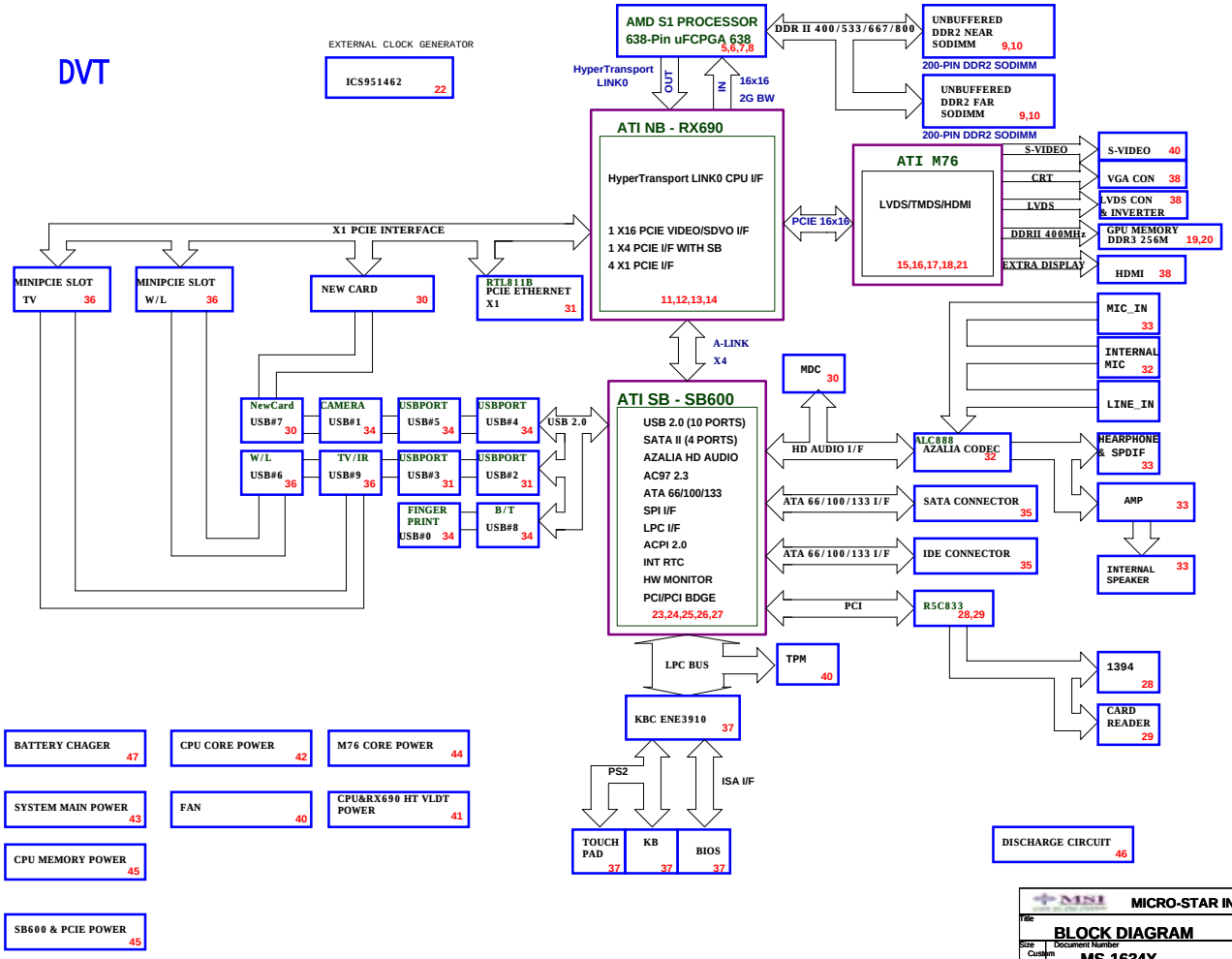
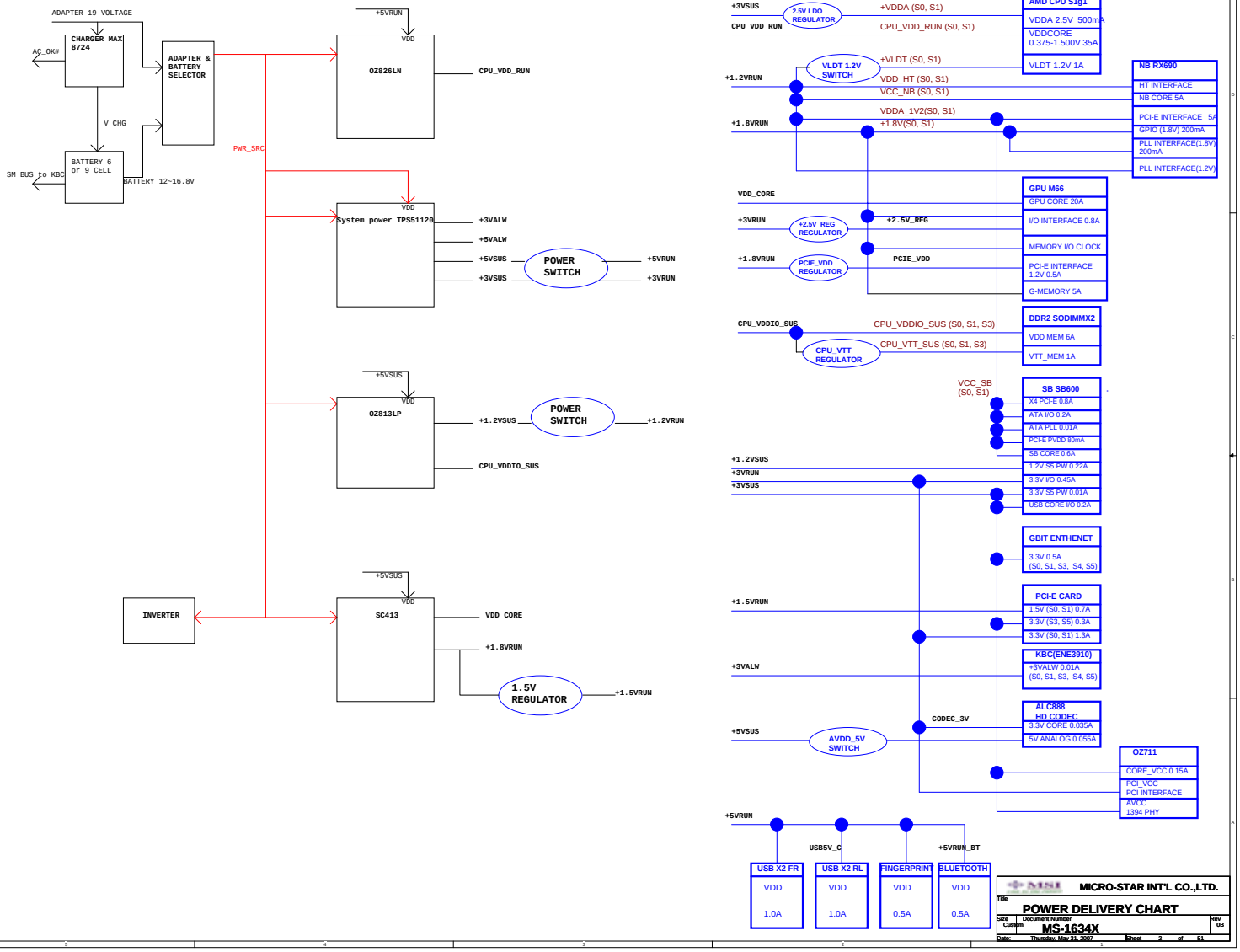


