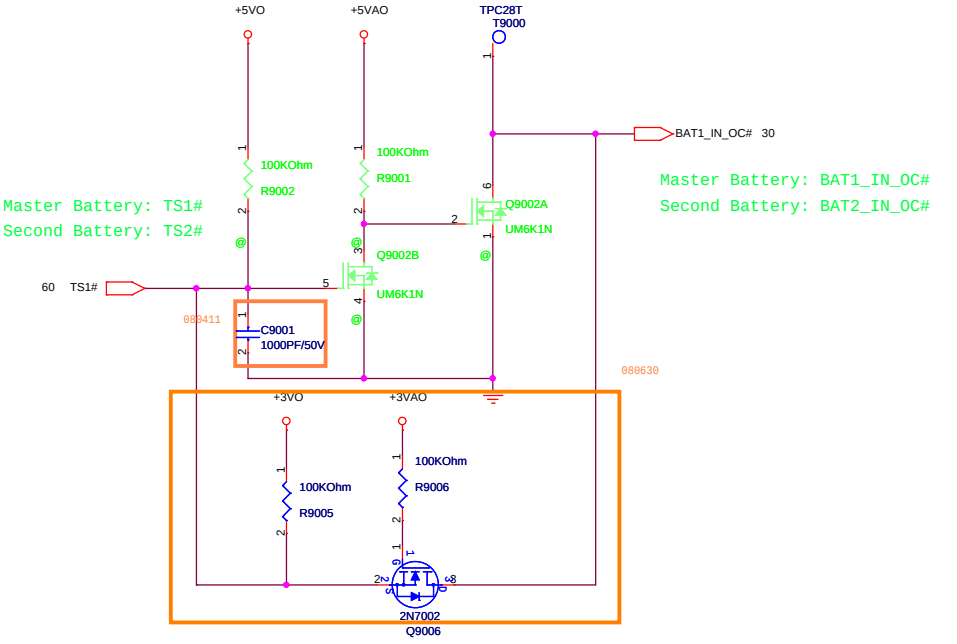
EC not ready OK--->unmount 8821=20KOhm,
R8826=20KOhm,R8823=100KOHM

BATT=2.1V===>BAT=12.6V

Title : POWER_CHARGER			
<OrgName>	Engineer: Benson		
Size: Custom	Project Name: N10		Rev: 1.0
Date: Wednesday, July 02, 2008	Sheet 88 of 97		

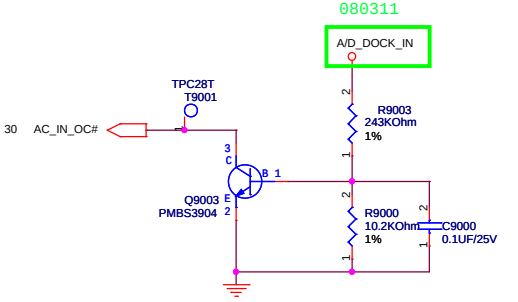
Title :	NA
ASUSTeK COMPUTER INC	Engineer: Benson
Size: A	Project Name: N10
Rev: 1.0	
Date: Wednesday, July 02, 2008	Sheet 89 of 97

