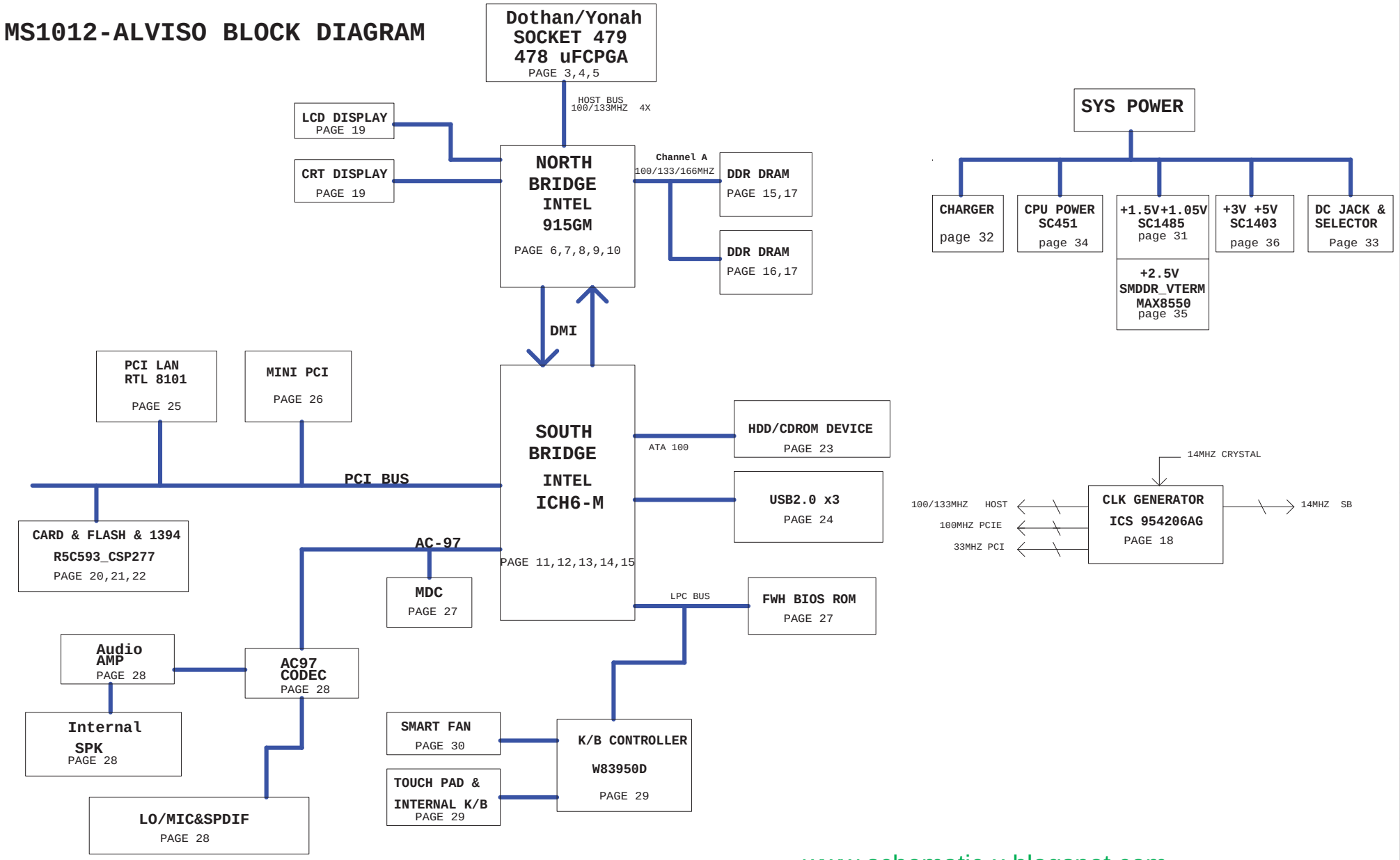
MS1012-ALVISO BLOCK DIAGRAM



MICRO-STAR INT'L CO.,LTD.

Title: BLOCK DIAGRAM

Size: C | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 1 of 39

Voltage Rails

Voltage	Description	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
VHCORE	Core Voltage for Processor	GME_PWRGD
VTT	1.05 rail for Processor & Alviso I/O	RUNPWROK
SMDDR_VTERM	1.25V DDR Termination voltage (off in S4-S5)	+5VRUN
+1_5VSUS	1.5V power rail (off in S4-S5)	SUS_ON
+1_5VRUN	1.5V switched power rail(off in S3-S5)	RUN_ON
+1_8VRUN	1.8V switched power rail(off in S3-S5)	RUN_ON
+2_5VSUS	2.5V power rail DDR (off in S4-S5)	+5VSUS
+2_5VRUN	2.5V switched power rail(off in S3-S5)	RUN_ON
+3VALW	3.3V always on power rail	PWR_SRC
+3VSUS	3.3V power rail (off in S4-S5)	SUS_ON
+3VRUN	3.3V switched power rail(off in S3-S5)	RUN_ON
+5VALW	5.0V always on power rail	PWR_SRC
+5VSUS	5.0V power rail (off in S4-S5)	SUS_ON
+5VRUN	5.0V switched power rail(off in S3-S5)	RUN_ON

Voltage	Description	Control Signal
+V5_AUDIO	5.0V Power rail Audio codec(off in S3-S5)	+5VRUN

GND	DIGTIAL GROUD	
AGND	AUDIO GND	
PGND	POWER Analogy GND	

POWER STATES

STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+V*ALWAYS	+V*SUS	+V*RUN	Clocks
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1M(Power On Suspend)	HIGH	HIGH	HIGH	ON	ON	ON	LOW
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

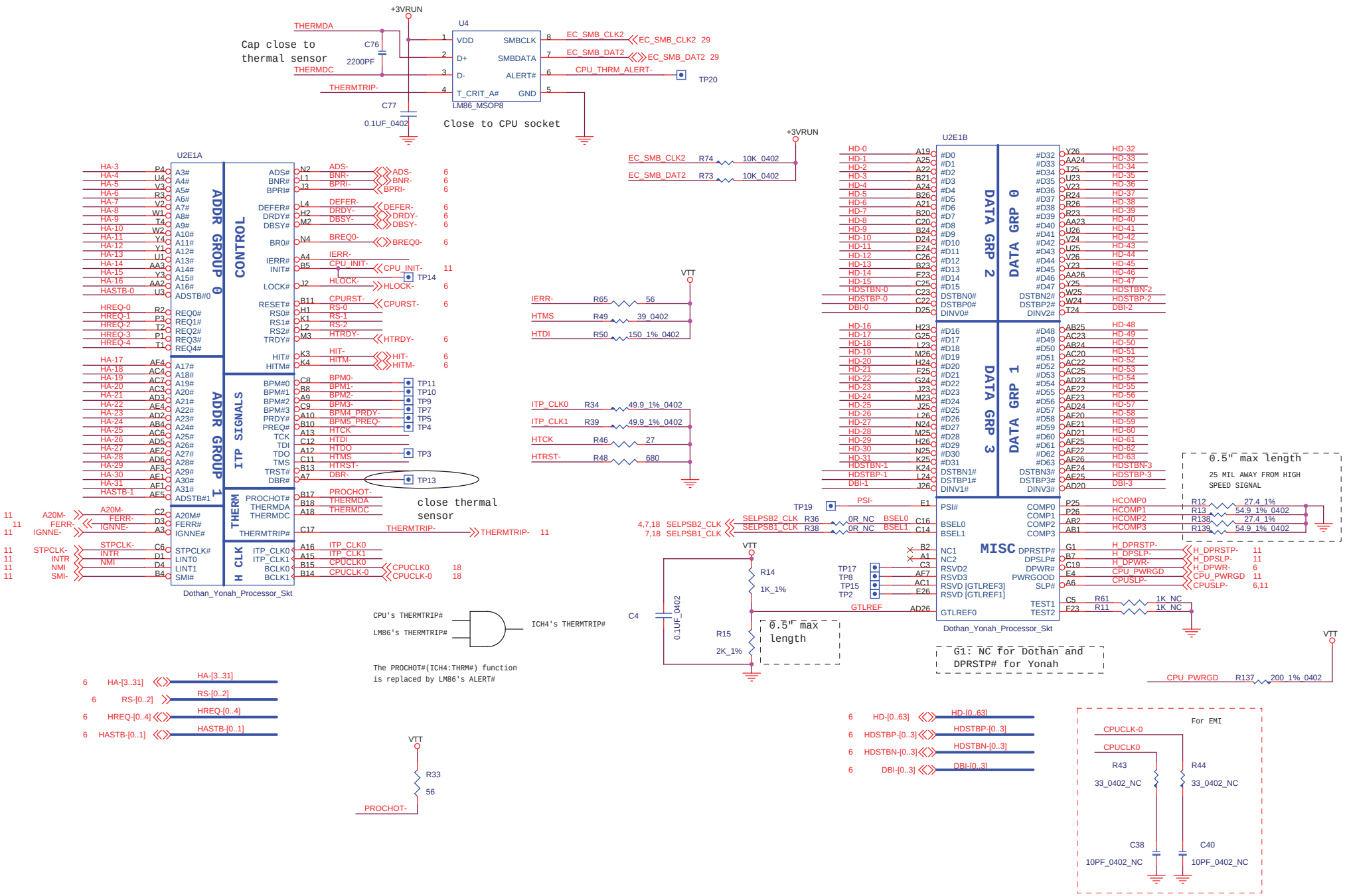
*Note : WHEN AC MODE , System turn on then +V*SUS will always keep high*

MICRO-STAR INT'L CO.,LTD.

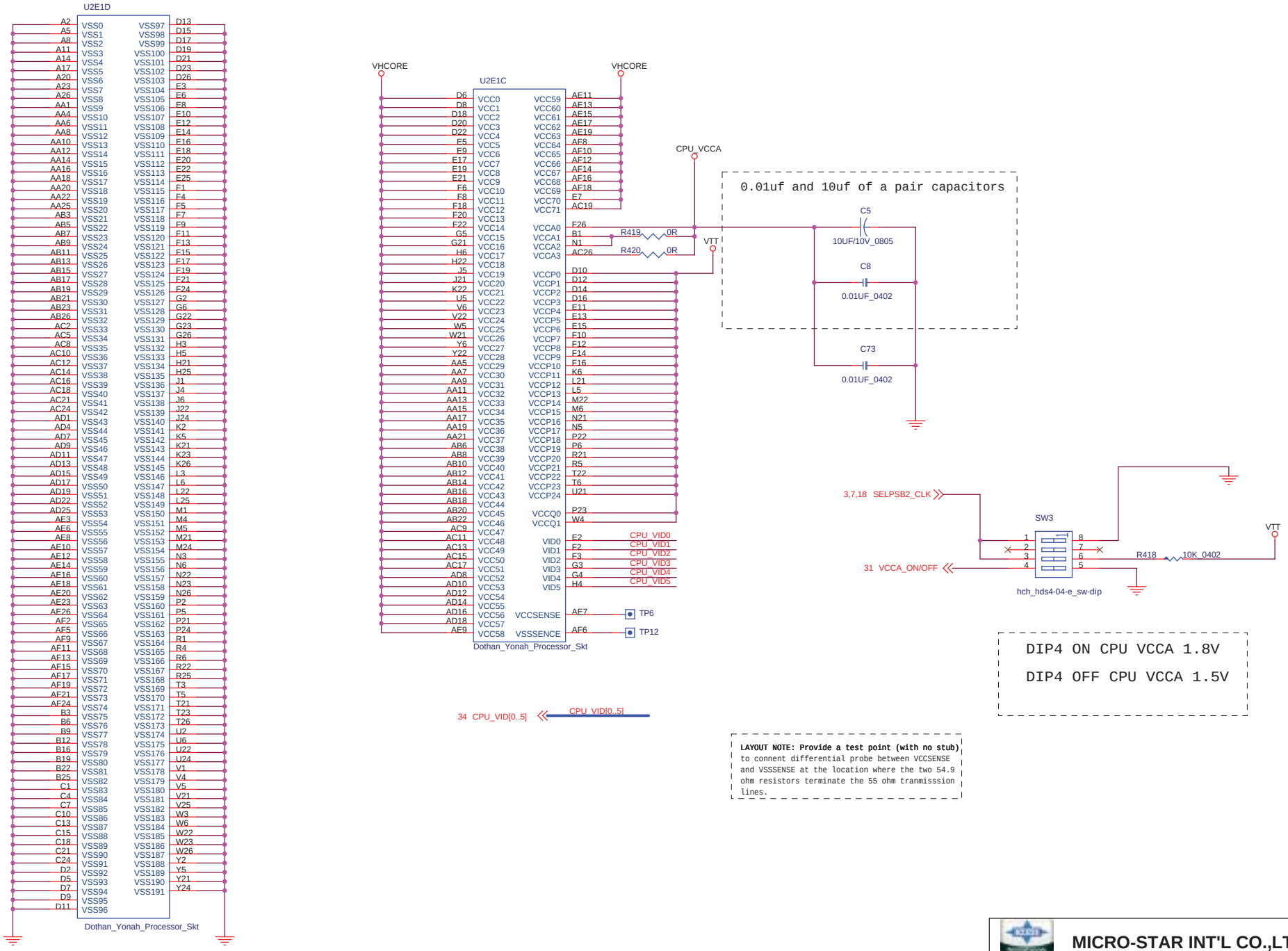
Title: PLATFORM

Size: B | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 2 of 39



Company	MICRO-STAR INT'L CO.,LTD.
Title	Dothan-1(HOST BUS)
Size	Custom
Document Number	MS-1012
Rev	1.1
Date:	Friday, January 21, 2005
Sheet	3 of 39

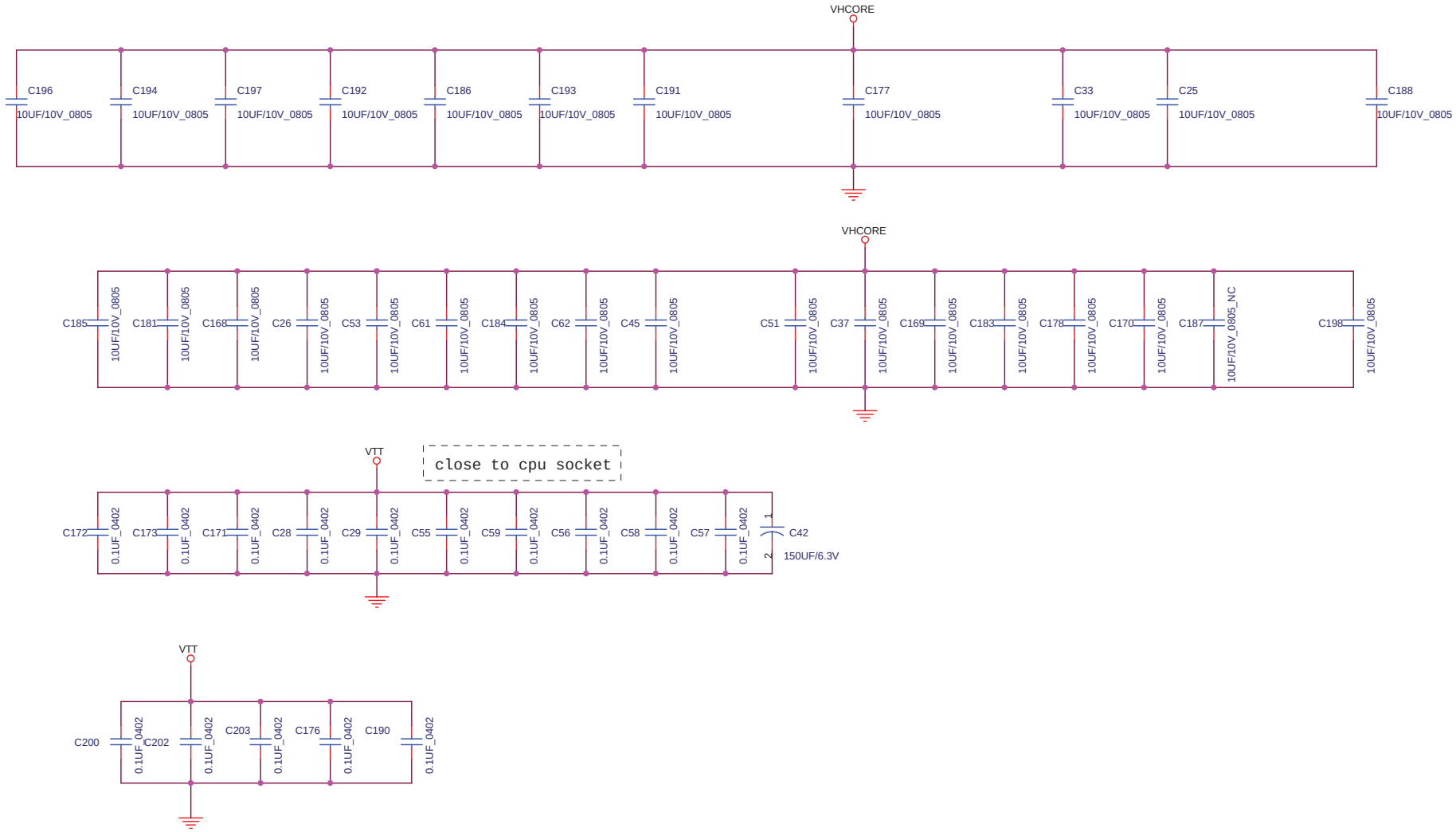


MICRO-STAR INT'L CO.,LTD.

Title: Dothan-2 (Power / GND)

Size: Custom | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 4 of 39

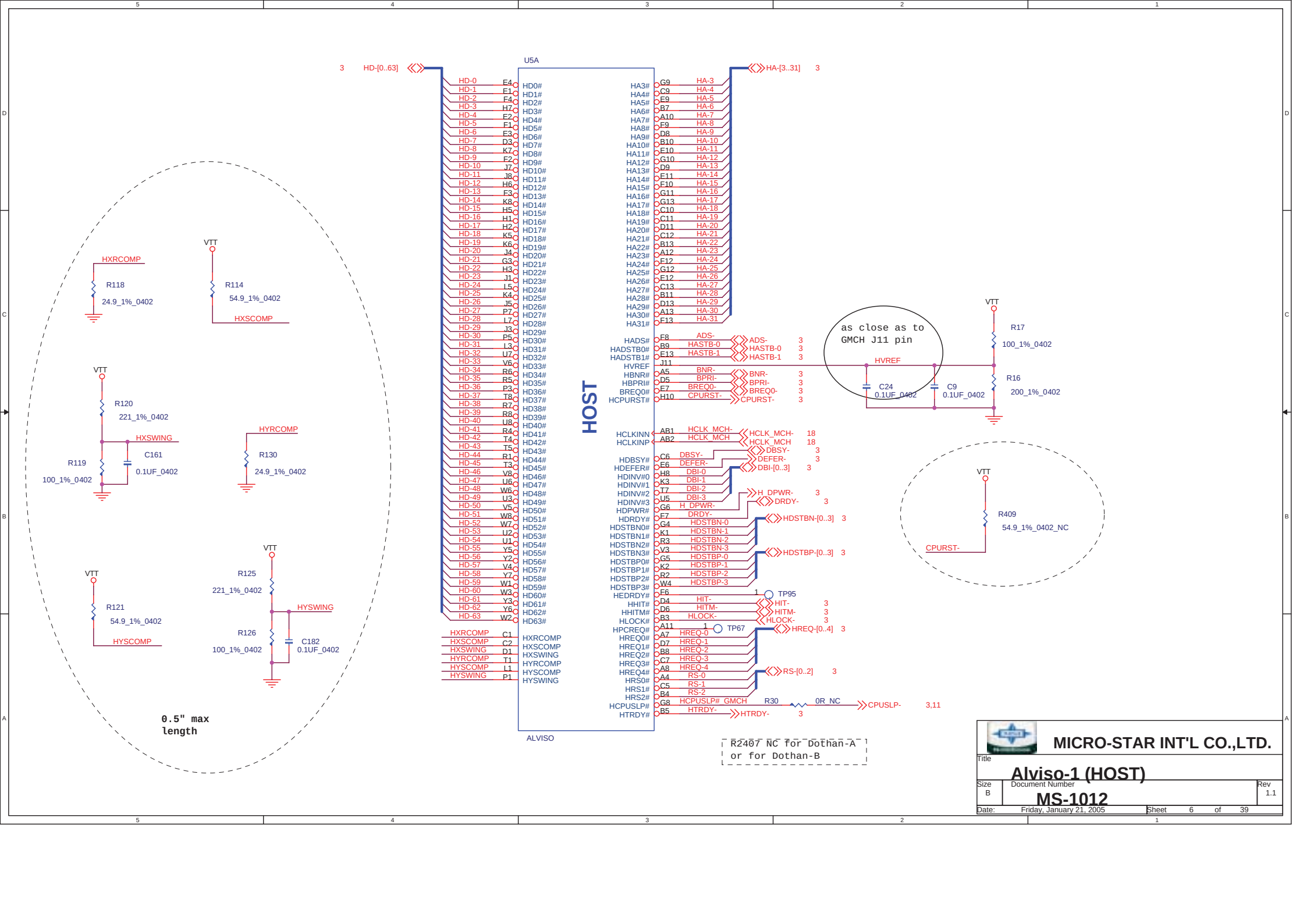


MICRO-STAR INT'L CO.,LTD.

