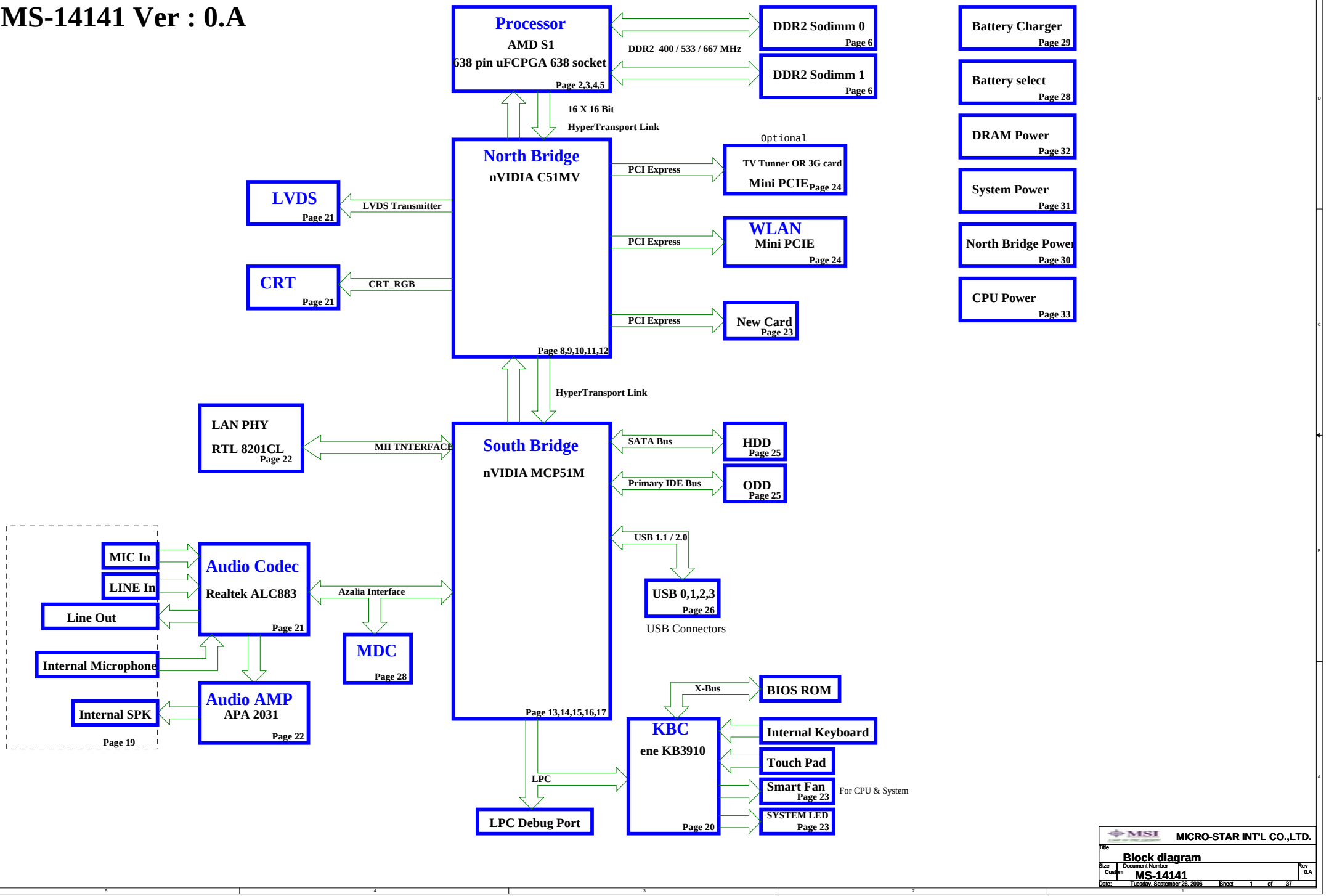
MS-14141 Ver : 0.A



MICRO-STAR INT'L CO.,LTD.

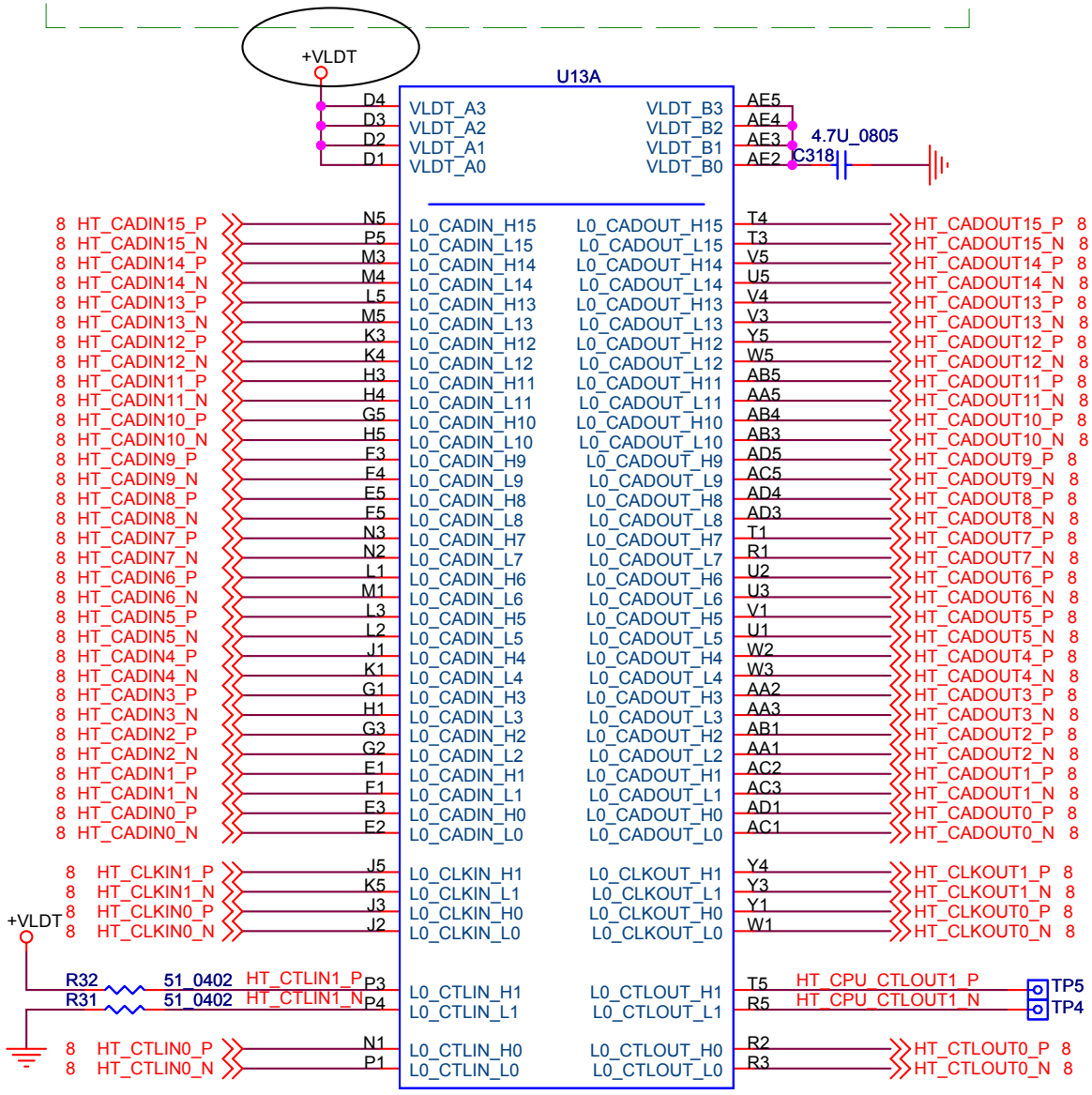
Title: Block diagram

Size: Custom | Document Number: MS-14141 | Rev: 0.A

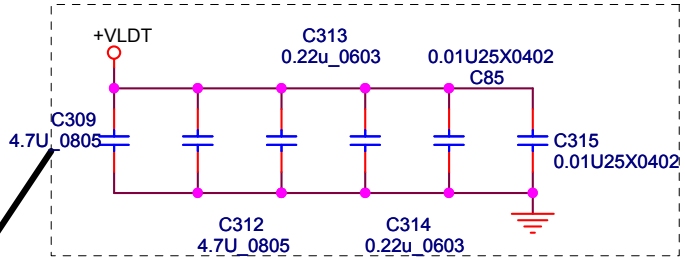
Date: Tuesday, September 26, 2006 | Sheet 1 of 37

PROCESSOR HYPERTRANSPORT INTERFACE

VLDT_Ax AND VLDT_Bx ARE CONNECTED TO THE LDT_RUN POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE



Athlon 64 S1 Processor Socket



LAYOUT: Place bypass cap on topside of board

NEAR HT POWER PINS THAT ARE NOT CONNECTED DIRECTLY TO DOWNSTREAM HT DEVICE, BUT CONNECTED INTERNALLY TO OTHER HT POWER PINS
PLACE CLOSE TO VLDT0 POWER PINS

MICRO-STAR INT'L CO.,LTD.

Title: AMD S1 HT I/F

Size	Document Number	Rev
Custom	MS-14141	0.A

Date: Tuesday, September 26, 2006 Sheet 2 of 37

Processor DDR2 Memory Interface

VDD_VTT_SUS_CPU IS CONNECTED TO THE VDD_VTT_SUS POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE

VTT_SENSE should be routed as a 10-mil trace with 10 mils spacing

15MIL trace, 20MIL space shorter than 1"

CPU_VDDIO_SUS

CPU_M_VREF_SUS

CPU_VTT_SUS

R197 39.2_0402 1%

R198 39.2_0402 1%

C93 1n_0402

PLACE THEM CLOSE TO CPU WITHIN 1"

U13B

CPU_VTT_SUS

CI25 0.1u_0402_NC

C324 0.1u_0402

CI24 0.1u_0402_NC

CI41 EMI 0.1u_0402_NC

DDR II: CMD/CTRL/CLK

Athlon 64 S1 Processor Socket

U13C

DDR: DATA

Athlon 64 S1 Processor Socket

Differential CTT termination

PLACE CLOSE TO PROCESSOR WITHIN 1.5 INCH

C320 1.5p_0402

C121 1.5p_0402

Differential CTT termination

PLACE CLOSE TO PROCESSOR WITHIN 1.5 INCH

C119 1.5p_0402

C120 1.5p_0402

VDD_VREF_SUS_CPU

R51 1K_0402 1%

R52 1K_0402 1%

C125 1n_0402

C118 1n_0402

0922 by harry

LAYOUT:PLACE CLOSE TO CPU

A1

A26

AF1

Athlon 64 S1g1
uPGA638
Top View

MICRO-STAR INT'L CO.,LTD.

Title: AMD S1 DDRII MEMORY I/F

Size: A3 | Document Number: MS-14141 | Rev: 0.A

Date: Tuesday, September 26, 2006 | Sheet 3 of 37

ATHLON Control and Debug

LAYOUT: ROUTE VDDA TRACE APPROX. 50 mils WIDE (USE 2x25 mil TRACES TO EXIT BALL FIELD) AND 500 mils LONG.

CPU_VDDA_2.5_RUN

+2.5VRUN → L14 300L600mA → VDDA_L
C89 4.7U_0805, C96 3.9n, C92 0.22u_0603

De-Glitching Circuit

1/21 Change to OD gate

3/9 Delete 0 ohm

+2.5VRUN, +3VRUN, +3VSUS, CPU_VDDIO_SUS
R177 1K_0402 1%, R181 4.7KR0402 DNI, R178 300_0402
8 HTCPU_PWRGD
U12A 74LCX07(Open Drain) → CPU_ALL_PWROK
U12B 74LCX07(Open Drain)

+2.5VRUN, CPU_VDDIO_SUS
R179 1K_0402 1%, R182 300_0402
8 HTCPU_STOP#
U12C 74LCX07(Open Drain) → CPU_LDTSTOP#

U12D 74LCX07(Open Drain)

+2.5VRUN, CPU_VDDIO_SUS
R183 1K_0402 1%, R184 300_0402
8 HTCPU_RST#
U12E 74LCX07(Open Drain) → CPU_HT_RESET#

ED1 ESD-DIODE_NC
03/21 for EMI

15,30 VLDT_PG
U12F 74LCX07(Open Drain)

+3VALW
RN1 8P4R-10KR0402
CPU_CRIT#
ALERT#
SMB_THRMCPU_DATA
SMB_THRMCPU_CLK

Cap close to thermal sensor

U4 LM86CIMMXNOPB_MSOP8-RH
VDD, D+, D-, T_CRIT_A#, SMBCLK, SMBDATA, ALERT#, GND
CPU_TEST4_THERMDA, CPU_TEST5_THERMDC
C88 2200P50X0402
C86 0.1u_0402
SMB_THRMCPU_CLK → SMB_THRMCPU_CLK 20
SMB_THRMCPU_DATA → SMB_THRMCPU_DATA 20
ALERT# → TP6
27 CPU_CRIT#
Close to CPU socket

CPU_VDDIO_SUS
R189 300_0402_NC, R187 300_0402, R186 300_0402
+VLDT
R35 44.2_0603 1%, R38 44.2_0603 1%
CPU_HTREF1, CPU_HTREF0
place them to CPU within 1"(5mil trace 10mil space)

33 CPU_VDD_RUN_FB_H, 33 CPU_VDD_RUN_FB_L
TP17, TP14
CPU_VDDIO_SUS_FB_H, CPU_VDDIO_SUS_FB_L

8 CPU_CLK_P, C316 3.9n, CPU_CLKIN_SC_P
R185 169_0402 1%
8 CPU_CLK_N, C317 3.9n, CPU_CLKIN_SC_N
TP23 CPU_DBRDY

CPU_TMS, CPU_TCK, CPU_TRST#, CPU_TDI

CPU_TEST25_H_BYPASSCLK_H
CPU_TEST25_L_BYPASSCLK_L
CPU_TEST19_PLLTEST0
CPU_TEST18_PLLTEST1

TP11, TP15, TP16, TP10, TP12

CPU_TEST5_THERMDC
CPU_TEST4_THERMDA

U13D

VDDA2, VDDA1
RESET_L, PWROK, LDTSTOP_L
SIC, SID
HT_REF1, HT_REF0
VDD_FB_H, VDD_FB_L
VDDIO_FB_H, VDDIO_FB_L
CLKIN_H, CLKIN_L
DBRDY
TMS, TCK, TRST_L, TDI
TEST25_H, TEST25_L, TEST19, TEST18, TEST13, TEST9, TEST17, TEST16, TEST15, TEST14, TEST12
TEST7, TEST6, THERMDC, THERMDA, TEST3, TEST2
RSVD0, RSVD1, RSVD2, RSVD3
RSVD4, RSVD5, RSVD6, RSVD7

THERMTRIP_L, PROCHOT_L
CPU_THERMTRIP#, CPU_PROCHOT# 1.8
CPU_HT_RESET#, CPU_ALL_PWROK, CPU_LDTSTOP#
CPU_SIC_R, CPU_SID_R
CPU_VDD_RUN_FB_H, CPU_VDD_RUN_FB_L
CPU_VDDIO_SUS_FB_H, CPU_VDDIO_SUS_FB_L
CPU_CLKIN_SC_P, CPU_CLKIN_SC_N
CPU_DBRDY
CPU_TMS, CPU_TCK, CPU_TRST#, CPU_TDI
CPU_TEST25_H_BYPASSCLK_H, CPU_TEST25_L_BYPASSCLK_L, CPU_TEST19_PLLTEST0, CPU_TEST18_PLLTEST1
TP11, TP15, TP16, TP10, TP12
CPU_TEST5_THERMDC, CPU_TEST4_THERMDA

VID5, VID4, VID3, VID2, VID1, VID0
CPU_PRESENT_L
PSI_L
DBREQ_L
TDO
TEST29_H, TEST29_L
TEST24, TEST23, TEST22, TEST21, TEST20
TEST28_H, TEST28_L, TEST27, TEST26, TEST10, TEST8
RSVD8, RSVD9, RSVD10, RSVD11, RSVD12, RSVD13, RSVD14, RSVD15, RSVD16, RSVD17, RSVD18, RSVD19, RSVD20

CPU_VID5, CPU_VID4, CPU_VID3, CPU_VID2, CPU_VID1, CPU_VID0
CPU_PRESENT#
CPU_PSI# → CPU_PSI# 33
CPU_DBREQ#
CPU_TDO → TP21
CPU_TEST29_H_FBCLKOUT_P, CPU_TEST29_L_FBCLKOUT_N
R37 80.6_0603 1%
ROUTE AS 80 Ohm DIFFERENTIAL PAIR PLACE IT CLOSE TO CPU WITHIN 1"
TP8, TP7, TP13 CPU_TEST21_SCANEN, TP9
CPU_TEST26_BURNIN#

MISC
AMD NPT S1 SOCKET
Processor Socket

JTAC

0824
CPU_VDDIO_SUS
R190 220_0402, R192 300_0402, R191 220_0402
+1.8VRUN
R194 10K
Q8 PMBS3904
CPU_THERMTRIP_D# 13

+1.8VRUN
R193 10K_NC
CPU_PROCHOT# 1.8
Q9 SMBT3904_NC
TP56

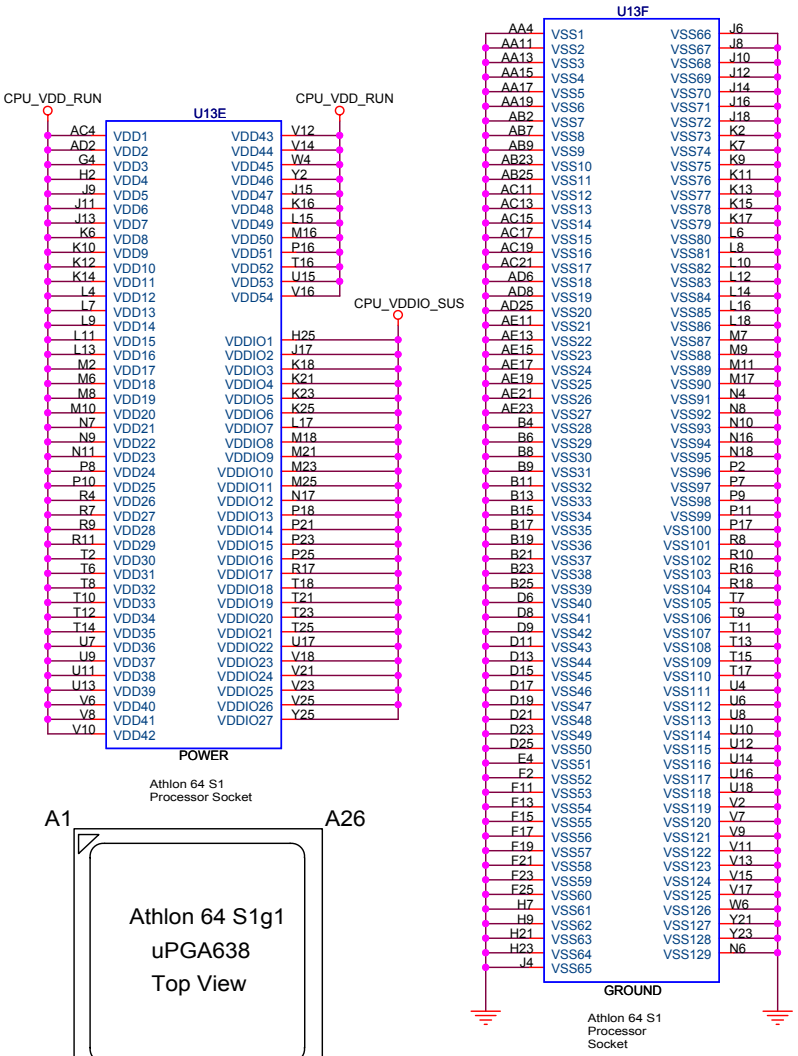
CPU_VDDIO_SUS
CPU_DBREQ# R47 510_0402_NC
CPU_TMS R45 510_0402_NC
CPU_TCK R43 510_0402_NC
CPU_TRST# R196 510_0402_NC
CPU_TDI R195 510_0402_NC