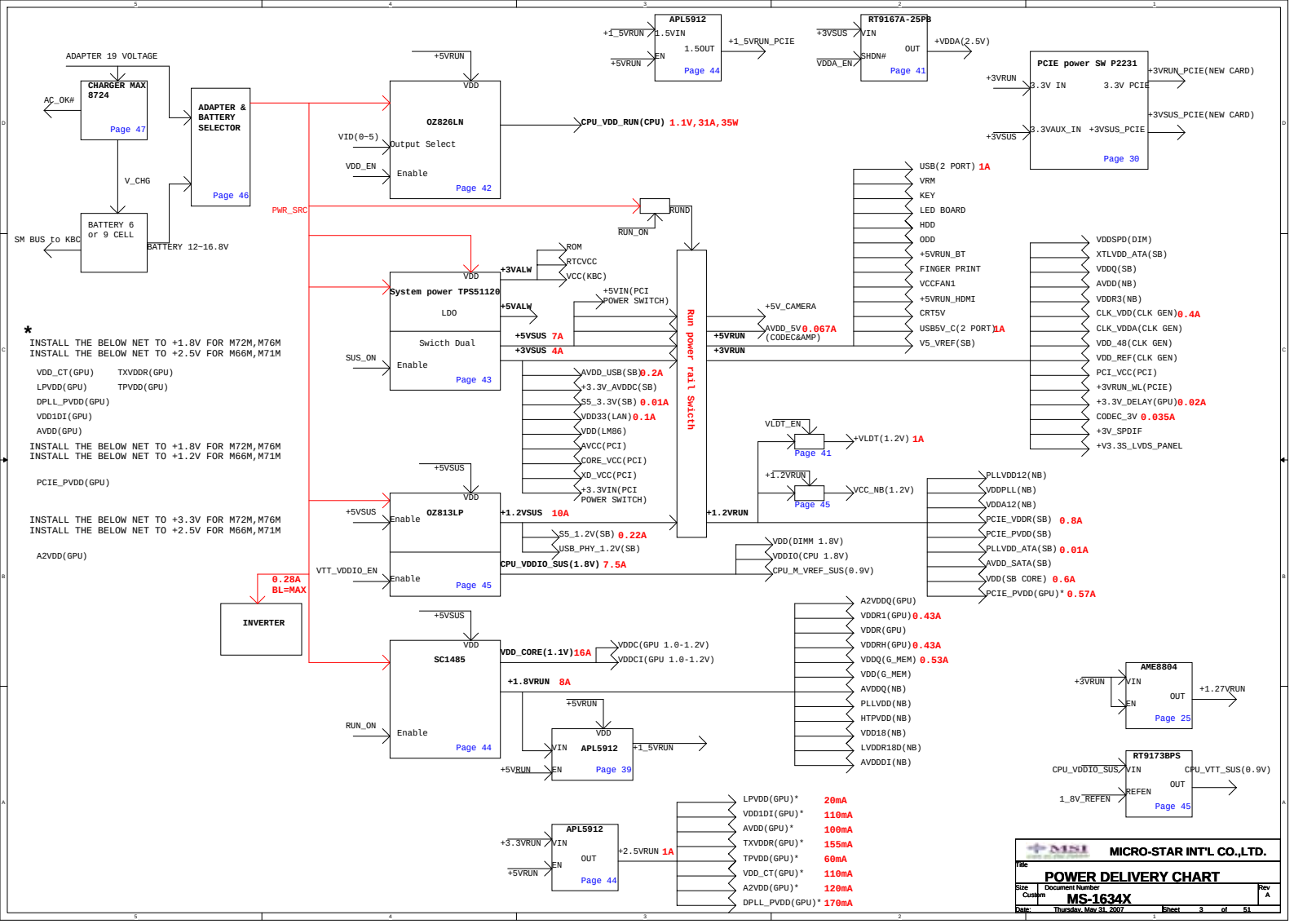
MICRO-STAR INT'L CO.,LTD.

Title: BLOCK DIAGRAM

Size: Custom | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 1 of 51


ADAPTER 19 VOLTAGE
CHARGER MAX 8724
AC_OK#
ADAPTER & BATTERY SELECTOR
V_CHG
BATTERY 6 or 9 CELL
SM BUS to KBC
BATTERY 12~16.8V
PWR_SRC
+5VRUN
VDD
OZ826LN
CPU_VDD_RUN
System power TPS51120
+3VALW
+5VALW
+5VSUS
+3VSUS
POWER SWITCH
+5VRUN
+3VRUN
+5VSUS
OZ813LP
+1.2VSUS
+1.2VRUN
CPU_VDDIO_SUS
INVERTER
SC413
VDD_CORE
+1.8VRUN
1.5V REGULATOR
+1.5VRUN
+3VSUS
2.5V LDO REGULATOR
+VDDA (S0, S1)
CPU_VDD_RUN (S0, S1)
AMD CPU S1g1
VDDA 2.5V 500mA
VDDCORE 0.375-1.500V 35A
VLDT 1.2V 1A
+1.2VRUN
VLDT 1.2V SWITCH
+VLDT (S0, S1)
VDD_HT (S0, S1)
VCC_NB (S0, S1)
VDDA_1V2(S0, S1)
+1.8V(S0, S1)
+1.8VRUN
NB RX690
HT INTERFACE
NB CORE 5A
PCI-E INTERFACE 5A
GPIO (1.8V) 200mA
PLL INTERFACE(1.8V) 200mA
PLL INTERFACE(1.2V)
VDD_CORE
GPU M66
GPU CORE 20A
+3VRUN
+2.5V_REG REGULATOR
+2.5V_REG
I/O INTERFACE 0.8A
MEMORY I/O CLOCK
+1.8VRUN
PCIE_VDD REGULATOR
PCIE_VDD
PCI-E INTERFACE 1.2V 0.5A
G-MEMORY 5A
CPU_VDDIO_SUS
CPU_VDDIO_SUS (S0, S1, S3)
CPU_VTT REGULATOR
CPU_VTT_SUS (S0, S1, S3)
DDR2 SODIMMX2
VDD MEM 6A
VTT_MEM 1A
VCC_SB (S0, S1)
SB SB600
X4 PCI-E 0.8A
ATA I/O 0.2A
ATA PLL 0.01A
PCI-E PVDD 80mA
SB CORE 0.6A
+1.2VSUS
1.2V S5 PW 0.22A
+3VRUN
3.3V I/O 0.45A
+3VSUS
3.3V S5 PW 0.01A
USB CORE I/O 0.2A
GBIT ENTHENET
3.3V 0.5A (S0, S1, S3, S4, S5)
+1.5VRUN
PCI-E CARD
1.5V (S0, S1) 0.7A
3.3V (S3, S5) 0.3A
3.3V (S0, S1) 1.3A
+3VALW
KBC(ENE3910)
+3VALW 0.01A (S0, S1, S3, S4, S5)
CODEC_3V
ALC888 HD CODEC
3.3V CORE 0.035A
+5VSUS
AVDD_5V SWITCH
5V ANALOG 0.055A
OZ711
CORE_VCC 0.15A
PCI_VCC PCI INTERFACE
AVCC 1394 PHY
+5VRUN
USB5V_C
+5VRUN_BT
USB X2 FR
VDD
1.0A
USB X2 RL
VDD
1.0A
FINGERPRINT
VDD
0.5A
BLUETOOTH
VDD
0.5A
MICRO-STAR INT'L CO.,LTD.
POWER DELIVERY CHART
Size Custom
Document Number MS-1634X
Rev 0B
Date: Thursday, May 31, 2007
Sheet 2 of 51

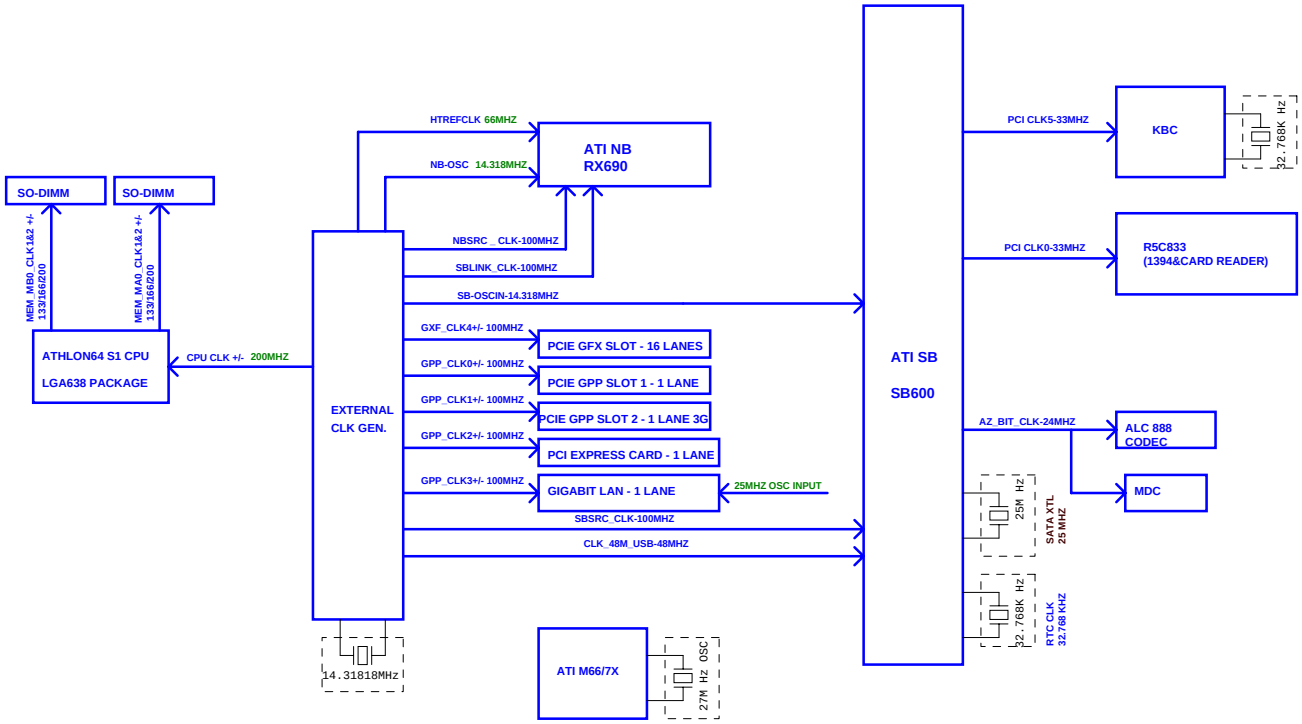


MICRO-STAR INT'L CO.,LTD.

Title: POWER DELIVERY CHART

Size: Custom | Document Number: MS-1634X | Rev: A

Date: Thursday, May 31, 2007 | Sheet 3 of 51



MICRO-STAR INT'L CO.,LTD.