Title: Dothan-3

Size: B | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 5 of 39


U5A
HOST
ALVISO
HD-[0..63]
HA-[3..31]
HXRCOMP
R118
24.9_1%_0402
R114
54.9_1%_0402
HXSCOMP
VTT
R120
221_1%_0402
HXSWING
R119
100_1%_0402
C161
0.1UF_0402
HYRCOMP
R130
24.9_1%_0402
R121
54.9_1%_0402
HYSCOMP
R125
221_1%_0402
HYSWING
R126
100_1%_0402
C182
0.1UF_0402
0.5" max length
as close as to GMCH J11 pin
HVREF
R17
100_1%_0402
R16
200_1%_0402
C24
0.1UF_0402
C9
0.1UF_0402
R409
54.9_1%_0402_NC
CPURST-
R30
0R_NC
CPUSLP-
TP95
TP67
R2407 NC for Dothan-A
or for Dothan-B
MICRO-STAR INT'L CO.,LTD.
Title
Alviso-1 (HOST)
Size B
Document Number MS-1012
Rev 1.1
Date: Friday, January 21, 2005
Sheet 6 of 39

CFG[3:17] have internal pullup resistors

CFG[18:19] have internal pulldown resistors

U5C

DMI

DDR MUXING

CFG/RSVD

PM

CLK

NC

ALVISO

U5F

MISC

TV

VGA

LVDS

PCI-EXPRESS GRAPHICS

ALVISO

Rote as short as possible

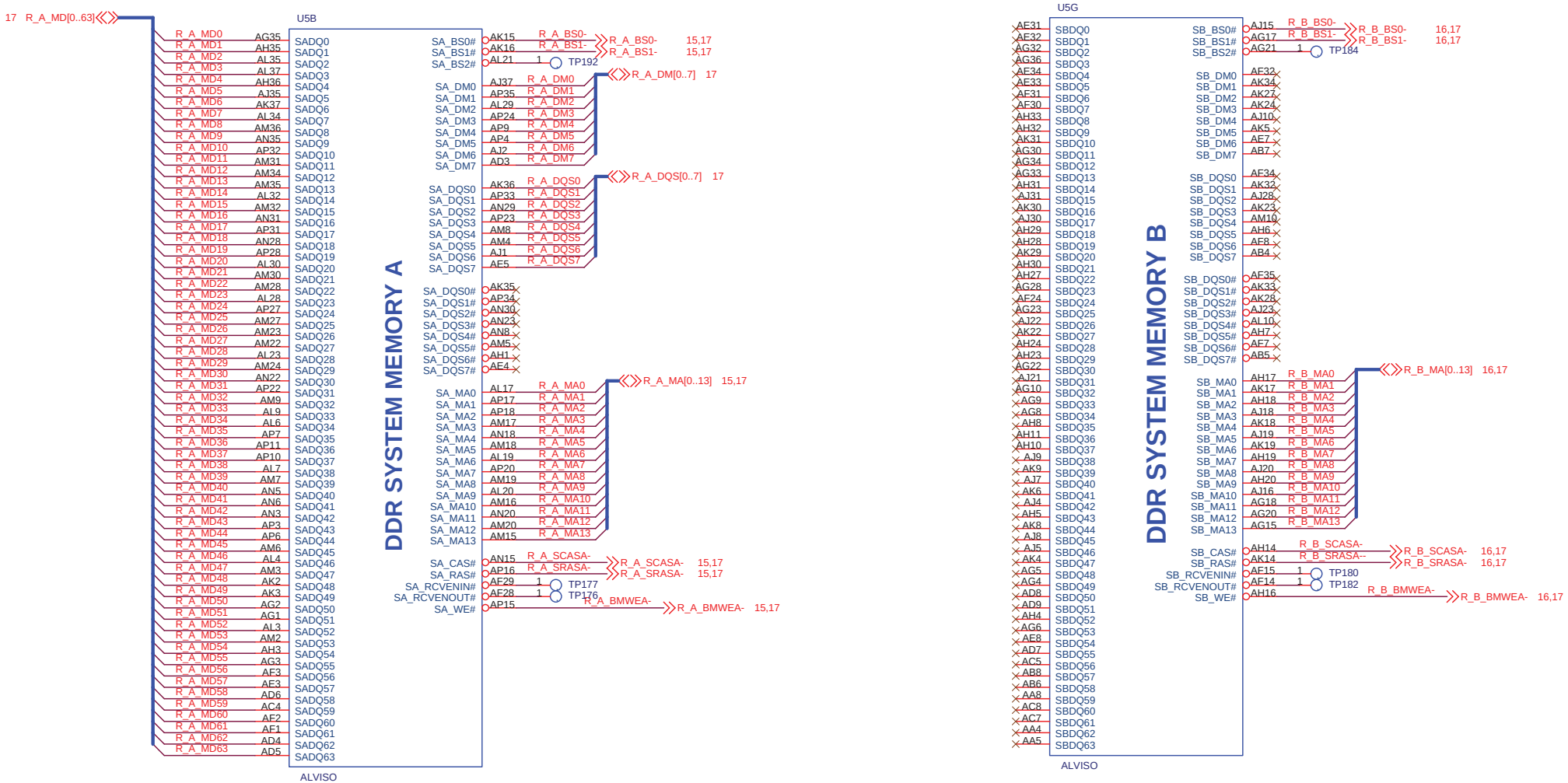
It's point to point, 55ohm trace,keep as short as possible.

as close as 915GM(ALVISO)

LOW=DDR2
HIGH=DDR1

LOW=DMIX2
HIGH=DMIX4

Title	MICRO-STAR INT'L CO.,LTD.
	Alviso-2 (DMI/VGA)
Size: Custom	Document Number: MS-1012
Rev: 1.1	
Date: Friday, January 21, 2005	Sheet 7 of 39

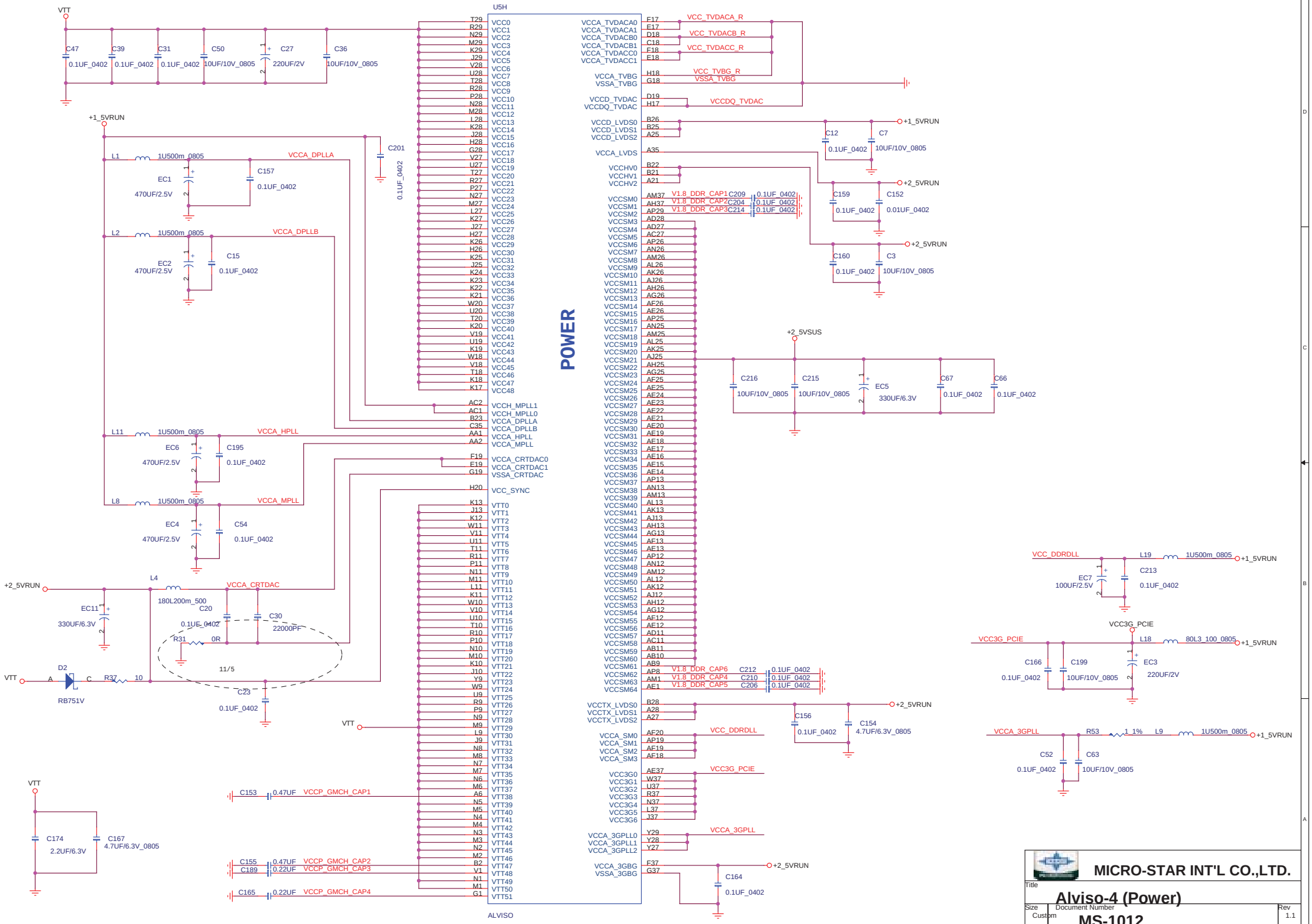


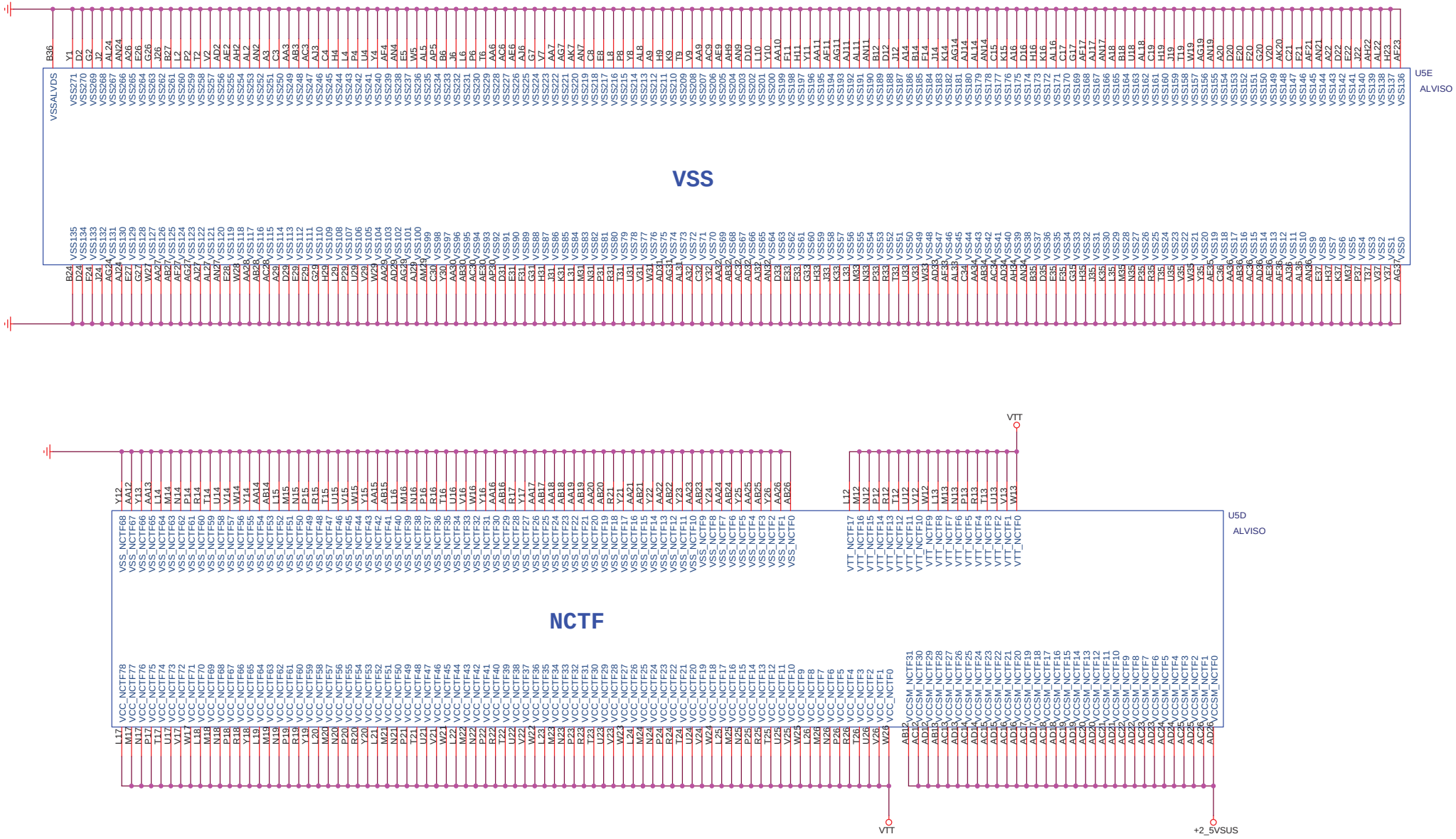
MICRO-STAR INT'L CO.,LTD.

Title: Alviso-3 (DDR)

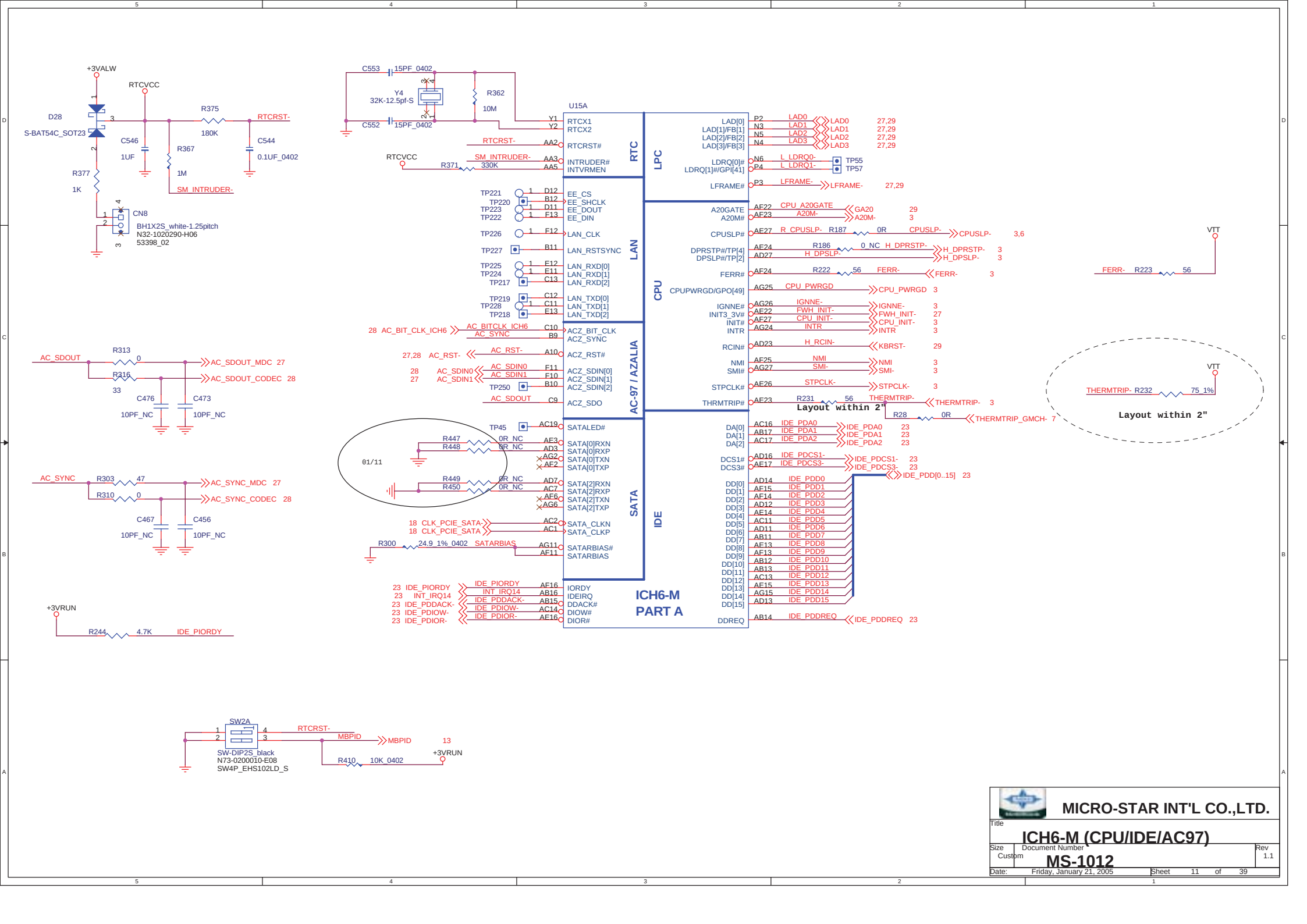
Size: B | Document Number: MS-1012 | Rev: 1.1

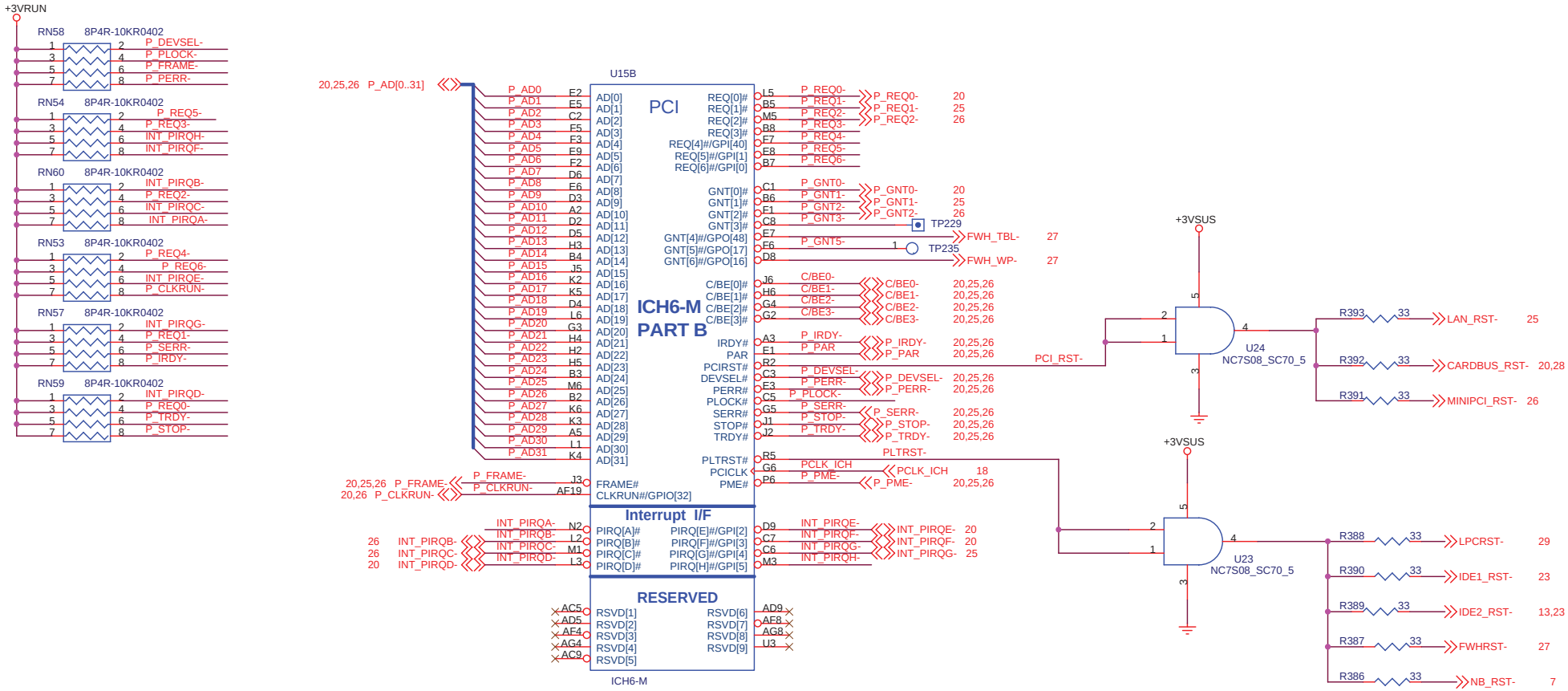
Date: Friday, January 21, 2005 | Sheet 8 of 39


U5H
POWER
ALVISO
VTT
+1_5VRUN
+2_5VRUN
+2_5VSUS
VCC_TVDACA_R
VCC_TVDACB_R
VCC_TVDACC_R
VCC_TVBG_R
VSSA_TVBG
VCCDQ_TVDAC
VCCA_DPLLA
VCCA_DPLLB
VCCA_HPLL
VCCA_MPLL
VCCA_CRTDAC
VCC_DDRDLL
VCC3G_PCIE
VCCA_3GPLL
VCCP_GMCH_CAP1
VCCP_GMCH_CAP2
VCCP_GMCH_CAP3
VCCP_GMCH_CAP4
V1.8_DDR_CAP1
V1.8_DDR_CAP2
V1.8_DDR_CAP3
V1.8_DDR_CAP6
V1.8_DDR_CAP4
V1.8_DDR_CAP5
MICRO-STAR INT'L CO.,LTD.
Alviso-4 (Power)
MS-1012
Custom
Rev 1.1
Friday, January 21, 2005
Sheet 9 of 39



MICRO-STAR INT'L CO.,LTD.		
Title: Alviso-5 (GND)		
Size: Custom	Document Number: MS-1012	Rev: 1.1
Date: Friday, January 21, 2005	Sheet 10 of 39	