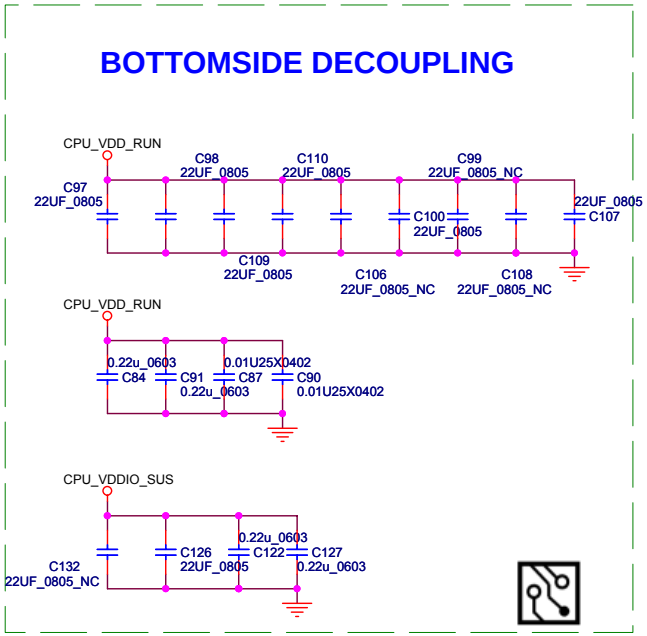
CPU_TEST26_BURNIN# R188 300_0402
CPU_PRESENT# R39 1K_0402 1%
CPU_TEST25_H_BYPASSCLK_H R44 510_0402

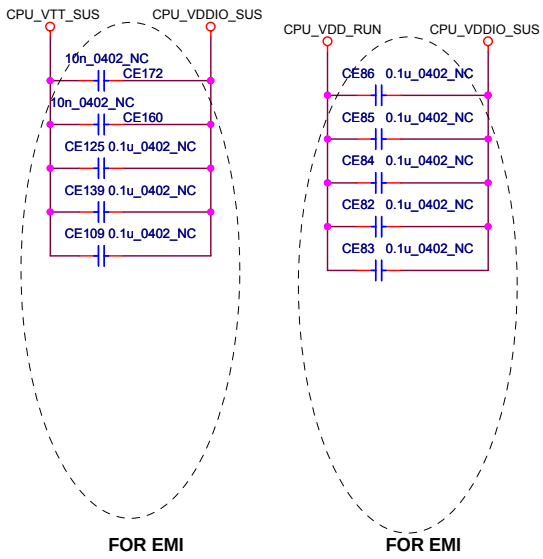
CPU_TEST21_SCANEN R42 300_0402
CPU_TEST25_L_BYPASSCLK_L R36 510_0402
CPU_TEST19_PLLTEST0 R46 300_0402
CPU_TEST18_PLLTEST1 R50 300_0402

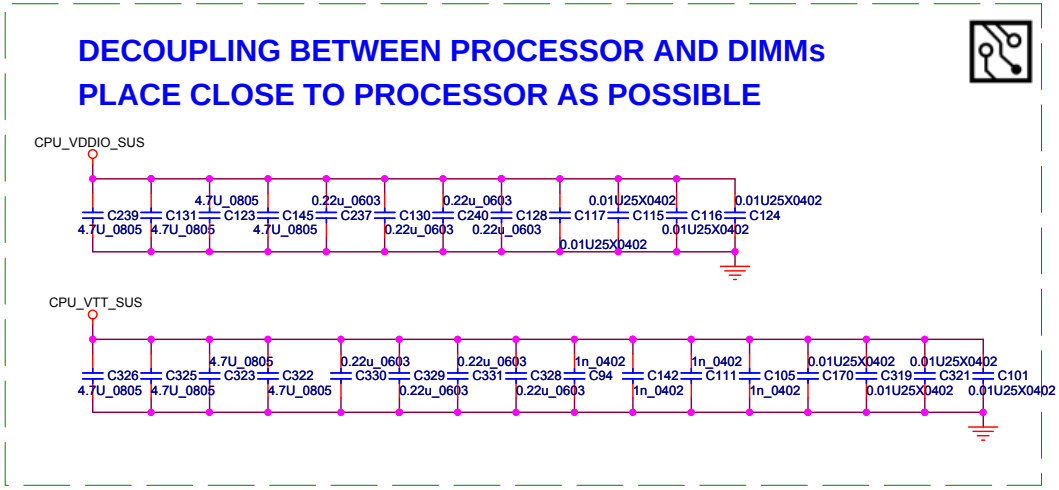
MICRO-STAR INT'L CO.,LTD.

Title: AMD S1 CTRL
Size: B
Document Number: MS-14141
Rev: 0.A
Date: Tuesday, September 26, 2006
Sheet 4 of 37









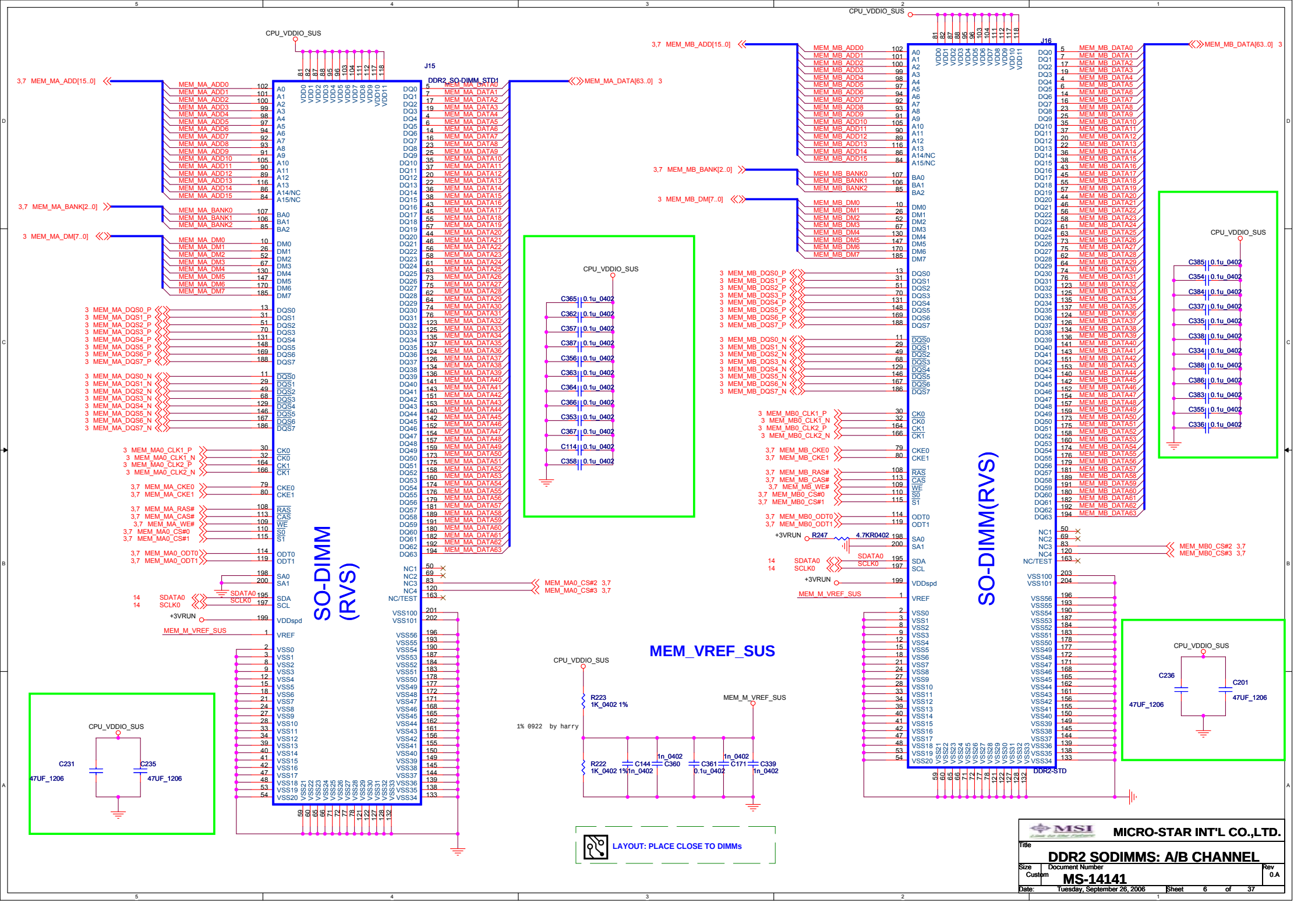
PROCESSOR POWER AND GROUND

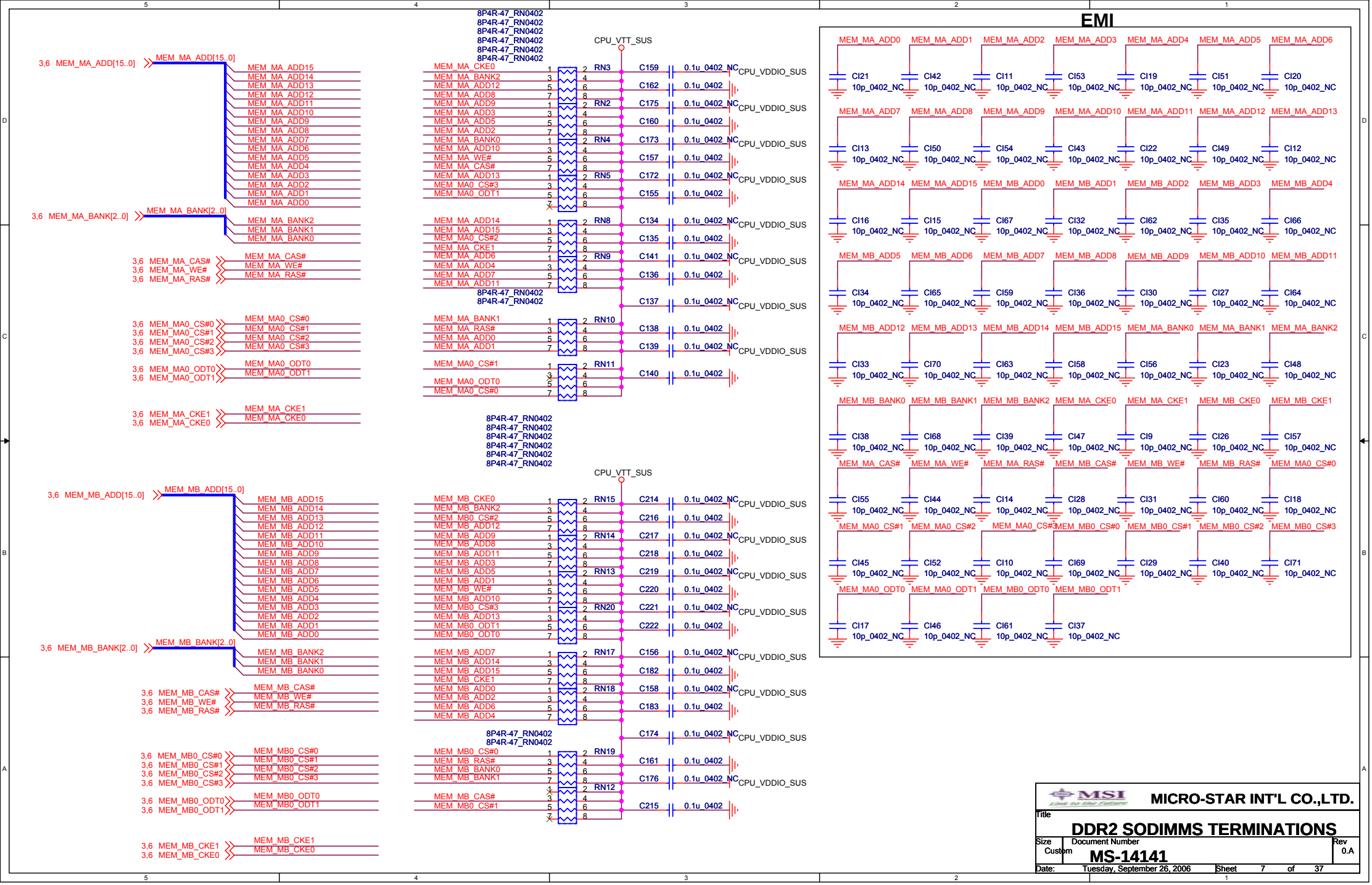
MICRO-STAR INT'L CO.,LTD.

Title: AMD S1 Power & Ground

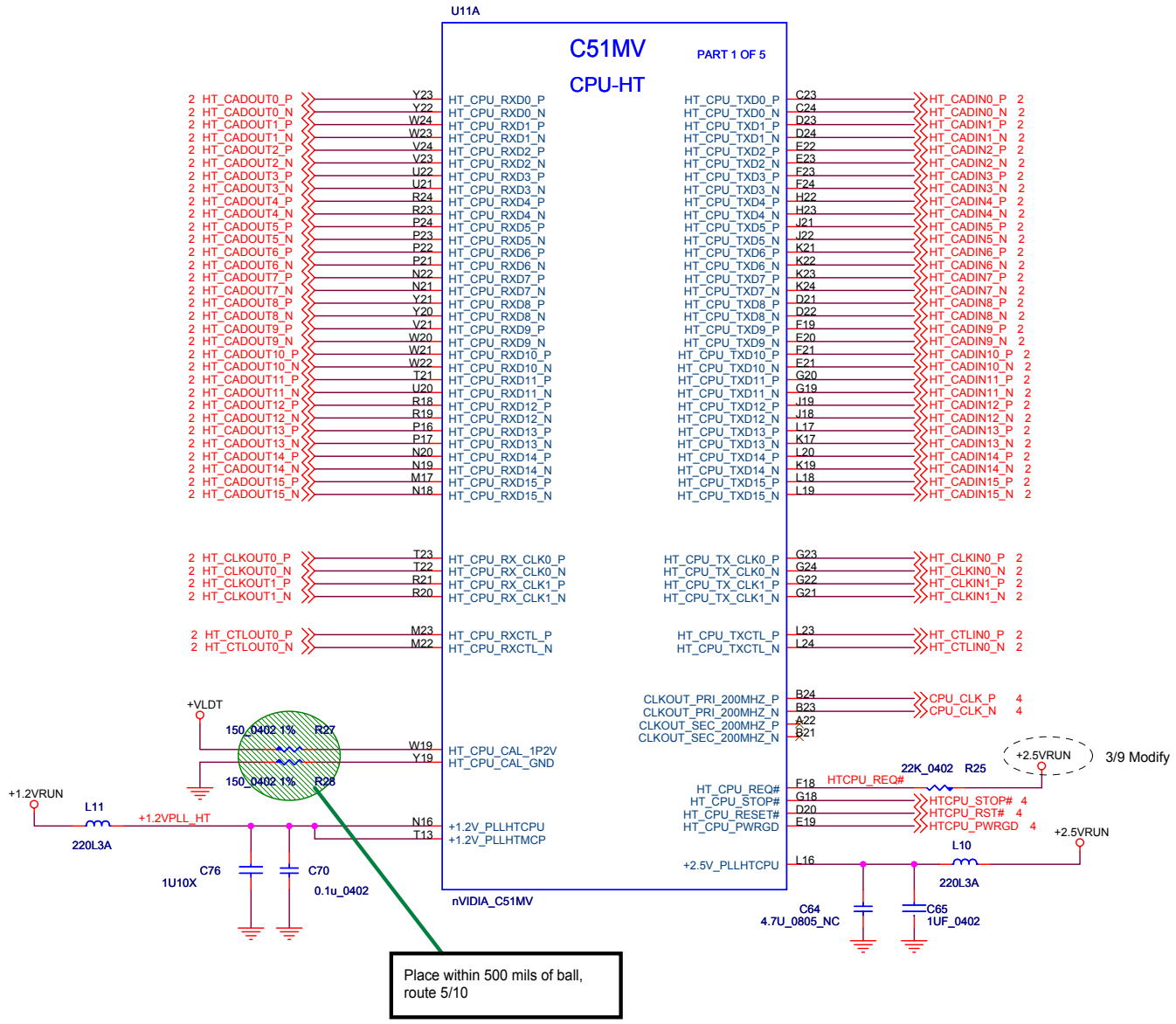
Size: B | Document Number: MS-14141 | Rev: 0.A