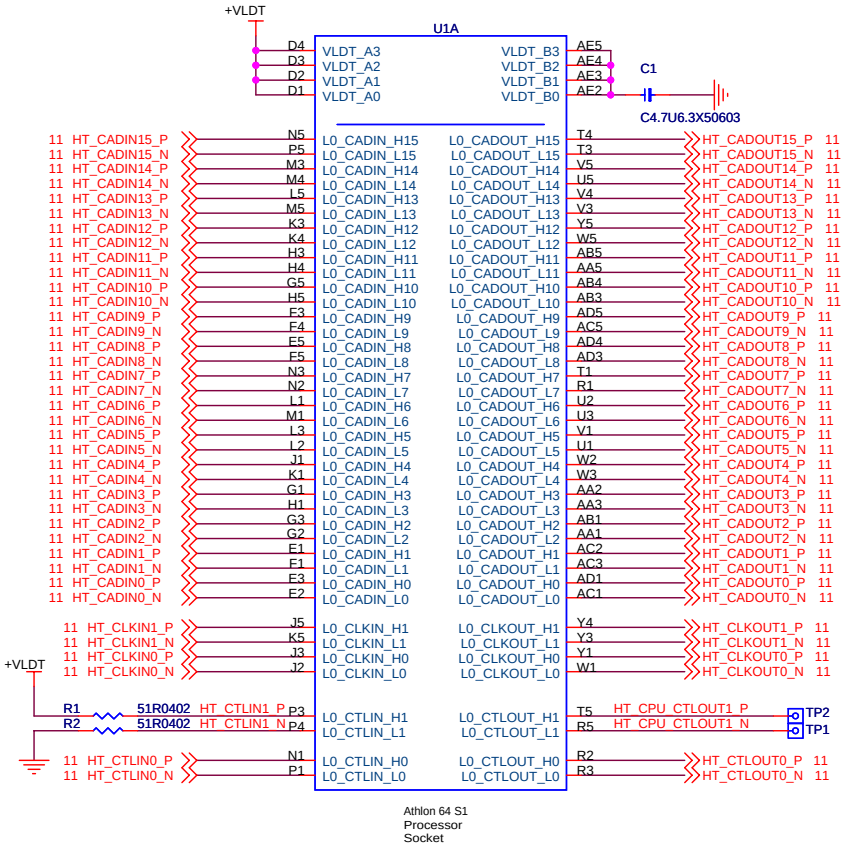
Title: CLOCK DISTRIBUTION

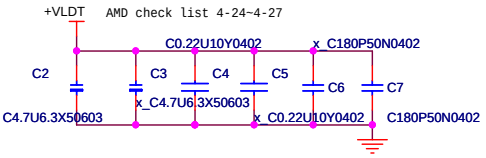
Size: Custom | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 4 of 51

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





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.

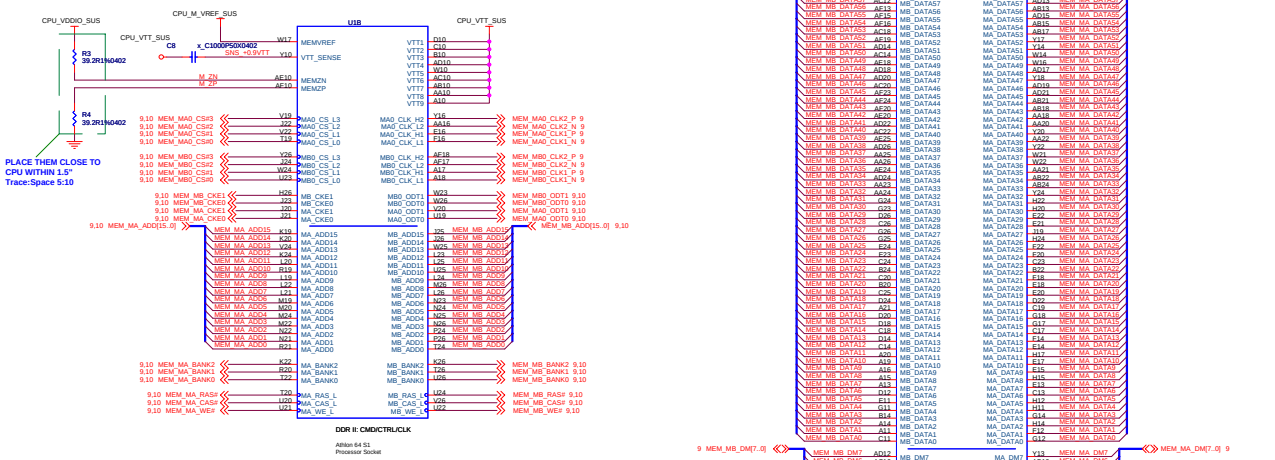
Title: SOCKET S1 HT I/F

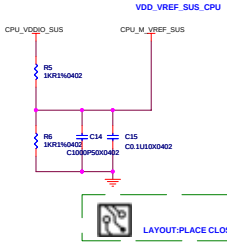
Size: Custom | Document Number: MS-1634X | Rev: 0B

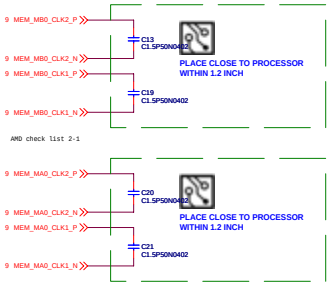
Date: Thursday, May 31, 2007 | Sheet 5 of 51

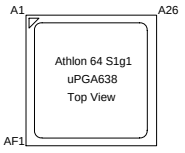
Processor DDR2 Memory Interface

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









MICRO-STAR INT'L CO.,LTD.

File: SOCKET S1 DDR2 MEMORY I/F

Size	Document Number	Rev
C	MS-1634X	0B

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ATHLON Control and Debug

CPU_VDDA_2.5_RUN

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

Impedance 35 ohm
DC Resistance <40m ohm
Imax>500mA
Ferrite bead 30-300nH

07/01/05 0A->0B

place them to CPU within 1.5"

Within <1.25 Inch

Within <0.6 Inch

ROUTE AS 80 Ohm DIFFERENTIAL PAIR
PLACE IT CLOSE TO CPU WITHIN 1"

Trace impedance 80ohm

Cap close to thermal sensor

Close to CPU socket

R0402_6 ==> SHORT PAD FOOTPRINT

AMD check list 4-22 10L1000m_50_0402-LF

AMD NPT S1 SOCKET
Processor Socket

Company	MICRO-STAR INT'L CO.,LTD.
Title	SOCKET S1 CTRL
Size	B
Document Number	MS-1634X
Rev	0B
Date:	Thursday, May 31, 2007
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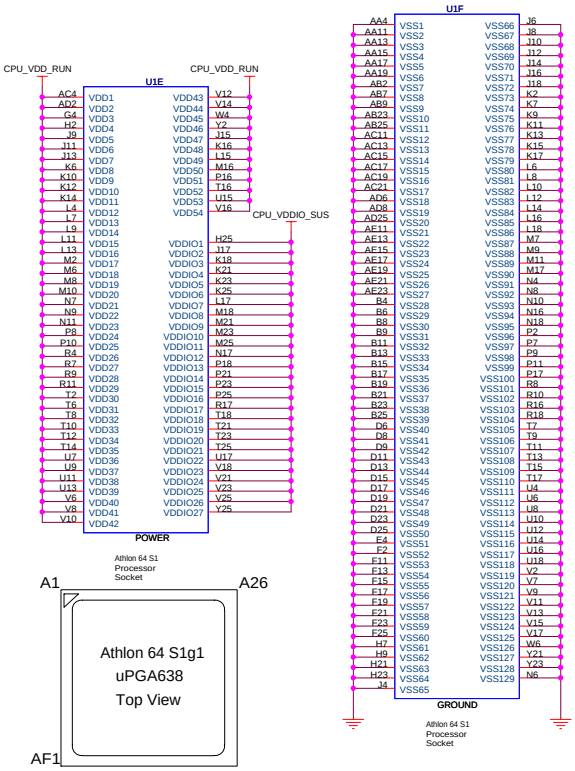
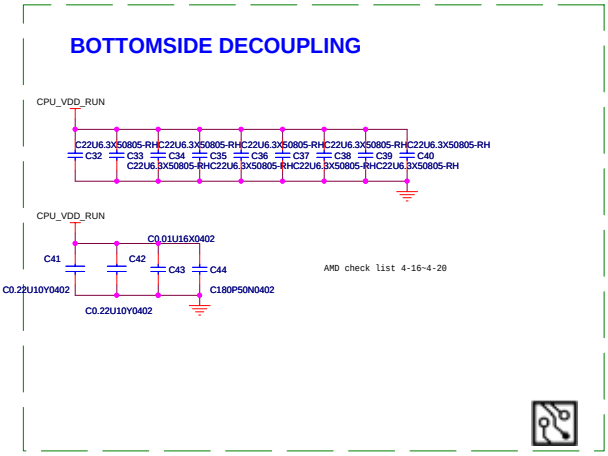
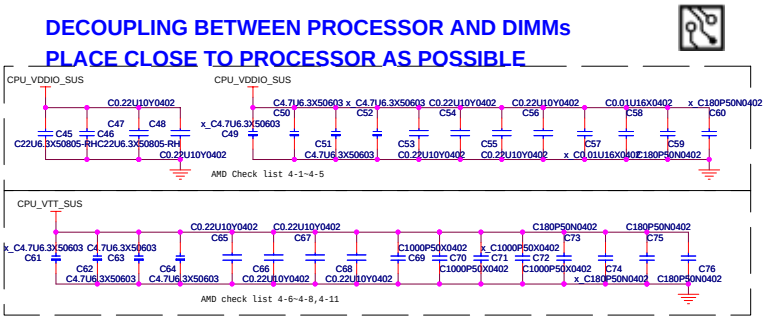