+3VALW
RTCVCC
D28
S-BAT54C_SOT23
R375
180K
RTCRST-
C546
1UF
R367
1M
C544
0.1UF_0402
R377
1K
SM_INTRUDER-
CN8
BH1X2S_white-1.25pitch
N32-1020290-H06
53398_02
C553
15PF_0402
Y4
32K-12.5pf-S
R362
10M
C552
15PF_0402
U15A
RTCX1
RTCX2
RTCRST#
INTRUDER#
INTVRMEN
RTC
LPC
EE_CS
EE_SHCLK
EE_DOUT
EE_DIN
LAN_CLK
LAN_RSTSYNC
LAN_RXD[0]
LAN_RXD[1]
LAN_RXD[2]
LAN_TXD[0]
LAN_TXD[1]
LAN_TXD[2]
LAN
CPU
ACZ_BIT_CLK
ACZ_SYNC
ACZ_RST#
ACZ_SDIN[0]
ACZ_SDIN[1]
ACZ_SDIN[2]
ACZ_SDO
AC-97 / AZALIA
SATALED#
SATA[0]RXN
SATA[0]RXP
SATA[0]TXN
SATA[0]TXP
SATA[2]RXN
SATA[2]RXP
SATA[2]TXN
SATA[2]TXP
SATA_CLKN
SATA_CLKP
SATARBIAS#
SATARBIAS
SATA
IDE
IORDY
IDEIRQ
DDACK#
DIOW#
DIOR#
ICH6-M
PART A
LAD[0]
LAD[1]/FB[1]
LAD[2]/FB[2]
LAD[3]/FB[3]
LDRQ[0]#
LDRQ[1]#/GPI[41]
LFRAME#
A20GATE
A20M#
CPUSLP#
DPRSTP#/TP[4]
DPSLP#/TP[2]
FERR#
CPUPWRGD/GPO[49]
IGNNE#
INIT3_3V#
INIT#
INTR
RCIN#
NMI
SMI#
STPCLK#
THRMTRIP#
DA[0]
DA[1]
DA[2]
DCS1#
DCS3#
DD[0]
DD[1]
DD[2]
DD[3]
DD[4]
DD[5]
DD[6]
DD[7]
DD[8]
DD[9]
DD[10]
DD[11]
DD[12]
DD[13]
DD[14]
DD[15]
DDREQ
TP221
TP220
TP223
TP222
TP226
TP227
TP225
TP224
TP217
TP219
TP228
TP218
TP250
TP45
AC_SDOUT
R313
R316
AC_SDOUT_MDC 27
AC_SDOUT_CODEC 28
C476
C473
10PF_NC
AC_SYNC
R303
R310
AC_SYNC_MDC 27
AC_SYNC_CODEC 28
C467
C456
01/11
R447
R448
R449
R450
R300
24.9_1%_0402
SATARBIAS
+3VRUN
R244
4.7K
IDE_PIORDY
SW2A
SW-DIP2S_black
N73-0200010-E08
SW4P_EHS102LD_S
MBPID
R410
10K_0402
LAD0 27,29
LAD1 27,29
LAD2 27,29
LAD3 27,29
L_LDRQ0-
L_LDRQ1-
TP55
TP57
LFRAME- 27,29
CPU_A20GATE
GA20 29
A20M- 3
R_CPUSLP- R187 0R CPUSLP- 3,6
R186 0_NC H_DPRSTP- 3
H_DPSLP- 3
FERR- R222 56 FERR- 3
CPU_PWRGD 3
IGNNE- 3
FWH_INIT- 27
CPU_INIT- 3
INTR 3
H_RCIN- KBRST- 29
NMI 3
SMI- 3
STPCLK- 3
THERMTRIP- R231 56
Layout within 2"
R28 0R THERMTRIP_GMCH- 7
IDE_PDA0 23
IDE_PDA1 23
IDE_PDA2 23
IDE_PDCS1- 23
IDE_PDCS3- 23
IDE_PDD[0..15] 23
IDE_PDDREQ 23
VTT
FERR- R223 56
THERMTRIP- R232 75_1%
Layout within 2"
MICRO-STAR INT'L CO.,LTD.
Title
ICH6-M (CPU/IDE/AC97)
Size Custom
Document Number MS-1012
Rev 1.1
Date: Friday, January 21, 2005
Sheet 11 of 39

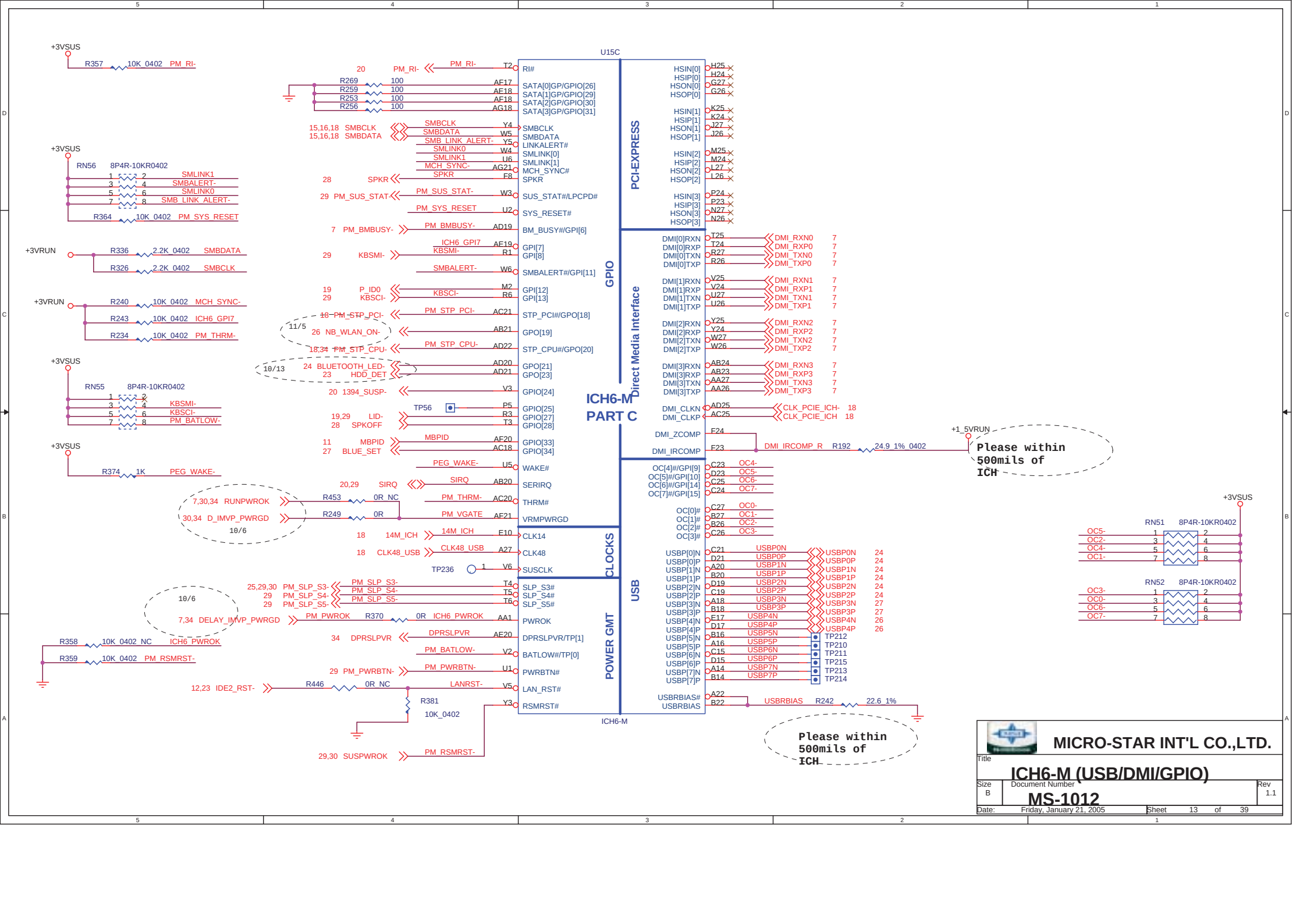


MICRO-STAR INT'L CO.,LTD.

Title: ICH6-M (PCI BUS)

Size: B | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 12 of 39

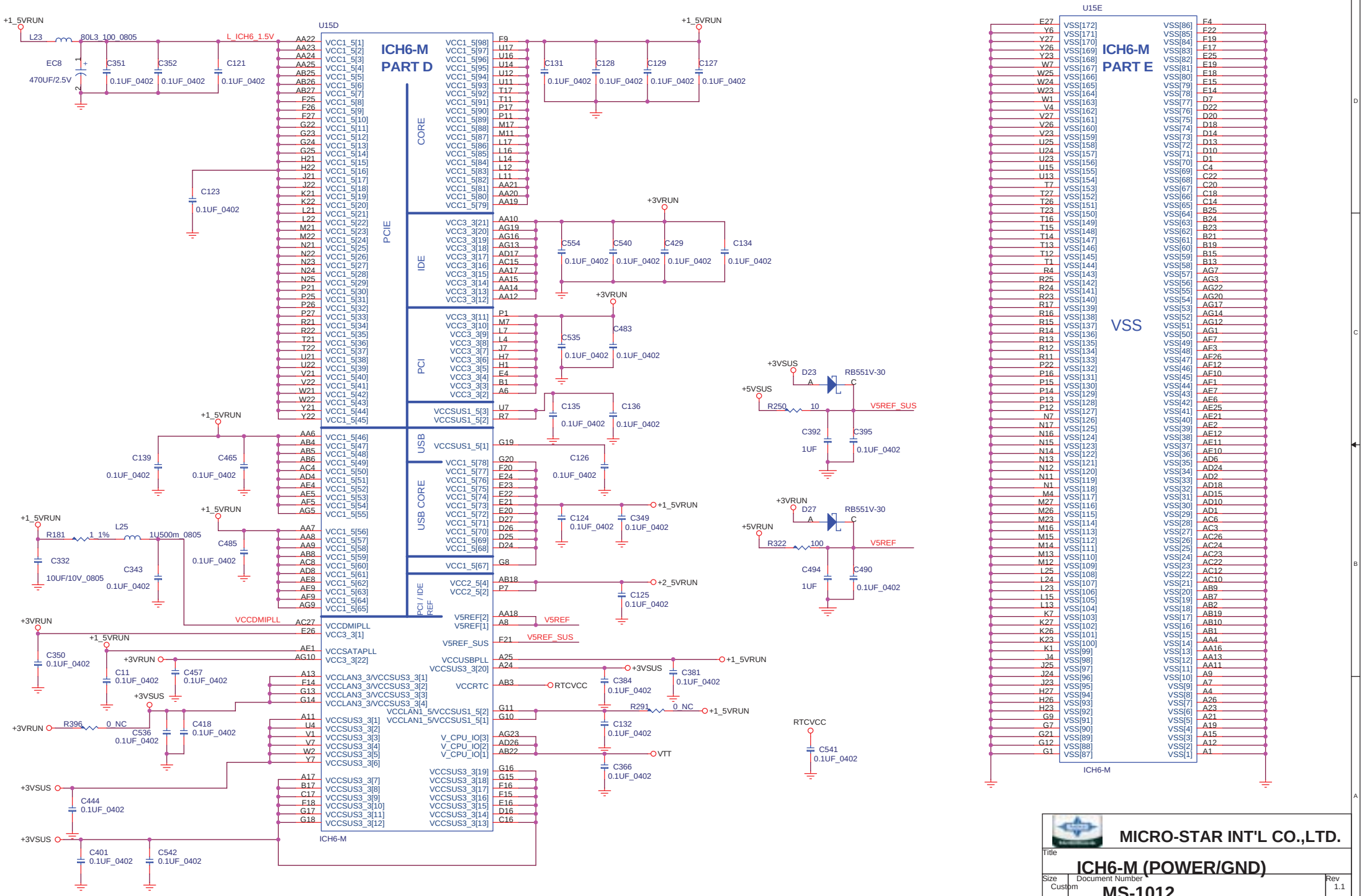


MICRO-STAR INT'L CO.,LTD.

Title: ICH6-M (USB/DMI/GPIO)

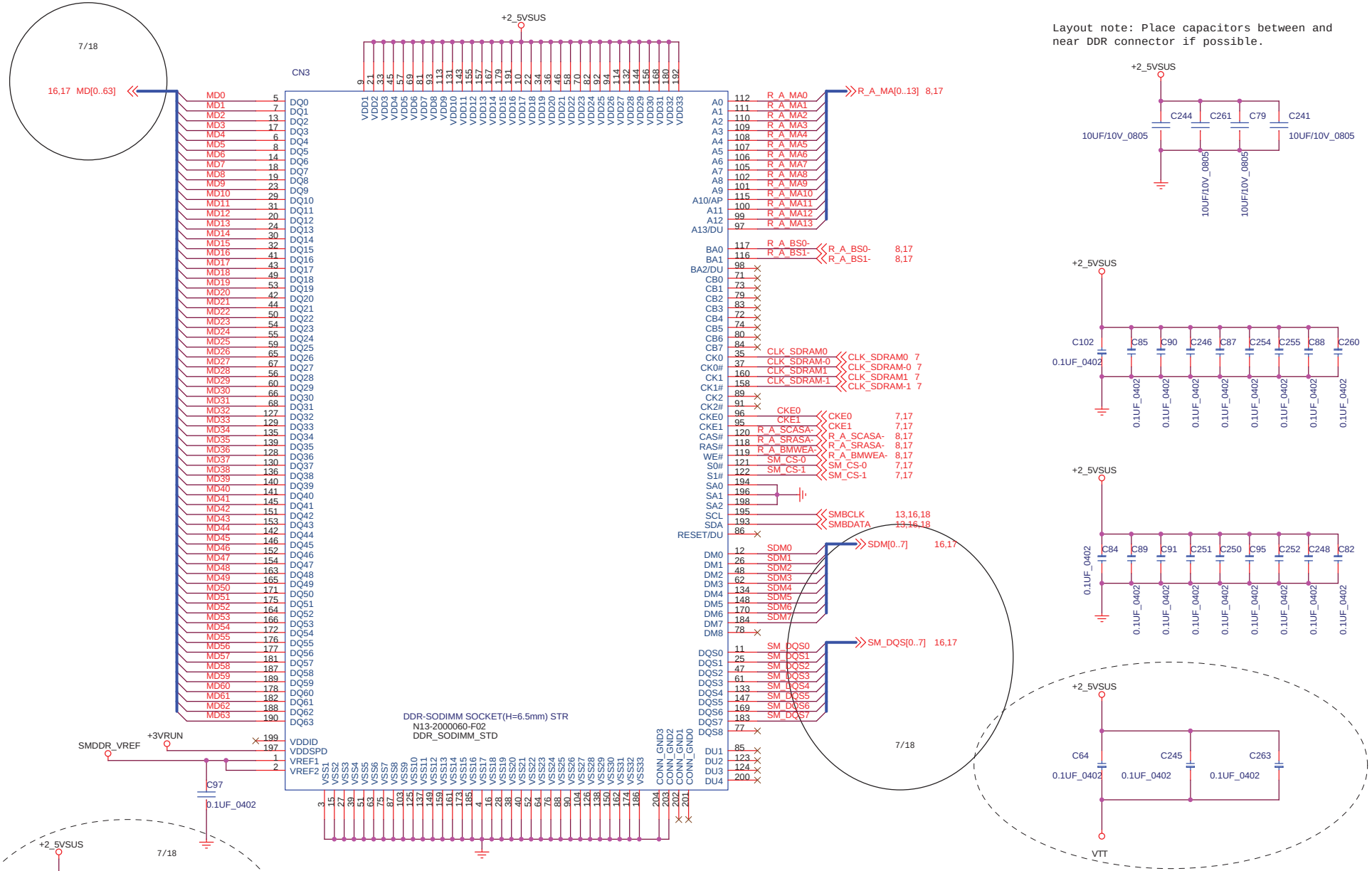
Size: B | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 13 of 39



Title	ICH6-M (POWER/GND)
Size	Custom
Document Number	MS-1012
Rev	1.1
Date:	Friday, January 21, 2005
Sheet	14 of 39

MICRO-STAR INT'L CO.,LTD.

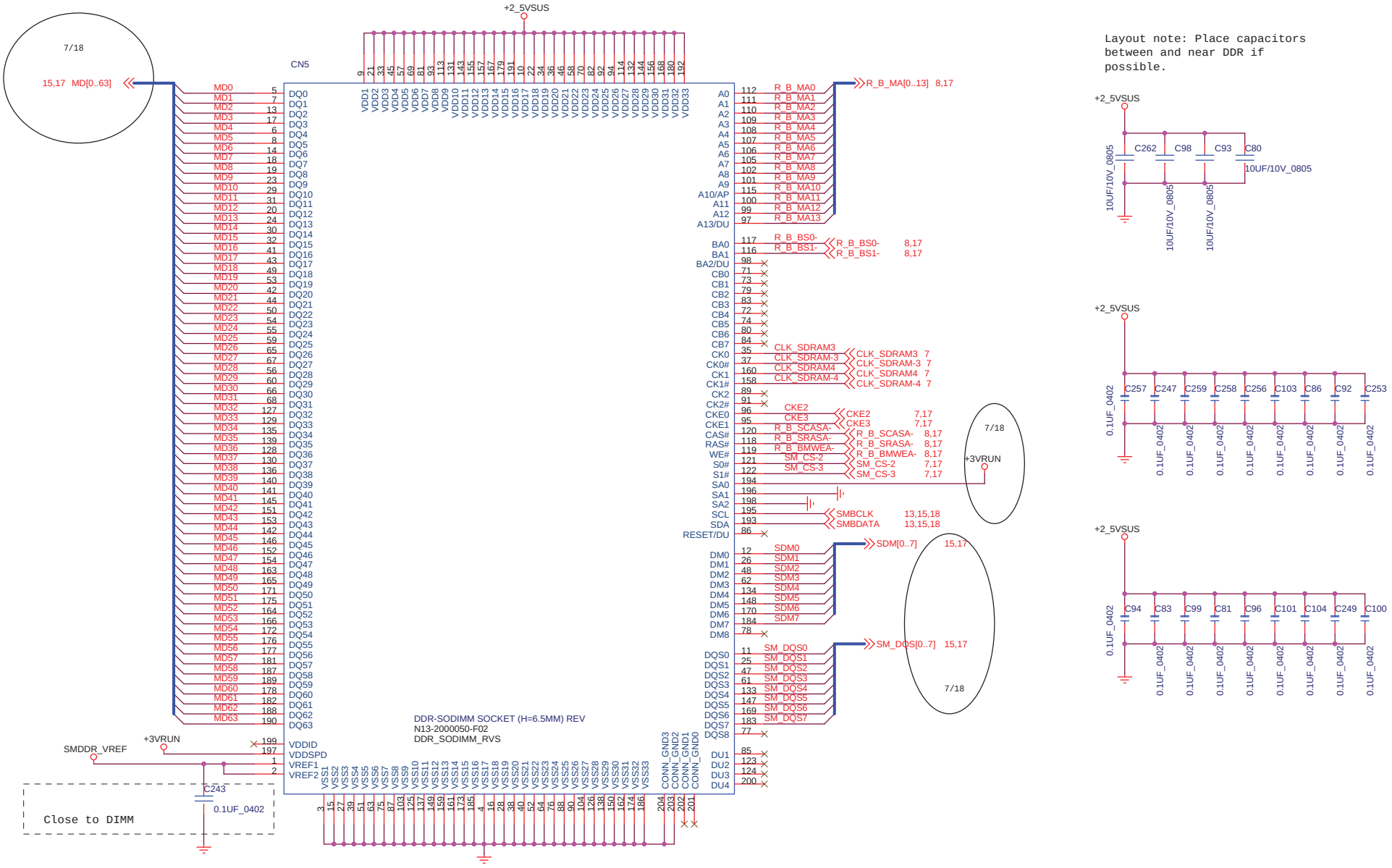


MICRO-STAR INT'L CO.,LTD.

Title: DDR-SODIMM-0 (Channel A)

Size: Custom | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 15 of 39



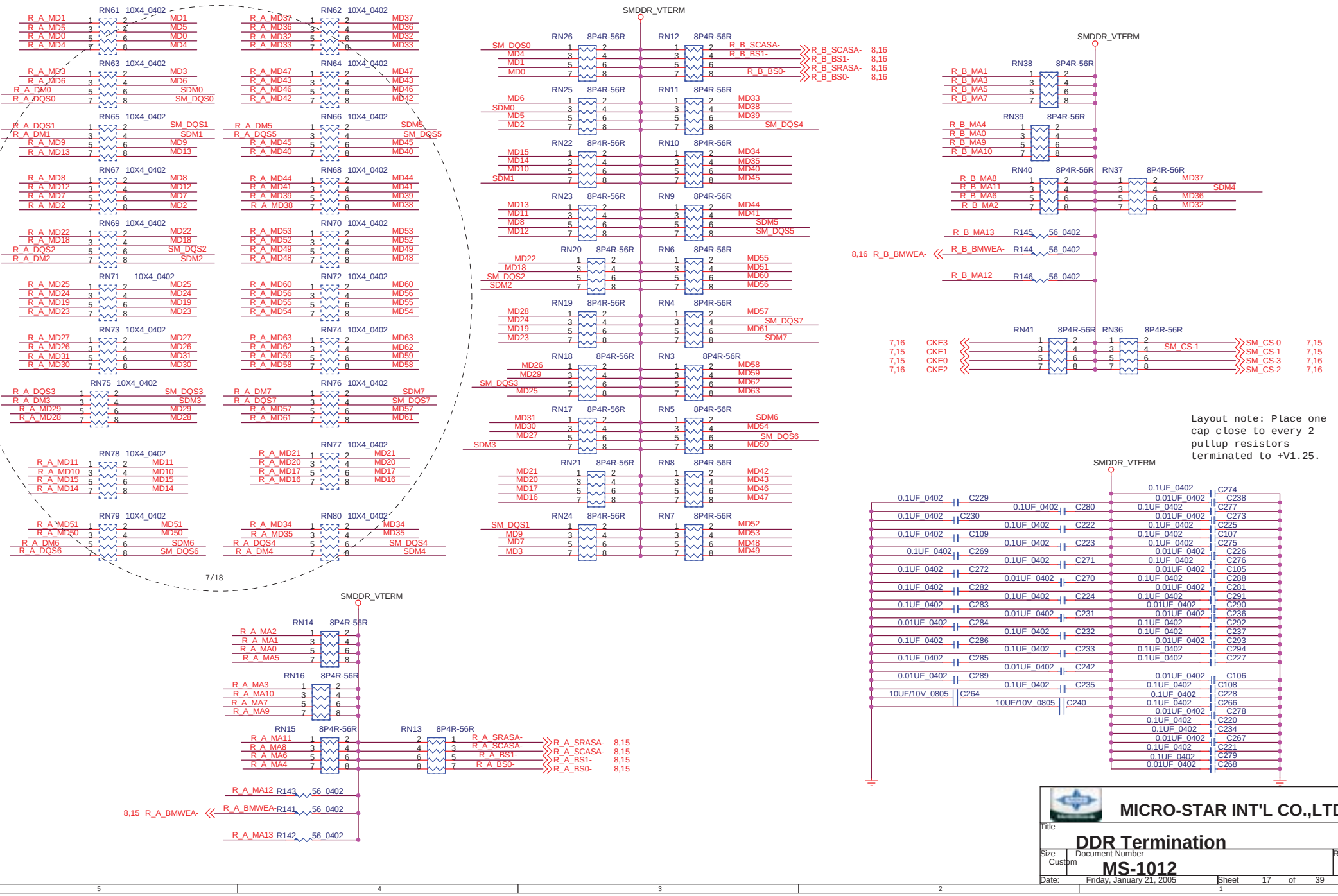
Layout note: Place capacitors between and near DDR if possible.