Date: Tuesday, September 26, 2006 | Sheet 5 of 37

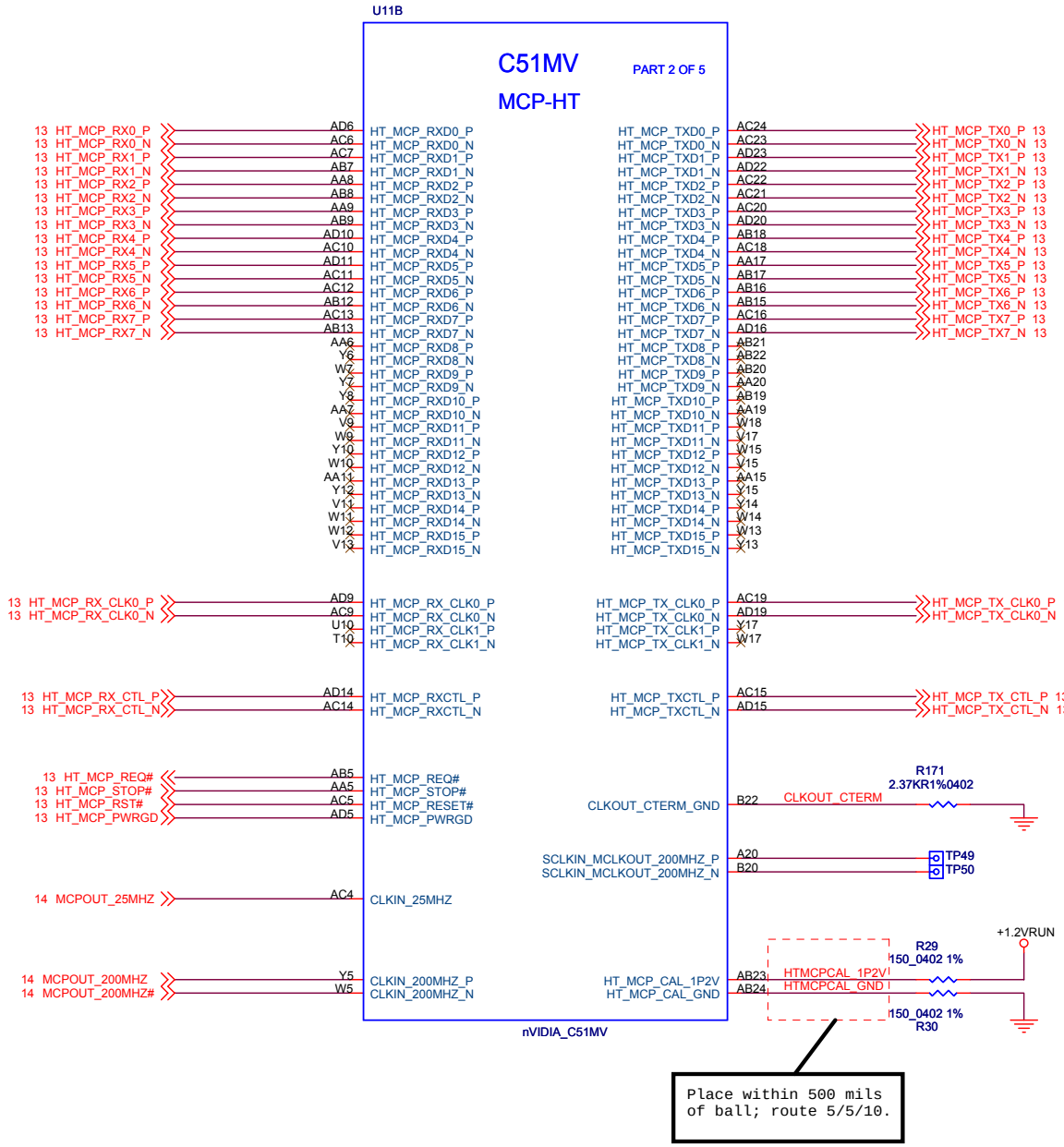

CPU_VDDIO_SUS
J15
DDR2_SO-DIMM_STD1
SO-DIMM (RVS)
MEM_MA_ADD[15..0]
MEM_MA_BANK[2..0]
MEM_MA_DM[7..0]
MEM_MA_DQS0_P
MEM_MA_DQS1_P
MEM_MA_DQS2_P
MEM_MA_DQS3_P
MEM_MA_DQS4_P
MEM_MA_DQS5_P
MEM_MA_DQS6_P
MEM_MA_DQS7_P
MEM_MA_DQS0_N
MEM_MA_DQS1_N
MEM_MA_DQS2_N
MEM_MA_DQS3_N
MEM_MA_DQS4_N
MEM_MA_DQS5_N
MEM_MA_DQS6_N
MEM_MA_DQS7_N
MEM_MA0_CLK1_P
MEM_MA0_CLK1_N
MEM_MA0_CLK2_P
MEM_MA0_CLK2_N
MEM_MA_CKE0
MEM_MA_CKE1
MEM_MA_RAS#
MEM_MA_CAS#
MEM_MA_WE#
MEM_MA0_CS#0
MEM_MA0_CS#1
MEM_MA0_ODT0
MEM_MA0_ODT1
SDATA0
SCLK0
+3VRUN
MEM_M_VREF_SUS
MEM_MA_DATA[63..0]
MEM_MA0_CS#2
MEM_MA0_CS#3
C365 0.1u_0402
C362 0.1u_0402
C357 0.1u_0402
C387 0.1u_0402
C356 0.1u_0402
C363 0.1u_0402
C364 0.1u_0402
C366 0.1u_0402
C353 0.1u_0402
C367 0.1u_0402
C114 0.1u_0402
C358 0.1u_0402
C231 47UF_1206
C235 47UF_1206
MEM_VREF_SUS
R223 1K_0402 1%
R222 1K_0402 1%
1% 0922 by harry
C144 1n_0402
C360 1n_0402
C361 0.1u_0402
C171 1n_0402
C339 1n_0402
LAYOUT: PLACE CLOSE TO DIMMs
J16
SO-DIMM(RVS)
MEM_MB_ADD[15..0]
MEM_MB_BANK[2..0]
MEM_MB_DM[7..0]
MEM_MB_DQS0_P
MEM_MB_DQS1_P
MEM_MB_DQS2_P
MEM_MB_DQS3_P
MEM_MB_DQS4_P
MEM_MB_DQS5_P
MEM_MB_DQS6_P
MEM_MB_DQS7_P
MEM_MB_DQS0_N
MEM_MB_DQS1_N
MEM_MB_DQS2_N
MEM_MB_DQS3_N
MEM_MB_DQS4_N
MEM_MB_DQS5_N
MEM_MB_DQS6_N
MEM_MB_DQS7_N
MEM_MB0_CLK1_P
MEM_MB0_CLK1_N
MEM_MB0_CLK2_P
MEM_MB0_CLK2_N
MEM_MB_CKE0
MEM_MB_CKE1
MEM_MB_RAS#
MEM_MB_CAS#
MEM_MB_WE#
MEM_MB0_CS#0
MEM_MB0_CS#1
MEM_MB0_ODT0
MEM_MB0_ODT1
R247 4.7KR0402
MEM_MB_DATA[63..0]
MEM_MB0_CS#2
MEM_MB0_CS#3
C385 0.1u_0402
C354 0.1u_0402
C384 0.1u_0402
C337 0.1u_0402
C335 0.1u_0402
C338 0.1u_0402
C334 0.1u_0402
C388 0.1u_0402
C386 0.1u_0402
C383 0.1u_0402
C355 0.1u_0402
C336 0.1u_0402
C236 47UF_1206
C201 47UF_1206
DDR2-STD
MICRO-STAR INT'L CO.,LTD.
Title
DDR2 SODIMMS: A/B CHANNEL
Size Custom
Document Number MS-14141
Rev 0.A
Date: Tuesday, September 26, 2006
Sheet 6 of 37



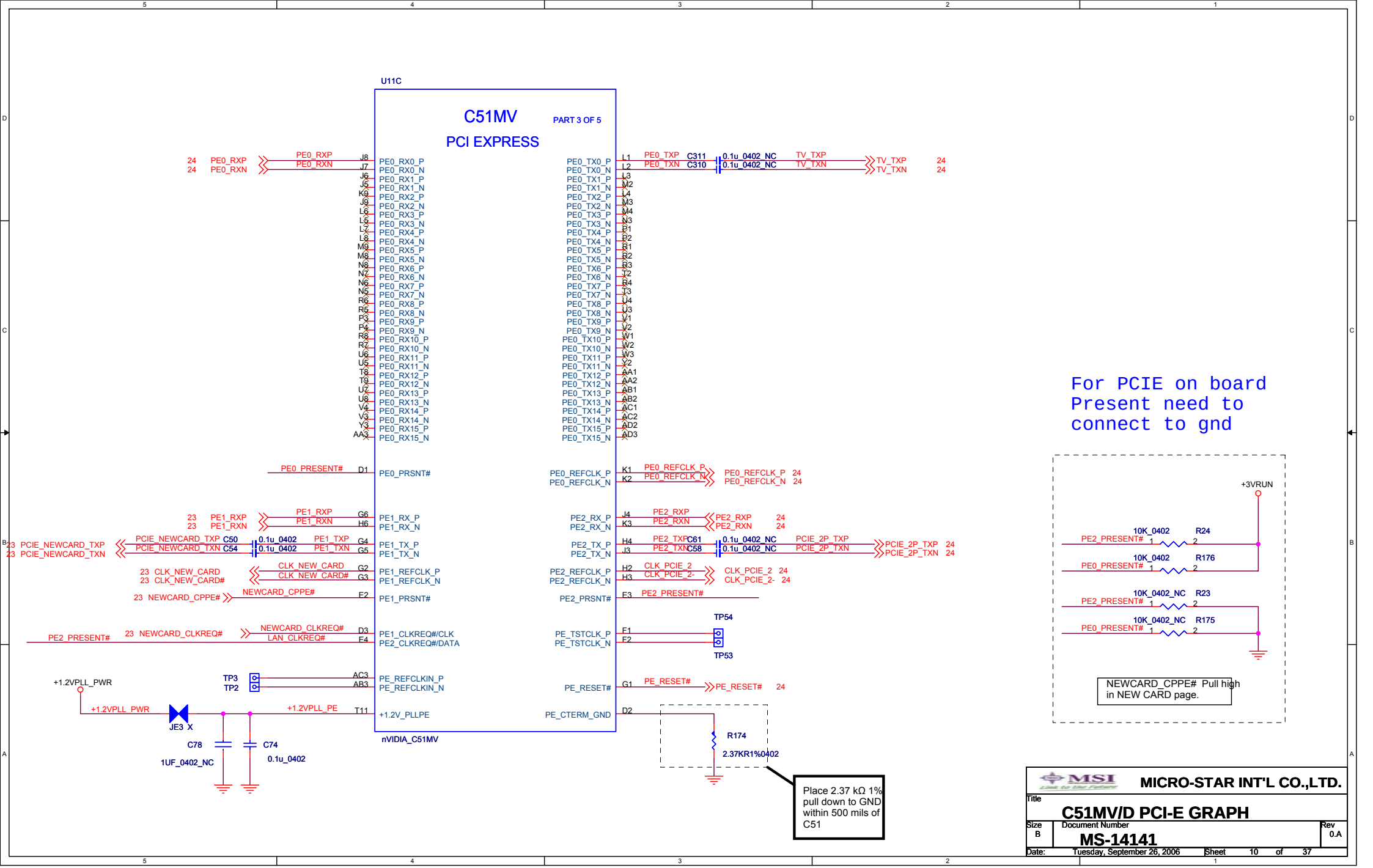
MSI	MICRO-STAR INT'L CO.,LTD.	
Title	DDR2 SODIMMS TERMINATIONS	
Size: Custom	Document Number: MS-14141	Rev: 0.A
Date: Tuesday, September 26, 2006	Sheet 7 of 37	



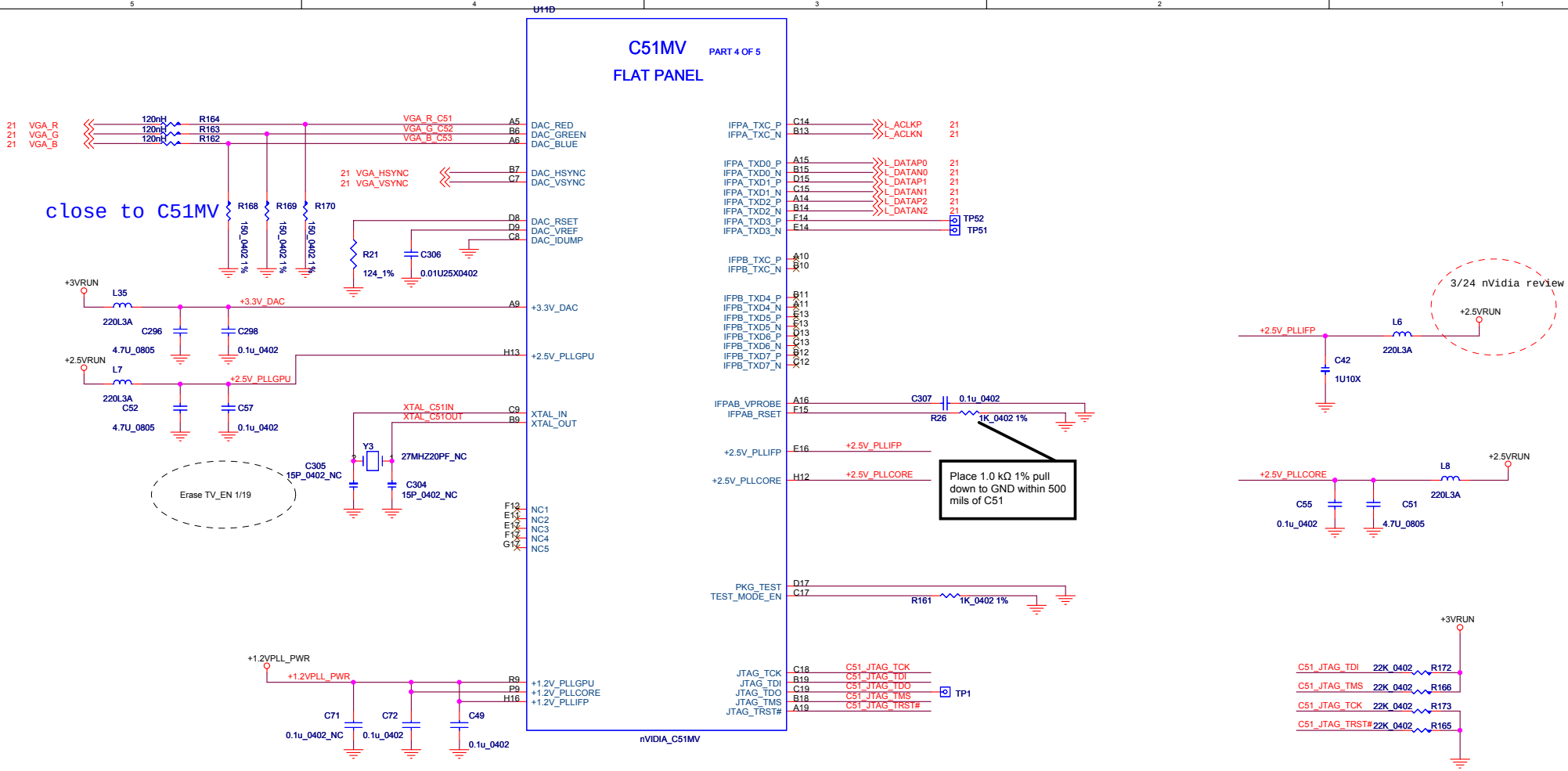
MSI	MICRO-STAR INT'L CO.,LTD.		
Title	C51MV/D HT CPU		
Size B	Document Number MS-14141	Rev 0.A	
Date: Tuesday, September 26, 2006	Sheet 8 of 37		



MICRO-STAR INT'L CO.,LTD.			
Title: C51MV/D HT SB			
Size: B	Document Number: MS-14141		Rev: 0.A
Date: Tuesday, September 26, 2006	Sheet 9 of 37		



MSI	MICRO-STAR INT'L CO.,LTD.
Title	C51MV/D PCI-E GRAPH
Size	B
Document Number	MS-14141
Rev	0.A
Date:	Tuesday, September 26, 2006
Sheet	10 of 37

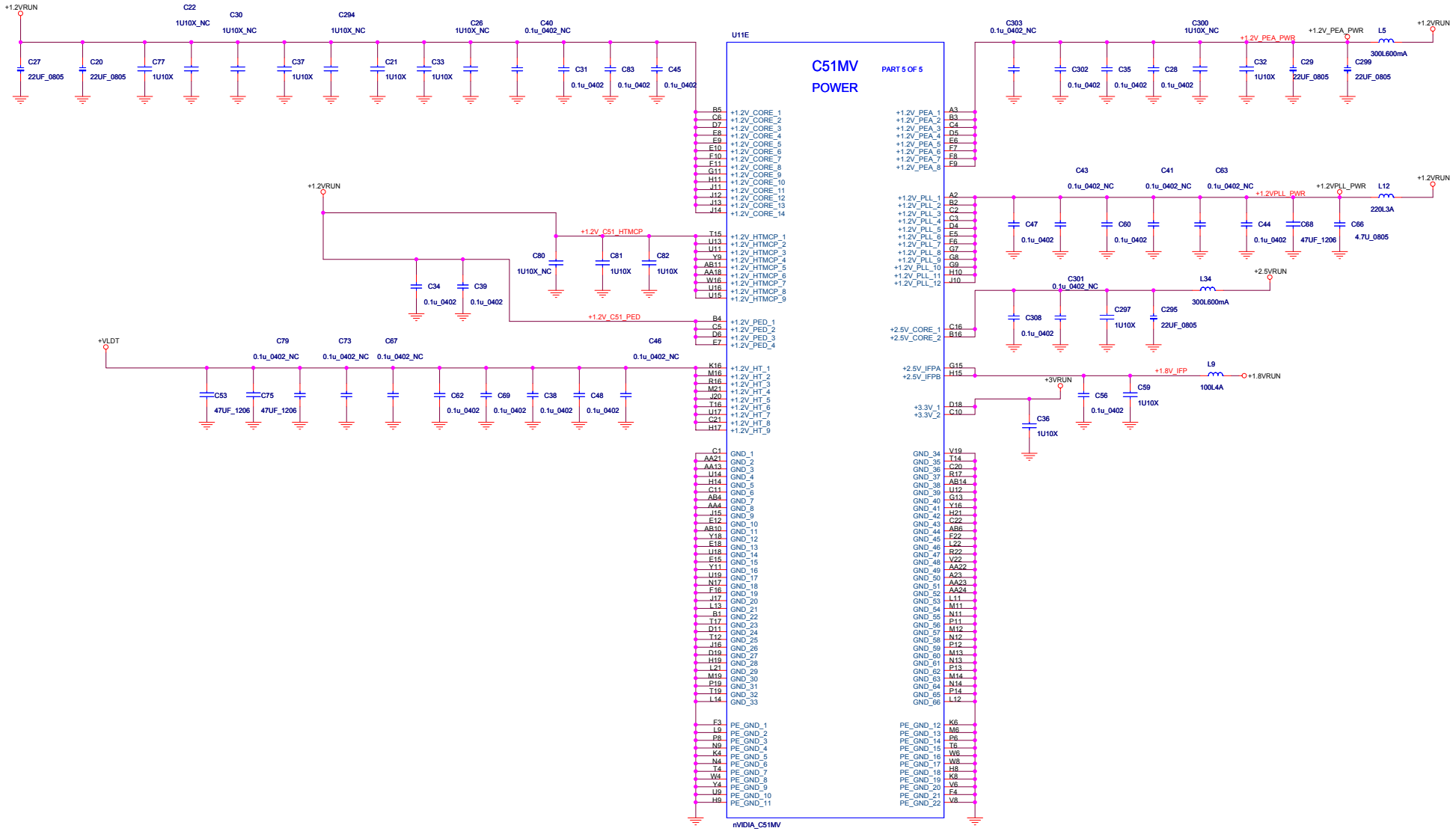


MICRO-STAR INT'L CO.,LTD.