BATTERY IN DETECT

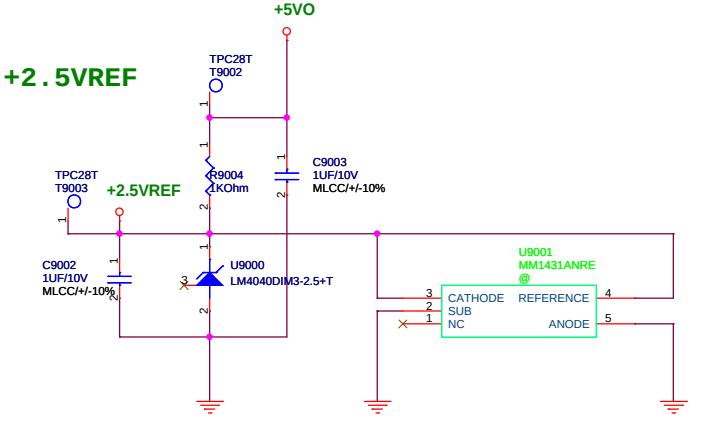


Master Battery: BAT1_IN_OC#
Second Battery: BAT2_IN_OC#

ADAPTER IN DETECT



+2.5VREF

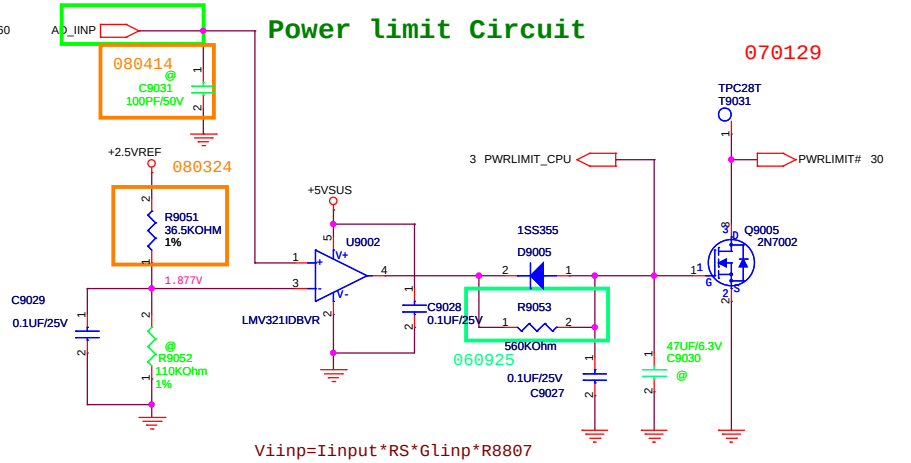


U8600 & U8601 colay

U8600 Main source change to 06G006002414(tolerence:1%).
Add second source 06G006002610 (tolerence:1%),
06G006002412 (tolerence:0.2%) and
06G006002020(tolerence:0.2%)

Power limit Circuit

070129



Viinp=Iinput*RS*Glinp*R8807
Viinp=1.877V, RS=20mohm,
Glinp=2.8uA/mV,Pinput=63.65W

R8839=10K----->Iinput=3.35A

ASUSTeK COMPUTER INC	Title : POWER_DETECT	
	Engineer: Benson	
Size: Custom	Project Name: N10	Rev: 1.0
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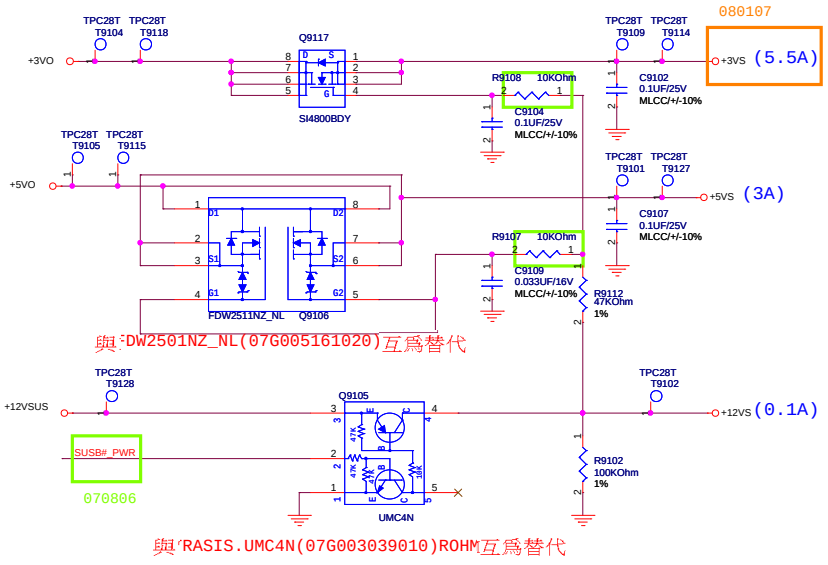
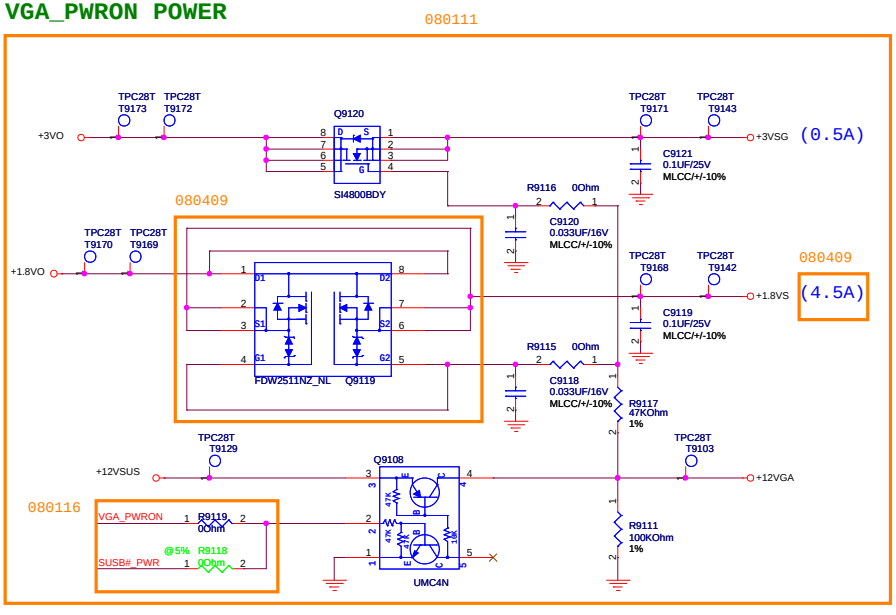
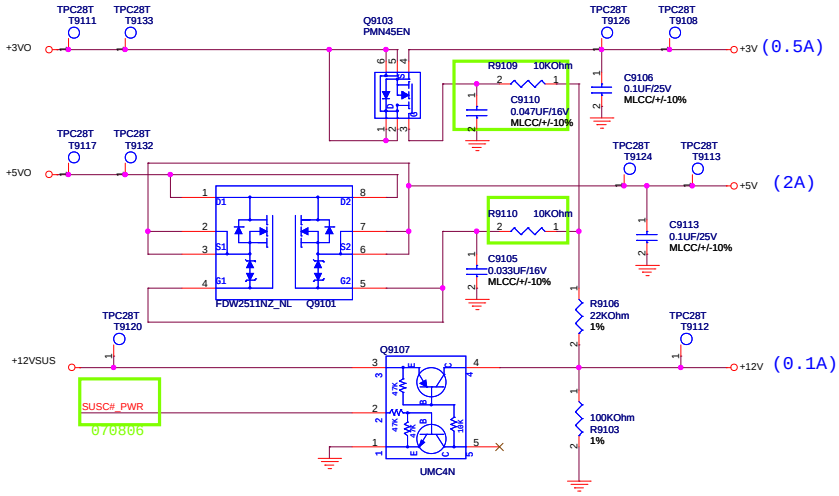
SUSB#_PWR POWER