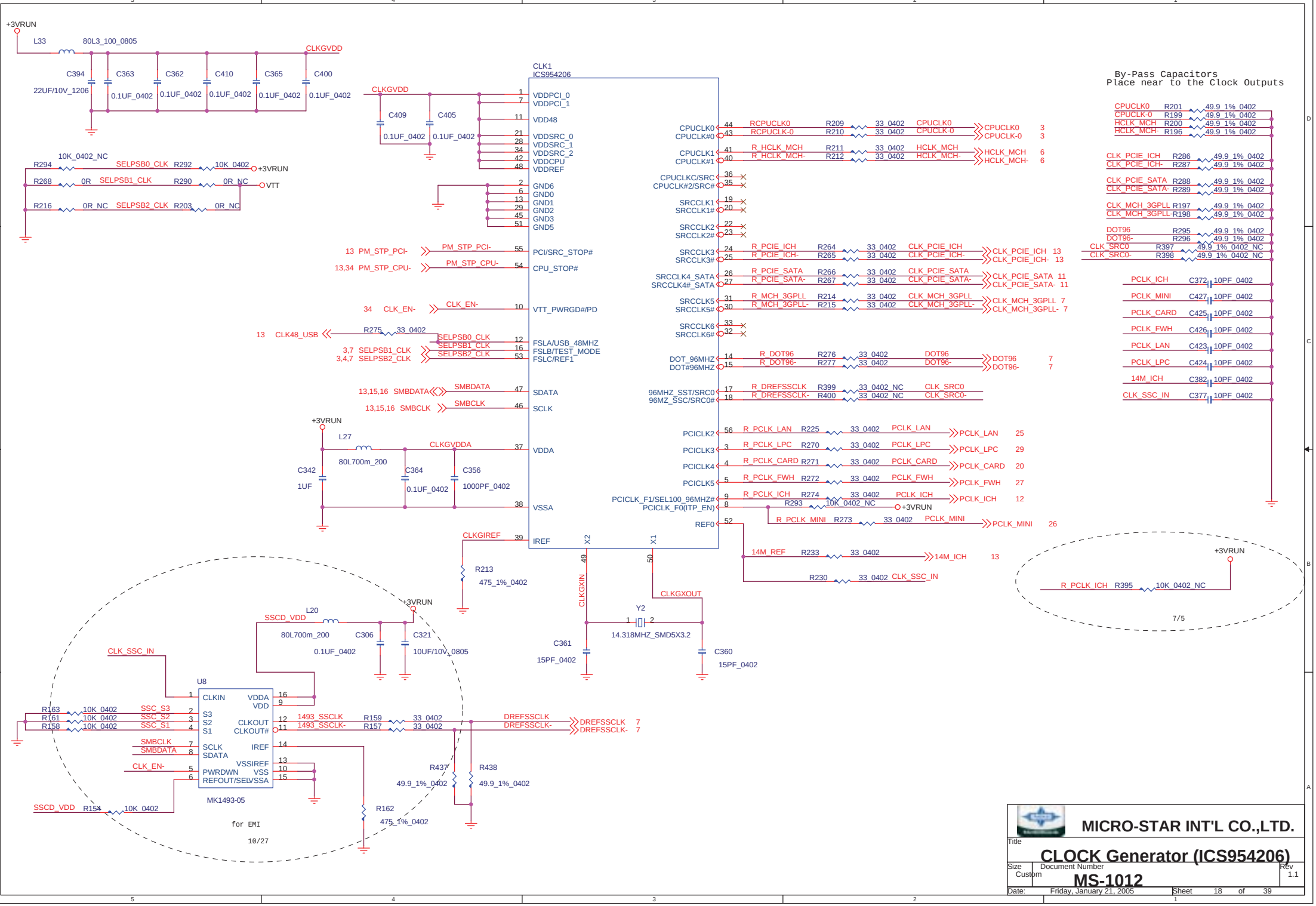
MICRO-STAR INT'L CO.,LTD.

Title: DDR-SODIMM-1 (Channel B)

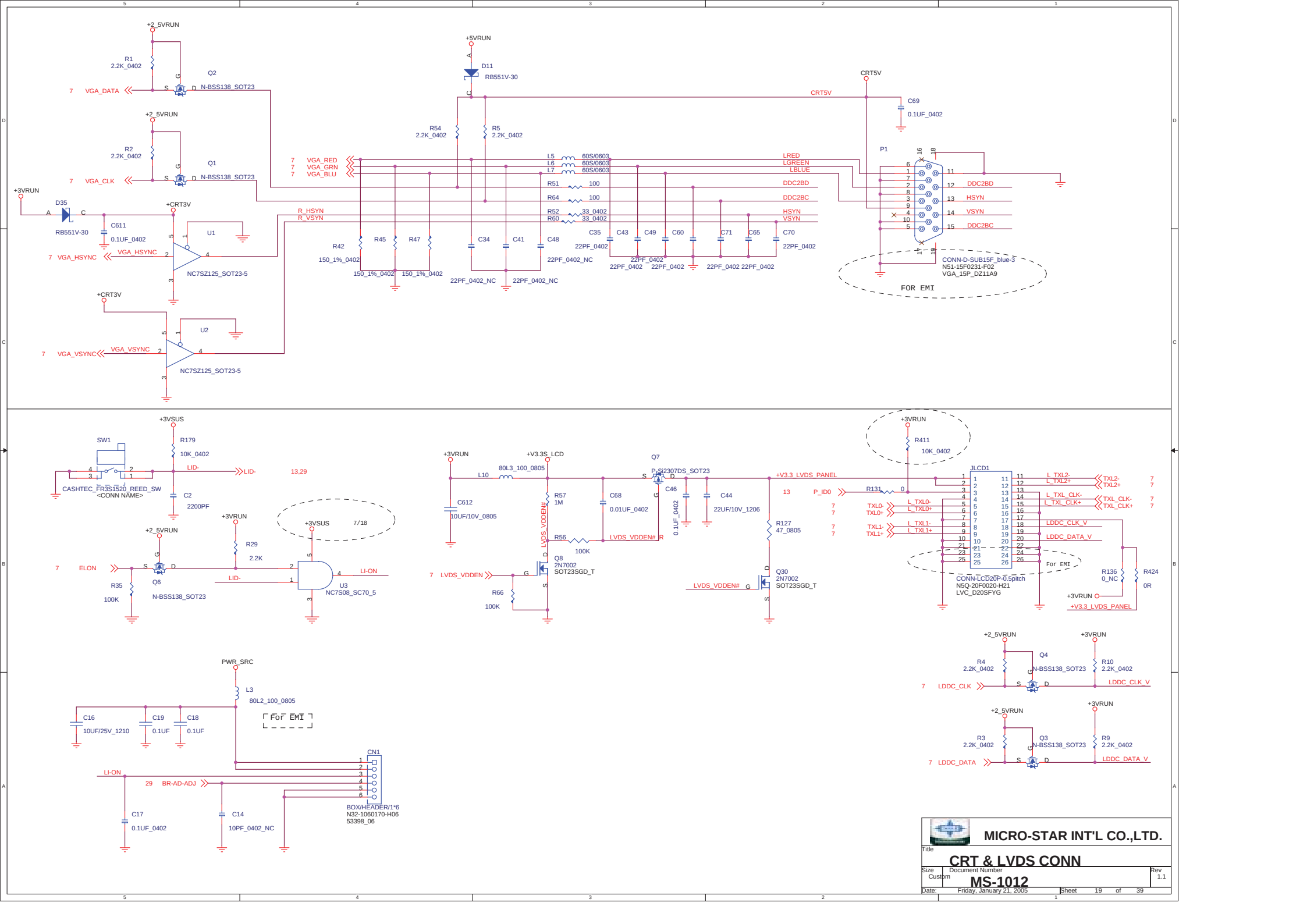
Size: Custom | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 16 of 39


8 R_A_DQS[0..7]
R_A_DQS[0..7]
SM_DQS[0..7]
SM_DQS[0..7] 15,16
R_A_MD[0..63]
R_A_MD[0..63] 8
MD[0..63]
MD[0..63] 15,16
8 R_A_DM[0..7]
R_A_DM[0..7]
SDM[0..7]
SDM[0..7] 15,16
R_A_MA[0..13]
R_A_MA[0..13] 8,15
R_B_MA[0..13]
R_B_MA[0..13] 8,16
RN61 10X4_0402
RN62 10X4_0402
RN63 10X4_0402
RN64 10X4_0402
RN65 10X4_0402
RN66 10X4_0402
RN67 10X4_0402
RN68 10X4_0402
RN69 10X4_0402
RN70 10X4_0402
RN71 10X4_0402
RN72 10X4_0402
RN73 10X4_0402
RN74 10X4_0402
RN75 10X4_0402
RN76 10X4_0402
RN77 10X4_0402
RN78 10X4_0402
RN79 10X4_0402
RN80 10X4_0402
7/18
SMDDR_VTERM
RN26 8P4R-56R
RN12 8P4R-56R
RN25 8P4R-56R
RN11 8P4R-56R
RN22 8P4R-56R
RN10 8P4R-56R
RN23 8P4R-56R
RN9 8P4R-56R
RN20 8P4R-56R
RN6 8P4R-56R
RN19 8P4R-56R
RN4 8P4R-56R
RN18 8P4R-56R
RN3 8P4R-56R
RN17 8P4R-56R
RN5 8P4R-56R
RN21 8P4R-56R
RN8 8P4R-56R
RN24 8P4R-56R
RN7 8P4R-56R
R_B_SCASA- 8,16
R_B_BS1- 8,16
R_B_SRASA- 8,16
R_B_BS0- 8,16
SMDDR_VTERM
RN38 8P4R-56R
RN39 8P4R-56R
RN40 8P4R-56R
RN37 8P4R-56R
R_B_MA13 R145 56_0402
8,16 R_B_BMWEA- R_B_BMWEA- R144 56_0402
R_B_MA12 R146 56_0402
RN41 8P4R-56R
RN36 8P4R-56R
7,16 CKE3
7,15 CKE1
7,15 CKE0
7,16 CKE2
SM_CS-1
SM_CS-0 7,15
SM_CS-1 7,15
SM_CS-3 7,16
SM_CS-2 7,16
Layout note: Place one cap close to every 2 pullup resistors terminated to +V1.25.
SMDDR_VTERM
0.1UF_0402
0.01UF_0402
10UF/10V_0805
SMDDR_VTERM
RN14 8P4R-56R
RN16 8P4R-56R
RN15 8P4R-56R
RN13 8P4R-56R
R_A_SRASA- 8,15
R_A_SCASA- 8,15
R_A_BS1- 8,15
R_A_BS0- 8,15
R_A_MA12 R143 56_0402
8,15 R_A_BMWEA- R_A_BMWEA- R141 56_0402
R_A_MA13 R142 56_0402
MICRO-STAR INT'L CO.,LTD.
Title
DDR Termination
Size Custom
Document Number MS-1012
Rev 1.1
Date: Friday, January 21, 2005
Sheet 17 of 39



Company	MICRO-STAR INT'L CO.,LTD.
Title	CLOCK Generator (ICS954206)
Size	Custom
Document Number	MS-1012
Rev	1.1
Date:	Friday, January 21, 2005
Sheet	18 of 39


+2_5VRUN
R1
2.2K_0402
Q2
7 VGA_DATA
N-BSS138_SOT23
+2_5VRUN
R2
2.2K_0402
Q1
7 VGA_CLK
N-BSS138_SOT23
+3VRUN
D35
RB551V-30
C611
0.1UF_0402
+CRT3V
U1
7 VGA_HSYNC
VGA_HSYNC
NC7SZ125_SOT23-5
+CRT3V
U2
7 VGA_VSYNC
VGA_VSYNC
NC7SZ125_SOT23-5
+5VRUN
D11
RB551V-30
R54
2.2K_0402
R5
2.2K_0402
7 VGA_RED
7 VGA_GRN
7 VGA_BLU
L5 60S/0603
L6 60S/0603
L7 60S/0603
R51 100
R64 100
R52 33_0402
R60 33_0402
R_HSYN
R_VSYN
R42
150_1%_0402
R45
150_1%_0402
R47
150_1%_0402
C34
22PF_0402_NC
C41
22PF_0402_NC
C48
22PF_0402_NC
C35
22PF_0402
C43
22PF_0402
C49
22PF_0402
C60
22PF_0402
C71
22PF_0402
C65
22PF_0402
C70
22PF_0402
LRED
LGREEN
LBLUE
DDC2BD
DDC2BC
HSYN
VSYN
CRT5V
CRT5V
C69
0.1UF_0402
P1
DDC2BD
HSYN
VSYN
DDC2BC
CONN-D-SUB15F_blue-3
N51-15F0231-F02
VGA_15P_DZ11A9
FOR EMI
+3VSUS
SW1
R179
10K_0402
LID-
LID-
13,29
CASHTEC_FR3S1520_REED_SW
<CONN NAME>
C2
2200PF
+3VRUN
+2_5VRUN
R29
2.2K
7 ELON
R35
100K
Q6
N-BSS138_SOT23
LID-
+3VSUS
7/18
U3
NC7SC08_SC70_5
LI-ON
+3VRUN
+V3.3S_LCD
L10
80L3_100_0805
C612
10UF/10V_0805
Q7
P-Si2307DS_SOT23
R57
1M
LVDS_VDDEN#
C68
0.01UF_0402
R56
100K
LVDS_VDDEN#_R
C46
0.1UF_0402
C44
22UF/10V_1206
+V3.3_LVDS_PANEL
13 P_ID0
R127
47_0805
7 LVDS_VDDEN
Q8
2N7002
SOT23SGD_T
R66
100K
LVDS_VDDEN#
Q30
2N7002
SOT23SGD_T
+3VRUN
R411
10K_0402
R131
0
JLCD1
TXL0-
TXL0+
TXL1-
TXL1+
L_TXL2-
L_TXL2+
L_TXL_CLK-
L_TXL_CLK+
L_TXL0-
L_TXL0+
L_TXL1-
L_TXL1+
LDDC_CLK_V
LDDC_DATA_V
TXL2-
TXL2+
TXL_CLK-
TXL_CLK+
For EMI
CONN-LCD20P-0.5pitch
NSQ-20F0020-H21
LVC_D20SFYG
R136
0_NC
R424
0R
+3VRUN
+V3.3_LVDS_PANEL
+2_5VRUN
R4
2.2K_0402
Q4
N-BSS138_SOT23
7 LDDC_CLK
+3VRUN
R10
2.2K_0402
LDDC_CLK_V
+2_5VRUN
R3
2.2K_0402
Q3
N-BSS138_SOT23
7 LDDC_DATA
+3VRUN
R9
2.2K_0402
LDDC_DATA_V
PWR_SRC
L3
80L2_100_0805
For EMI
C16
10UF/25V_1210
C19
0.1UF
C18
0.1UF
CN1
LI-ON
29 BR-AD-ADJ
C17
0.1UF_0402
C14
10PF_0402_NC
BOX/HEADER/1*6
N32-1060170-H06
53398_06
MICRO-STAR INT'L CO.,LTD.
Title
CRT & LVDS CONN
Size
Custom
Document Number
MS-1012
Rev
1.1
Date:
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19
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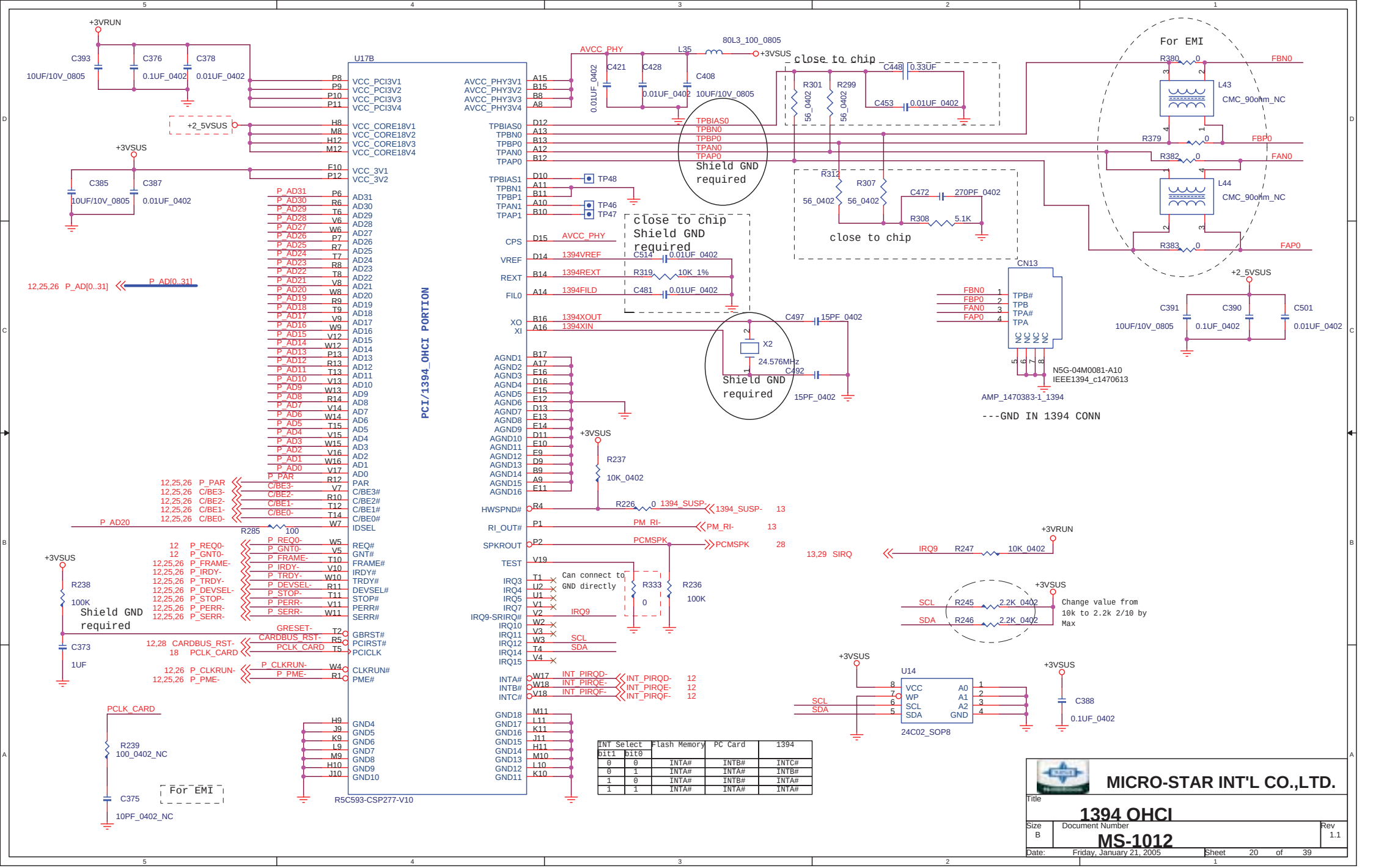
U17B
PCI/1394_OHCI PORTION
R5C593-CSP277-V10
VCC_PCI3V1
VCC_PCI3V2
VCC_PCI3V3
VCC_PCI3V4
VCC_CORE18V1
VCC_CORE18V2
VCC_CORE18V3
VCC_CORE18V4
VCC_3V1
VCC_3V2
AVCC_PHY3V1
AVCC_PHY3V2
AVCC_PHY3V3
AVCC_PHY3V4
TPBIAS0
TPBN0
TPBP0
TPAN0
TPAP0
TPBIAS1
TPBN1
TPBP1
TPAN1
TPAP1
CPS
VREF
REXT
FIL0
XO
XI
AGND1
AGND2
AGND3
AGND4
AGND5
AGND6
AGND7
AGND8
AGND9
AGND10
AGND11
AGND12
AGND13
AGND14
AGND15
AGND16
HWSPND#
RI_OUT#
SPKROUT
TEST
IRQ3
IRQ4
IRQ5
IRQ7
IRQ9-SRIRQ#
IRQ10
IRQ11
IRQ12
IRQ14
IRQ15
INTA#
INTB#
INTC#
GND18
GND17
GND16
GND15
GND14
GND13
GND12
GND11
GND4
GND5
GND6
GND7
GND8
GND9
GND10
AD31
AD30
AD29
AD28
AD27
AD26
AD25
AD24
AD23
AD22
AD21
AD20
AD19
AD18
AD17
AD16
AD15
AD14
AD13
AD12
AD11
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
PAR
C/BE3#
C/BE2#
C/BE1#
C/BE0#
IDSEL
REQ#
GNT#
FRAME#
IRDY#
TRDY#
DEVSEL#
STOP#
PERR#
SERR#
GBRST#
PCIRST#
PCICLK
CLKRUN#
PME#
P_AD[0..31]
P_PAR
P_REQ0-
P_GNT0-
P_FRAME-
P_IRDY-
P_TRDY-
P_DEVSEL-
P_STOP-
P_PERR-
P_SERR-
GRESET-
CARDBUS_RST-
PCLK_CARD
P_CLKRUN-
P_PME-
+3VRUN
+2_5VSUS
+3VSUS
C393
C376
C378
10UF/10V_0805
0.1UF_0402
0.01UF_0402
C385
C387
C421
C428
C408
AVCC_PHY
L35
80L3_100_0805
close to chip
Shield GND required
TP48
TP46
TP47
C514
R319
10K_1%
C481
1394VREF
1394REXT
1394FILD
1394XOUT
1394XIN
C497
15PF_0402
X2
24.576MHz
C492
R237
10K_0402
R226
0_1394_SUSP-
PM_RI-
PCMSPK
R333
R236
100K
Can connect to GND directly
INT_PIRQD-
INT_PIRQE-
INT_PIRQF-
R301
R299
56_0402
C448
0.33UF
C453
R312
R307
C472
270PF_0402
R308
5.1K
For EMI
R380
R379
R382
R383
FBN0
FBP0
FAN0
FAP0
L43
L44
CMC_90ohm_NC
CN13
TPB#
TPB
TPA#
TPA
NC
N5G-04M0081-A10
IEEE1394_c1470613
AMP_1470383-1_1394
---GND IN 1394 CONN
C391
C390
C501
R285
100
R238
C373
1UF
R239
100_0402_NC
C375
10PF_0402_NC
IRQ9
R247
10K_0402
13,29 SIRQ
SCL
SDA
R245
R246
2.2K_0402
Change value from 10k to 2.2k 2/10 by Max
U14
VCC
WP
A0
A1
A2
GND
24C02_SOP8
C388
0.1UF_0402
INT Select
bit1
bit0
Flash Memory
PC Card
1394
0 0 INTA# INTB# INTC#
0 1 INTA# INTA# INTB#
1 0 INTA# INTB# INTA#
1 1 INTA# INTA# INTA#
MICRO-STAR INT'L CO.,LTD.
Title
1394 OHCI
Size B
Document Number
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Rev 1.1
Date: Friday, January 21, 2005
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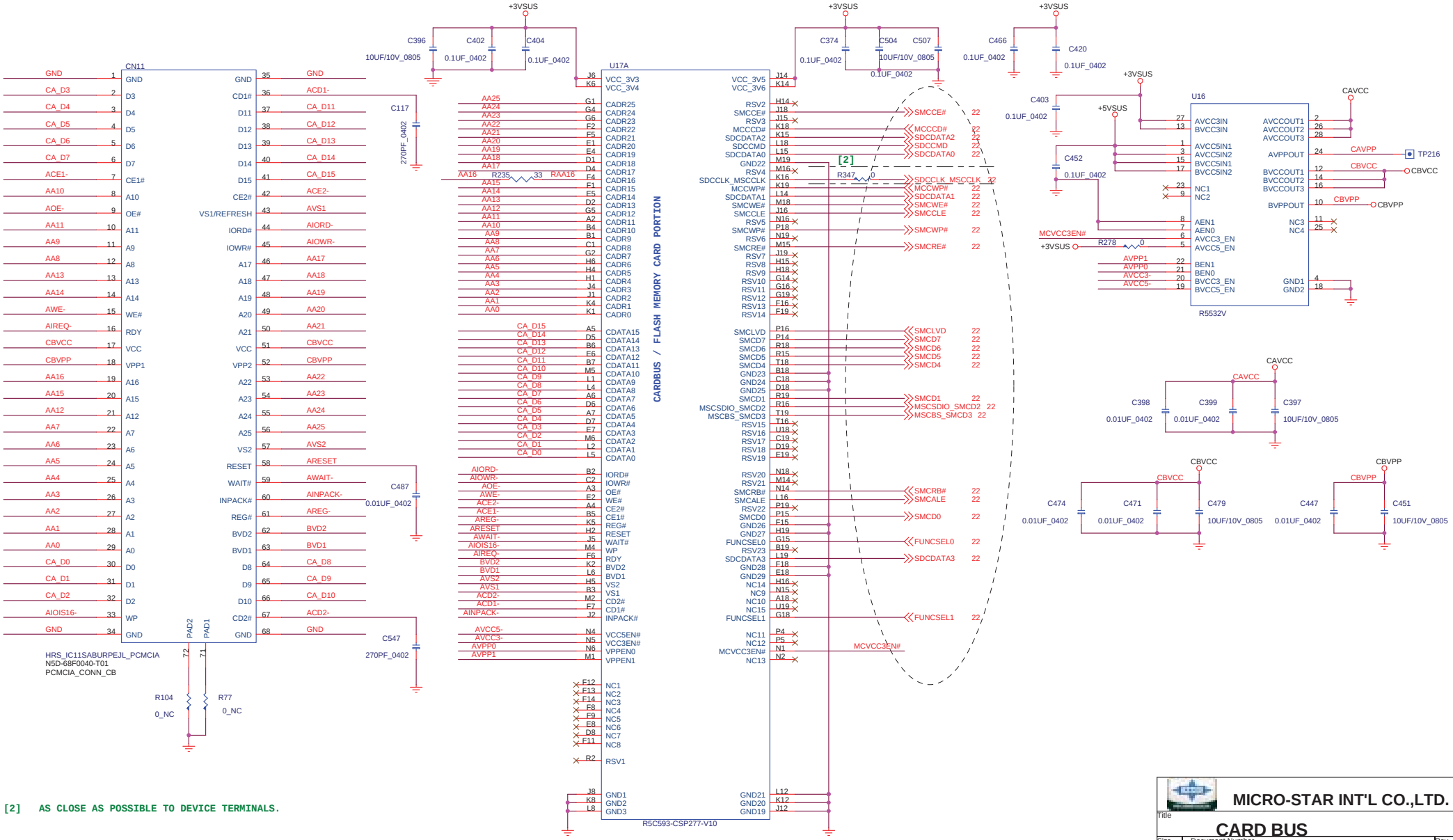
CN11
HRS_IC11SABURPEJL_PCMCIA
N5D-68F0040-T01
PCMCIA_CONN_CB
U17A
CARDBUS / FLASH MEMORY CARD PORTION
R5C593-CSP277-V10
U16
R5532V
[2] AS CLOSE AS POSSIBLE TO DEVICE TERMINALS.
MICRO-STAR INT'L CO.,LTD.
CARD BUS
MS-1012
Date: Friday, January 21, 2005
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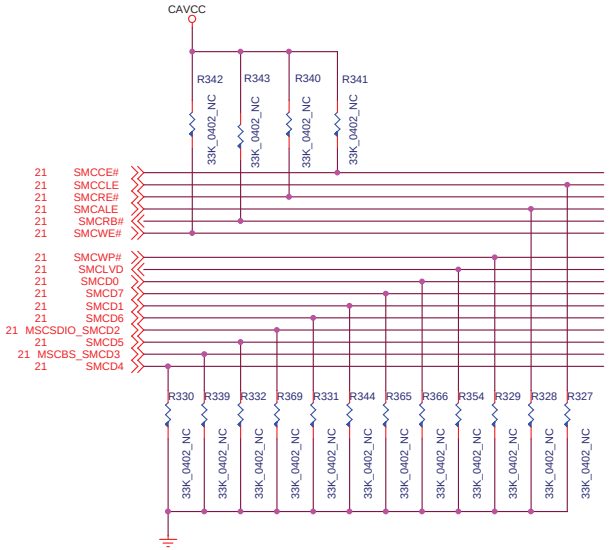