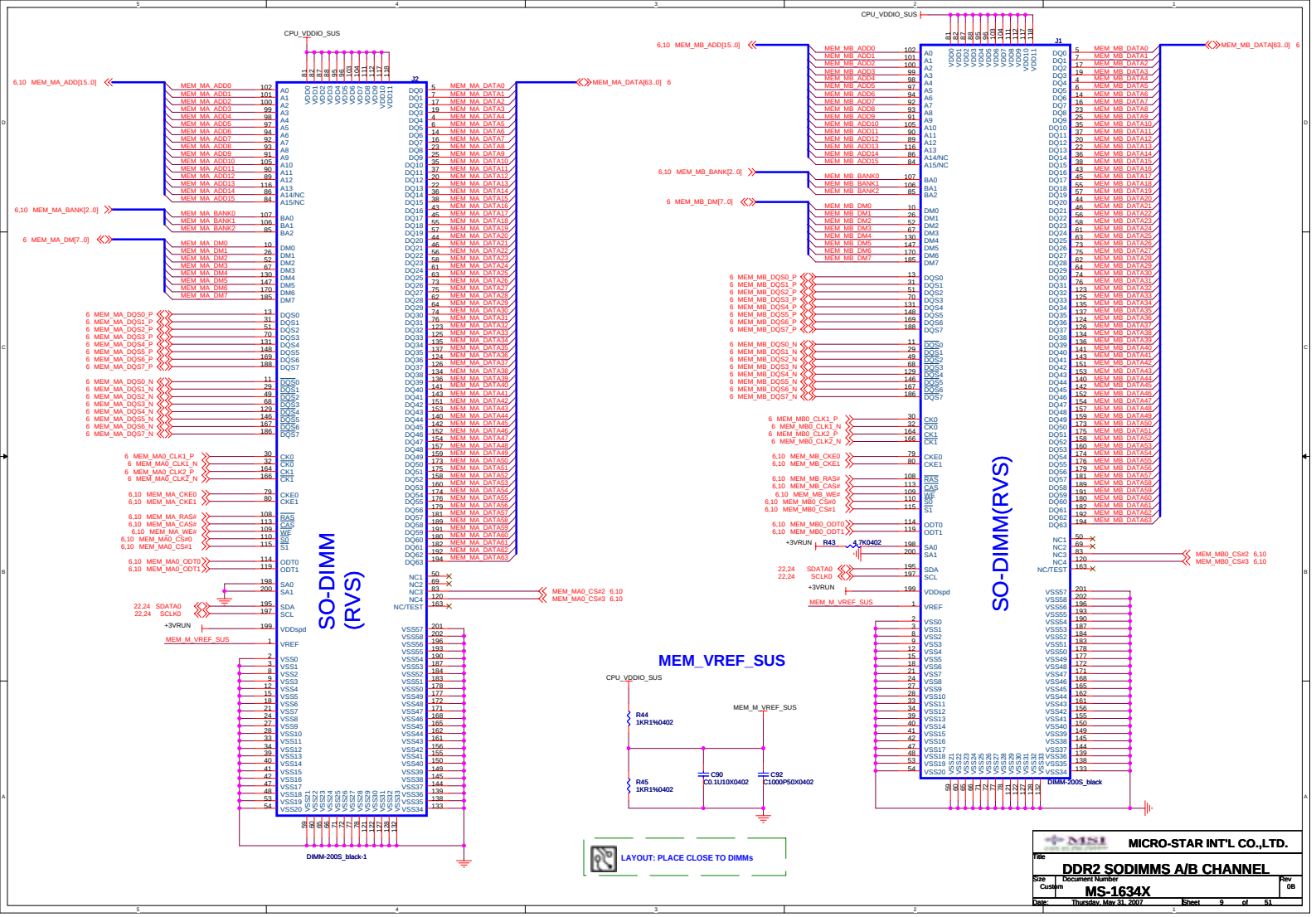
PROCESSOR POWER AND GROUND

MICRO-STAR INT'L CO.,LTD.

Title: SOCKET S1 PWR & GND

Size: B | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 8 of 51

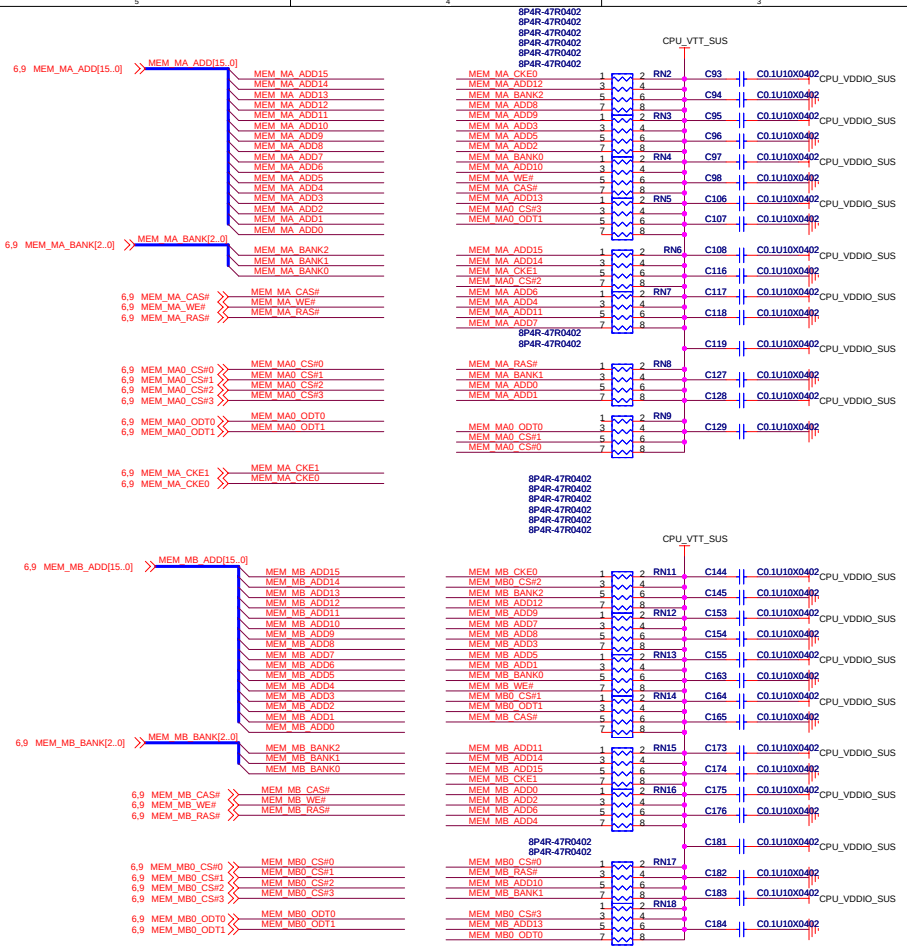


MICRO-STAR INT'L CO.,LTD.

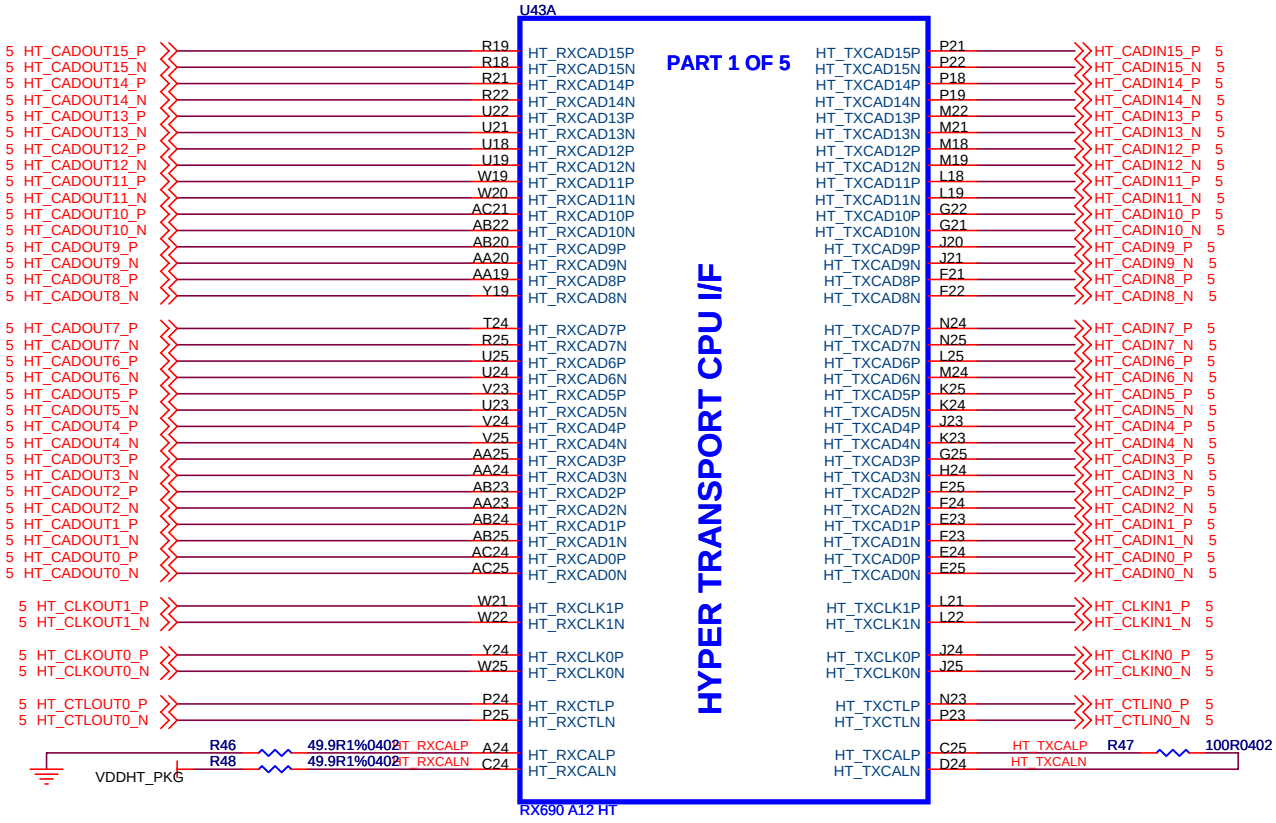
Title: DDR2 SODIMMS A/B CHANNEL

Size	Document Number	Rev
Custom	MS-1634X	0B

Date: Thursday, May 31, 2007 Sheet 9 of 51



MICRO-STAR INT'L CO.,LTD.		
Title: DDR2 SODIMMS TERMINATIONS		
Size: Custom	Document Number: MS-1634X	Rev: 0B
Date: Thursday, May 31, 2007	Sheet 10 of 51	