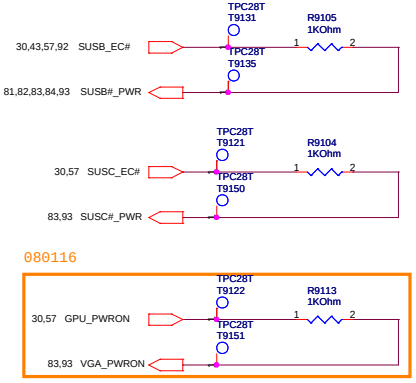


VGA_PWRON POWER



SUSC#_PWR POWER





ASUSTeK COMPUTER INC

Title : POWER_LOAD SWITCH

Engineer: Benson

Size	Project Name	Rev
Custom	N10	1.0

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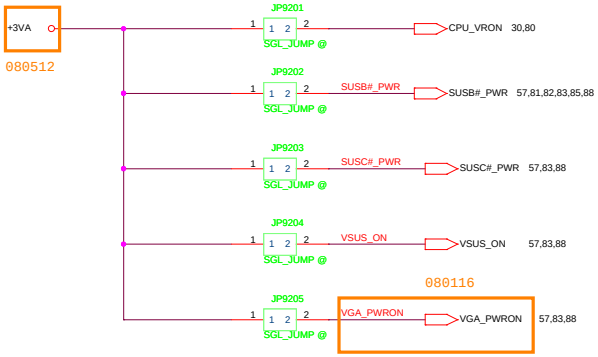
FOR POWER TEST



AC_BAT_SYS — AC_BAT_SYS 80,81,82,83,84
BAT — BAT 60,84
BAT_CON — BAT_CON 60,84
+3VA — +3VA 12,30,57,85,86
+5VO — +5VO 81,82,83,85,88
+5VSUS — +5VSUS 56,62,81
+3VO — +3VO 53,81,88
+3VSUS — +3VSUS 30,37,81
+5V — +5V 9,14,39,52,56,57,65,69,88
+5VS — +5VS 14,36,37,45,48,50,56,57,61,62,69,80,82,88
+3V — +3V 13,14,30,45,52,54,57,62,65,88
+3VS — +3VS 7,12,13,14,29,30,35,36,37,42,44,45,48,50,51,53,54,55,56,57,58,61,62,66,68,80,82,85,88

+12V — +12V 48,57,66,81
+12VS — +12VS 48,57,66,81

+2.5VS — +2.5VS 48,57,66,81

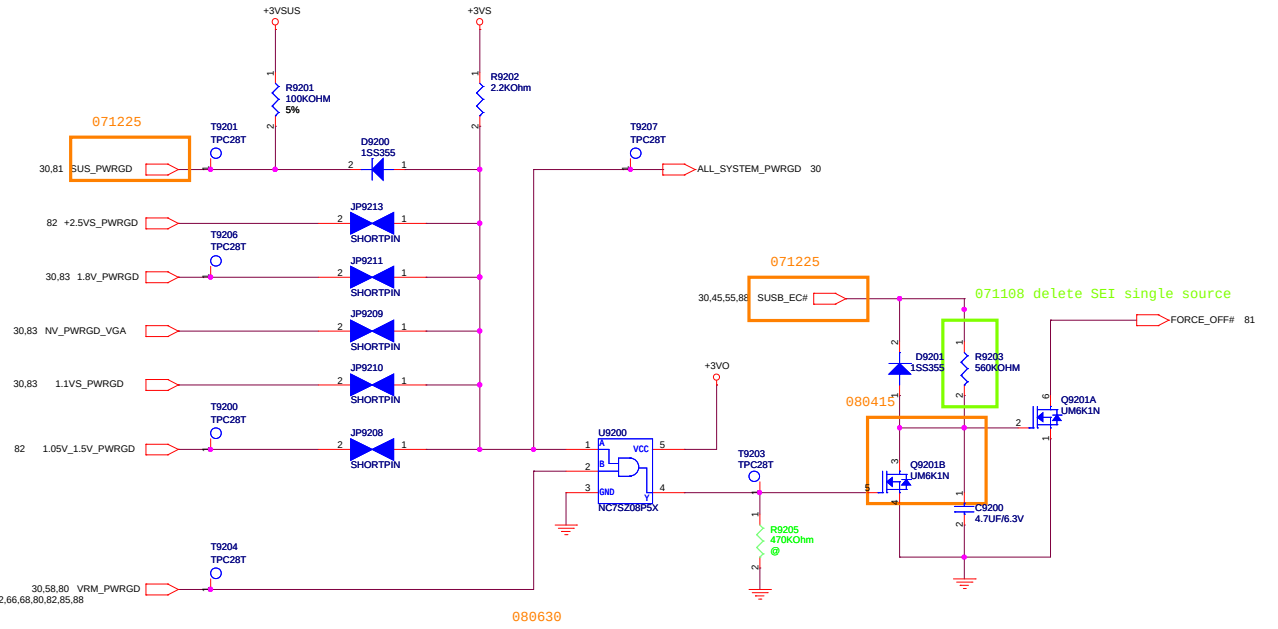
+1.8VO — +1.8VO 83
+1.8V — +1.8V 7,9,11,14,57,83,85
+1.8VS — +1.8VS 7,9,11,14,57,83,85
+0.9VS — +0.9VS 7,9,11,83