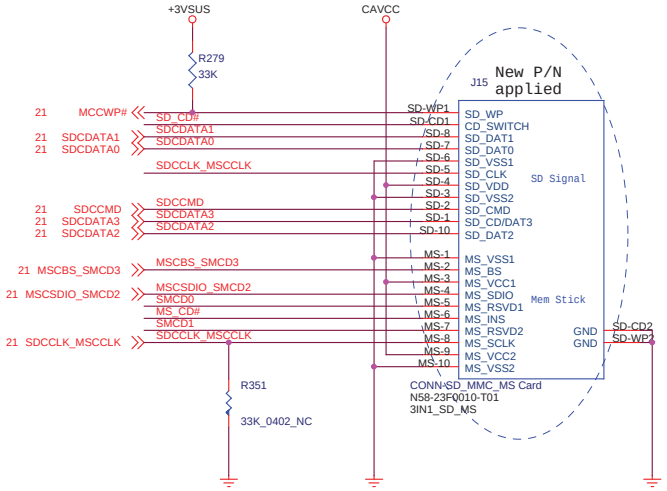

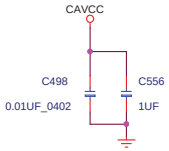

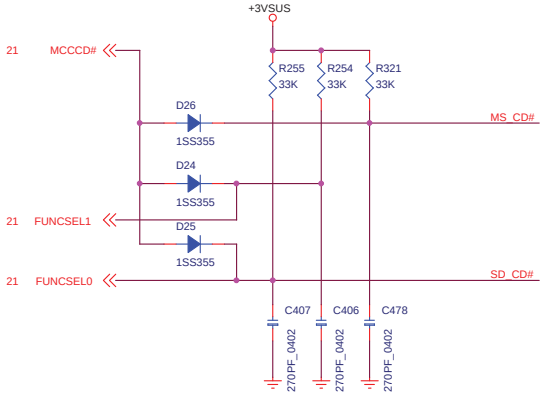

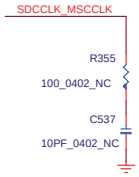

Memory Card Detect Logic Table

MS_CD#	SM_CD#	SD_CD#		Detected Card
0	0	0	->	INHIBIT
0	0	1	->	INHIBIT
0	1	0	->	INHIBIT
0	1	1	->	MemoryStick Detected
1	0	0	->	INHIBIT
1	0	1	->	SmartMedia Detected
1	1	0	->	SD/MMC Detected
1	1	1	->	Not Detected

DO NOT INSERT SMARTMEDIA, SD/MMC AND MEMORYSTICK SIMULTANEOUSLY.

MICRO-STAR INT'L CO.,LTD.

Title: FLASH CARD CONN

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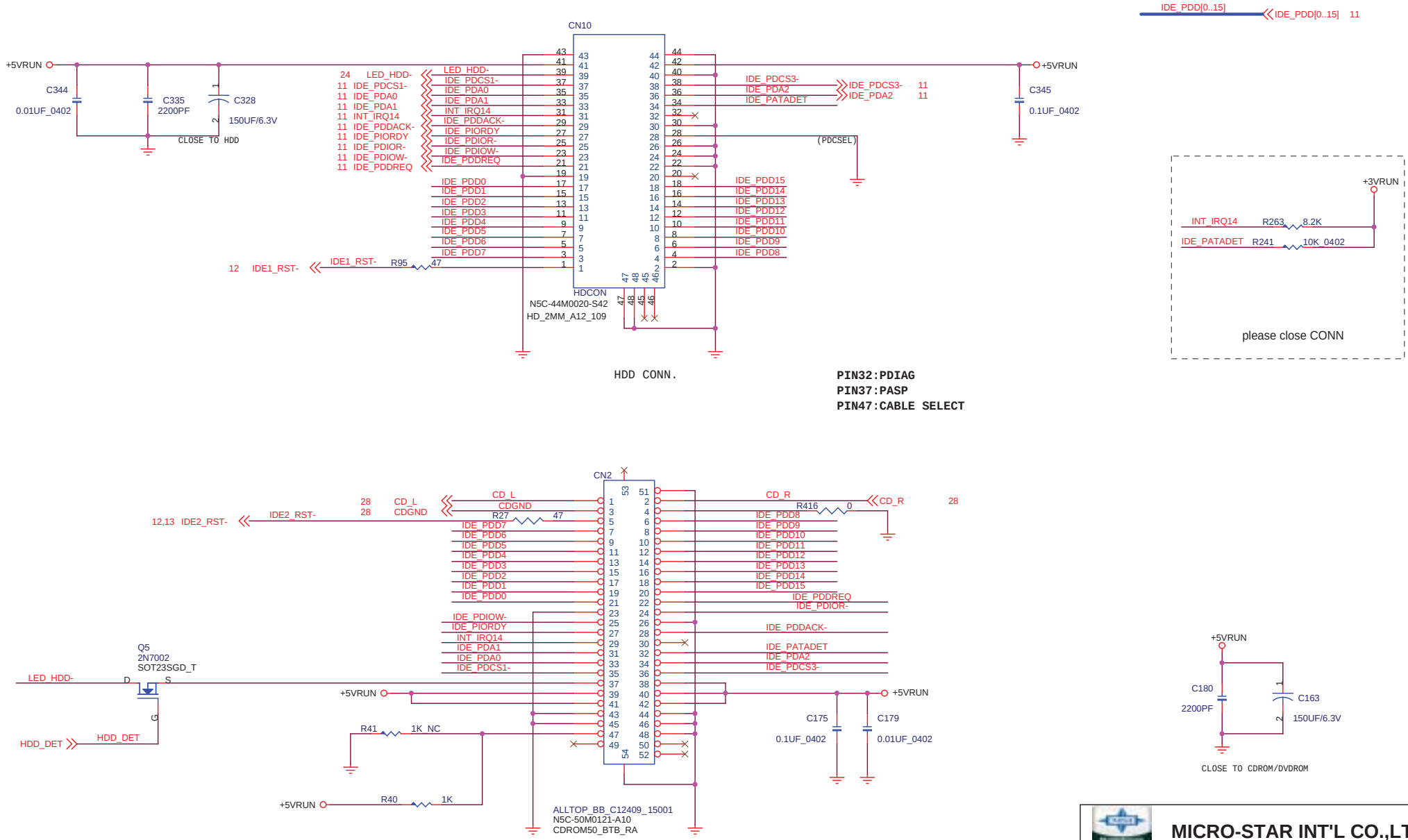

Title	HDD & CDROM CONN
Size	B
Document Number	MS-1012
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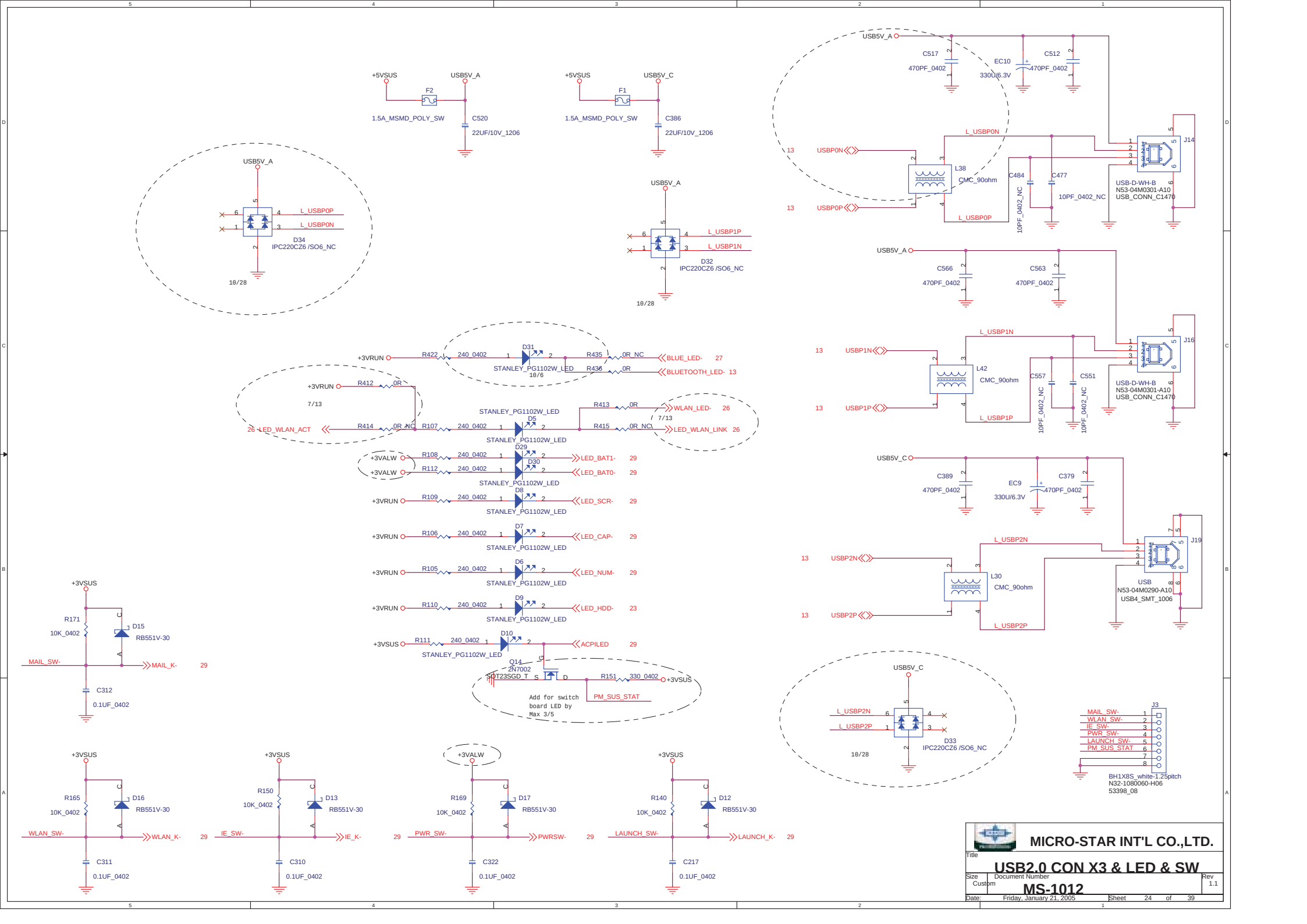
MICRO-STAR INT'L CO.,LTD.