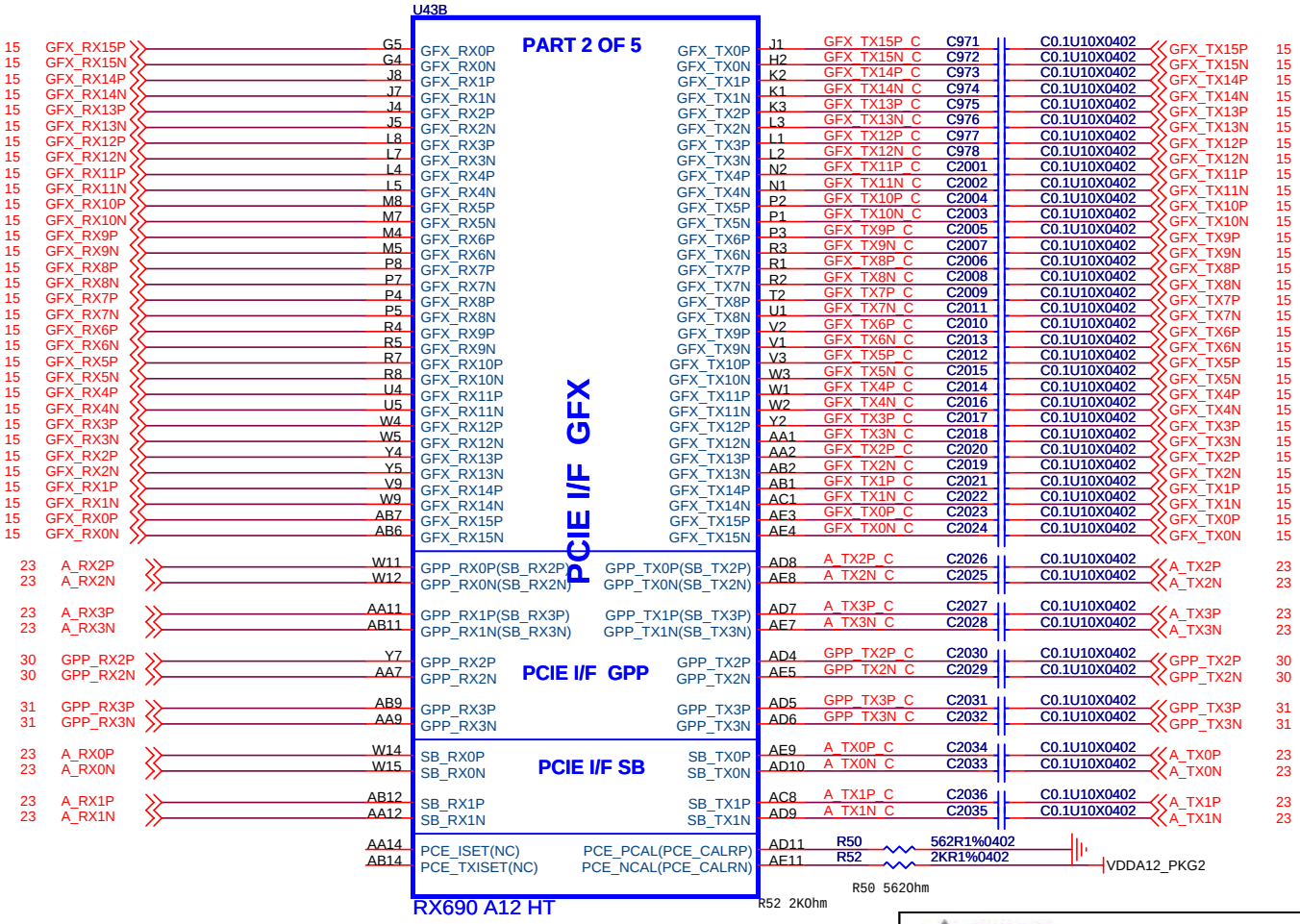


MICRO-STAR INT'L CO.,LTD.

Title: RX690 HT LINK I/F

Size: A | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 11 of 51



15	GFX_RX15P	GFX_TX15P_C	C971	C0.1U10X0402	GFX_TX15P	15
15	GFX_RX15N	GFX_TX15N_C	C972	C0.1U10X0402	GFX_TX15N	15
15	GFX_RX14P	GFX_TX14P_C	C973	C0.1U10X0402	GFX_TX14P	15
15	GFX_RX14N	GFX_TX14N_C	C974	C0.1U10X0402	GFX_TX14N	15
15	GFX_RX13P	GFX_TX13P_C	C975	C0.1U10X0402	GFX_TX13P	15
15	GFX_RX13N	GFX_TX13N_C	C976	C0.1U10X0402	GFX_TX13N	15
15	GFX_RX12P	GFX_TX12P_C	C977	C0.1U10X0402	GFX_TX12P	15
15	GFX_RX12N	GFX_TX12N_C	C978	C0.1U10X0402	GFX_TX12N	15
15	GFX_RX11P	GFX_TX11P_C	C2001	C0.1U10X0402	GFX_TX11P	15
15	GFX_RX11N	GFX_TX11N_C	C2002	C0.1U10X0402	GFX_TX11N	15
15	GFX_RX10P	GFX_TX10P_C	C2004	C0.1U10X0402	GFX_TX10P	15
15	GFX_RX10N	GFX_TX10N_C	C2003	C0.1U10X0402	GFX_TX10N	15
15	GFX_RX9P	GFX_TX9P_C	C2005	C0.1U10X0402	GFX_TX9P	15
15	GFX_RX9N	GFX_TX9N_C	C2007	C0.1U10X0402	GFX_TX9N	15
15	GFX_RX8P	GFX_TX8P_C	C2006	C0.1U10X0402	GFX_TX8P	15
15	GFX_RX8N	GFX_TX8N_C	C2008	C0.1U10X0402	GFX_TX8N	15
15	GFX_RX7P	GFX_TX7P_C	C2009	C0.1U10X0402	GFX_TX7P	15
15	GFX_RX7N	GFX_TX7N_C	C2011	C0.1U10X0402	GFX_TX7N	15
15	GFX_RX6P	GFX_TX6P_C	C2010	C0.1U10X0402	GFX_TX6P	15
15	GFX_RX6N	GFX_TX6N_C	C2013	C0.1U10X0402	GFX_TX6N	15
15	GFX_RX5P	GFX_TX5P_C	C2012	C0.1U10X0402	GFX_TX5P	15
15	GFX_RX5N	GFX_TX5N_C	C2015	C0.1U10X0402	GFX_TX5N	15
15	GFX_RX4P	GFX_TX4P_C	C2014	C0.1U10X0402	GFX_TX4P	15
15	GFX_RX4N	GFX_TX4N_C	C2016	C0.1U10X0402	GFX_TX4N	15
15	GFX_RX3P	GFX_TX3P_C	C2017	C0.1U10X0402	GFX_TX3P	15
15	GFX_RX3N	GFX_TX3N_C	C2018	C0.1U10X0402	GFX_TX3N	15
15	GFX_RX2P	GFX_TX2P_C	C2020	C0.1U10X0402	GFX_TX2P	15
15	GFX_RX2N	GFX_TX2N_C	C2019	C0.1U10X0402	GFX_TX2N	15
15	GFX_RX1P	GFX_TX1P_C	C2021	C0.1U10X0402	GFX_TX1P	15
15	GFX_RX1N	GFX_TX1N_C	C2022	C0.1U10X0402	GFX_TX1N	15
15	GFX_RX0P	GFX_TX0P_C	C2023	C0.1U10X0402	GFX_TX0P	15
15	GFX_RX0N	GFX_TX0N_C	C2024	C0.1U10X0402	GFX_TX0N	15
23	A_RX2P	A_TX2P_C	C2026	C0.1U10X0402	A_TX2P	23
23	A_RX2N	A_TX2N_C	C2025	C0.1U10X0402	A_TX2N	23
23	A_RX3P	A_TX3P_C	C2027	C0.1U10X0402	A_TX3P	23
23	A_RX3N	A_TX3N_C	C2028	C0.1U10X0402	A_TX3N	23
30	GPP_RX2P	GPP_TX2P_C	C2030	C0.1U10X0402	GPP_TX2P	30
30	GPP_RX2N	GPP_TX2N_C	C2029	C0.1U10X0402	GPP_TX2N	30
31	GPP_RX3P	GPP_TX3P_C	C2031	C0.1U10X0402	GPP_TX3P	31
31	GPP_RX3N	GPP_TX3N_C	C2032	C0.1U10X0402	GPP_TX3N	31
23	A_RX0P	A_TX0P_C	C2034	C0.1U10X0402	A_TX0P	23
23	A_RX0N	A_TX0N_C	C2033	C0.1U10X0402	A_TX0N	23
23	A_RX1P	A_TX1P_C	C2036	C0.1U10X0402	A_TX1P	23
23	A_RX1N	A_TX1N_C	C2035	C0.1U10X0402	A_TX1N	23

MICRO-STAR INT'L CO.,LTD.