+VCCP — +VCCP 4,10,13,14,29,53,57,85
+1.05VO — +1.05VO 82
+1.5VS — +1.5VS 4,10,13,14,29,53,57,85

+VCORE — +VCORE 4,80

+VGA_Vcore — +VGA_Vcore 4,10,13,14,29,53,57,85
+1.1VS — +1.1VS 60,84
GPU_VID0 — GPU_VID0 60,84
GPU_VID1 — GPU_VID1 60,84
NVDD_SENSE — NVDD_SENSE 60,84

POWER GOOD DETECTER



R2.0 080331 Add Q9201, R9204 and un-mount U9200 for cost down with R9209 change from 100kohm to 10 kohm
080401 Change Q9201 from 2N7002 to BSS138.
080402 Un-Mount Q9201 and R9204, mount U9200. Recover R9209 from 10Kohm to 100Kohm

ASUSTeK COMPUTER INC	Title : Power_PROTECT_SIGNA	
	Engineer: Benson	
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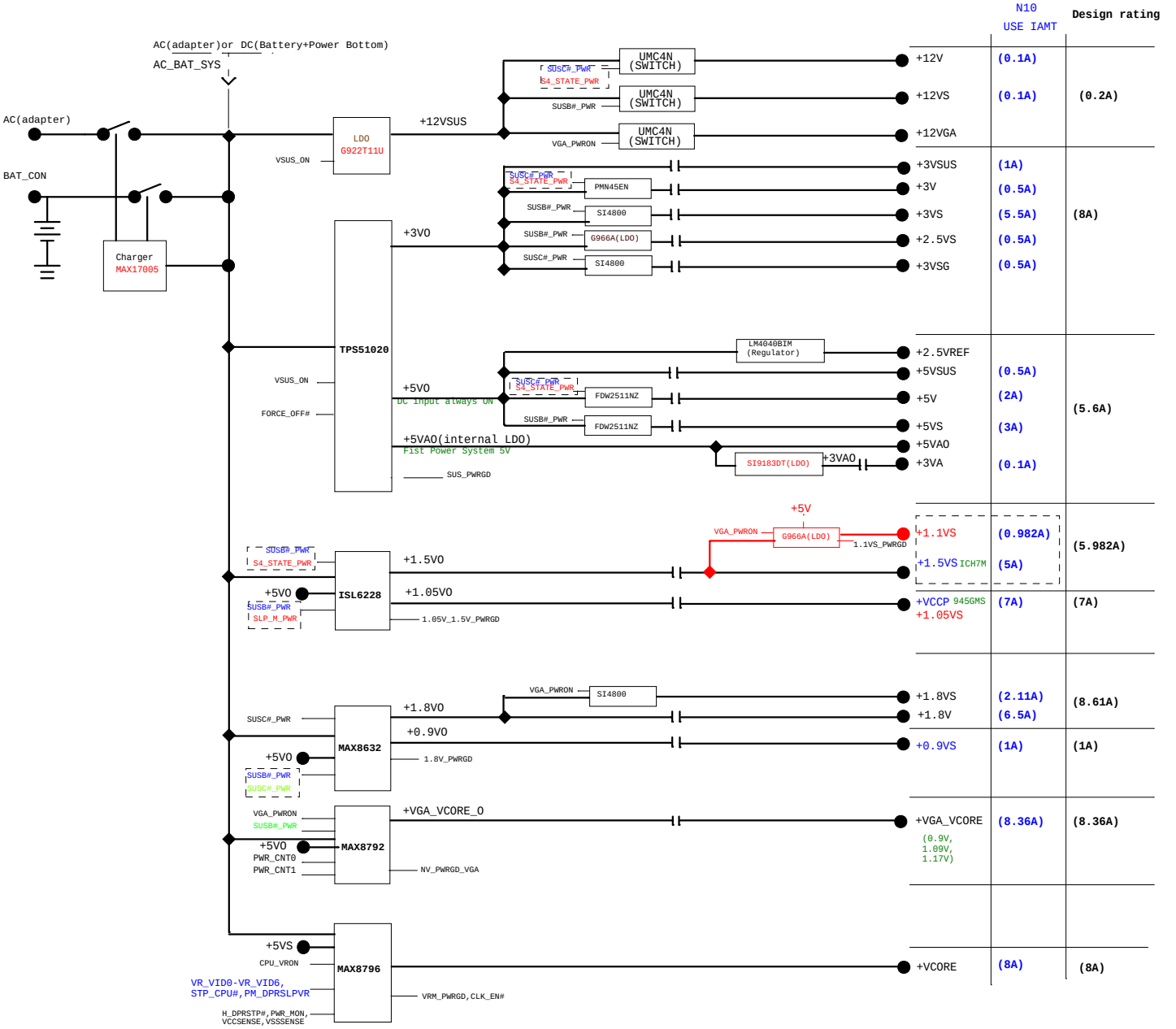