+5VSUS
USB5V_A
F2
1.5A_MSMD_POLY_SW
C520
22UF/10V_1206
+5VSUS
USB5V_C
F1
1.5A_MSMD_POLY_SW
C386
22UF/10V_1206
USB5V_A
L_USBP0P
L_USBP0N
D34
IPC220CZ6 /SO6_NC
10/28
USB5V_A
L_USBP1P
L_USBP1N
D32
IPC220CZ6 /SO6_NC
10/28
USB5V_A
C517
470PF_0402
EC10
330U/6.3V
C512
470PF_0402
L_USBP0N
13 USBP0N
13 USBP0P
L38
CMC_90ohm
C484
C477
10PF_0402_NC
10PF_0402_NC
L_USBP0P
J14
USB-D-WH-B
N53-04M0301-A10
USB_CONN_C1470
USB5V_A
C566
470PF_0402
C563
470PF_0402
L_USBP1N
13 USBP1N
13 USBP1P
L42
CMC_90ohm
C557
C551
10PF_0402_NC
10PF_0402_NC
L_USBP1P
J16
USB-D-WH-B
N53-04M0301-A10
USB_CONN_C1470
USB5V_C
C389
470PF_0402
EC9
330U/6.3V
C379
470PF_0402
L_USBP2N
13 USBP2N
13 USBP2P
L30
CMC_90ohm
L_USBP2P
J19
USB
N53-04M0290-A10
USB4_SMT_1006
+3VRUN
R422
240_0402
D31
STANLEY_PG1102W_LED
10/6
R435
0R_NC
BLUE_LED-
27
R436
0R
BLUETOOTH_LED-
13
+3VRUN
R412
0R
7/13
26 LED_WLAN_ACT
R414
0R_NC
R107
240_0402
D5
STANLEY_PG1102W_LED
R413
0R
WLAN_LED-
26
7/13
R415
0R_NC
LED_WLAN_LINK
26
+3VALW
R108
240_0402
D29
LED_BAT1-
29
+3VALW
R112
240_0402
D30
LED_BAT0-
29
STANLEY_PG1102W_LED
+3VRUN
R109
240_0402
D8
STANLEY_PG1102W_LED
LED_SCR-
29
+3VRUN
R106
240_0402
D7
STANLEY_PG1102W_LED
LED_CAP-
29
+3VRUN
R105
240_0402
D6
STANLEY_PG1102W_LED
LED_NUM-
29
+3VRUN
R110
240_0402
D9
STANLEY_PG1102W_LED
LED_HDD-
23
+3VSUS
R111
240_0402
D10
STANLEY_PG1102W_LED
ACPILED
29
Q14
2N7002
SOT23SGD_T
R151
330_0402
+3VSUS
Add for switch
board LED by
Max 3/5
PM_SUS_STAT
+3VSUS
R171
10K_0402
D15
RB551V-30
MAIL_SW-
MAIL_K-
29
C312
0.1UF_0402
+3VSUS
R165
10K_0402
D16
RB551V-30
WLAN_SW-
WLAN_K-
29
C311
0.1UF_0402
+3VSUS
R150
10K_0402
D13
RB551V-30
IE_SW-
IE_K-
29
C310
0.1UF_0402
+3VALW
R169
10K_0402
D17
RB551V-30
29 PWR_SW-
PWRSW-
29
C322
0.1UF_0402
+3VSUS
R140
10K_0402
D12
RB551V-30
LAUNCH_SW-
LAUNCH_K-
29
C217
0.1UF_0402
USB5V_C
L_USBP2N
L_USBP2P
D33
IPC220CZ6 /SO6_NC
10/28
J3
MAIL_SW-
WLAN_SW-
IE_SW-
PWR_SW-
LAUNCH_SW-
PM_SUS_STAT
BH1X8S_white-1.25pitch
N32-1080060-H06
53398_08
MICRO-STAR INT'L CO.,LTD.
Title
USB2.0 CON X3 & LED & SW
Size
Custom
Document Number
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1.1
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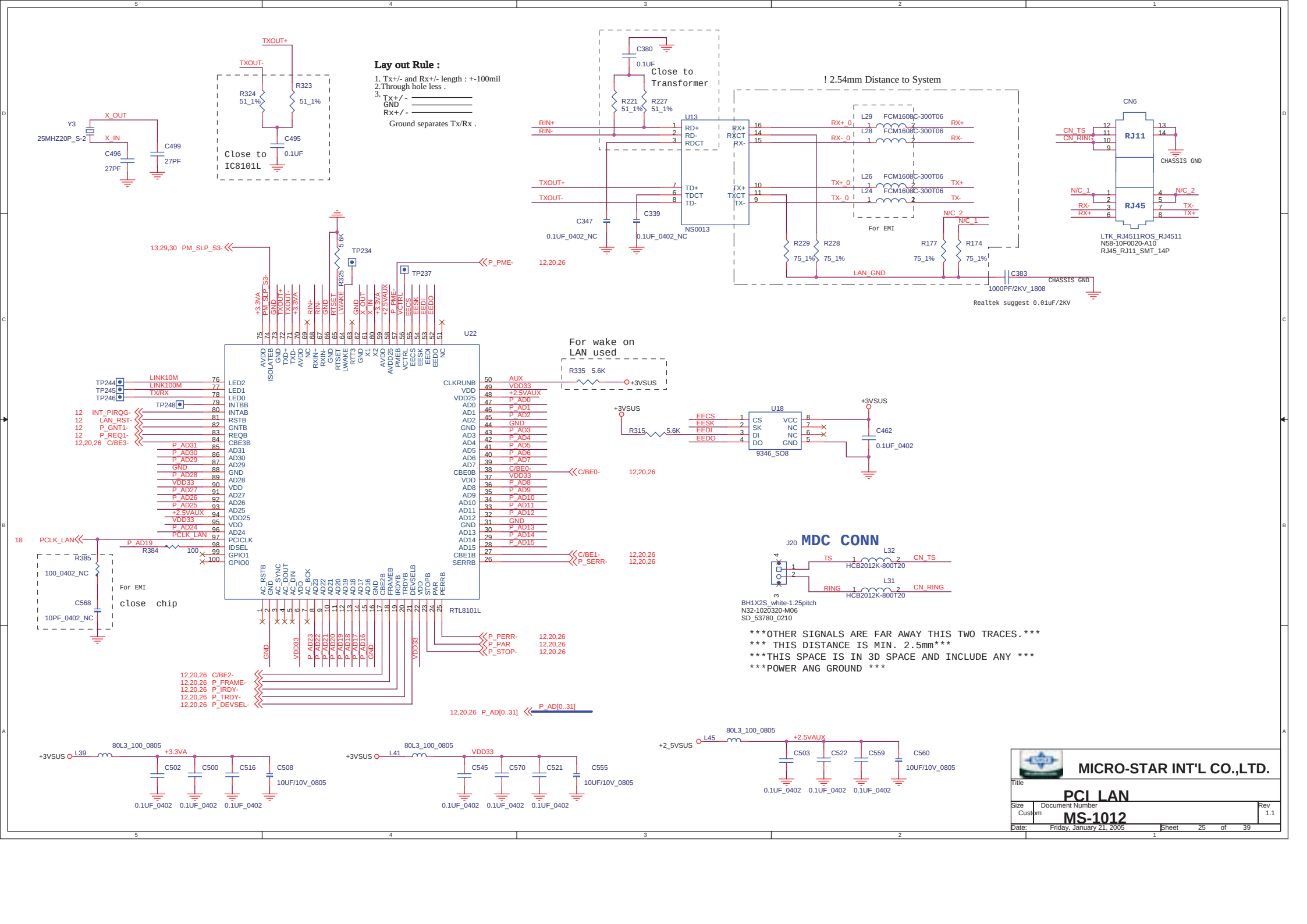
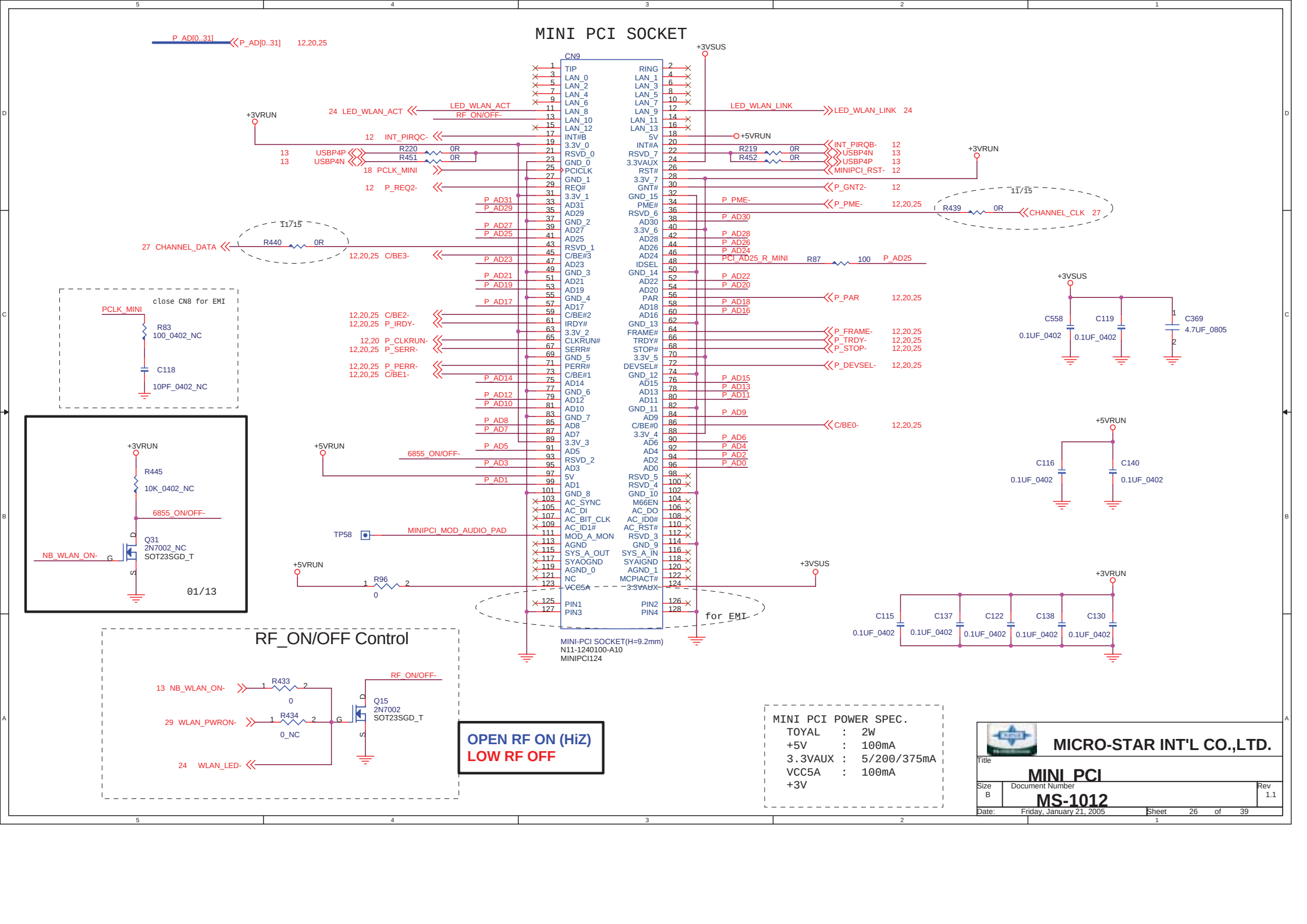
39


Lay out Rule :
1. Tx+/- and Rx+/- length : +-100mil
2.Through hole less .
3. Tx+/- ——————
GND ——————
Rx+/- ——————
Ground separates Tx/Rx .
Close to IC8101L
Close to Transformer
! 2.54mm Distance to System
For wake on LAN used
For EMI
close chip
MDC CONN
OTHER SIGNALS ARE FAR AWAY THIS TWO TRACES.
*** THIS DISTANCE IS MIN. 2.5mm***
***THIS SPACE IS IN 3D SPACE AND INCLUDE ANY ***
***POWER ANG GROUND ***
MICRO-STAR INT'L CO.,LTD.
PCI_LAN
MS-1012
Friday, January 21, 2005

MINI PCI SOCKET



MICRO-STAR INT'L CO.,LTD.

Title: MINI PCI

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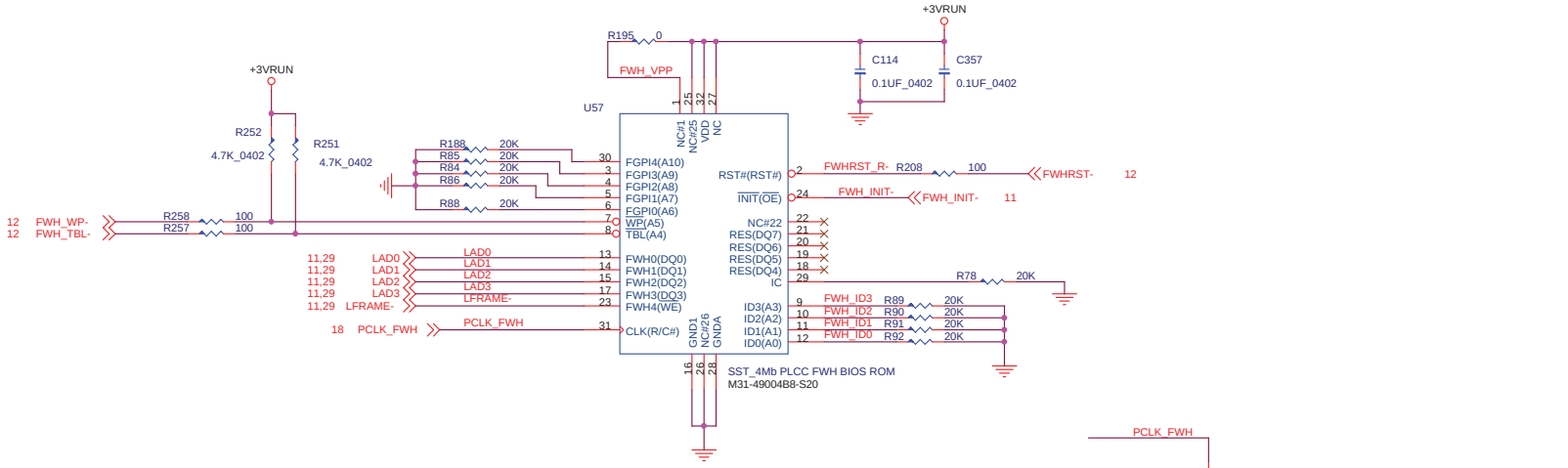
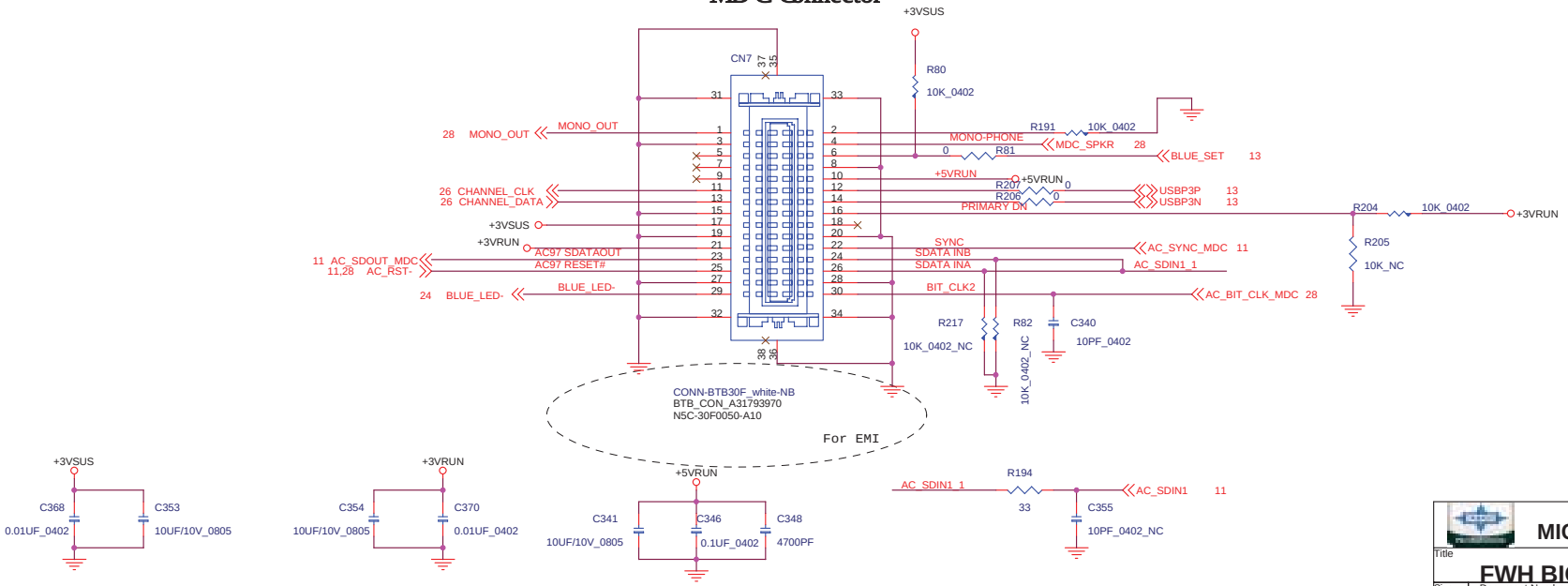
Date: Friday, January 21, 2005 | Sheet 26 of 39



MD C Connector

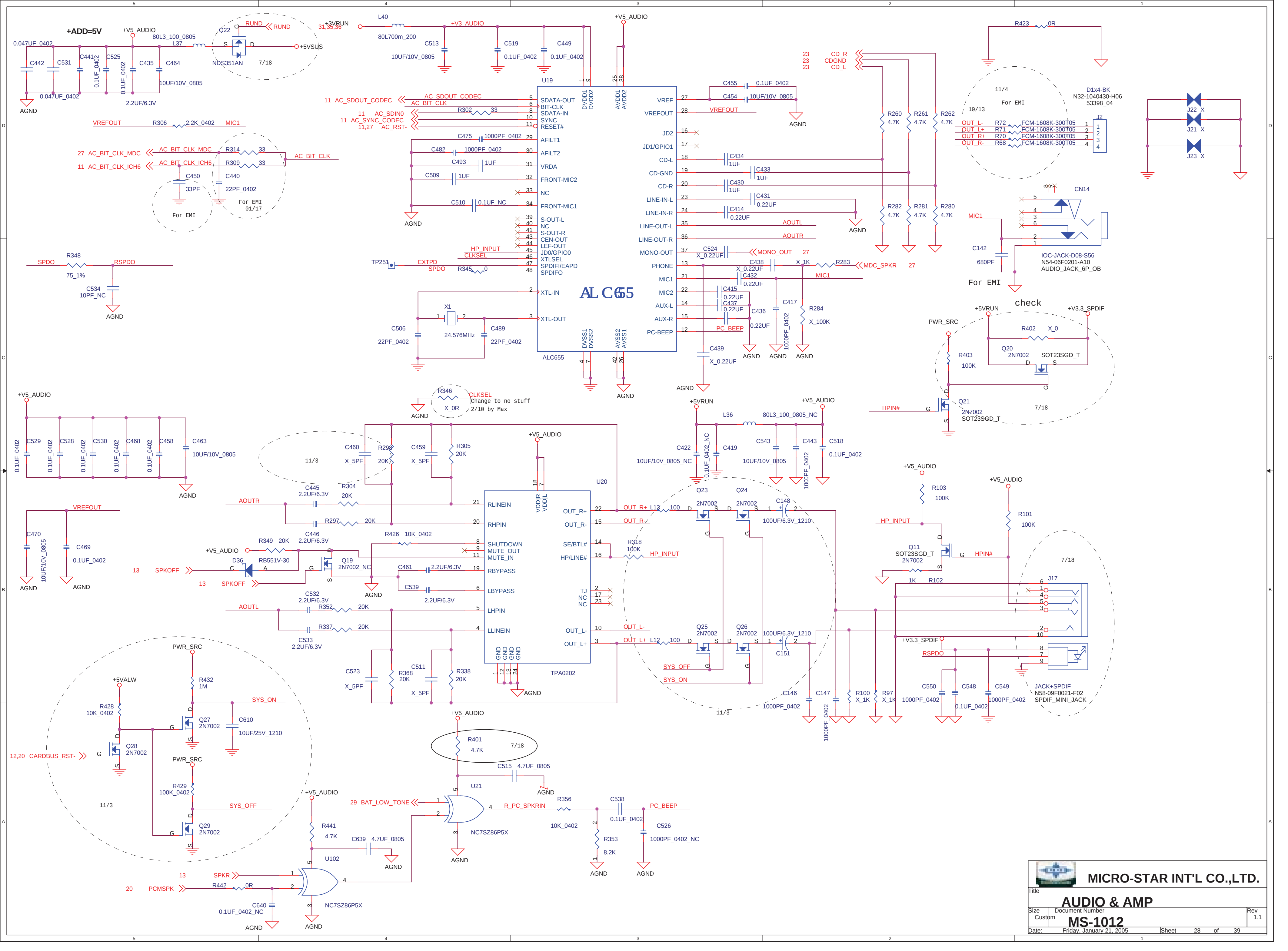


MICRO-STAR INT'L CO.,LTD.

Title: FWH BIOS & MDC CONN

Size: Custom | Document Number: MS-1012 | Rev: 1.1

Date: Friday, January 21, 2005 | Sheet 27 of 39



MICRO-STAR INT'L CO.,LTD.

Title: AUDIO & AMP

Size	Document Number	Rev
Custom	MS-1012	1.1

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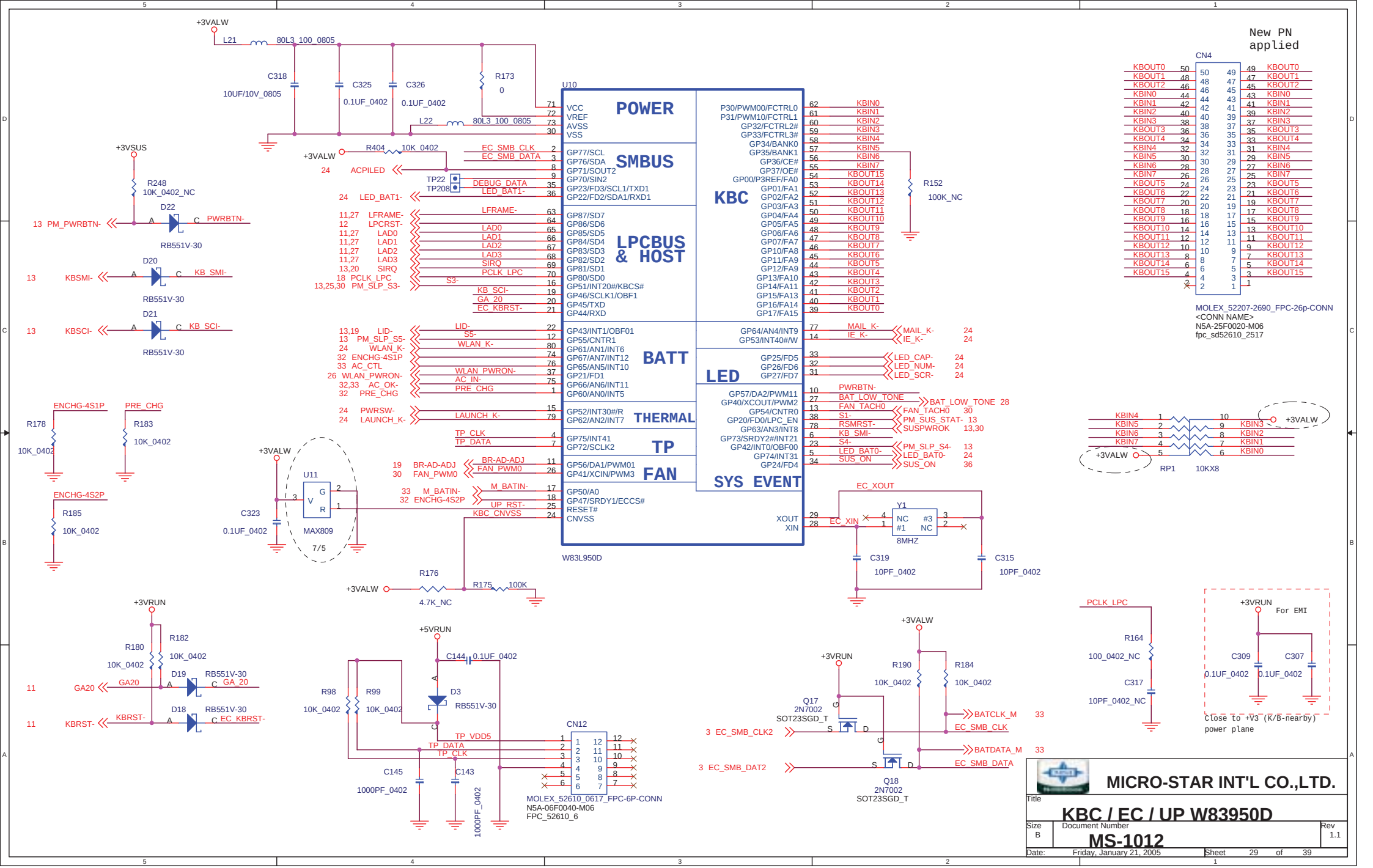
New PN applied
U10
POWER
SMBUS
LPCBUS & HOST
KBC
BATT
LED
THERMAL
TP
FAN
SYS EVENT
W83L950D
CN4
MOLEX_52207-2690_FPC-26p-CONN
<CONN NAME>
N5A-25F0020-M06
fpc_sd52610_2517
CN12
MOLEX_52610_0617_FPC-6P-CONN
N5A-06F0040-M06
FPC_52610_6
MAX809
RP1 10KX8
Y1 8MHZ
Q17 2N7002 SOT23SGD_T
Q18 2N7002 SOT23SGD_T
Close to +V3 (K/B-nearby) power plane
MICRO-STAR INT'L CO.,LTD.
Title
KBC / EC / UP W83950D
Size B
Document Number MS-1012
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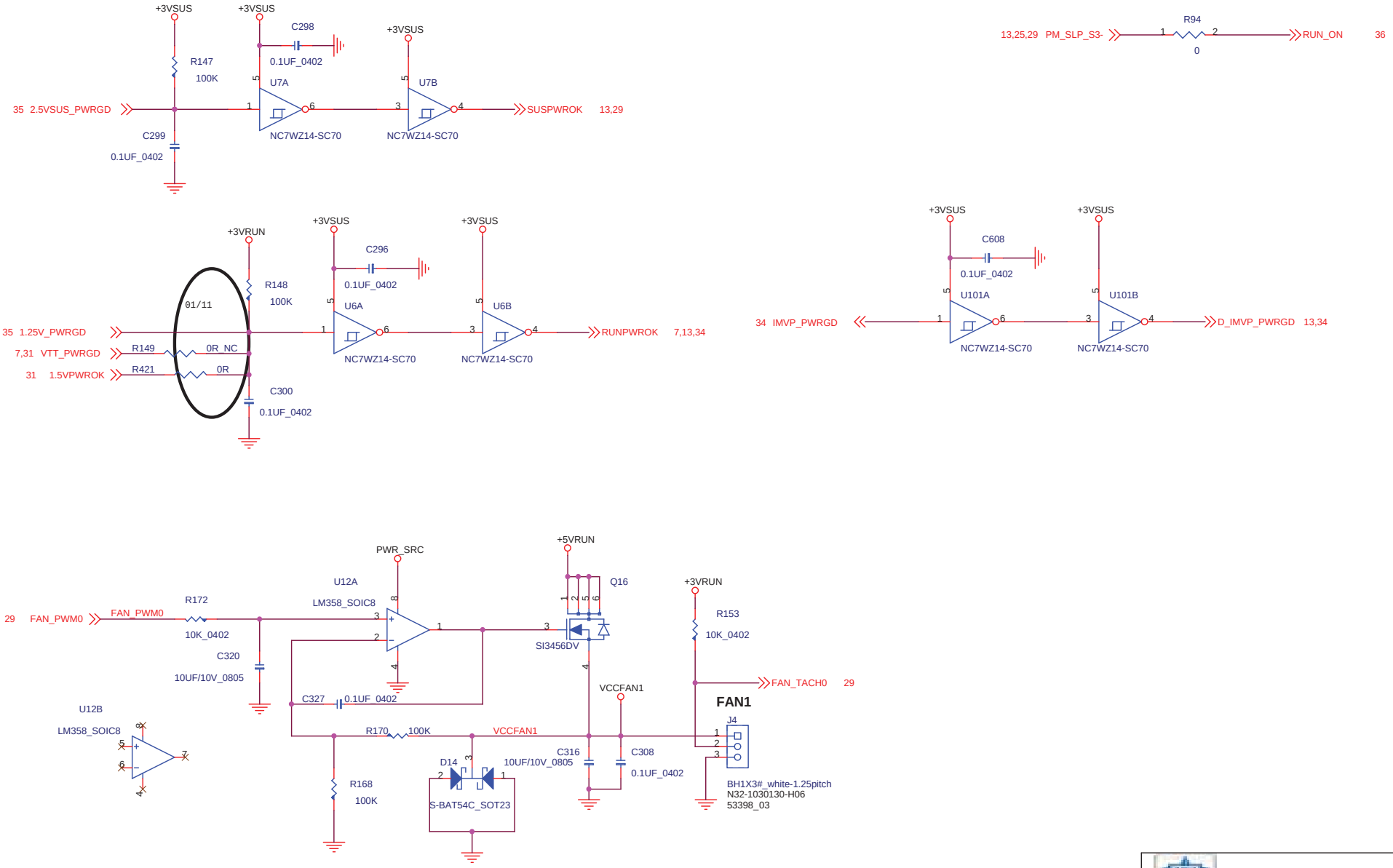

MICRO-STAR INT'L CO.,LTD.