Title: C51MV/D LVDS & CRT

Size: Custom | Document Number: MS-14141 | Rev: 0.A

Date: Tuesday, September 26, 2006 | Sheet 11 of 37

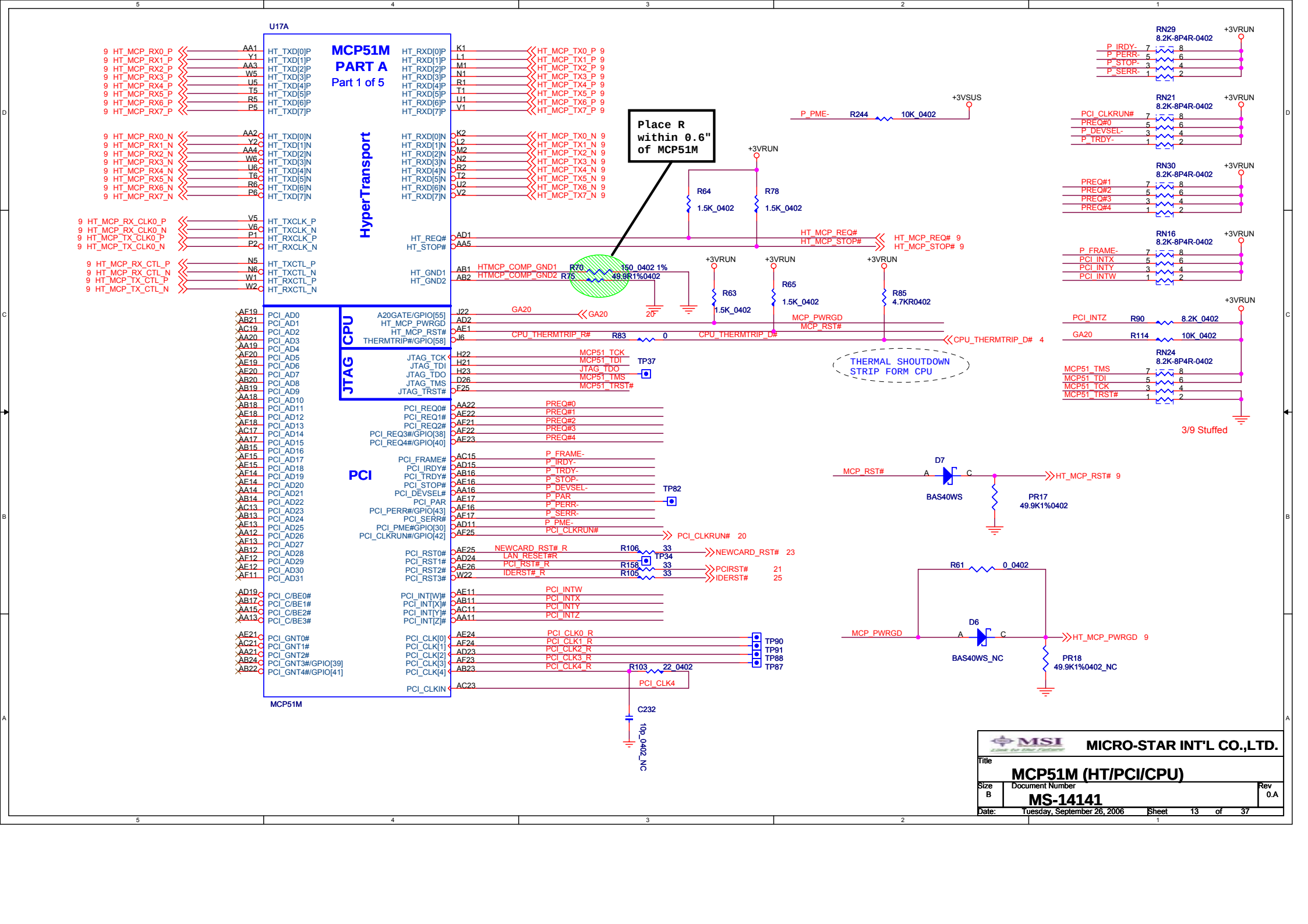


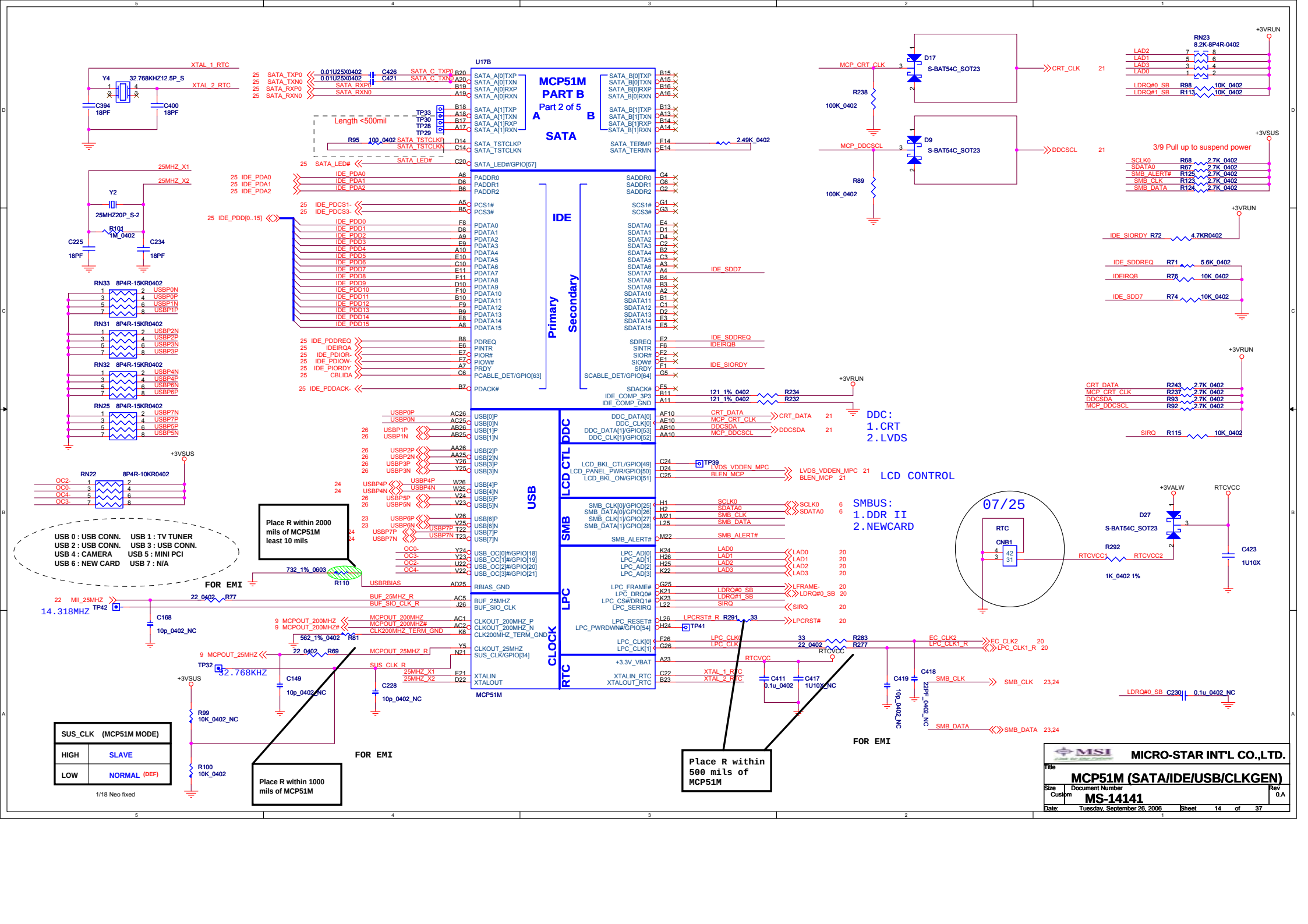
MICRO-STAR INT'L CO.,LTD.

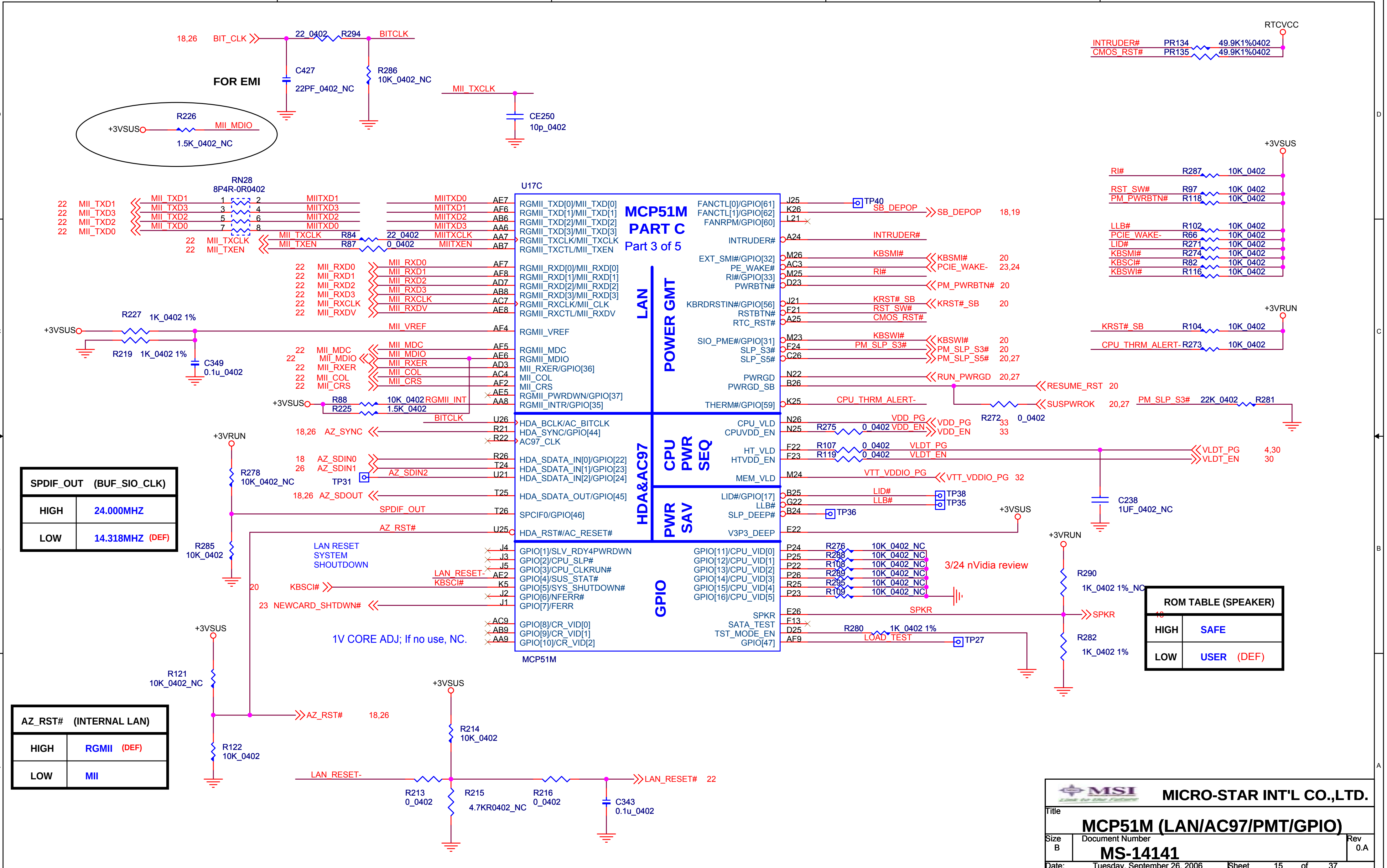
Title: C51MV/D POWER

Size: C | Document Number: MS-14141 | Rev: 0.A

Date: Tuesday, September 26, 2006 | Sheet 12 of 37


U17A
MCP51M
PART A
Part 1 of 5
HyperTransport
CPU
JTAG
PCI
MCP51M
Place R within 0.6" of MCP51M
THERMAL SHOUTDOWN STRIP FORM CPU
3/9 Stuffed
BAS40WS
BAS40WS_NC
MICRO-STAR INT'L CO.,LTD.
MCP51M (HT/PCI/CPU)
MS-14141
Tuesday, September 26, 2006


MCP51M
PART B
Part 2 of 5
SATA
IDE
Primary
Secondary
USB
DDC
LCD CTL
SMB
LPC
CLOCK
RTC
DDC:
1.CRT
2.LVDS
LCD CONTROL
SMBUS:
1.DDR II
2.NEWCARD
07/25
USB 0 : USB CONN. USB 1 : TV TUNER
USB 2 : USB CONN. USB 3 : USB CONN.
USB 4 : CAMERA USB 5 : MINI PCI
USB 6 : NEW CARD USB 7 : N/A
FOR EMI
Place R within 2000 mils of MCP51M least 10 mils
Place R within 1000 mils of MCP51M
Place R within 500 mils of MCP51M
Length <500mil
3/9 Pull up to suspend power
SUS_CLK (MCP51M MODE)
HIGH SLAVE
LOW NORMAL (DEF)
1/18 Neo fixed
MICRO-STAR INT'L CO.,LTD.
MCP51M (SATA/IDE/USB/CLKGEN)
MS-14141
Tuesday, September 26, 2006



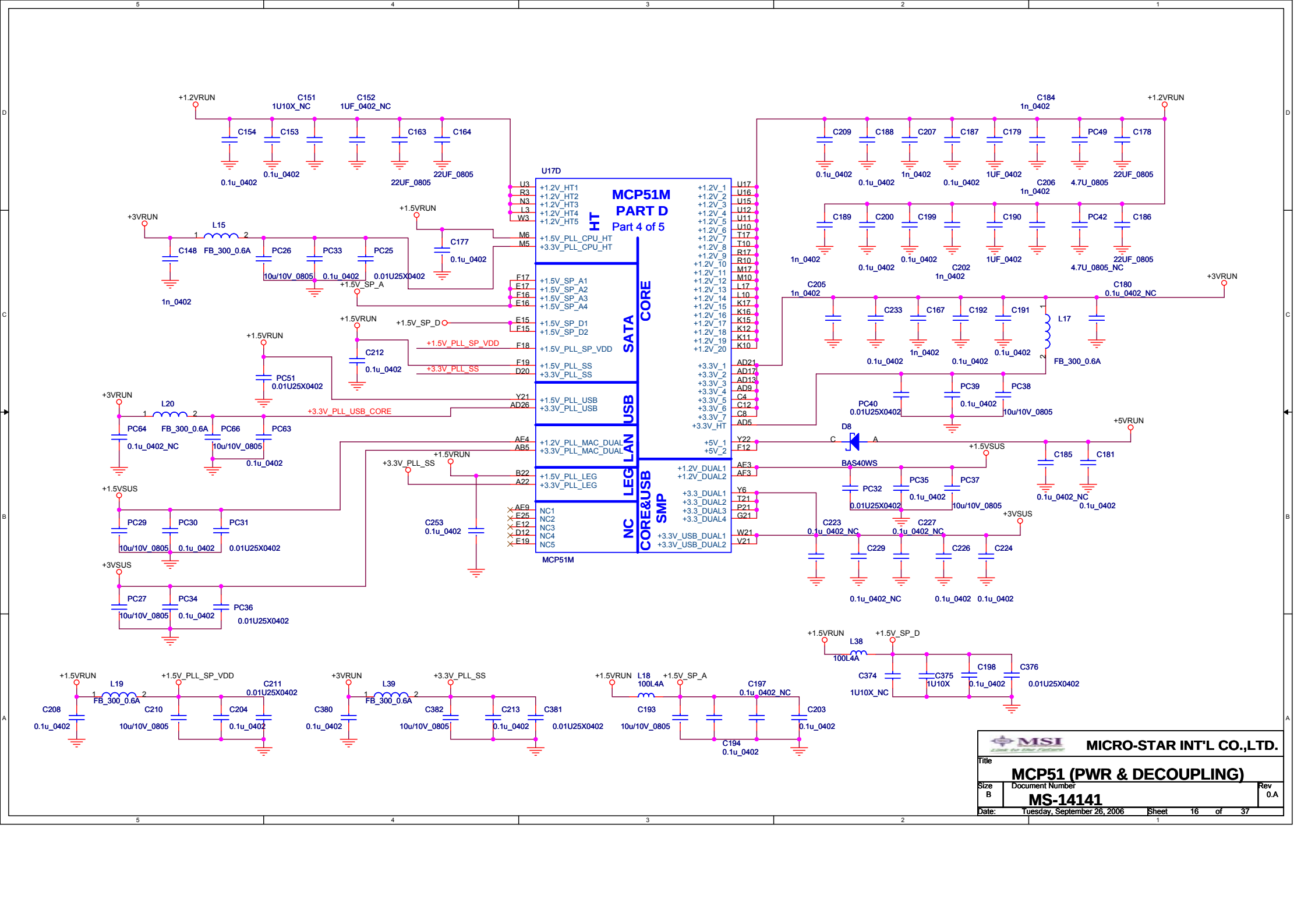
SPDIF_OUT	(BUF_SIO_CLK)
HIGH	24.000MHZ
LOW	14.318MHZ (DEF)

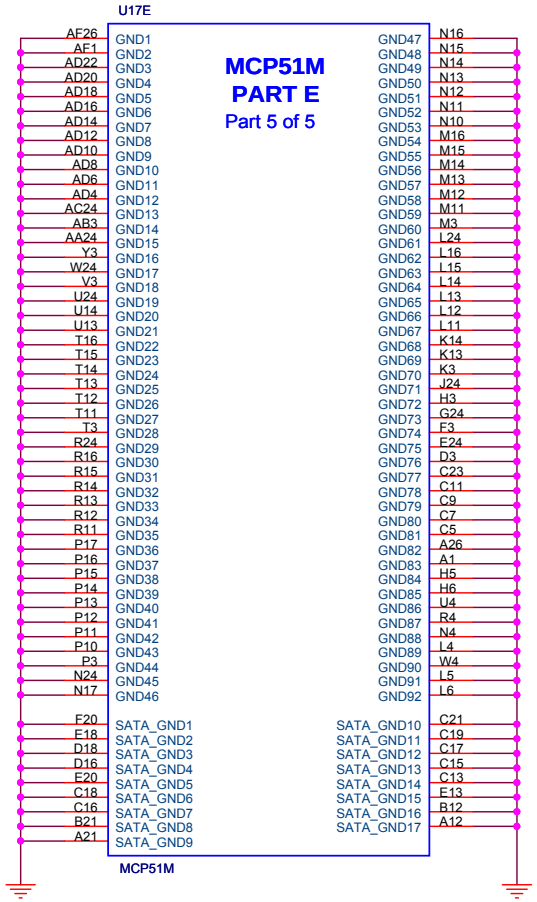
AZ_RST#	(INTERNAL LAN)
HIGH	RGMII (DEF)
LOW	MII

ROM TABLE (SPEAKER)	
HIGH	SAFE
LOW	USER (DEF)

MSI MICRO-STAR INT'L CO.,LTD.

Title	MCP51M (LAN/AC97/PMT/GPIO)
Size B	Document Number MS-14141
Rev	0.A
Date:	Tuesday, September 26, 2006
Sheet	15 of 37


MCP51M
PART D
Part 4 of 5
U17D
HT
CORE
SATA
USB
LAN
LEG
SMP
NC
CORE&USB
MCP51M
+1.2VRUN
+1.5VRUN
+3VRUN
+1.5VSUS
+3VSUS
+5VRUN
+1.5V_SP_A
+1.5V_SP_D
+1.5V_PLL_SP_VDD
+3.3V_PLL_SS
+3.3V_PLL_USB_CORE
BAS40WS
MICRO-STAR INT'L CO.,LTD.
MCP51 (PWR & DECOUPLING)
MS-14141
Size B
Rev 0.A
Date: Tuesday, September 26, 2006
Sheet 16 of 37

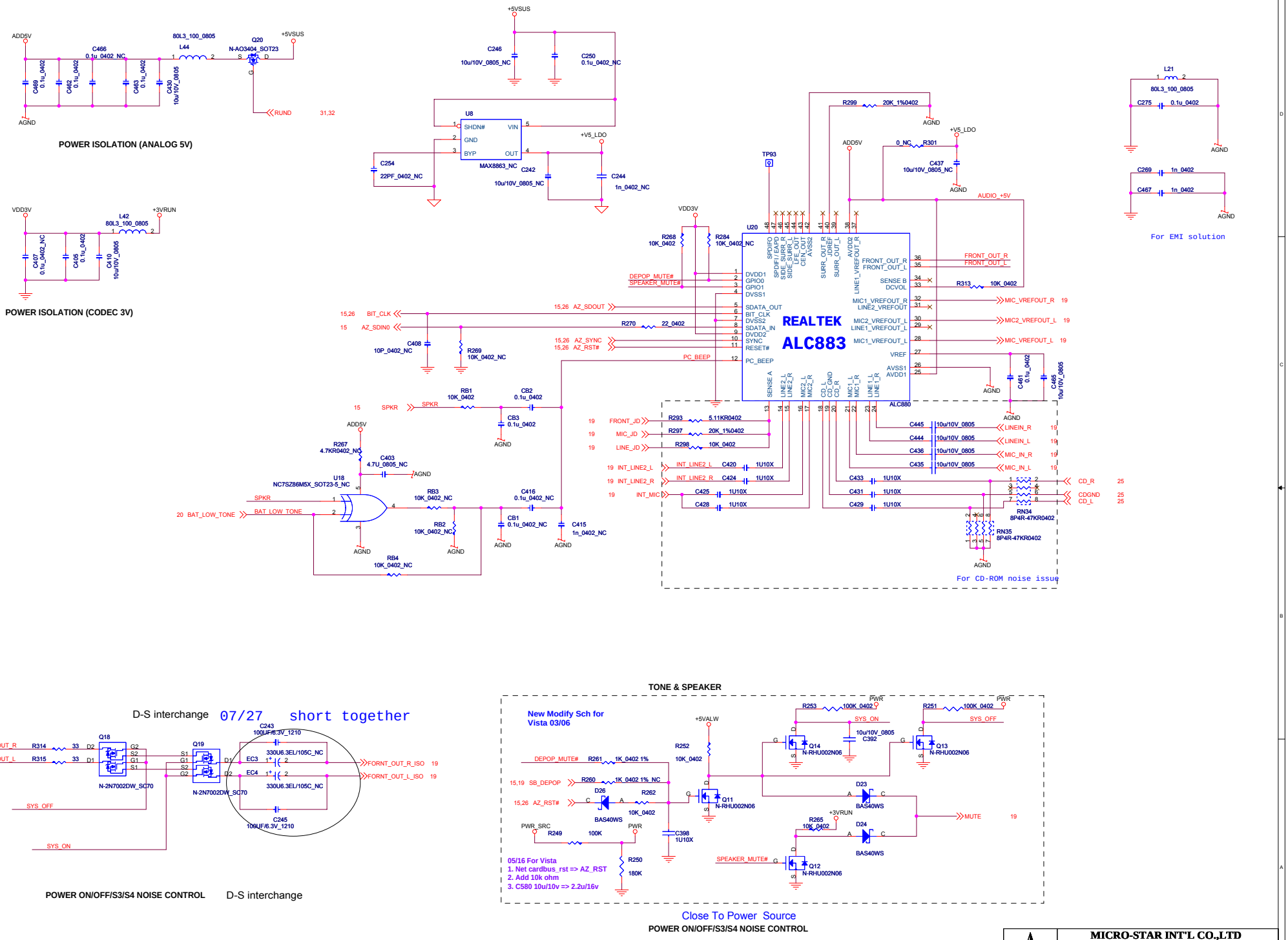


MICRO-STAR INT'L CO.,LTD.