ASUSTeK COMPUTER INC.
Title : POWER_FLOWCHART
Engineer: Benson
Size: Custom
Project Name: N10
Rev: 1.0
Date: Wednesday, July 02, 2008
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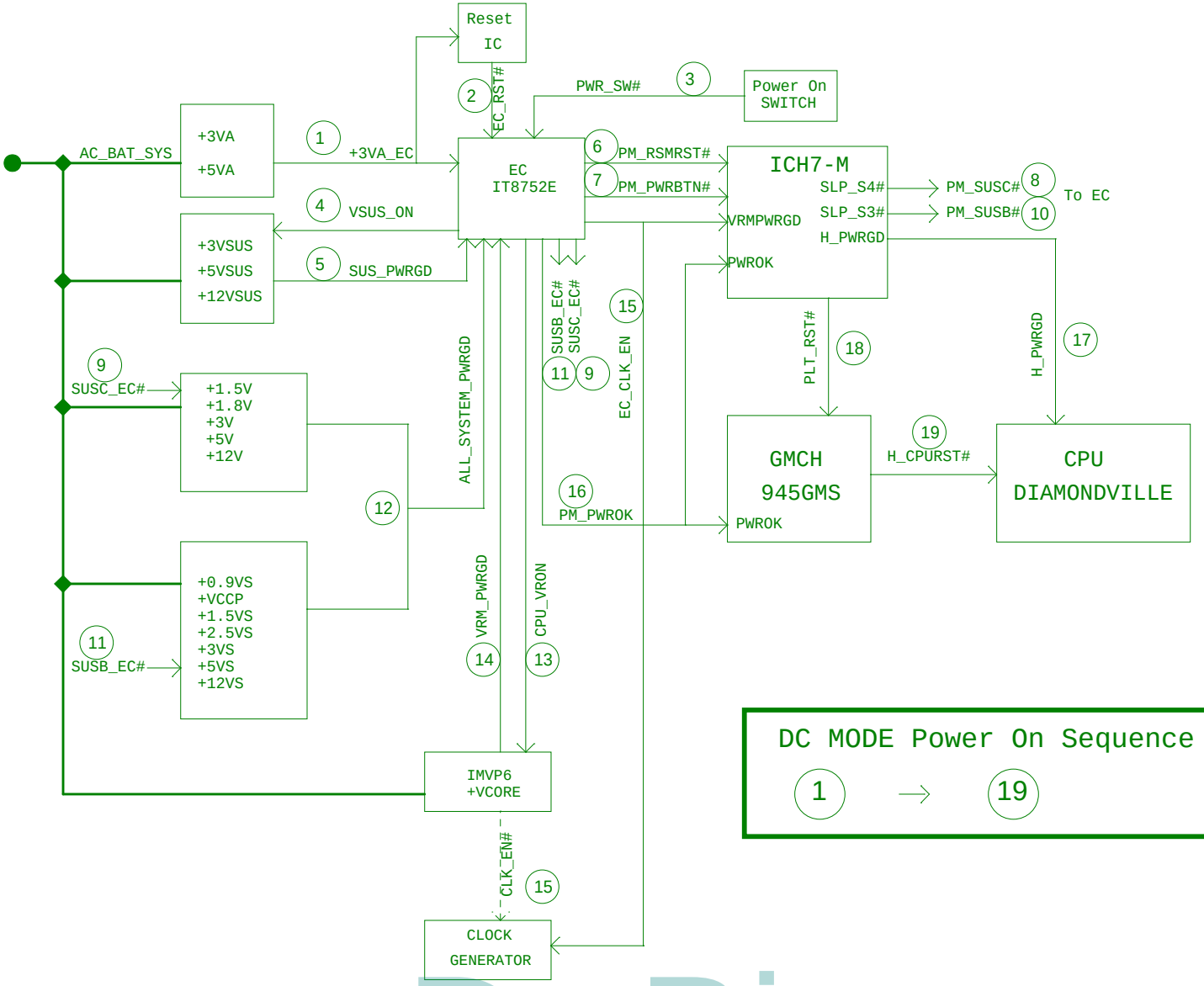
N10 POWER-ON SEQUENCE UNDER BATTERY MODE