Title: POWER GOOD & FAN

Size	Document Number	Rev
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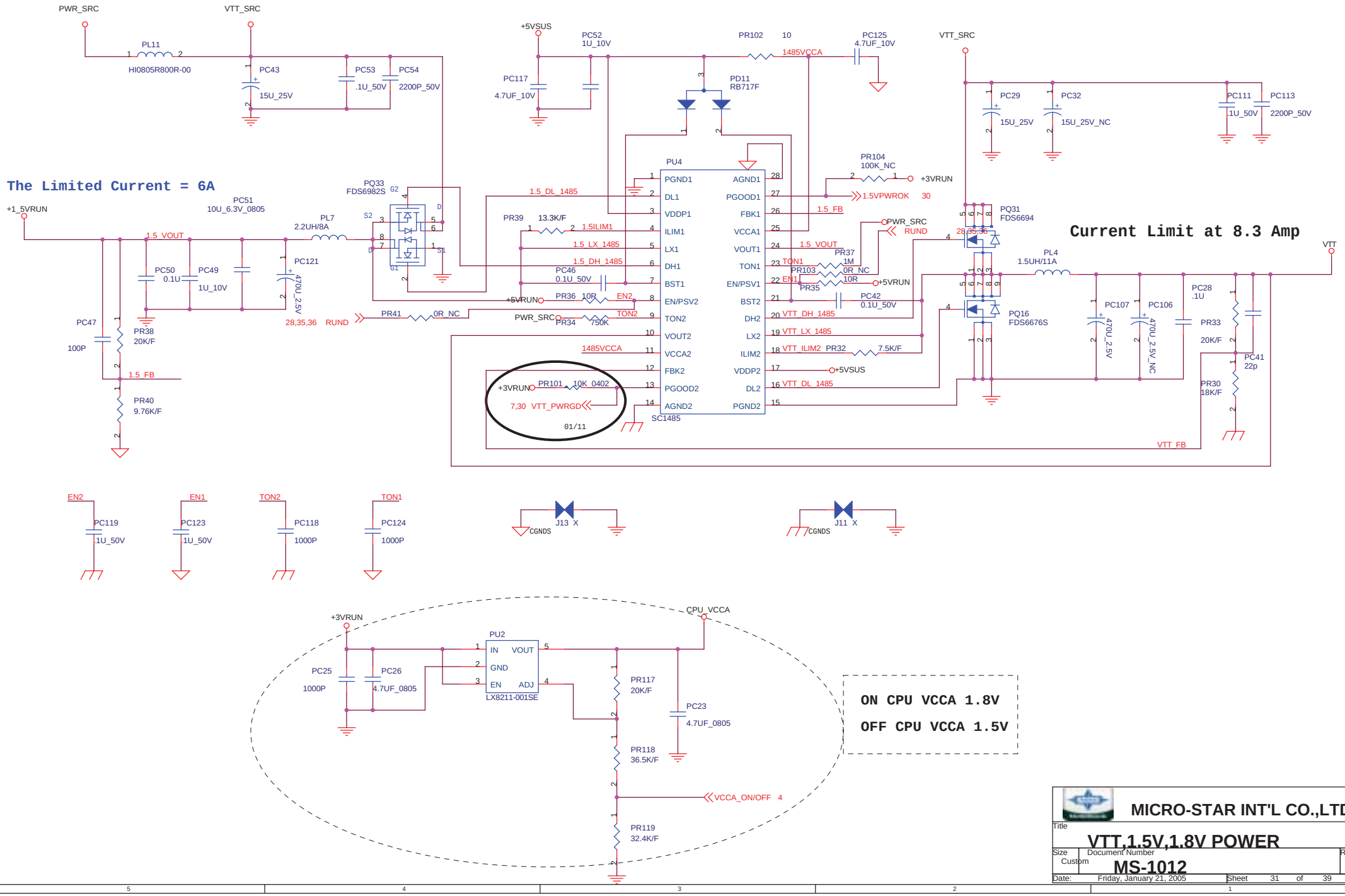
PWR_SRC
VTT_SRC
PL11
HI0805R800R-00
PC43
15U_25V
PC53
.1U_50V
PC54
2200P_50V
+5VSUS
PC52
1U_10V
PC117
4.7UF_10V
PR102
10
1485VCCA
PC125
4.7UF_10V
PD11
RB717F
VTT_SRC
PC29
15U_25V
PC32
15U_25V_NC
PC111
.1U_50V
PC113
2200P_50V
The Limited Current = 6A
Current Limit at 8.3 Amp
PU4
SC1485
PGND1
DL1
VDDP1
ILIM1
LX1
DH1
BST1
EN/PSV2
TON2
VOUT2
VCCA2
FBK2
PGOOD2
AGND2
AGND1
PGOOD1
FBK1
VCCA1
VOUT1
TON1
EN/PSV1
BST2
DH2
LX2
ILIM2
VDDP2
DL2
PGND2
PR104
100K_NC
+3VRUN
1.5VPWROK
30
1.5_FB
1.5_VOUT
PWR_SRC
RUND
PR37
1M
PR103
0R_NC
10R
+5VRUN
PR35
PC42
0.1U_50V
VTT_DH_1485
VTT_LX_1485
VTT_ILIM2
PR32
7.5K/F
+5VSUS
VTT_DL_1485
PQ31
FDS6694
PQ16
FDS6676S
PL4
1.5UH/11A
VTT
PC107
PC106
470U_2.5V
470U_2.5V_NC
PC28
.1U
PR33
20K/F
PR30
18K/F
PC41
22p
VTT_FB
PQ33
FDS6982S
PL7
2.2UH/8A
PC51
10U_6.3V_0805
+1_5VRUN
1.5_VOUT
PC50
0.1U
PC49
1U_10V
PC121
470U_2.5V
28,35,36
RUND
PC47
100P
PR38
20K/F
1.5_FB
PR40
9.76K/F
1.5_DL_1485
PR39
13.3K/F
1.5ILIM1
1.5_LX_1485
1.5_DH_1485
PC46
0.1U_50V
+5VRUN
PR36
10R
EN2
PWR_SRC
PR34
750K
TON2
PR41
0R_NC
1485VCCA
+3VRUN
PR101
10K_0402
7,30
VTT_PWRGD
01/11
EN2
PC119
1U_50V
EN1
PC123
1U_50V
TON2
PC118
1000P
TON1
PC124
1000P
J13 X
CGNDS
J11 X
CGNDS
+3VRUN
PU2
IN
VOUT
GND
EN
ADJ
LX8211-001SE
PC25
1000P
PC26
4.7UF_0805
CPU_VCCA
PR117
20K/F
PC23
4.7UF_0805
PR118
36.5K/F
VCCA_ON/OFF
4
PR119
32.4K/F
ON CPU VCCA 1.8V
OFF CPU VCCA 1.5V
MICRO-STAR INT'L CO.,LTD.
Title
VTT,1.5V,1.8V POWER
Size
Custom
Document Number
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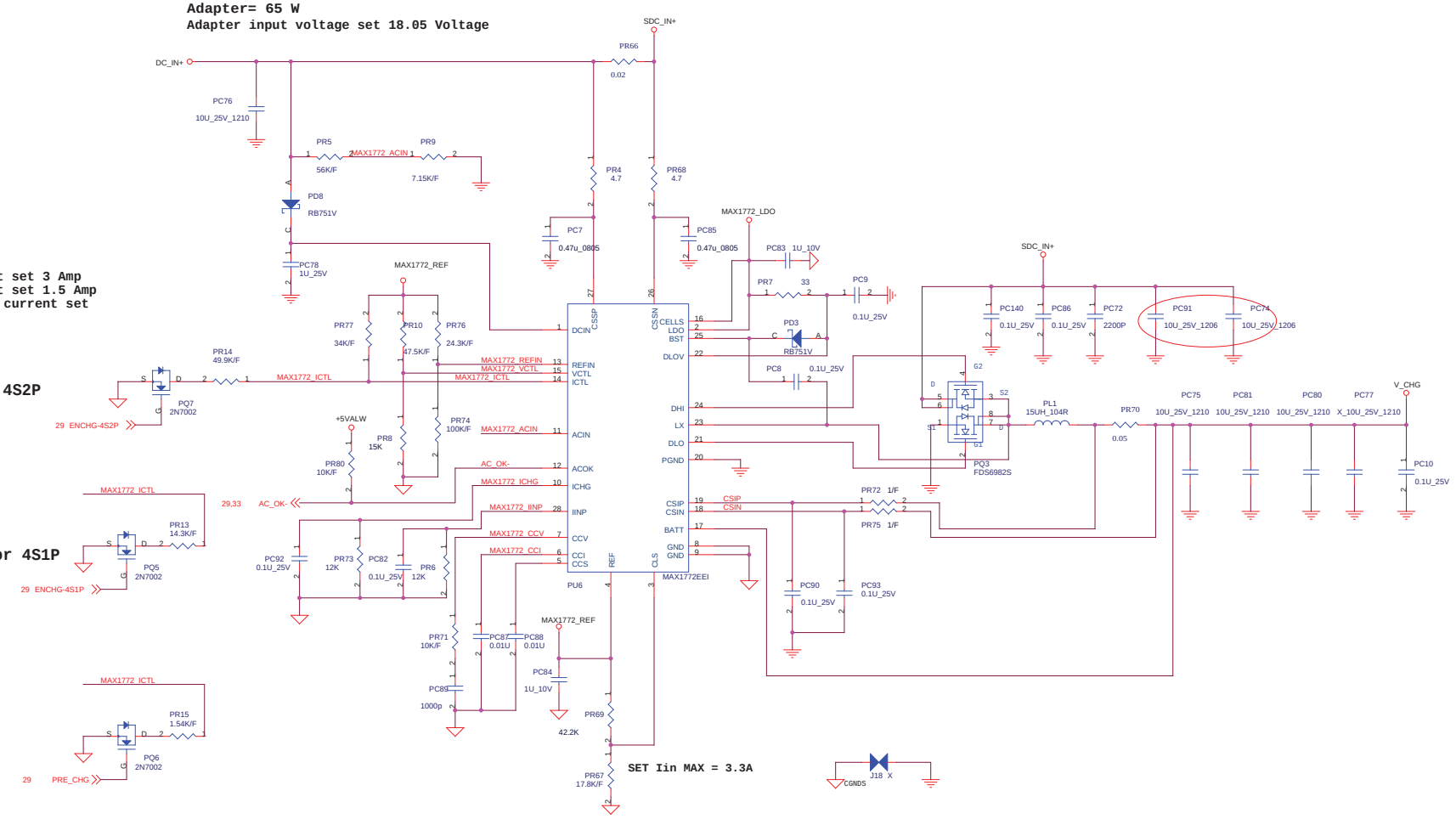
39

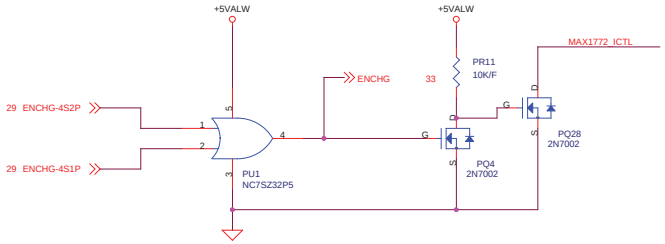
Adapter= 65 W
Adapter input voltage set 18.05 Voltage

4S2P: Charger current set 3 Amp
4S1P: Charger current set 1.5 Amp
Pre-charger: Charger current set 200mA

Charge to 3A for 4S2P

Charge to 1.5A for 4S1P





	4S1P	4S2P	Pre-changer
Pre-changer	1	0	1
Fast-changer	1	0	0
Fast-changer	0	1	0
Stop-changer	0	0	0

MICRO-STAR INT'L CO.,LTD.

Title: Battert Charger

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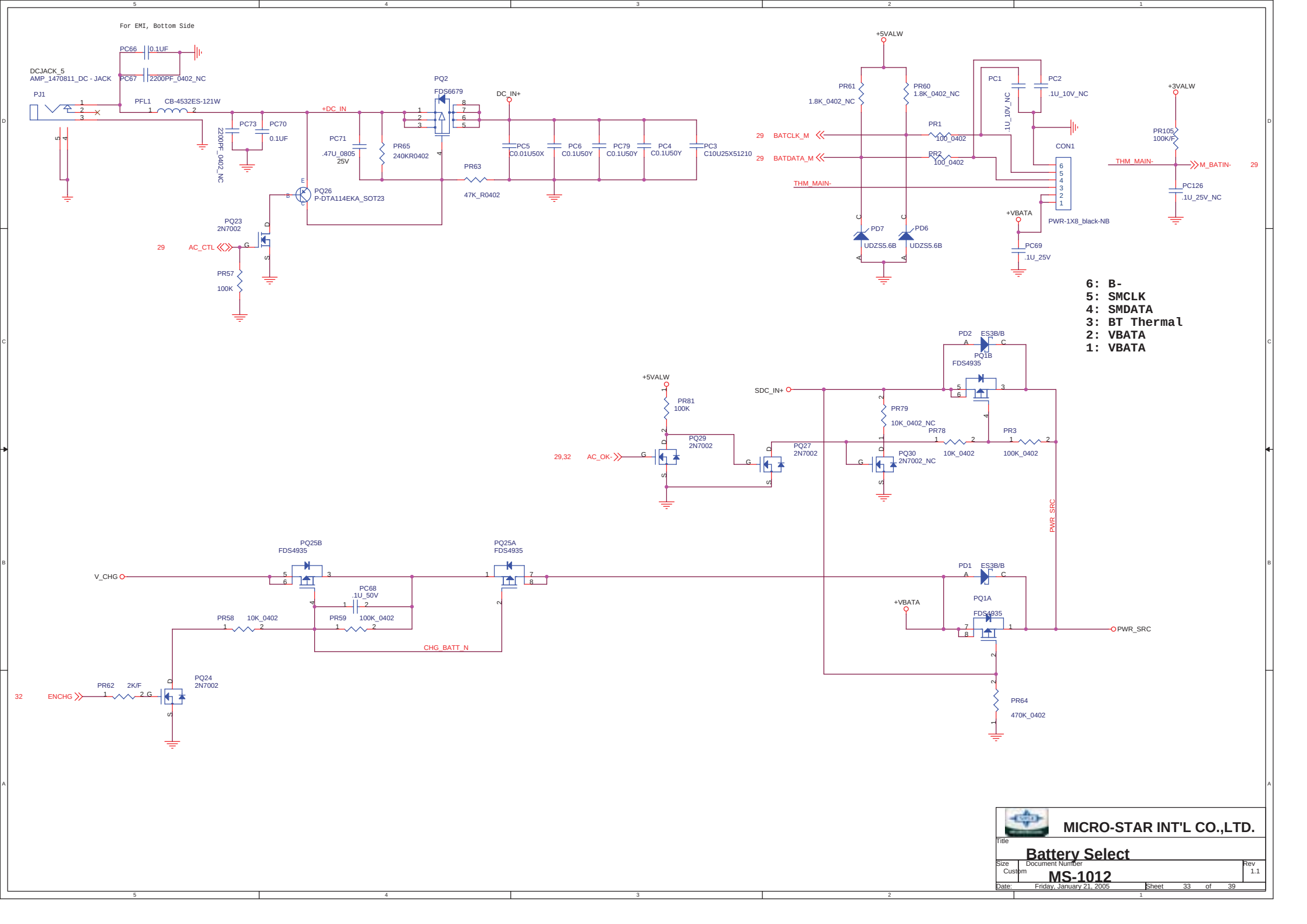

MICRO-STAR INT'L CO.,LTD.

Title: Battery Select

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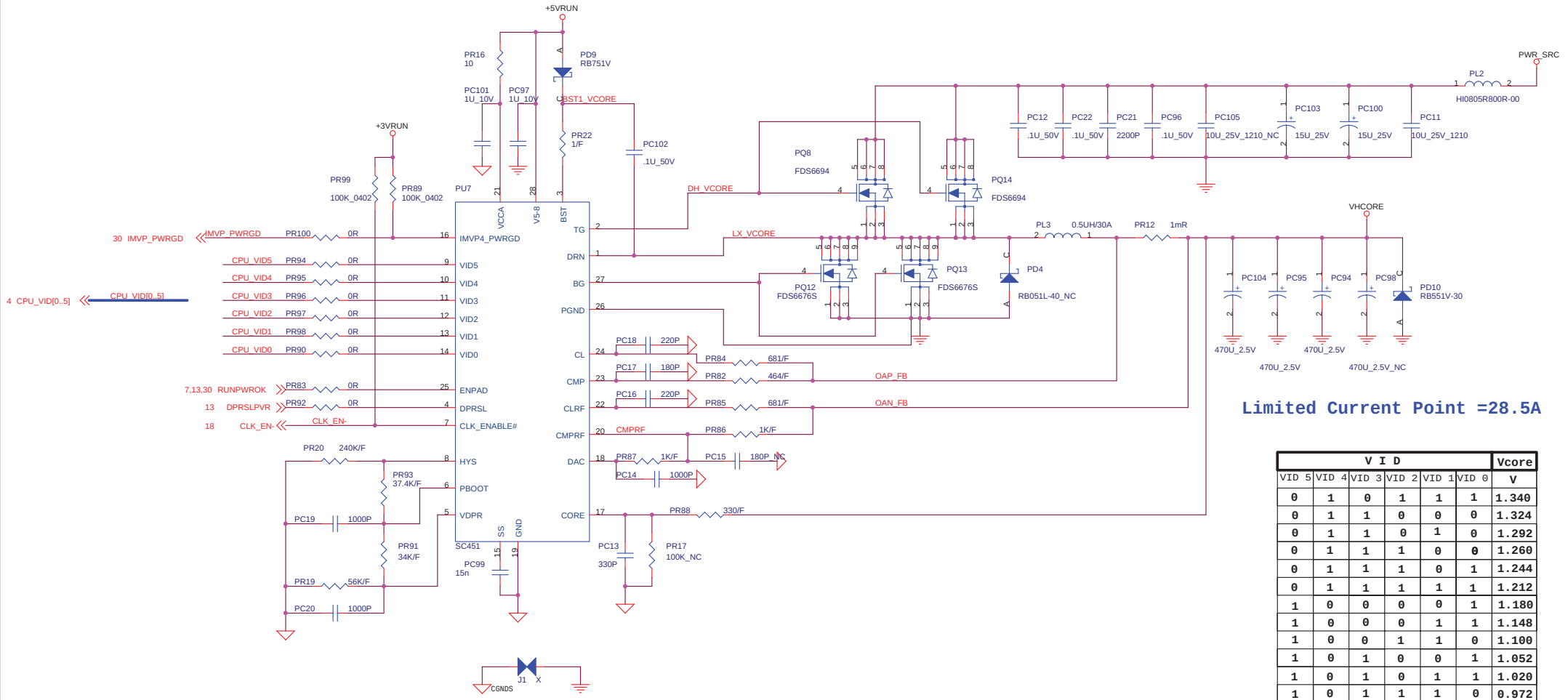

V I D						Vcore
VID 5	VID 4	VID 3	VID 2	VID 1	VID 0	V
0	1	0	1	1	1	1.340
0	1	1	0	0	0	1.324
0	1	1	0	1	0	1.292
0	1	1	1	0	0	1.260
0	1	1	1	0	1	1.244
0	1	1	1	1	1	1.212
1	0	0	0	0	1	1.180
1	0	0	0	1	1	1.148
1	0	0	1	1	0	1.100
1	0	1	0	0	1	1.052
1	0	1	0	1	1	1.020
1	0	1	1	1	0	0.972
1	1	0	0	0	0	0.940

MICRO-STAR INT'L CO.,LTD.