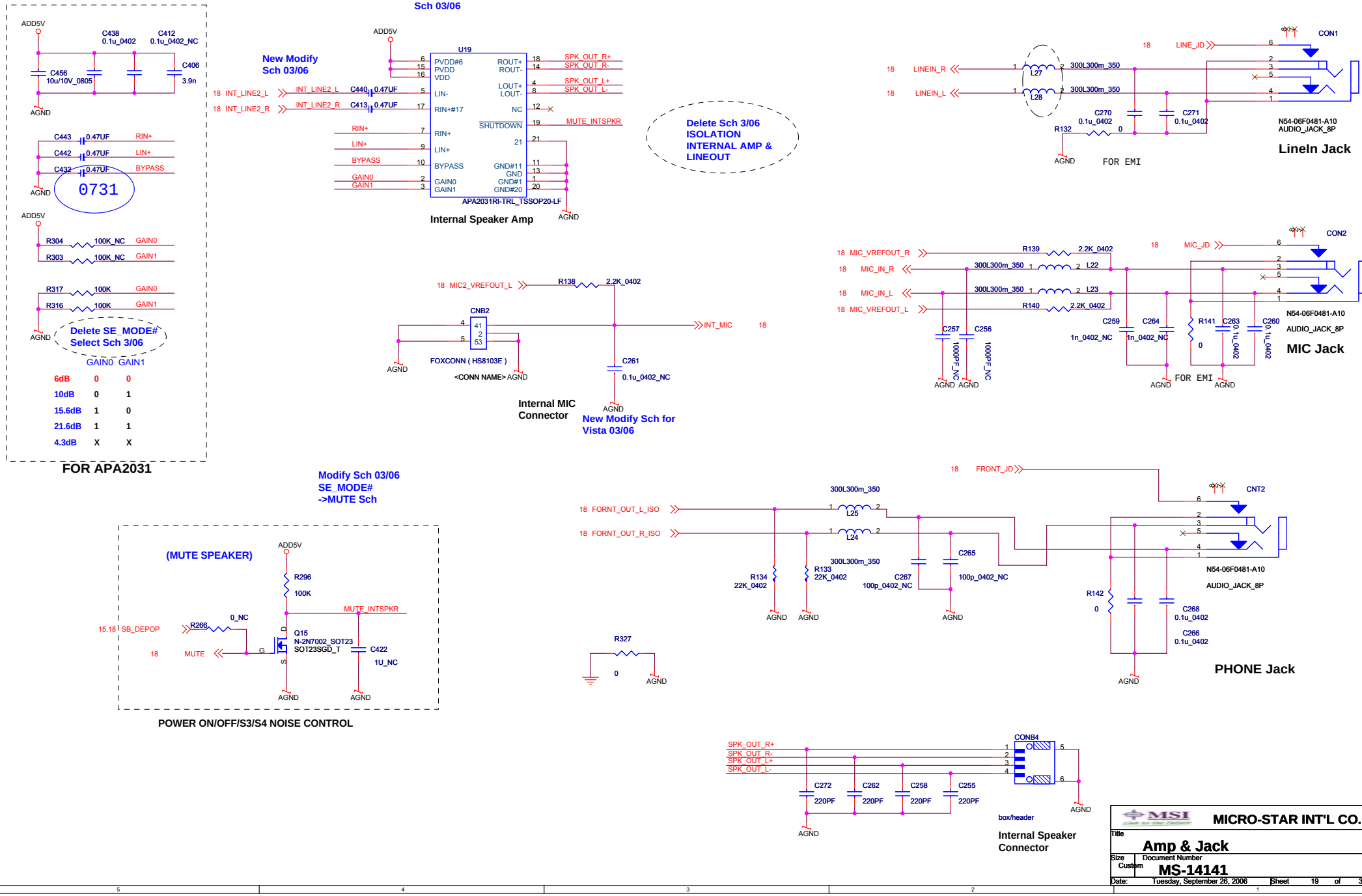
Title: MCP51 (GND/SATA GND)

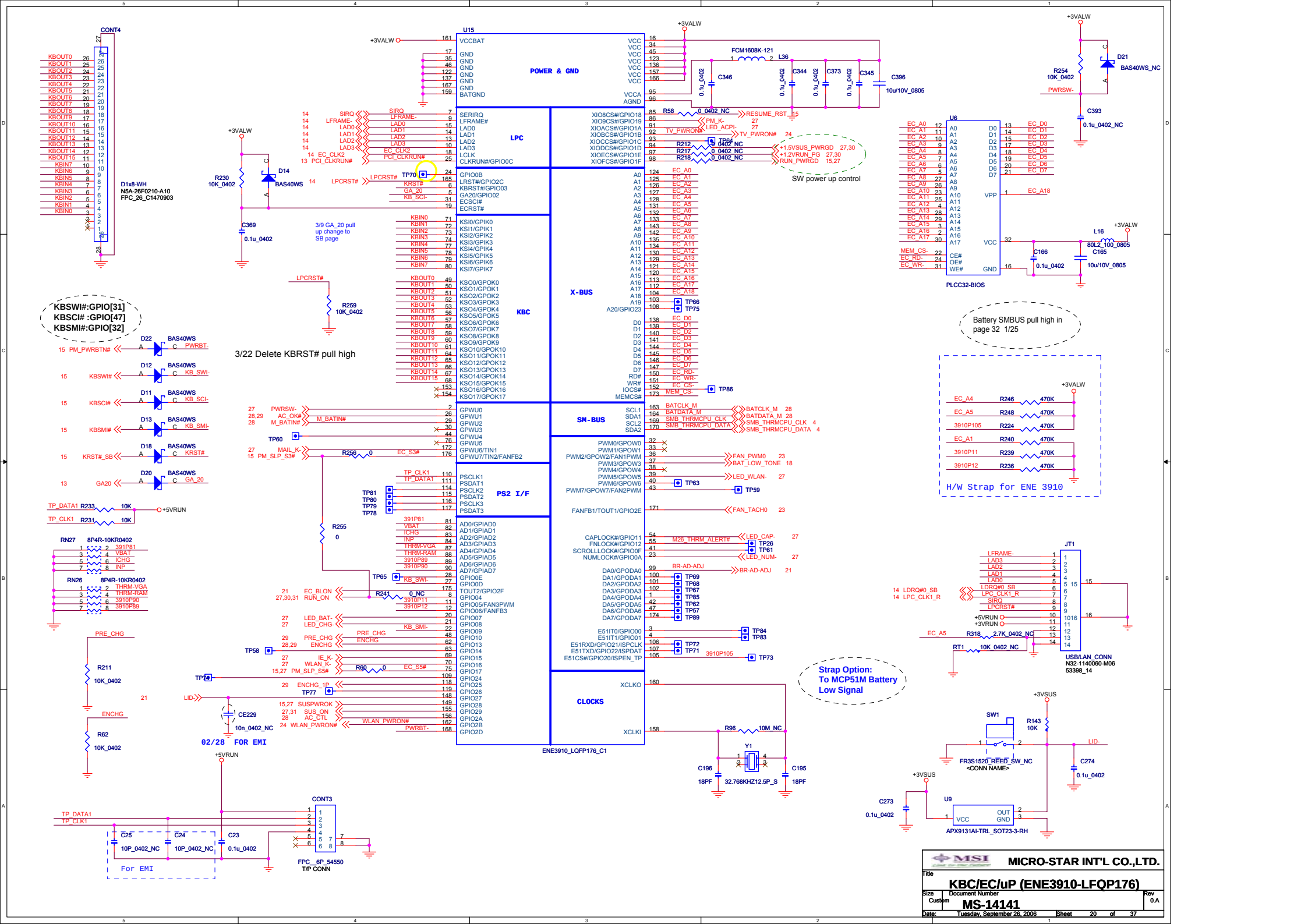
Size: B | Document Number: MS-14141 | Rev: 0.A

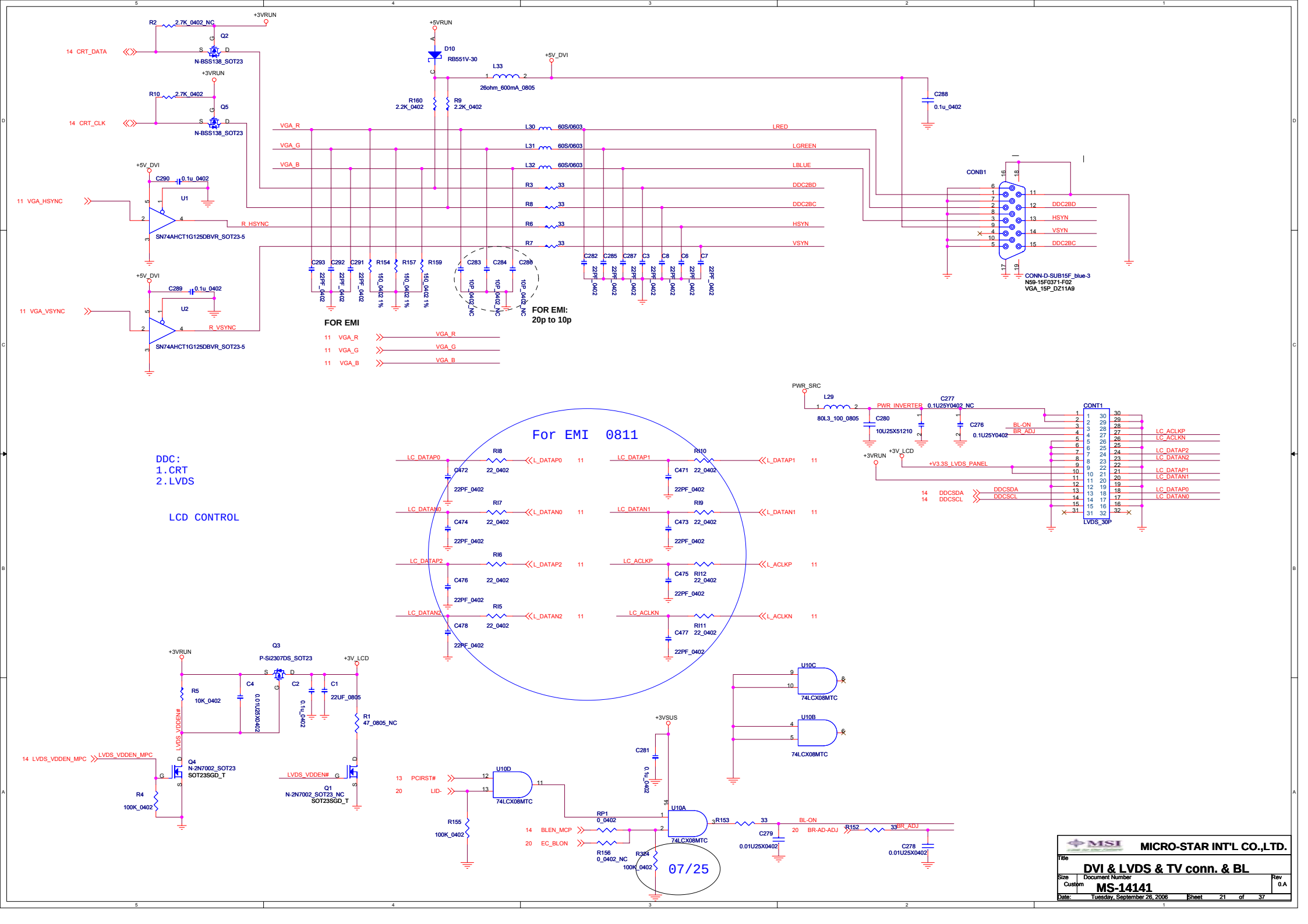
Date: Tuesday, September 26, 2006 | Sheet 17 of 37

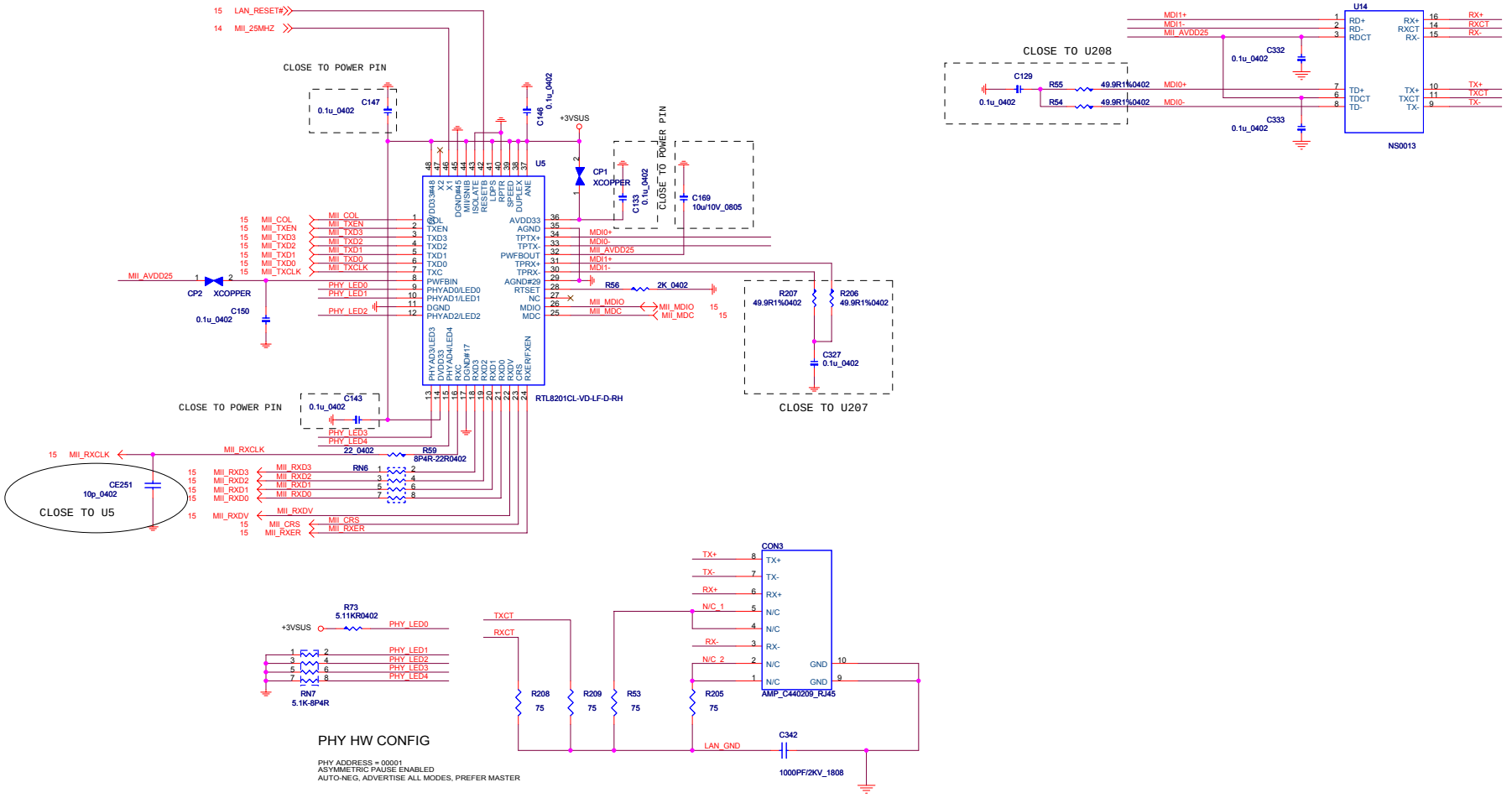


MICRO-STAR INT'L CO.,LTD	
MS-14141	
Size: C	Document Description: Azalia CODEC (AL883)
Rev: 0A	
Date: Tuesday, September 26, 2006	Sheet 18 of 37

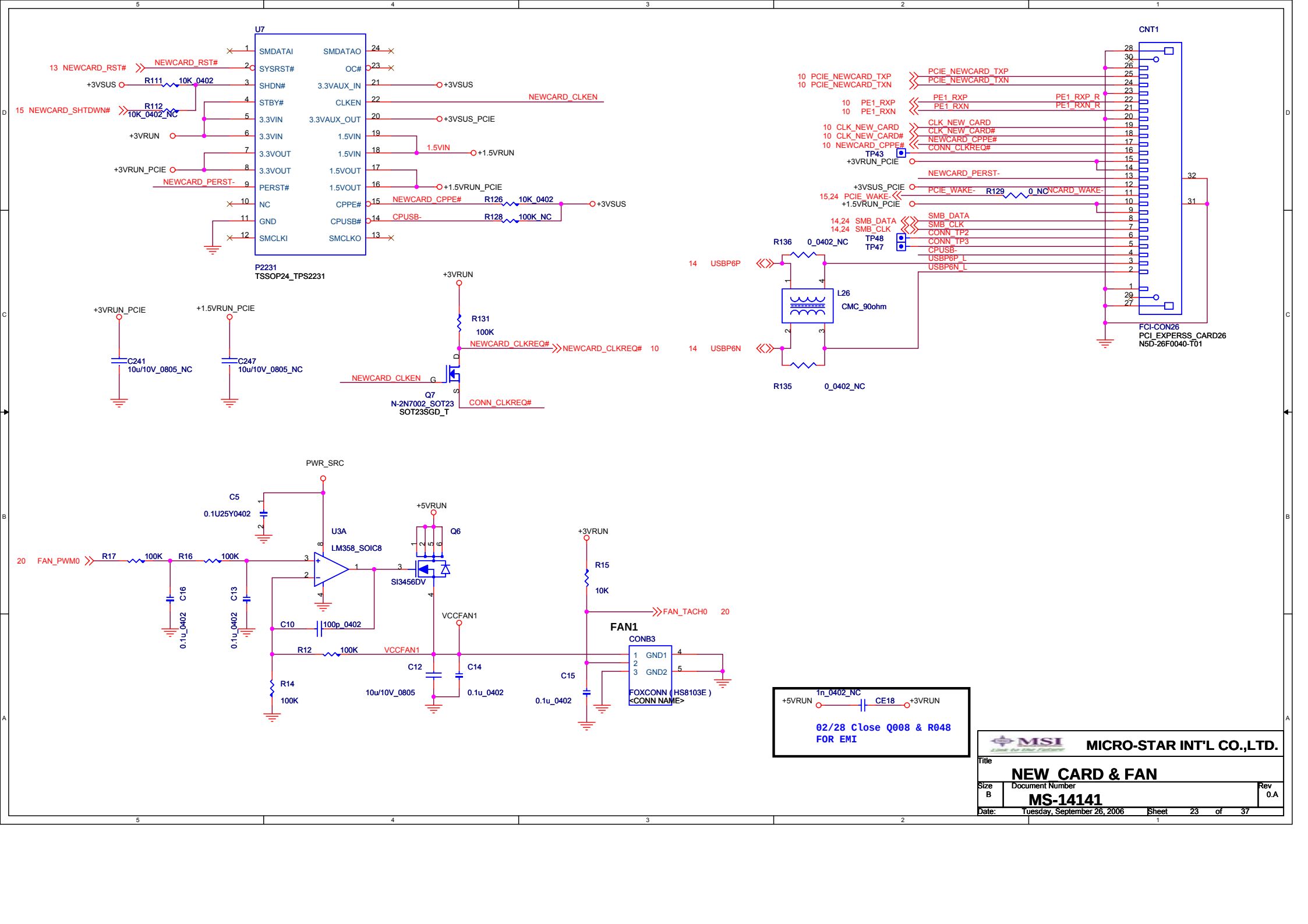

New Modify FAN7031 -> APA2031
Sch 03/06
New Modify
Sch 03/06
Internal Speaker Amp
Delete Sch 3/06
ISOLATION
INTERNAL AMP &
LINEOUT
LineIn Jack
FOR EMI
Delete SE_MODE#
Select Sch 3/06
GAIN0 GAIN1
6dB 0 0
10dB 0 1
15.6dB 1 0
21.6dB 1 1
4.3dB X X
FOR APA2031
Internal MIC
Connector
New Modify Sch for
Vista 03/06
MIC Jack
Modify Sch 03/06
SE_MODE#
->MUTE Sch
(MUTE SPEAKER)
POWER ON/OFF/S3/S4 NOISE CONTROL
PHONE Jack
Internal Speaker
Connector
MICRO-STAR INT'L CO.,LTD.
Amp & Jack
MS-14141
Tuesday, September 26, 2006