1. Battery is plugged in only and +3VA_EC is on
2. EC_RST# is de-asserted
3. Power button is pressed
4. EC asserts VSUS_ON to turn SUS power on
5. SUS_PWRGD is asserted to indicate SUS power is OK
6. EC de-asserts PM_RSMRST# to reset RTC well of ICH7M
7. EC asserts PM_PWRBTN# to ICH7M from G2 to G0
8. ICH7M de-asserts PM_SUSC# to EC
9. EC de-asserts SUSC_EC# to turn +V power on
10. ICH7M de-asserts PM_SUSB# to EC
11. EC de-asserts SUSB_EC# to turn +VS power on
12. EC waits for ALL_SYSTEM_PWRGD
13. EC asserts CPU_VRON to turn CPU power on
14. EC waits for VRM_PWRGD
15. EC asserts EC_CLK_EN to enable clock generator
16. EC asserts PM_PWROK to 945GMS and ICH7M
17. ICH7M asserts H_PWRGD to CPU
18. ICH7M asserts PLT_RST# to reset 945GMS
19. 945GMS asserts H_CPURST# to reset CPU

DC MODE Power On Sequence

1 → 19

ASUSTeK COMPUTER INC	Title : POWER ON SEQUENCE(1)	
	Engineer: ENGINEER	
Size: C	Project Name: N10	Rev: 0.1
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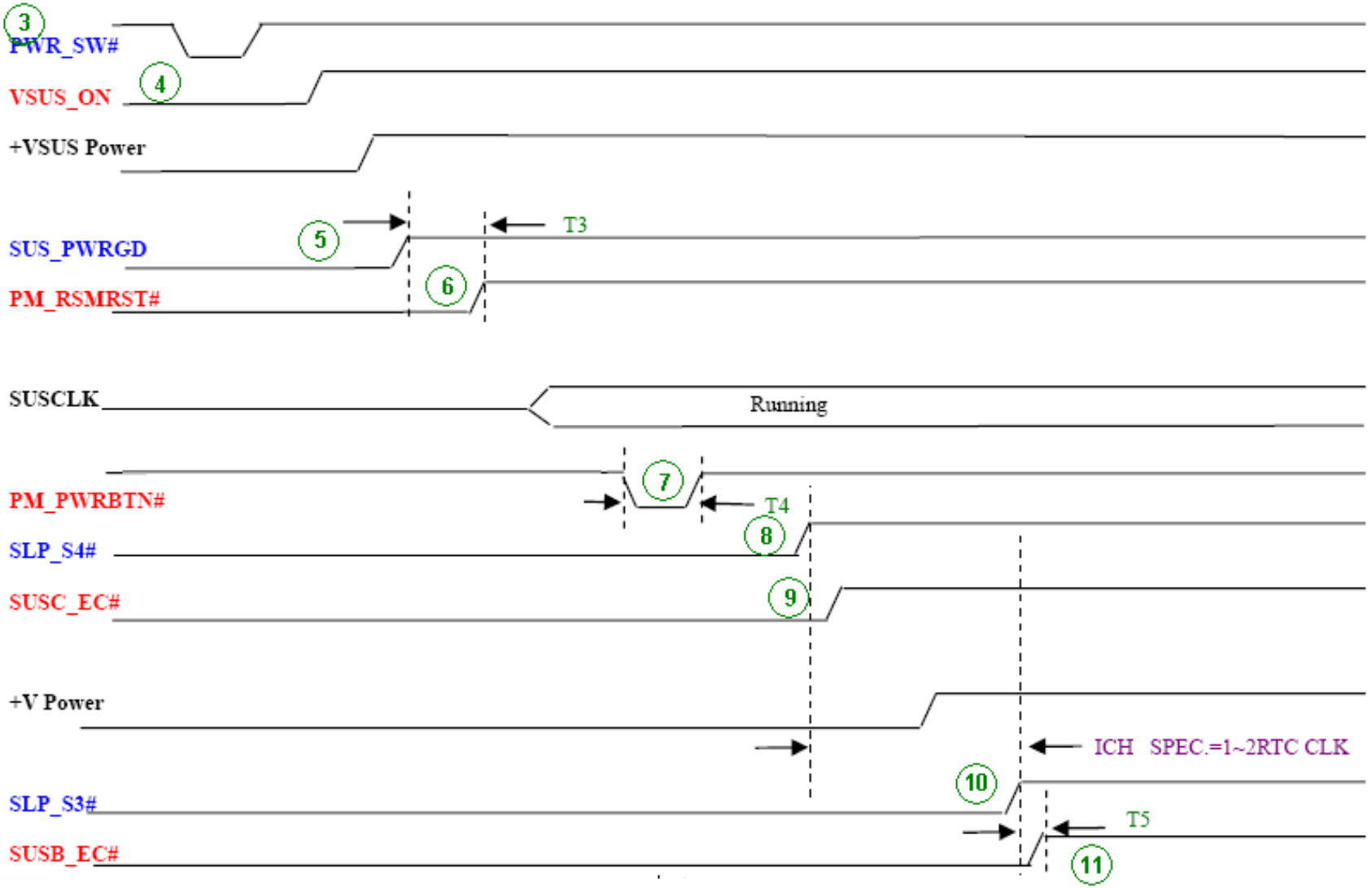
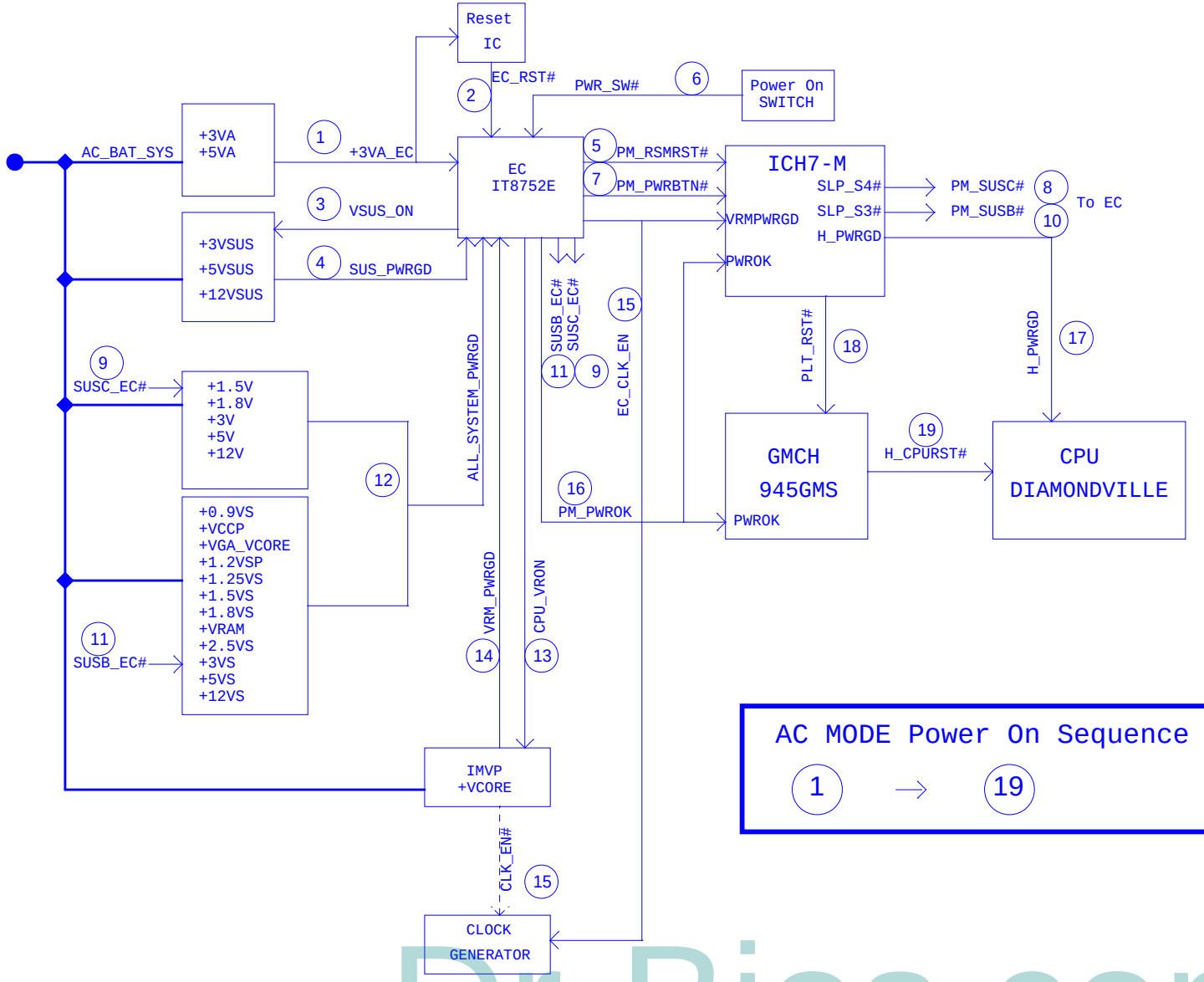


ASUSTeK COMPUTER INC	Title : POWER ON SEQUENCE(1)	
	Engineer: ENGINEER	
Size: A	Project Name: N10	Rev: 0.1
Date: Wednesday, July 02, 2008	Sheet 95 of 97	