Title: RX690 PCI-E LINK&HDMI I/F

Size	Document Number	Rev
A	MS-1634X	0B

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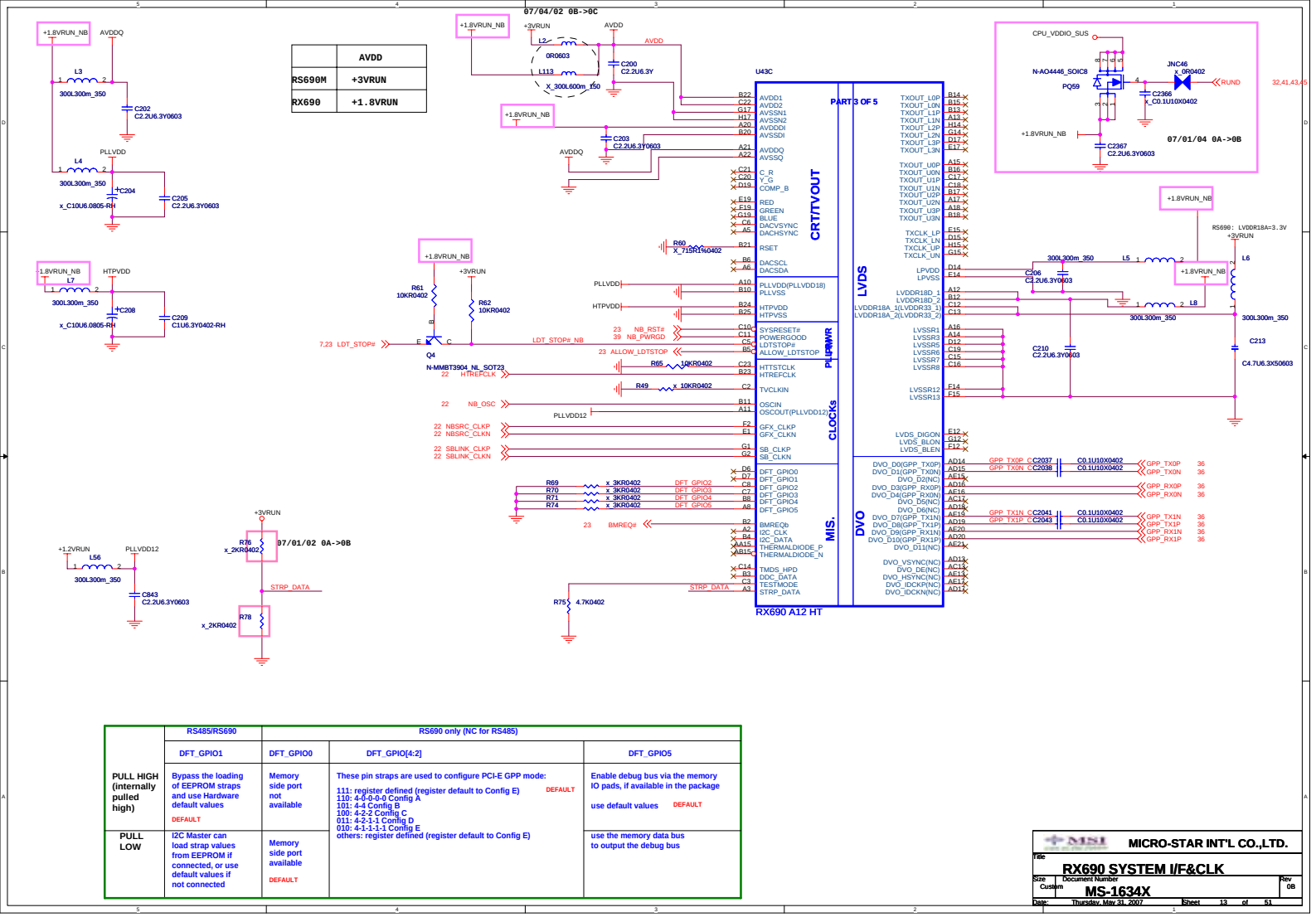


	AVDD
RS690M	+3VRUN
RX690	+1.8VRUN

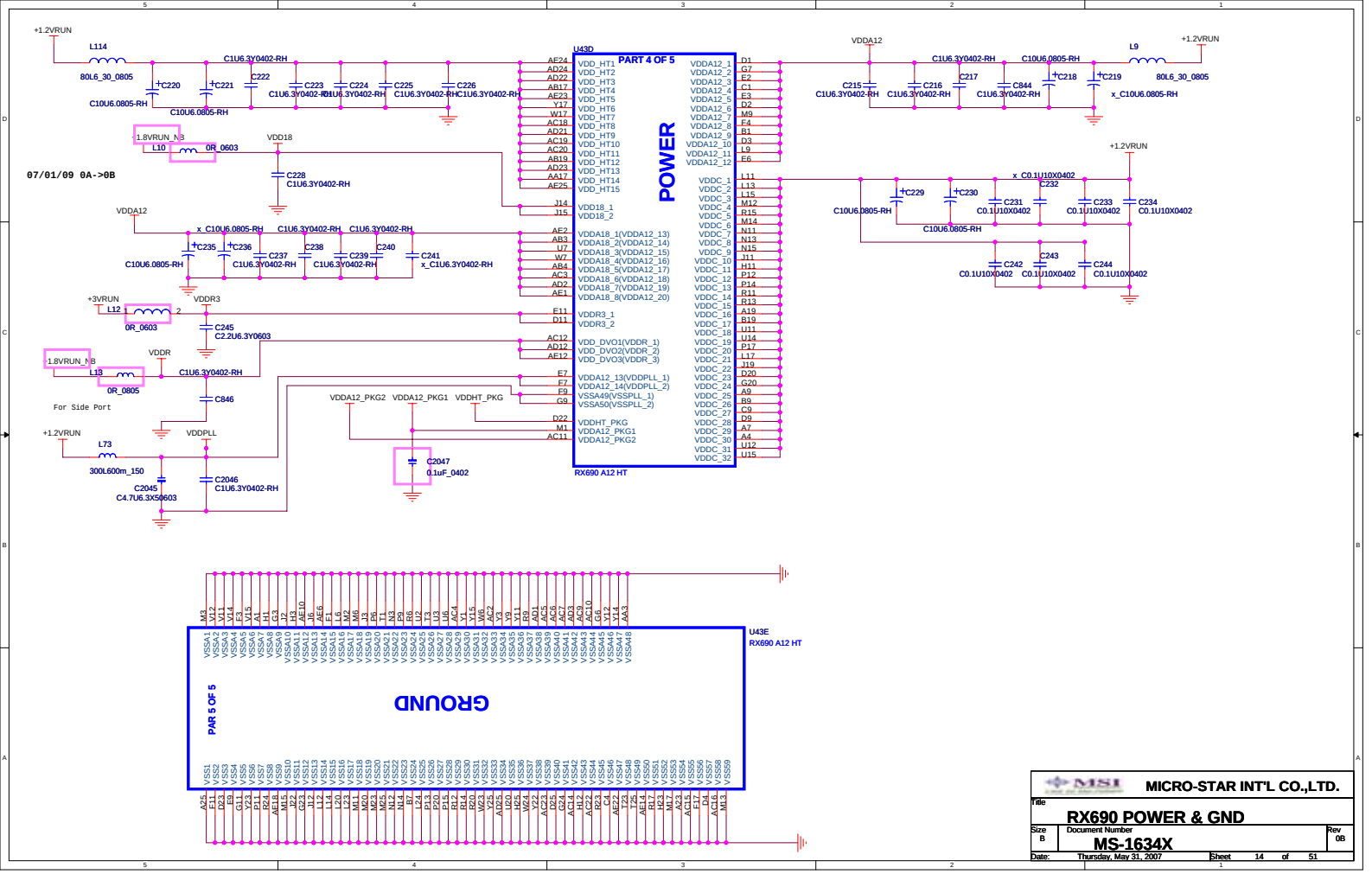
	RS485/RS690	RS690 only (NC for RS485)		
	DFT_GPIO1	DFT_GPIO0	DFT_GPIO[4:2]	DFT_GPIO5
PULL HIGH (internally pulled high)	Bypass the loading of EEPROM straps and use Hardware default values DEFAULT	Memory side port not available	These pin straps are used to configure PCI-E GPP mode: 111: register defined (register default to Config E) DEFAULT 110: 4-0-0-0-0 Config A 101: 4-4 Config B 100: 4-2-2 Config C 011: 4-2-1-1 Config D 010: 4-1-1-1-1 Config E others: register defined (register default to Config E)	Enable debug bus via the memory IO pads, if available in the package use default values DEFAULT
PULL LOW	I2C Master can load strap values from EEPROM if connected, or use default values if not connected	Memory side port available DEFAULT		use the memory data bus to output the debug bus

MICRO-STAR INT'L CO.,LTD.