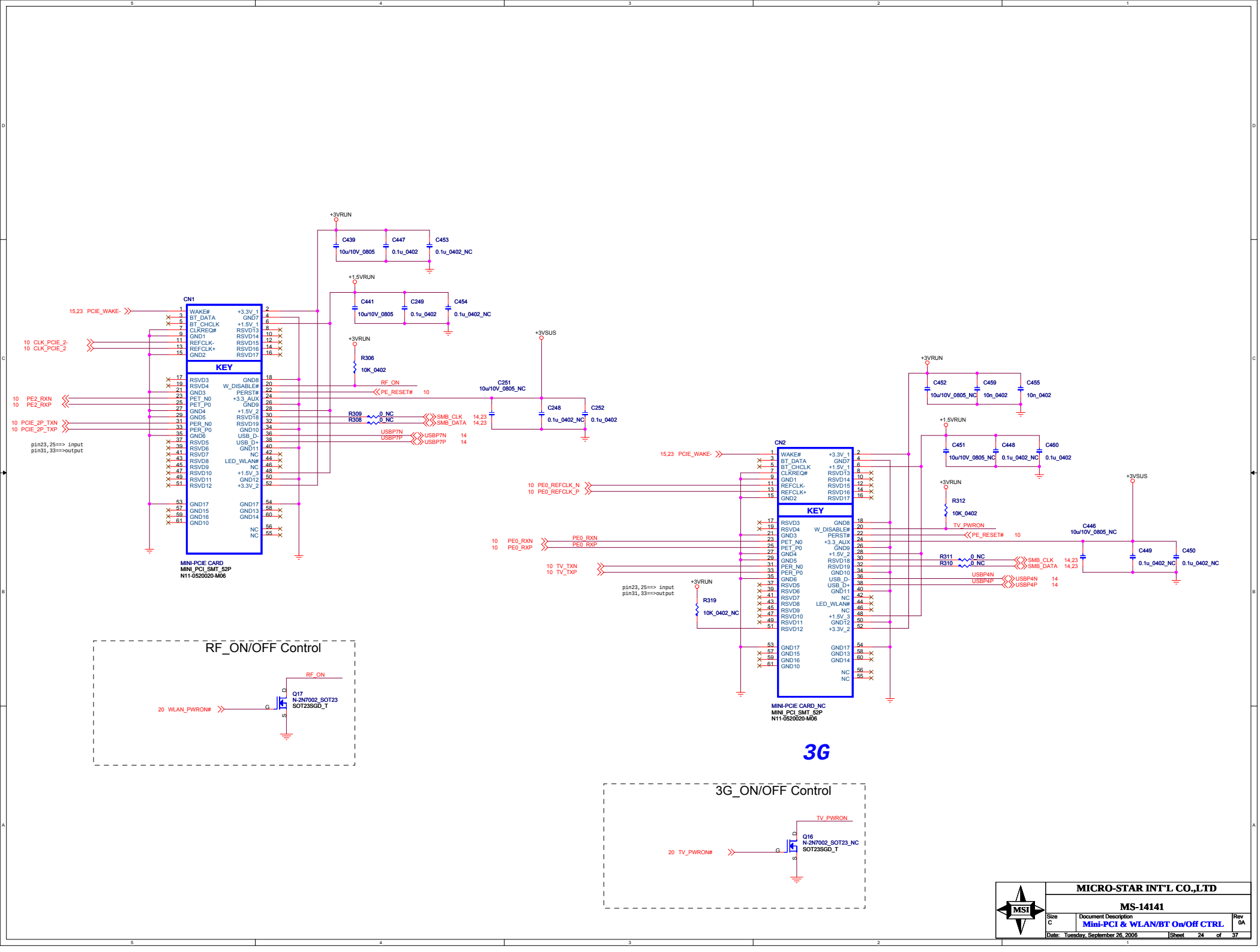

CONT4
D1x8-WH
N5A-26F0210-A10
FPC_26_C1470903
U15
POWER & GND
LPC
KBC
X-BUS
SM-BUS
PS2 I/F
CLOCKS
ENE3910_LQFP176_C1
SW power up control
PLCC32-BIOS
Battery SMBUS pull high in page 32 1/25
H/W Strap for ENE 3910
KBSWI#:GPIO[31]
KBSCI# :GPIO[47]
KBSMI#:GPIO[32]
3/22 Delete KBRST# pull high
3/9 GA_20 pull up change to SB page
02/28 FOR EMI
Strap Option:
To MCP51M Battery Low Signal
For EMI
USB/LAN_CONN
N32-1140060-M06
53398_14
FR3S1520_REED_SW_NC
<CONN NAME>
APX9131AI-TRL_SOT23-3-RH
FPC__6P_54550
T/P CONN
MICRO-STAR INT'L CO.,LTD.
KBC/EC/uP (ENE3910-LFQP176)
MS-14141
Tuesday, September 26, 2006


+3VRUN
R2 2.7K_0402_NC
Q2
14 CRT_DATA
N-BSS138_SOT23
R10 2.7K_0402
Q5
14 CRT_CLK
+5VRUN
D10
RB551V-30
L33
26ohm_600mA_0805
+5V_DVI
R160 2.2K_0402
R9 2.2K_0402
C288 0.1u_0402
VGA_R
VGA_G
VGA_B
L30 60S/0603
L31 60S/0603
L32 60S/0603
LRED
LGREEN
LBLUE
R3 33
R8 33
R6 33
R7 33
DDC2BD
DDC2BC
HSYN
VSYN
CONB1
CONN-D-SUB15F_blue-3
N59-15F0371-F02
VGA_15P_DZ11A9
C290 0.1u_0402
U1
11 VGA_HSYNC
R_HSYNC
SN74AHCT1G125DBVR_SOT23-5
C289 0.1u_0402
U2
11 VGA_VSYNC
R_VSYNC
C293 C292 C291 R154 R157 R159
22PF_0402
150_0402 1%
C283 C284 C280
10P_0402_NC
C282 C285 C287 C3 C8 C6 C7
FOR EMI
FOR EMI:
20p to 10p
11 VGA_R
11 VGA_G
11 VGA_B
PWR_SRC
L29
80L3_100_0805
PWR_INVERTER
C277 0.1U25Y0402_NC
C280 10U25X51210
C276 0.1U25Y0402
BL-ON
BR_ADJ
CONT1
LVDS_30P
+3V_LCD
+V3.3S_LVDS_PANEL
14 DDCSDA
14 DDCSCL
LC_ACLKP
LC_ACLKN
LC_DATAP2
LC_DATAN2
LC_DATAP1
LC_DATAN1
LC_DATAP0
LC_DATAN0
For EMI 0811
LC_DATAP0
LC_DATAN0
LC_DATAP2
LC_DATAN2
LC_DATAP1
LC_DATAN1
LC_ACLKP
LC_ACLKN
RI8 RI7 RI6 RI5 RI10 RI9 RI12 RI11
C472 C474 C476 C478 C471 C473 C475 C477
22_0402
22PF_0402
L_DATAP0 L_DATAN0 L_DATAP2 L_DATAN2 L_DATAP1 L_DATAN1 L_ACLKP L_ACLKN
DDC:
1.CRT
2.LVDS
LCD CONTROL
Q3
P-Si2307DS_SOT23
+3VRUN
+3V_LCD
R5 10K_0402
C4 0.01U25X0402
C2 0.1u_0402
C1 22UF_0805
R1 47_0805_NC
LVDS_VDDEN#
14 LVDS_VDDEN_MPC
Q4
N-2N7002_SOT23
SOT23SGD_T
R4 100K_0402
Q1
N-2N7002_SOT23_NC
SOT23SGD_T
U10C
U10B
74LCX08MTC
+3VSUS
C281 0.1u_0402
13 PCIRST#
20 LID-
U10D
R155 100K_0402
U10A
RP1 0_0402
14 BLEN_MCP
20 EC_BLON
R156 0_0402_NC
R324 100K_0402
R153 33
R152 33
C279 0.01U25X0402
C278 0.01U25X0402
20 BR-AD-ADJ
07/25
MICRO-STAR INT'L CO.,LTD.
Title
DVI & LVDS & TV conn. & BL
Size Custom
Document Number MS-14141
Rev 0.A
Date: Tuesday, September 26, 2006
Sheet 21 of 37

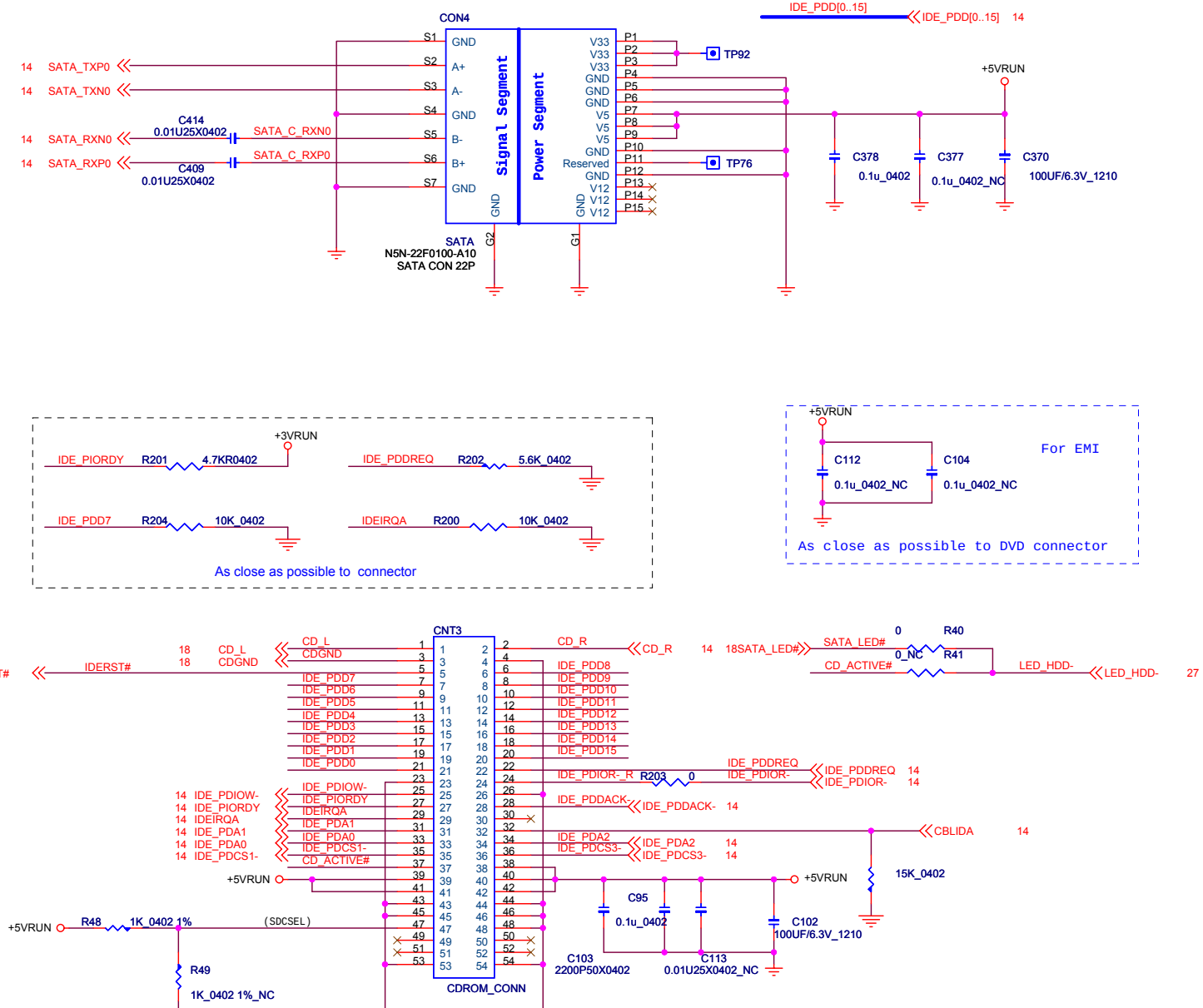


MICRO-STAR INT'L CO.,LTD			
MS-14141			
Size: C	Document Description: MII_LAN PHY (RTL8201CL)		Rev: 0A
Date: Tuesday, September 26, 2006		Sheet 22 of 37	


U7
SMDATAI
SYSRST#
SHDN#
STBY#
3.3VIN
3.3VIN
3.3VOUT
3.3VOUT
PERST#
NC
GND
SMCLKI
SMDATAO
OC#
3.3VAUX_IN
CLKEN
3.3VAUX_OUT
1.5VIN
1.5VIN
1.5VOUT
1.5VOUT
CPPE#
CPUSB#
SMCLKO
13 NEWCARD_RST#
NEWCARD_RST#
+3VSUS
R111 10K_0402
15 NEWCARD_SHTDWN#
R112 10K_0402_NC
+3VRUN
+3VRUN_PCIE
NEWCARD_PERST-
+3VSUS
NEWCARD_CLKEN
+3VSUS_PCIE
1.5VIN
+1.5VRUN
+1.5VRUN_PCIE
NEWCARD_CPPE#
R126 10K_0402
CPUSB-
R128 100K_NC
P2231
TSSOP24_TPS2231
+3VRUN_PCIE
+1.5VRUN_PCIE
C241 10u/10V_0805_NC
C247 10u/10V_0805_NC
+3VRUN
R131 100K
NEWCARD_CLKREQ#
NEWCARD_CLKREQ# 10
NEWCARD_CLKEN
Q7
N-2N7002_SOT23
SOT23SGD_T
CONN_CLKREQ#
CNT1
10 PCIE_NEWCARD_TXP
10 PCIE_NEWCARD_TXN
PCIE_NEWCARD_TXP
PCIE_NEWCARD_TXN
10 PE1_RXP
10 PE1_RXN
PE1_RXP
PE1_RXN
PE1_RXP_R
PE1_RXN_R
10 CLK_NEW_CARD
10 CLK_NEW_CARD#
10 NEWCARD_CPPE#
CLK_NEW_CARD
CLK_NEW_CARD#
NEWCARD_CPPE#
CONN_CLKREQ#
TP43
+3VRUN_PCIE
NEWCARD_PERST-
+3VSUS_PCIE
15,24 PCIE_WAKE-
PCIE_WAKE-
R129 0_NC
NCARD_WAKE-
+1.5VRUN_PCIE
14,24 SMB_DATA
14,24 SMB_CLK
SMB_DATA
SMB_CLK
CONN_TP2
CONN_TP3
TP48
TP47
CPUSB-
USBP6P_L
USBP6N_L
R136 0_0402_NC
14 USBP6P
14 USBP6N
L26
CMC_90ohm
R135 0_0402_NC
FCI-CON26
PCI_EXPERSS_CARD26
N5D-26F0040-T01
PWR_SRC
C5
0.1U25Y0402
U3A
LM358_SOIC8
+5VRUN
Q6
SI3456DV
20 FAN_PWM0
R17 100K
R16 100K
C16 0.1u_0402
C13 0.1u_0402
C10 100p_0402
R12 100K
VCCFAN1
R14 100K
C12 10u/10V_0805
C14 0.1u_0402
+3VRUN
R15 10K
FAN_TACH0 20
FAN1
CONB3
GND1
GND2
C15 0.1u_0402
FOXCONN (HS8103E)
<CONN NAME>
+5VRUN
1n_0402_NC
CE18
+3VRUN
02/28 Close Q008 & R048
FOR EMI
MICRO-STAR INT'L CO.,LTD.
Title
NEW CARD & FAN
Size B
Document Number
MS-14141
Rev 0.A
Date: Tuesday, September 26, 2006
Sheet 23 of 37



MICRO-STAR INT'L CO.,LTD		
MS-14141		
Size C	Document Description: Mini-PCI & WLAN/BT On/Off CTRL	Rev 0A
Date: Tuesday, September 26, 2006	Sheet 24 of 37	



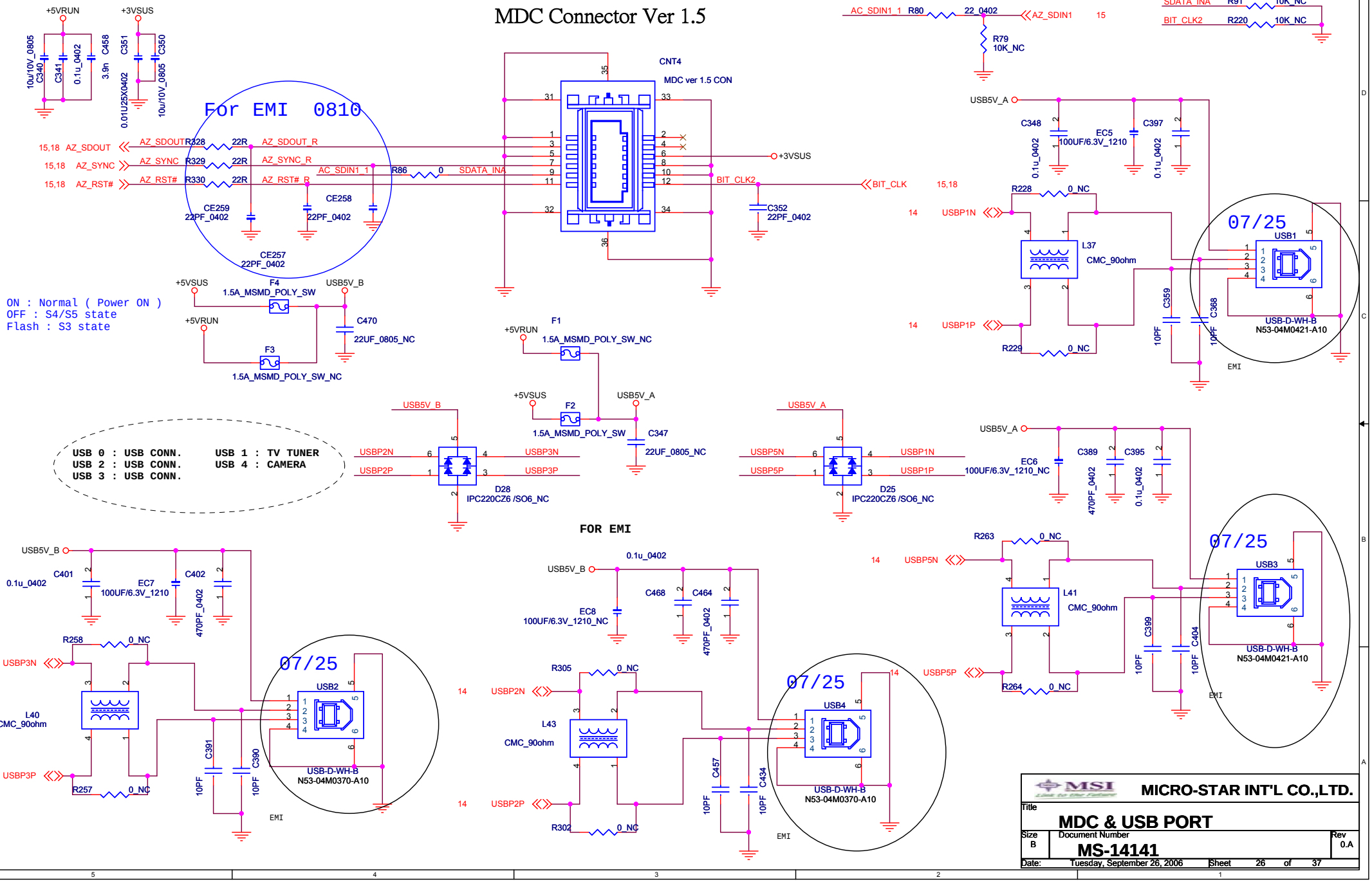
MICRO-STAR INT'L CO.,LTD.