N10 POWER-ON SEQUENCE UNDER BATTERY MODE



1. Battery is plugged in only and +3VA_EC is on
2. EC_RST# is de-asserted
3. Power button is pressed
4. EC asserts VSUS_ON to turn SUS power on
5. SUS_PWRGD is asserted to indicate SUS power is OK
6. EC de-asserts PM_RSMRST# to reset RTC well of ICH7M
7. EC asserts PM_PWRBTN# to ICH7M from G2 to G0
8. ICH7M de-asserts PM_SUSC# to EC
9. EC de-asserts SUSC_EC# to turn +V power on
10. ICH7M de-asserts PM_SUSB# to EC
11. EC de-asserts SUSB_EC# to turn +VS power on
12. EC waits for ALL_SYSTEM_PWRGD
13. EC asserts CPU_VRON to turn CPU power on
14. EC waits for VRM_PWRGD
15. EC asserts EC_CLK_EN to enable clock generator
16. EC asserts PM_PWROK to 945GMS and ICH7M
17. ICH7M asserts H_PWRGD to CPU
18. ICH7M asserts PLT_RST# to reset 945GMS
19. 945GMS asserts H_CPURST# to reset CPU

AC MODE Power On Sequence

1 → 19

ASUSTeK COMPUTER INC	Title : POWER ON SEQUENCE(1)	
	Engineer: ENGINEER	
Size: C	Project Name: N10	Rev: 0.1
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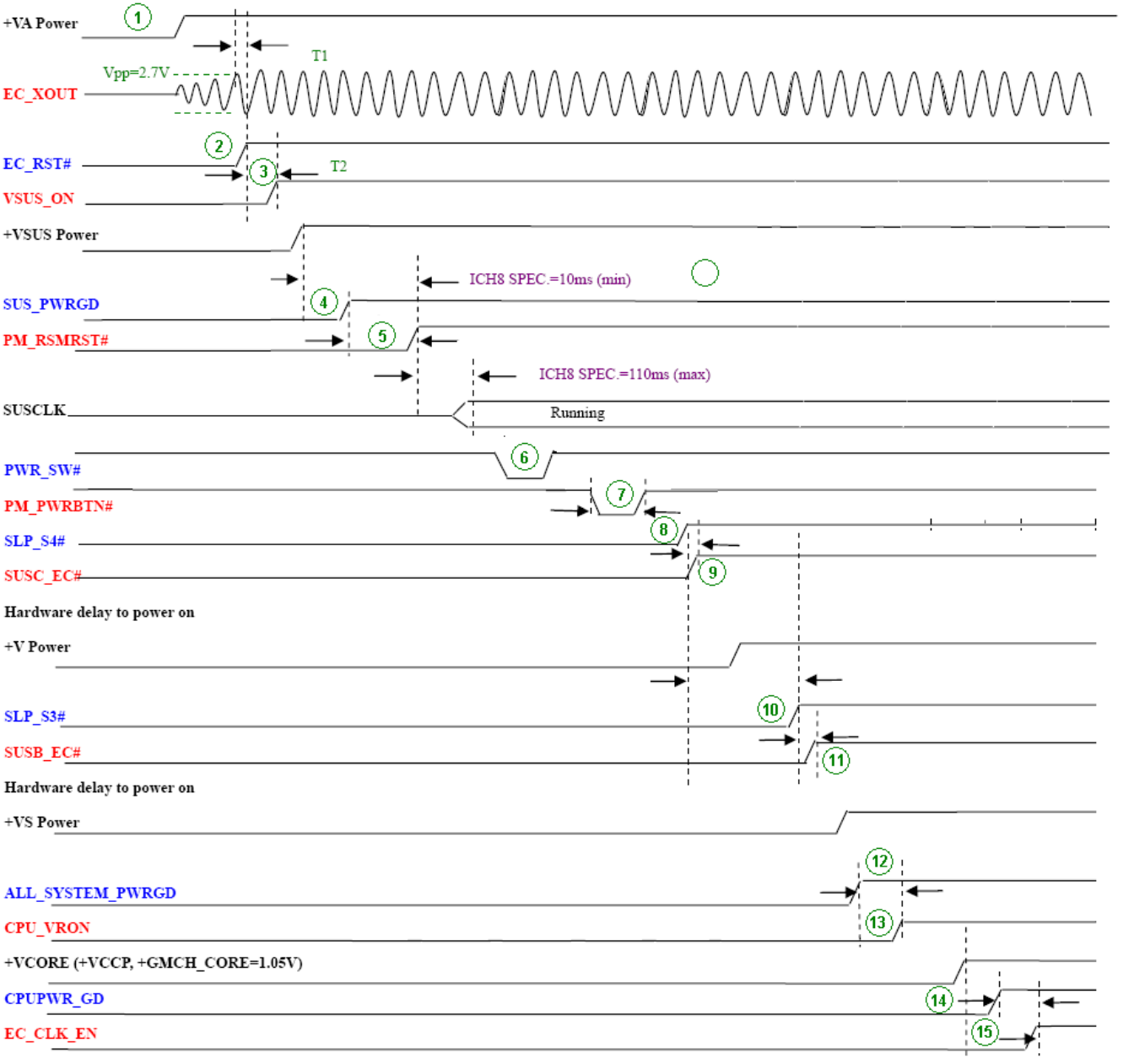

ASUSTeK COMPUTER INC	Title : POWER ON SEQUENCE(1)	
	Engineer: ENGINEER	
Size: B	Project Name: N10	Rev: 0.1
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