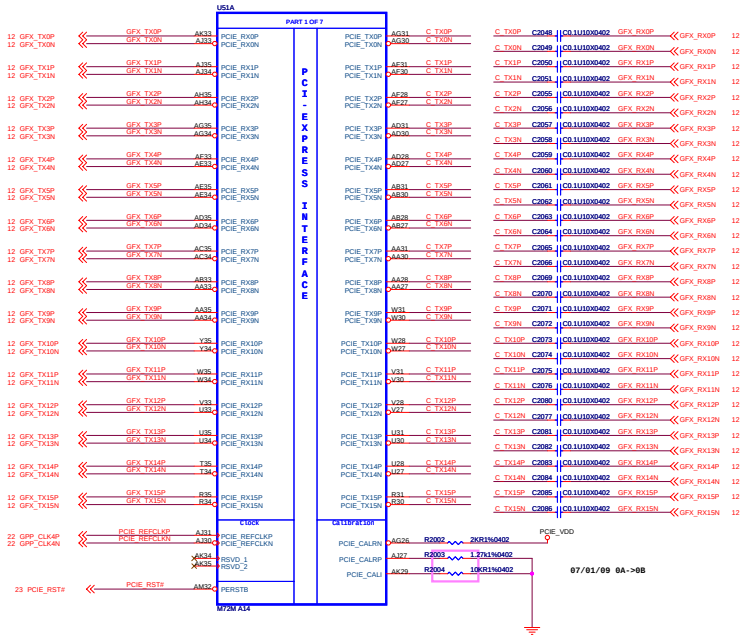
Title: RX690 SYSTEM I/F&CLK

Size: Custom | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 13 of 51

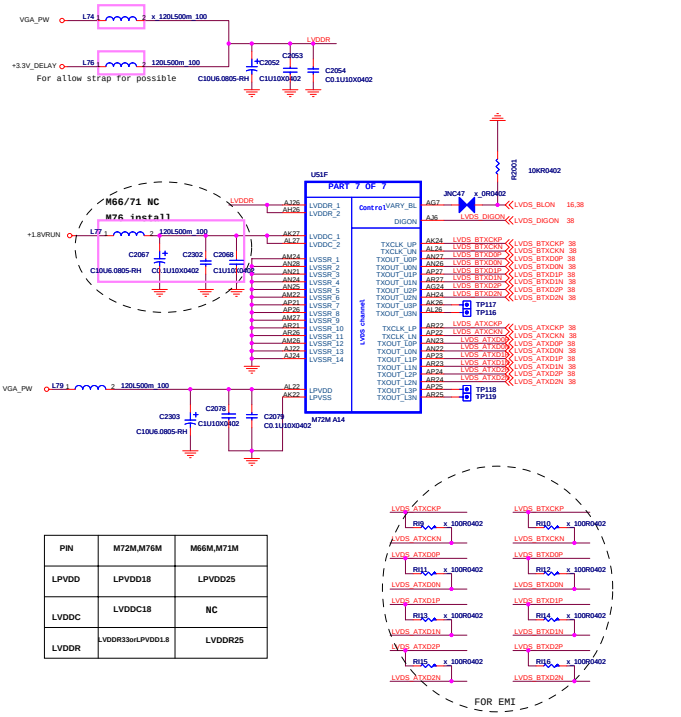


MICRO-STAR INT'L CO.,LTD.			
Title: RX690 POWER & GND			
Size: B	Document Number: MS-1634X		Rev: 0B
Date: Thursday, May 31, 2007	Sheet 14 of 51		



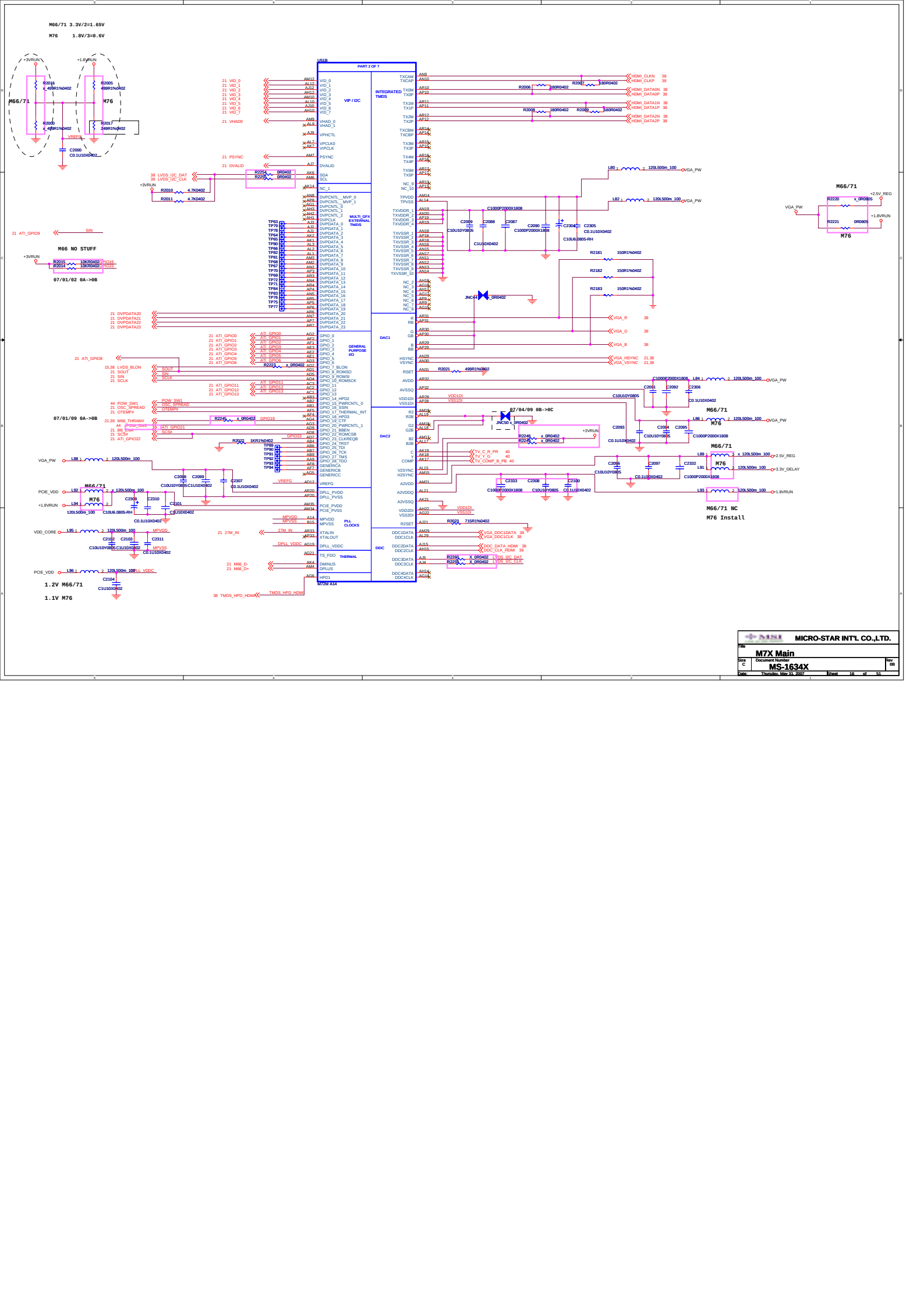
PIN	M72M,M76M	M66M,M71M
PCIE_CALRP	1.27K 1% = R11-1271T12-W08	562 1% = R11-5620T12-W08
PCIE_CALI	10K 1% = R11-0103T12-R01	1.47K 1% = R11-1471T12-W08