Title: HDD & CDROM

Size: B | Document Number: MS-14141 | Rev: 0.A

Date: Tuesday, September 26, 2006 | Sheet 25 of 37

MDC Connector Ver 1.5

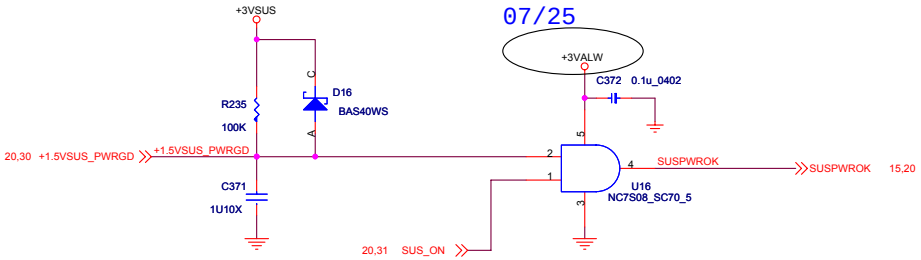


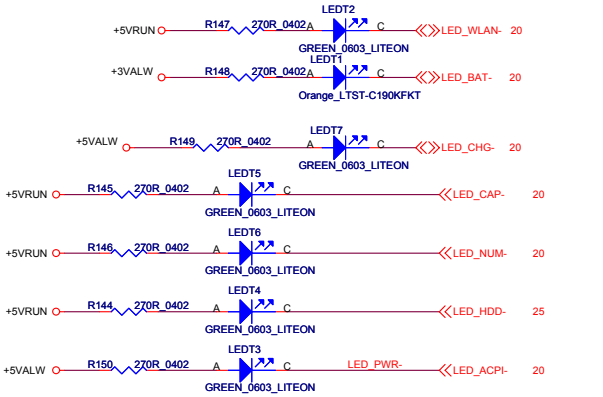
MICRO-STAR INT'L CO.,LTD.

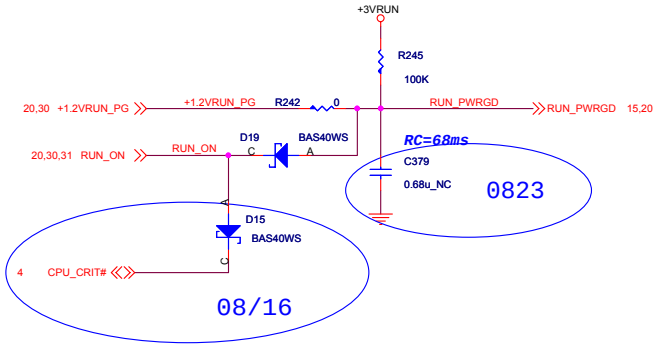
Title: MDC & USB PORT

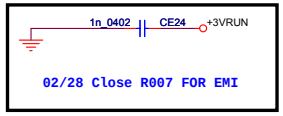
Size: B | Document Number: MS-14141 | Rev: 0.A

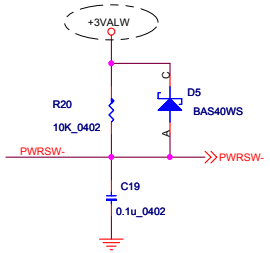
Date: Tuesday, September 26, 2006 | Sheet 26 of 37

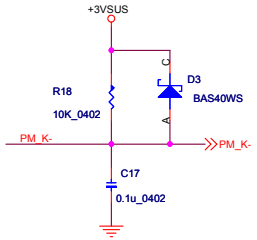


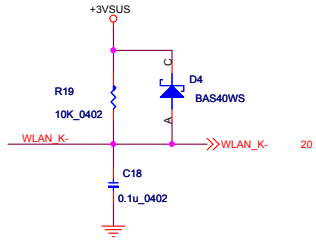


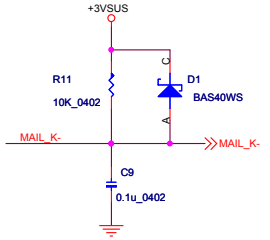


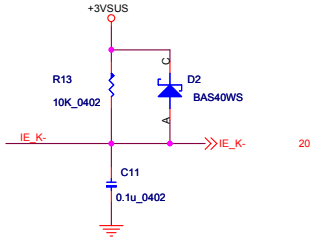


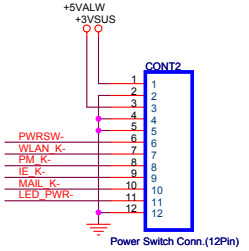










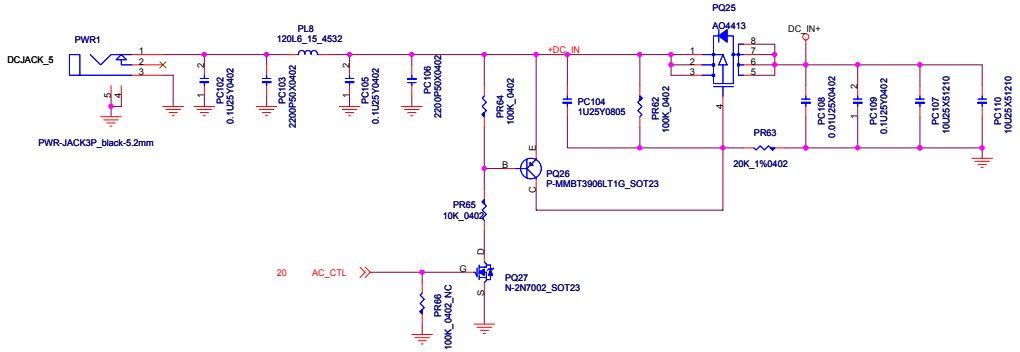


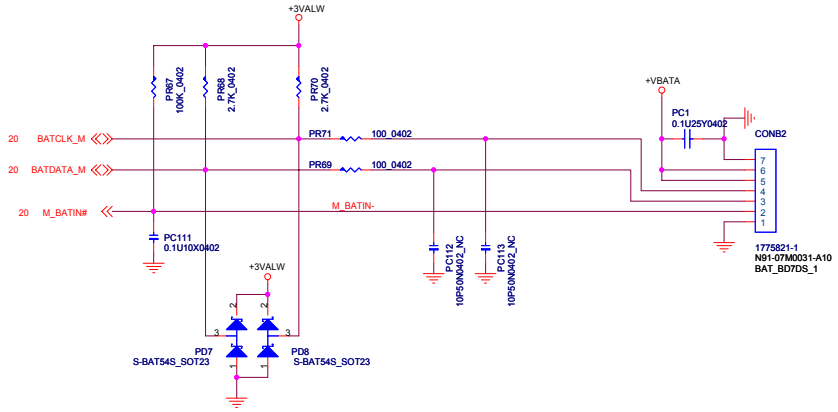
MICRO-STAR INT'L CO.,LTD.

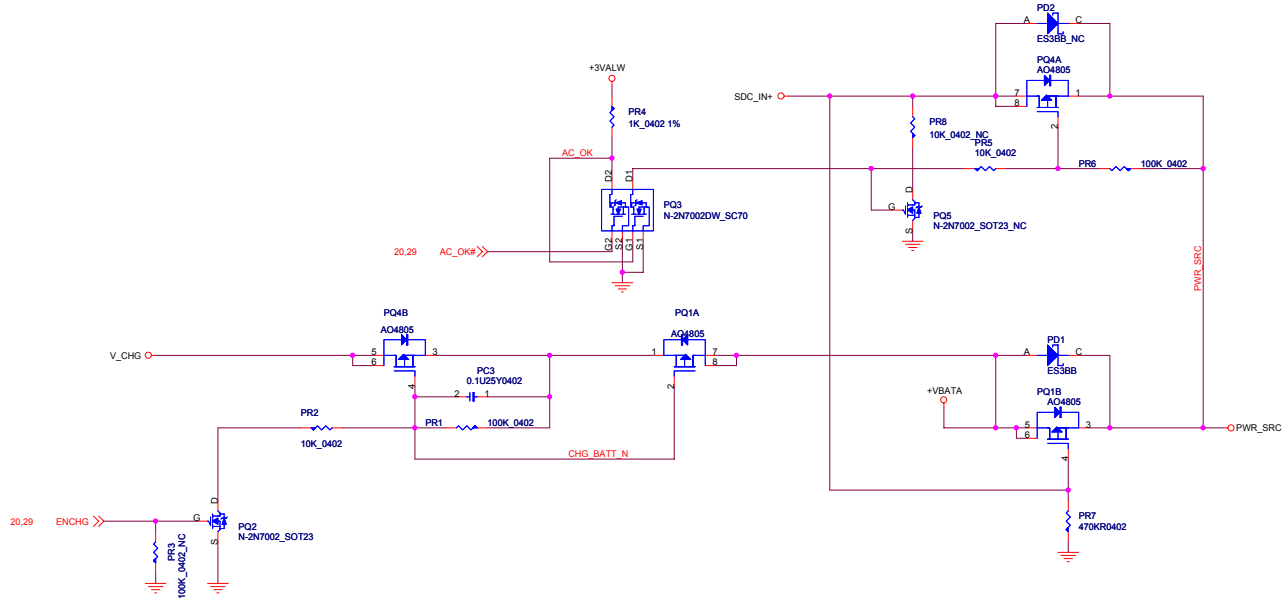
Title: **Power Good**

Size	Document Number	Rev
Custom	MS-14141	0.A

Date: Tuesday, September 26, 2006 Sheet 27 of 37







MICRO-STAR INT'L CO.,LTD

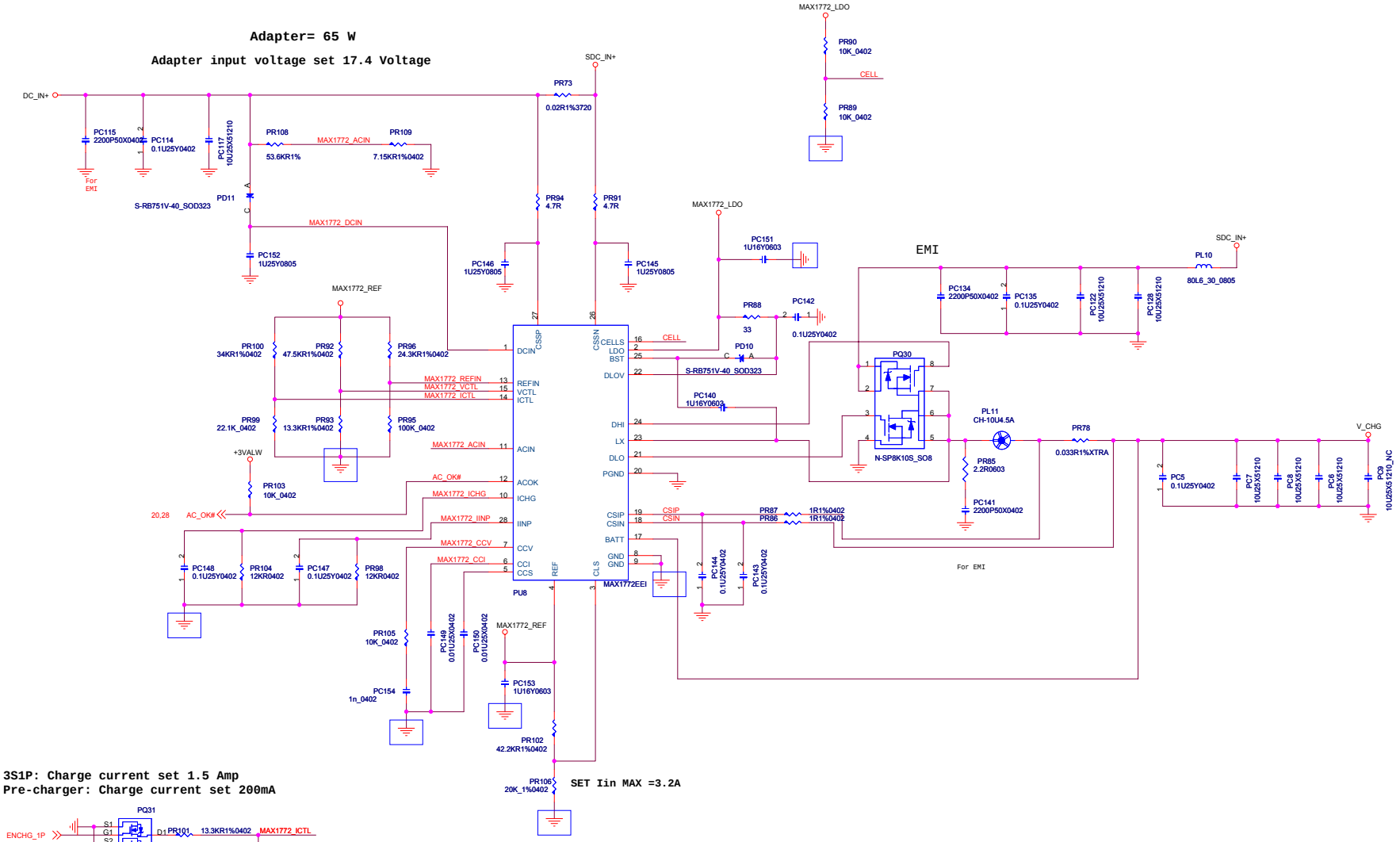
MS-14141

Size	Document Description	Rev
C	Battery Select	0A

Date: Tuesday, September 26, 2006 | Sheet 28 of 37

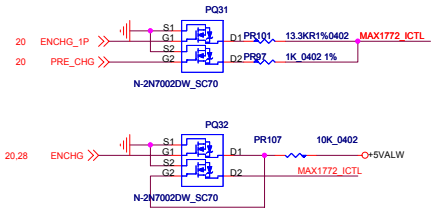
Adapter= 65 W

Adapter input voltage set 17.4 Voltage



3S1P: Charge current set 1.5 Amp

Pre-charger: Charge current set 200mA



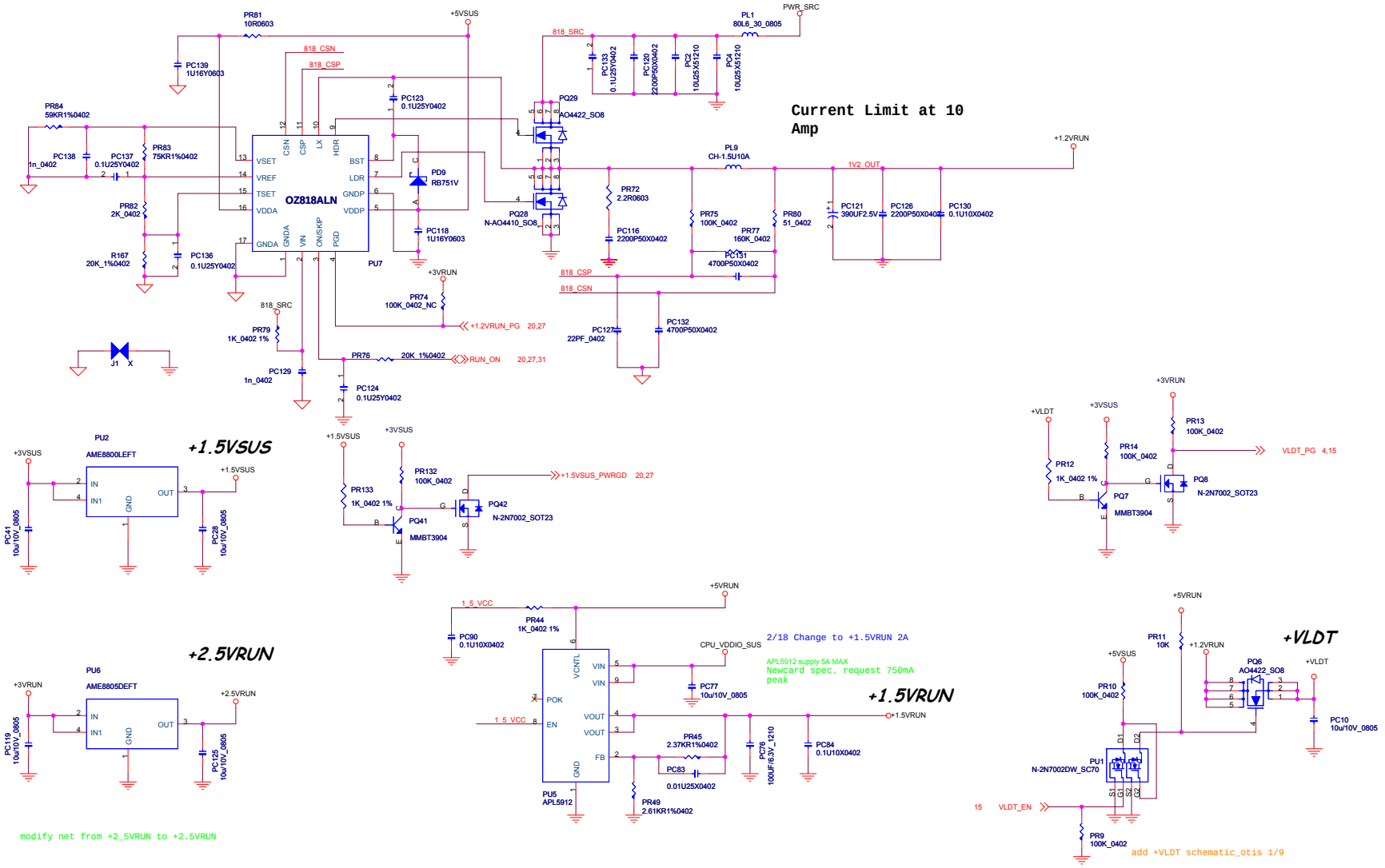
ENCHG-2P	PRE_CHG	ENCHG	
0	1	1	Pre-charge
1	0	1	3S1P-Fast charge
0	0	0	STOP CHARGE