Title: CPU POWER

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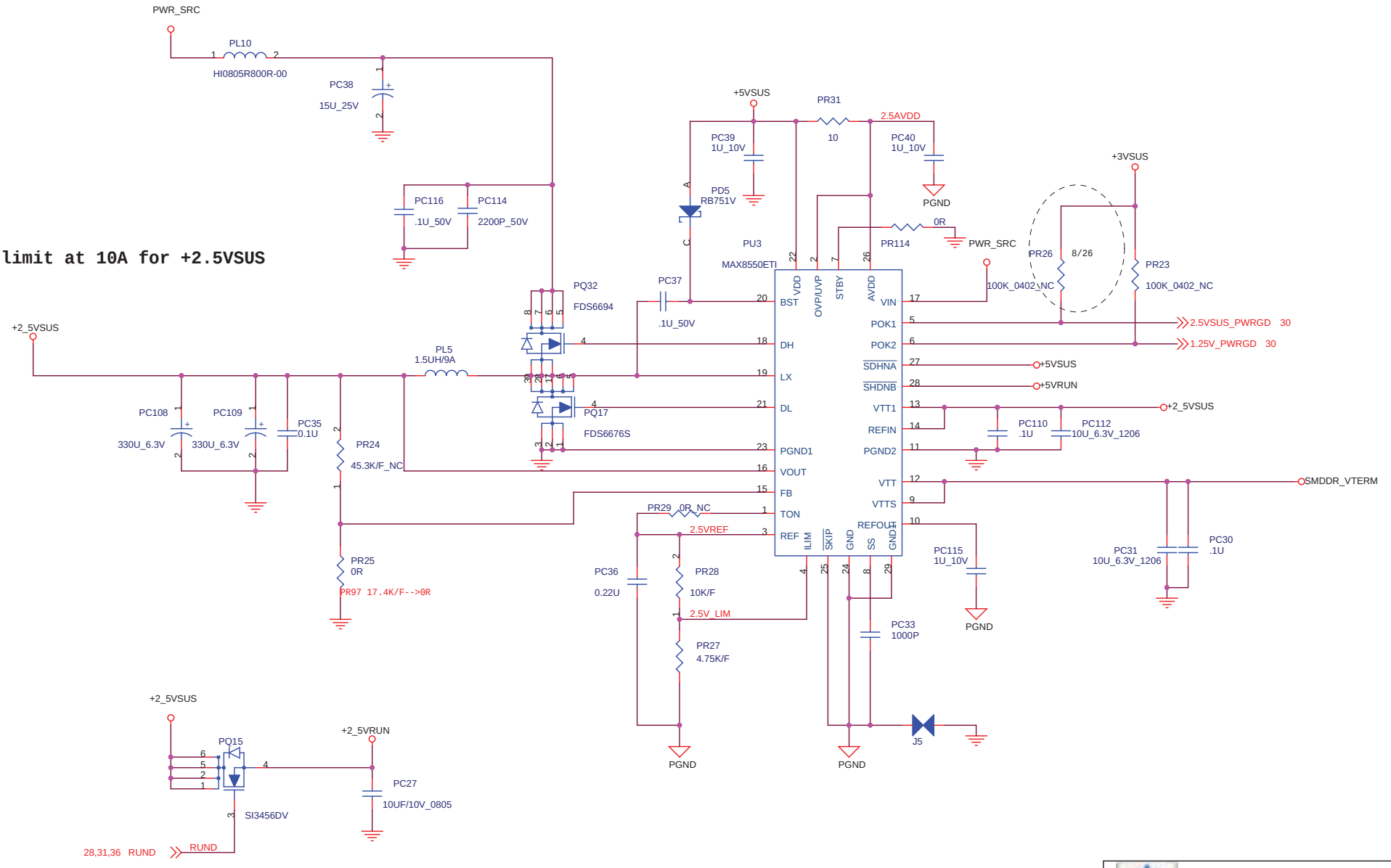

MICRO-STAR INT'L CO.,LTD.		
Title: DDR POWER		
Size: B	Document Number: MS-1012	Rev: 1.1
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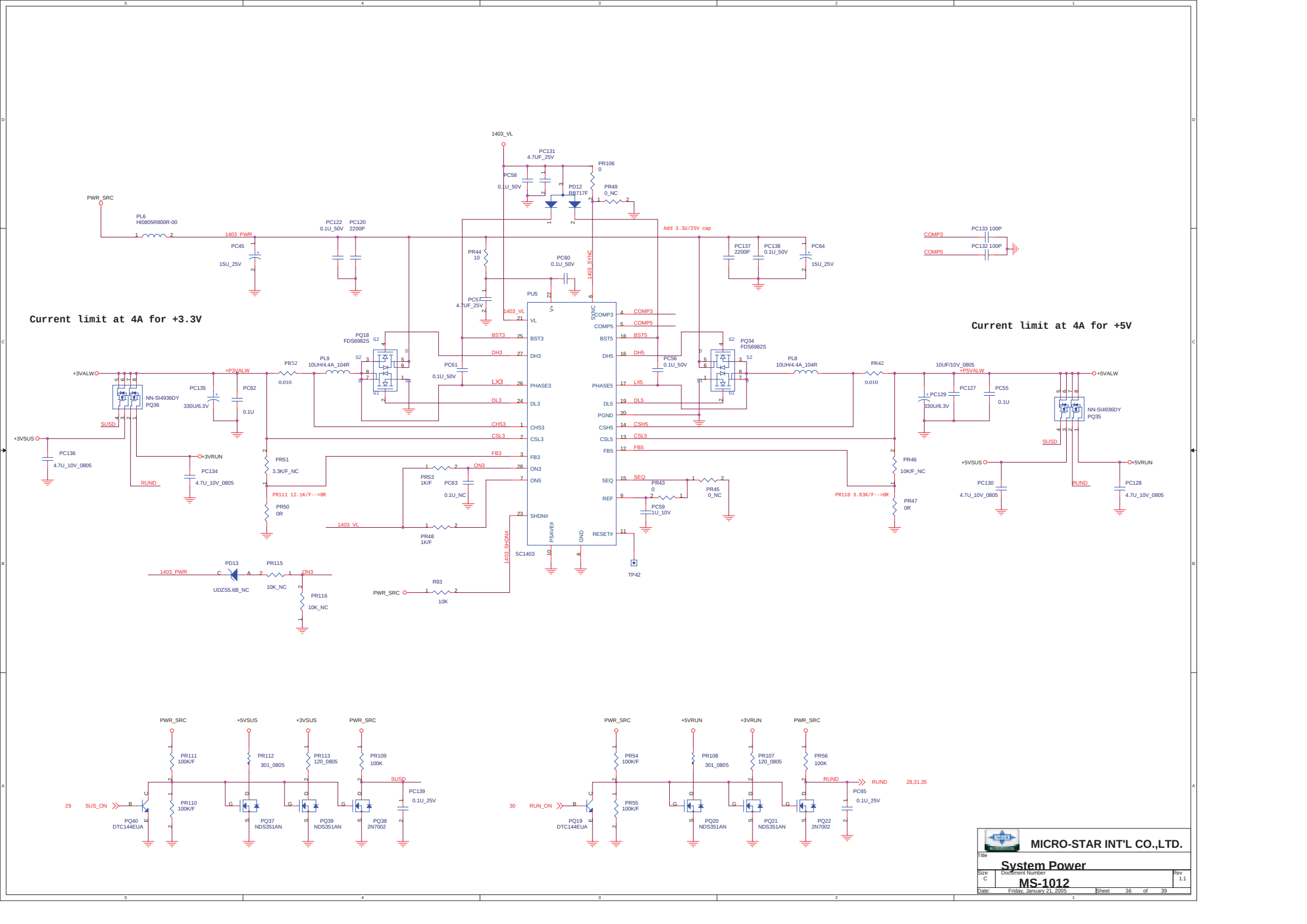
Current limit at 4A for +3.3V
Current limit at 4A for +5V
1403_VL
PWR_SRC
PL6
HI0805R800R-00
1403_PWR
PC45
15U_25V
PC122
0.1U_50V
PC120
2200P
PC131
4.7UF_25V
PC58
0.1U_50V
PD12
RB717F
PR106
0
PR49
0_NC
Add 3.3U/25V cap
PC137
2200P
PC138
0.1U_50V
PC64
15U_25V
COMP3
COMP5
PC133 100P
PC132 100P
PR44
10
PC60
0.1U_50V
1403_SYNC
PC57
4.7UF_25V
PU5
SC1403
VL
V+
SYNC
COMP3
COMP5
BST3
BST5
DH3
DH5
PHASE3
PHASE5
DL3
DL5
PGND
CHS3
CSH5
CSL3
CSL5
FB3
FB5
ON3
ON5
SEQ
REF
SHDN#
PSAVE#
GND
RESET#
LX3
LX5
PQ18
FDS6982S
PQ34
FDS6982S
PC61
0.1U_50V
PC56
0.1U_50V
PR52
0.010
PL9
10UH/4.4A_104R
PL8
10UH/4.4A_104R
PR42
0.010
+3VALW
+P3VALW
+P5VALW
10UF/10V_0805
NN-SI4936DY
PQ36
PQ35
PC135
330U/6.3V
PC62
0.1U
PC129
330U/6.3V
PC127
PC55
0.1U
SUSD
RUND
+3VSUS
+3VRUN
+5VSUS
+5VRUN
PC136
4.7U_10V_0805
PC134
4.7U_10V_0805
PC130
4.7U_10V_0805
PC128
4.7U_10V_0805
PR51
3.3K/F_NC
PR111 12.1K/F-->0R
PR50
0R
PR53
1K/F
PR63
0.1U_NC
PR48
1K/F
PR43
0
PR45
0_NC
PC59
1U_10V
PR110 3.83K/F-->0R
PR46
10K/F_NC
PR47
0R
TP42
PD13
UDZS5.6B_NC
PR115
10K_NC
PR116
10K_NC
R93
10K
1403_SHDN#
PR111
100K/F
PR112
301_0805
PR113
120_0805
PR109
100K
PC139
0.1U_25V
29
SUS_ON
PQ40
DTC144EUA
PQ37
NDS351AN
PQ39
NDS351AN
PQ38
2N7002
PR54
100K/F
PR108
301_0805
PR107
120_0805
PR56
100K
PC65
0.1U_25V
30
RUN_ON
PR55
100K/F
PQ19
DTC144EUA
PQ20
NDS351AN
PQ21
NDS351AN
PQ22
2N7002
28,31,35
MICRO-STAR INT'L CO.,LTD.
Title
System Power
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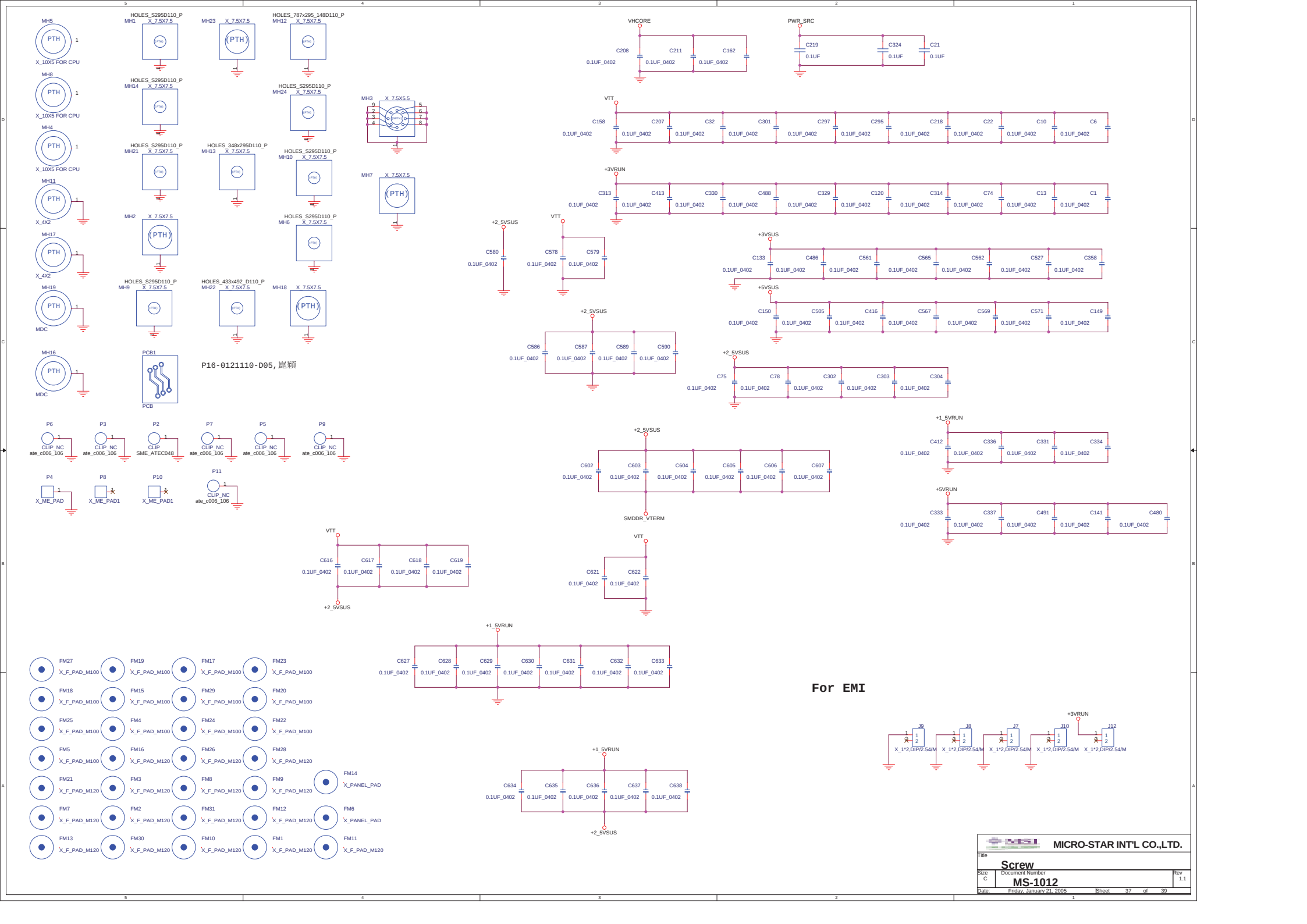
MH5 PTH 1 X_10X5 FOR CPU
MH8 PTH 1 X_10X5 FOR CPU
MH4 PTH 1 X_10X5 FOR CPU
MH11 PTH 1 X_4X2
MH17 PTH 1 X_4X2
MH19 PTH 1 MDC
MH16 PTH 1 MDC
HOLES_S295D110_P MH1 X_7.5X7.5
MH23 X_7.5X7.5 (PTH)
HOLES_787x295_148D110_P MH12 X_7.5X7.5
HOLES_S295D110_P MH14 X_7.5X7.5
HOLES_S295D110_P MH24 X_7.5X7.5
MH3 X_7.5X5.5
HOLES_S295D110_P MH21 X_7.5X7.5
HOLES_348x295D110_P MH13 X_7.5X7.5
HOLES_S295D110_P MH10 X_7.5X7.5
MH7 X_7.5X7.5 (PTH)
MH2 X_7.5X7.5 (PTH)
HOLES_S295D110_P MH6 X_7.5X7.5
HOLES_S295D110_P MH9 X_7.5X7.5
HOLES_433x492_D110_P MH22 X_7.5X7.5
MH18 X_7.5X7.5 (PTH)
PCB1
PCB
P16-0121110-D05,崑穎
P6 CLIP_NC ate_c006_106
P3 CLIP_NC ate_c006_106
P2 CLIP SME_ATEC048
P7 CLIP_NC ate_c006_106
P5 CLIP_NC ate_c006_106
P9 CLIP_NC ate_c006_106
P4 X_ME_PAD
P8 X_ME_PAD1
P10 X_ME_PAD1
P11 CLIP_NC ate_c006_106
FM27 X_F_PAD_M100
FM19 X_F_PAD_M100
FM17 X_F_PAD_M100
FM23 X_F_PAD_M100
FM18 X_F_PAD_M100
FM15 X_F_PAD_M100
FM29 X_F_PAD_M100
FM20 X_F_PAD_M100
FM25 X_F_PAD_M100
FM4 X_F_PAD_M100
FM24 X_F_PAD_M100
FM22 X_F_PAD_M100
FM5 X_F_PAD_M100
FM16 X_F_PAD_M120
FM26 X_F_PAD_M120
FM28 X_F_PAD_M120
FM21 X_F_PAD_M120
FM3 X_F_PAD_M120
FM8 X_F_PAD_M120
FM9 X_F_PAD_M120
FM14 X_PANEL_PAD
FM7 X_F_PAD_M120
FM2 X_F_PAD_M120
FM31 X_F_PAD_M120
FM12 X_F_PAD_M120
FM6 X_PANEL_PAD
FM13 X_F_PAD_M120
FM30 X_F_PAD_M120
FM10 X_F_PAD_M120
FM1 X_F_PAD_M120
FM11 X_F_PAD_M120
VHCORE
C208 C211 C162 0.1UF_0402
PWR_SRC
C219 C324 C21 0.1UF
VTT
C158 C207 C32 C301 C297 C295 C218 C22 C10 C6 0.1UF_0402
+3VRUN
C313 C413 C330 C488 C329 C120 C314 C74 C13 C1 0.1UF_0402
+2_5VSUS
C580 0.1UF_0402
VTT
C578 C579 0.1UF_0402
+3VSUS
C133 C486 C561 C565 C562 C527 C358 0.1UF_0402
+5VSUS
C150 C505 C416 C567 C569 C571 C149 0.1UF_0402
+2_5VSUS
C586 C587 C589 C590 0.1UF_0402
+2_5VSUS
C75 C78 C302 C303 C304 0.1UF_0402
+1_5VRUN
C412 C336 C331 C334 0.1UF_0402
+2_5VSUS
C602 C603 C604 C605 C606 C607 0.1UF_0402
SMDDR_VTERM
+5VRUN
C333 C337 C491 C141 C480 0.1UF_0402
VTT
C616 C617 C618 C619 0.1UF_0402
+2_5VSUS
VTT
C621 C622 0.1UF_0402
+1_5VRUN
C627 C628 C629 C630 C631 C632 C633 0.1UF_0402
+1_5VRUN
C634 C635 C636 C637 C638 0.1UF_0402
+2_5VSUS
For EMI
+3VRUN
J9 J8 J7 J10 J12 X_1*2,DIP/2.54/M
MICRO-STAR INT'L CO.,LTD.
Title
Screw
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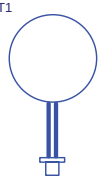
BAT1



RTC_BAT
D06-0100300-K26

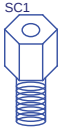
ML3

DDRMYLAR
E26-1003120-SA6

ML6

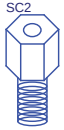
DDRMYLAR
E26-1003120-SA6

SC1



VGASC
E42-A040535-F02

SC2



VGASC
E42-A040535-F02

U100

PCMCIA
R-Eject

PCMCIA-EJECT
N5D-68M0170-T01

SHD1

PCMCIA SHIELDING
E21-1006060-Y28

SHD2

VGA SHIELDING
E21-1006020-Y28

ML1

SDMYLAR
E26-1006100-P38

ML4

KBMYLAR
E26-1006190-P38

ML5

KBMYLAR
E26-1006190-P38

ML2

KBMYLAR
E26-1006090-P38

SC3

M2X12

SC4

M2X12

SC5

M2X12

SC6

M2X12

SC7

M2X4

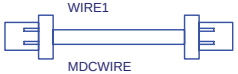
SC8

M2X4

MDC1

MDCASSB
S52-2801040-A95

WIRE1



MDCWIRE
K10-3002044-H39

ML7

HD CUSHION SPONG
E25-1012050-SE2

ML8

HD CUSHION SPONG
E25-1012050-SE2

ML9

HDD MYLAR
E26-1013010-SE2

ML10

THERMAL PAD
E26-1012040-C60

ML11

THERMAL PAD
E26-1012040-C60

11/12

ML12

CONDUCTIVE GASKET FOR RJ11
E25-1012040-CA7

ML13

CONDUCTIVE GASKET FOR 1394
E25-1012020-CA7

MICRO-STAR INT'L CO.,LTD.

Title: ME P/N

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1. Modify Page7 NB_PWRGD Link to VTT_PWRGD add R443 & R444

2. Modify Page7 Delete R58 & R55 & R59

3. Modify Page13 Add R453 & R446 0 ohm NC

4. For EMI Modify Page 17
   C270,C231,C284,C242,C289,C238,C273,C226,C105,C281,C290,C236
   C293,C106,C278,C267,C268 Change to 0.01UF_0402 CAP

5. For MSI_6855 Wireless & Bluebooth Mini_PCI
   Modify Page 26 Add R445 10K ohm & Q31 2N7002 & R451 & R452 0 ohm

6. For EMI Solution (1) Modify Page 28 R314 0 ohm change to 33 ohm
   (2) Modify Page 28 add C440 22PF CAP
   (3) Modify Page 28 add C450 33PF CAP
   (3) Modify Page 28 add short pin J23,J2,J22

7. Modify Page 28 Delete Q19 2N7002 & add D36

8. Modify Page 30 Delete R149 0 ohm

9. For EMI Solution Modify Page 32 Add PL12 & PC140

10. For EMI Solution Modify Page 31 PR101 change to 10K_0402

11. For EMI Solution Modify Page 37 Delete P5,P6,P9

12. For EMI Solution Modify Page 33 PC67 & PC70 0.1UF_0402 CAP

13. Modify Page 28 R429 Change to 100K_0402

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Title: Revision History		
Size: A	Document Number: MS-1012	Rev: 1.1
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