MICRO-STAR INT'L CO.,LTD

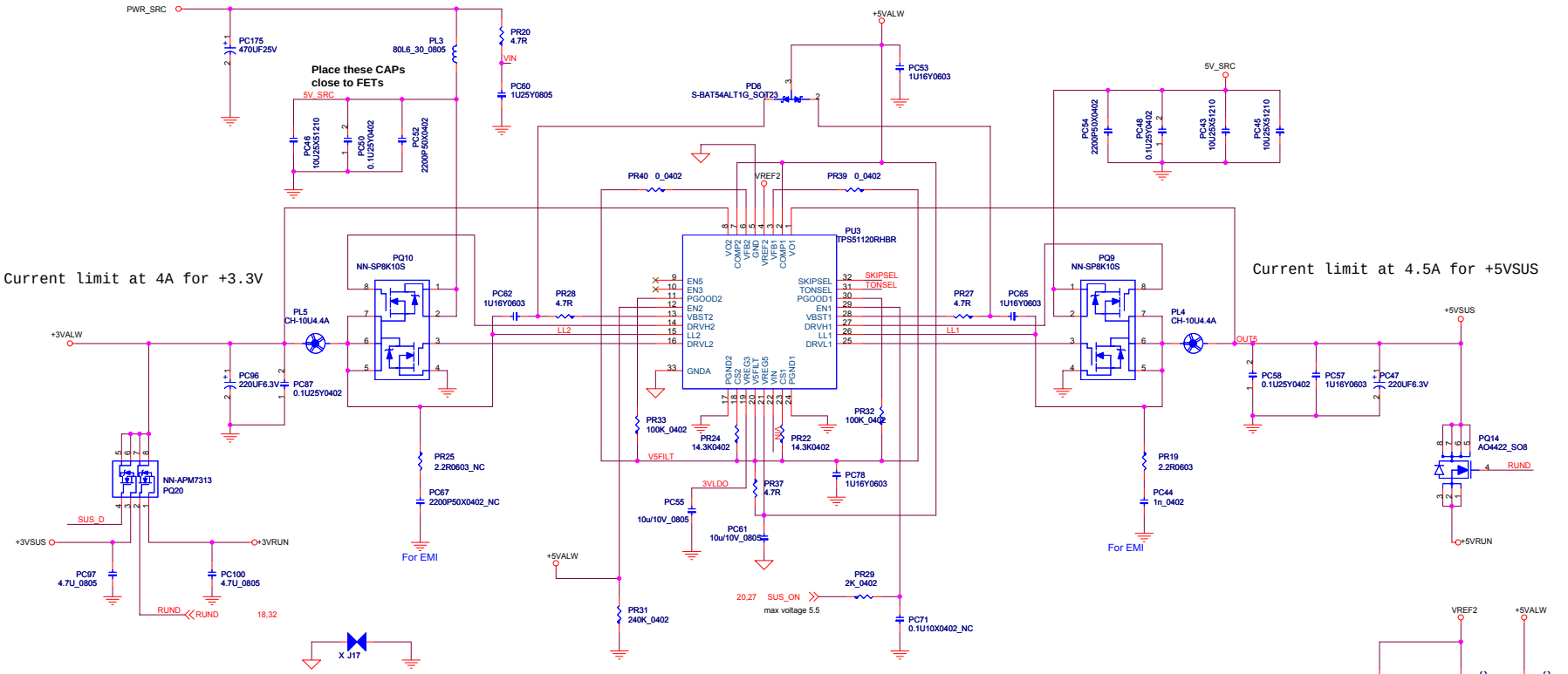
MS-14141

Size C | Document Description: Battery Charger | Rev 0A

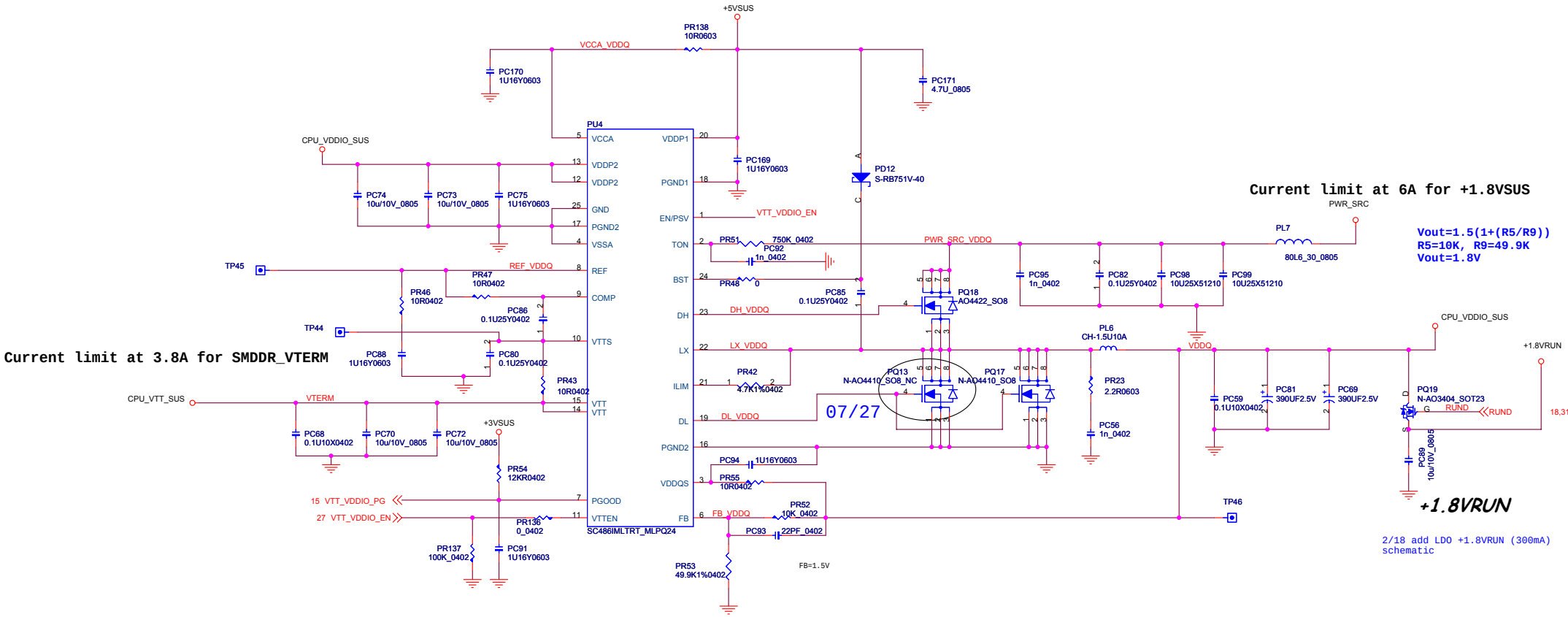
Date: Tuesday, September 26, 2006 | Sheet 29 of 37



MSI	MICRO-STAR INT'L CO.,LTD	
	MS-14141	
Size C	Document Description VCC_NB 1.2V 1.5V 1.8VRUN	Rev 0A
Date: Tuesday, September 26, 2006	Sheet 30 of 37	



MICRO-STAR INT'L CO.,LTD			
MS-14141			
Size C	Document Description: System Power 3/5 VSUS & VRUN		Rev 0A
Date: Tuesday, September 26, 2006		Sheet 31 of 37	

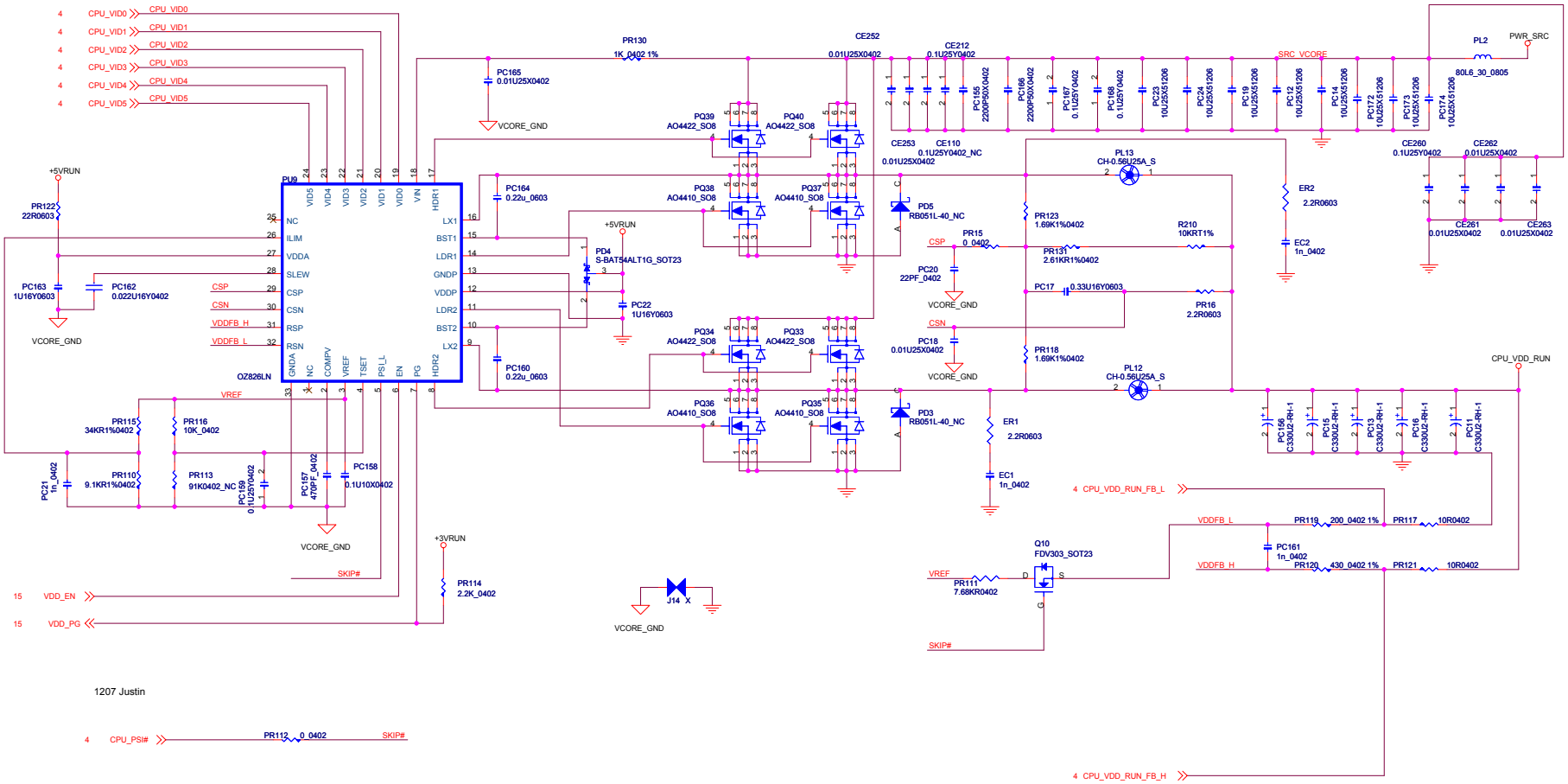


MICRO-STAR INT'L CO.,LTD.

Title: DDR2 1.8V VTT 0.9V

Size: Custom | Document Number: MS-14141 | Rev: 0.A

Date: Tuesday, September 26, 2006 | Sheet 32 of 37



1207 Justin

Components encircled are not necessary because the PSI_L signal input of OZ826 is fully compliant with AMD specification

CPU_PSI# can be directly connected to SKIP#

MICRO-STAR INT'L CO.,LTD	
MS-14141	
Size: C	Document Description: CPU VCORE
Rev: 0A	
Date: Tuesday, September 26, 2006	Sheet 33 of 37

HT26 HOLES_S276D118
HT6 HOLES_S276D118
HT16 HOLES_S276D118
HT25 HOLES_S276D118
HT20 HOLES_R295D110_DI140
HT9 HOLES_S276D118
HT7 HOLES_S276D118
HT17 HOLES_R236D138_DI168
HT19 HOLES_S276D118
HT10 HOLES_R236D138_DI168
HT24 HOLES_S276D118
HT23 HOLES_S276D118
HT3 HOLES_S276D118
HT5 HOLES_R295D110

MB position fixed rib

HT4 NPTH_80
HT18 NPTH_80

HT2 HOLE157
HT1 HOLE157
HT27 HOLE157
HT28 HOLE157

CPU's

HT15 HOLES_R276D185P_DI215
HT13 HOLES_R276D185P_DI215
HT8 HOLES_R276D185P_DI215

MDC Stand off

MH2 E2B-1022020-A89 HOLES236D96_PT R236D98
MH1 E2B-1022020-A89 HOLES236D96_PT R236D98

P23 CLIP_NC PAD_98X197
P26 CLIP PAD_98X197
P21 CLIP_NC PAD_98X197
P29 CLIP PAD_98X197
P22 CLIP_NC PAD_98X197

P19 CLIP ATE_C006_106
P13 CLIP ATE_C006_106
P11 CLIP ATE_C006_106
P7 CLIP ATE_C006_106
P5 CLIP ATE_C006_106

Impedence Test

HT12 HOLES_R236D138_DI168_NC
HT14 HOLES_R236D138_DI168_NC

FOR TV

FMB5 FMT2 FMT5 FMB10 FMB6 FMB9 FMB1 FMB12 FMB3 FMB4 FMB11 FM2
FMB2 FMB7 FMB8 FMT4 FMT1 FMB13 FMT3 FM6 FM4 FM5 FM3 FM1
FMT6 FMT7 FMT8 FMT9 FMT10
FMB14 FMB15 FMB16 FMB17 FMB18
X_FM

HOLES_R177D91_NC HT22
HOLES_R177D91 HT21

PCIE'S

P3 P9 P1 P16 P2 P4 P20 P14 P6 P17 P15 P18 P24 P10 P8
CLIP ATE_C006_106

FAN'S

HOLES_R177D91 HT11

P12 P25 P28 P27
CLIP 8X3_5MM

J7 L1_DIFF_5/7/5
J2 l1_4mil
J12 L6_DIFF_5/6/5
J11 L4_DIFF_5/6/5
J9 L3_DIFF_4/8/4
J3 L4_DIFF_4/8/4
J6 L1_DIFF_5/7/5#
J5 L6_10mil
J13 L6_DIFF_5/6/5#
J10 L4_DIFF_5/6/5#
J8 L3_DIFF_4/8/4#
J4 L4_DIFF_4/8/4#
X_PIN1*2

MICRO-STAR INT'L CO.,LTD.

Title: Screw1
Size: Custom
Document Number: MS-14141
Rev: 0.C
Date: Tuesday, September 26, 2006
Sheet 34 of 37

E1
South Brige AL FOIL for EMI
South Brige AL FOIL_NC

E2
MDC Module
MDC_Module_NC

E6
RJ45 MYLAR
RJ45_MYLAR

E7
DDR MYLAR
DDR_MYLAR

E16
M/B Mylar
M/B_MYLAR

E17
MB_HD_ MYLAR
HD_MYLAR

E18
MB_HD_ MYLAR
HD_MYLAR

SCREW1
Screw
Screw

SCREW2
Screw
Screw

SCREW4
Screw
Screw

SCREW5
Screw
Screw

PCB1
PCBA

SCREW7
Screw
Screw

SCREW8
Screw
Screw

SCREW6
Screw
Screw

SCREW3
Screw
Screw

SCREW9
Screw
Screw

BAT1
RTC Battery
RTC battery

E11
MB_HD_ MYLAR
HD_MYLAR

E14
NEW CARD COVER
PCI-EXPRESS-CARD
E23-1016011-T01

E15
PCI-E Mylar
PCI-E_MYLAR

E13
BIOS LABEL
BIOS_LABEL_NC

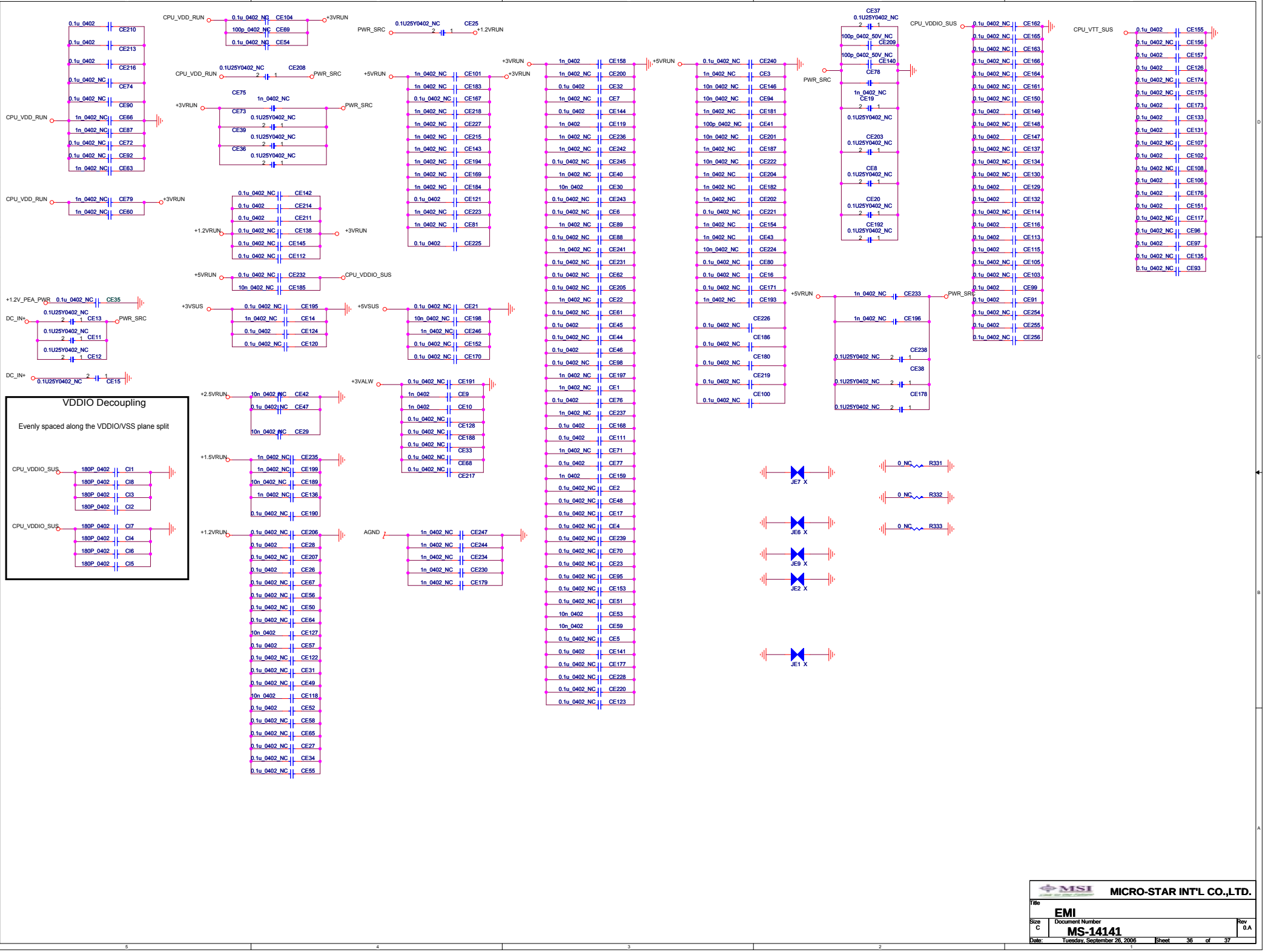
MSI MICRO-STAR INTERNATIONAL Link to the Future

MICRO-STAR INT'L CO.,LTD.

Title: Screw2

Size	Document Number	Rev
A	MS-14141	0.C

Date: Tuesday, September 26, 2006 Sheet 35 of 37


VDDIO Decoupling
Evenly spaced along the VDDIO/VSS plane split
MICRO-STAR INT'L CO.,LTD.
Title
EMI
Size C
Document Number MS-14141
Rev 0.A
Date: Tuesday, September 26, 2006
Sheet 36 of 37

History 0A--> 0B

1.P14. correct CNB1 RTC Batt . RTCVCC and GND pin define for Con type from Horizoutally to Vertically

2.P26. correct USB 1,2,3,4 pin define 5V,GND,D+,D-

3.P27. correct U16 power source from +3VSUS to +3VALW

4.P21. correct U10A pin2 pull down 100K to avoid LCD white Screen on boot intial.

5.P18. correct Q19 D1 D2 short together with Front_out_R_ISO and Front _out L_ISO

6.P4. correct R190,191,192,193,194 power source from +1.8VRUN to CPU_VDDIO_SUS

7.P19. correct c432 bypass Cap. from 10U to 0.47U.

8.P21. EMI change COM choke to RC for LVDS signal

9.P26. EMI change add 0R for AZ_SDOUT,SYNC,RST for test

10.P27 Shit D15 from CRTL SUSPWROK to RUN_PWRGD for LM86 CPU_Crit# to shutdown system power and programe by EC at 105C

11.P30,P31,P32, Cancel ALL power GAP G1,G2,G3,G4,G5,G6,G7 to Short.

MSI	MICRO-STAR INT'L CO.,LTD.	
Title: History		
Size: C	Document Number: MS-14141	Rev: 0.A
Date: Tuesday, September 26, 2006	Sheet 37 of 37	