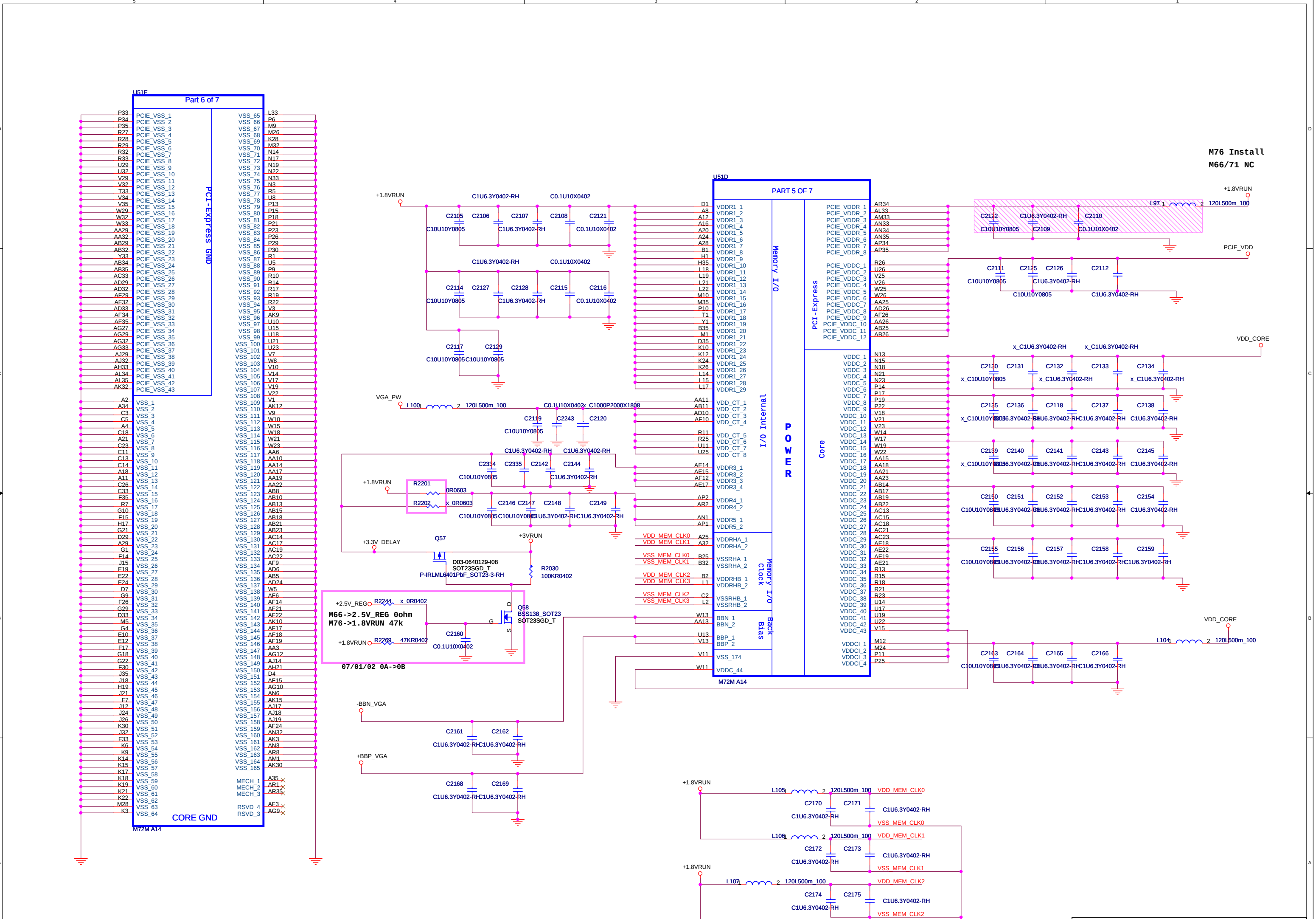
07/01/09 0A->0B



PIN	M72M,M76M	M66M,M71M
LPVDD	LPVDD18	LPVDD25
LVDDC	LVDDC18	NC
LVDDR	LVDDR33orLPVDD1.8	LVDDR25

MICRO-STAR INT'L CO.,LTD.	
Title	M7X PCIE BUS
Size C	Document Number MS-1634X Rev 0B
Date: Thursday, May 31, 2007	Sheet 15 of 51


M66/71 3.3V/2=1.65V
M76 1.8V/3=0.6V
M66 NO STUFF
07/01/02 0A->0B
07/01/09 0A->0B
07/04/09 0B->0C
1.2V M66/71
1.1V M76
M66/71 NC
M76 Install
MICRO-STAR INT'L CO.,LTD.
M7X Main
MS-1634X
Thursday, May 31, 2007



MICRO-STAR INT'L CO.,LTD.

Title: M7X POWER & GND

Size: C | Document Number: MS-1634X | Rev: 0B

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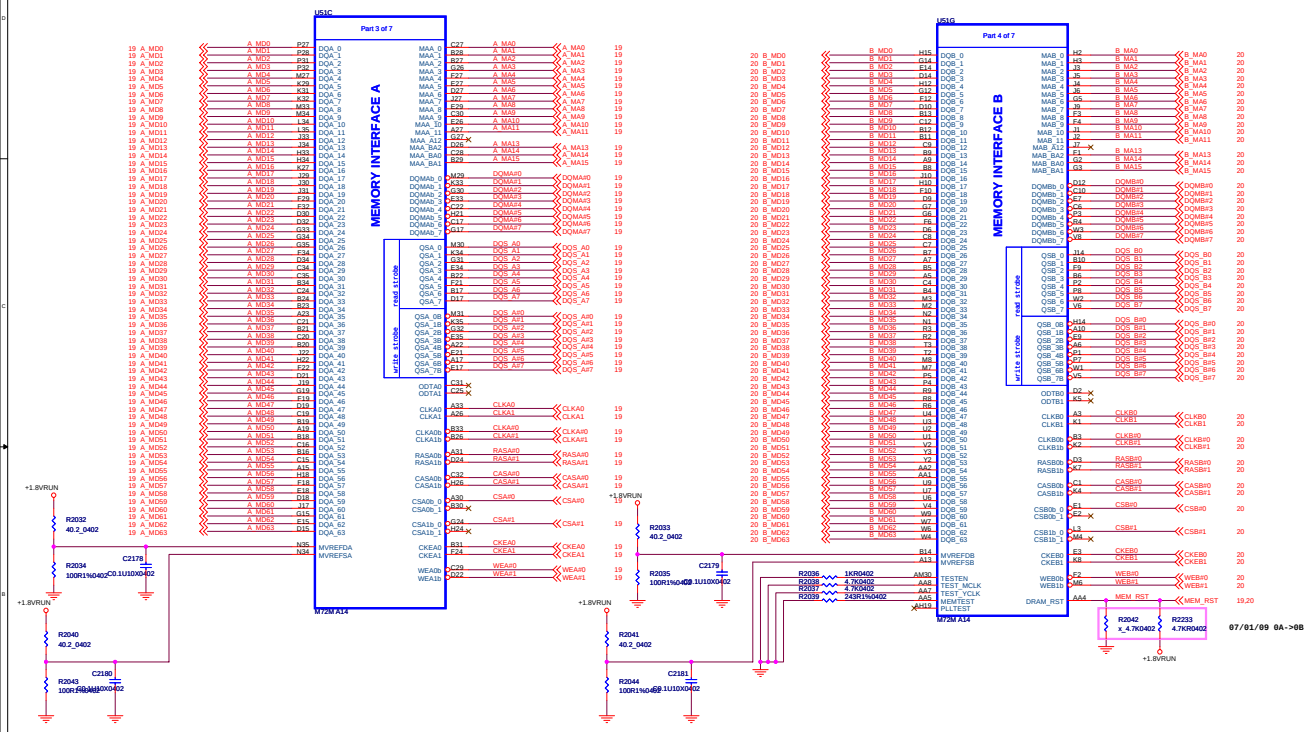
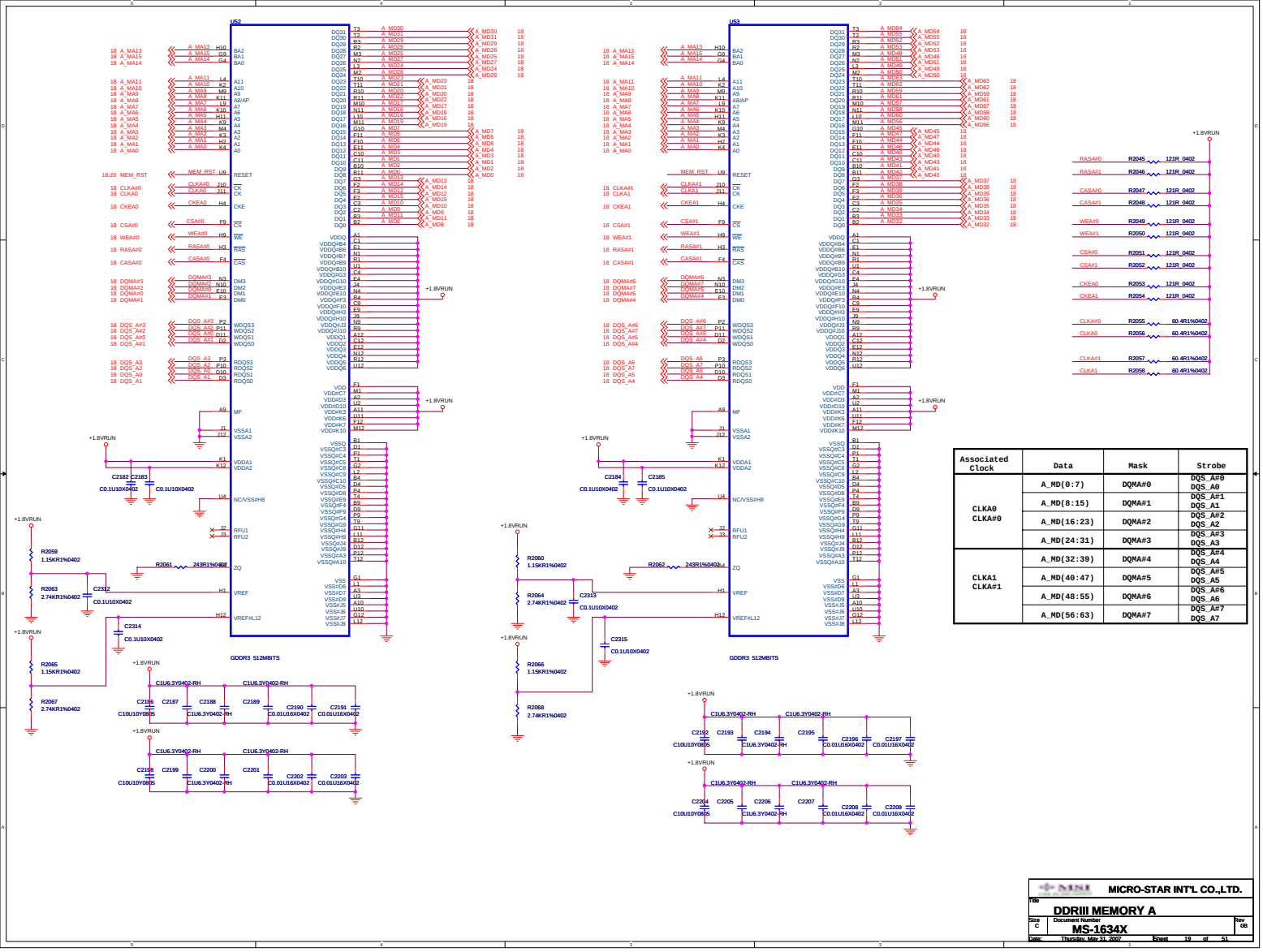


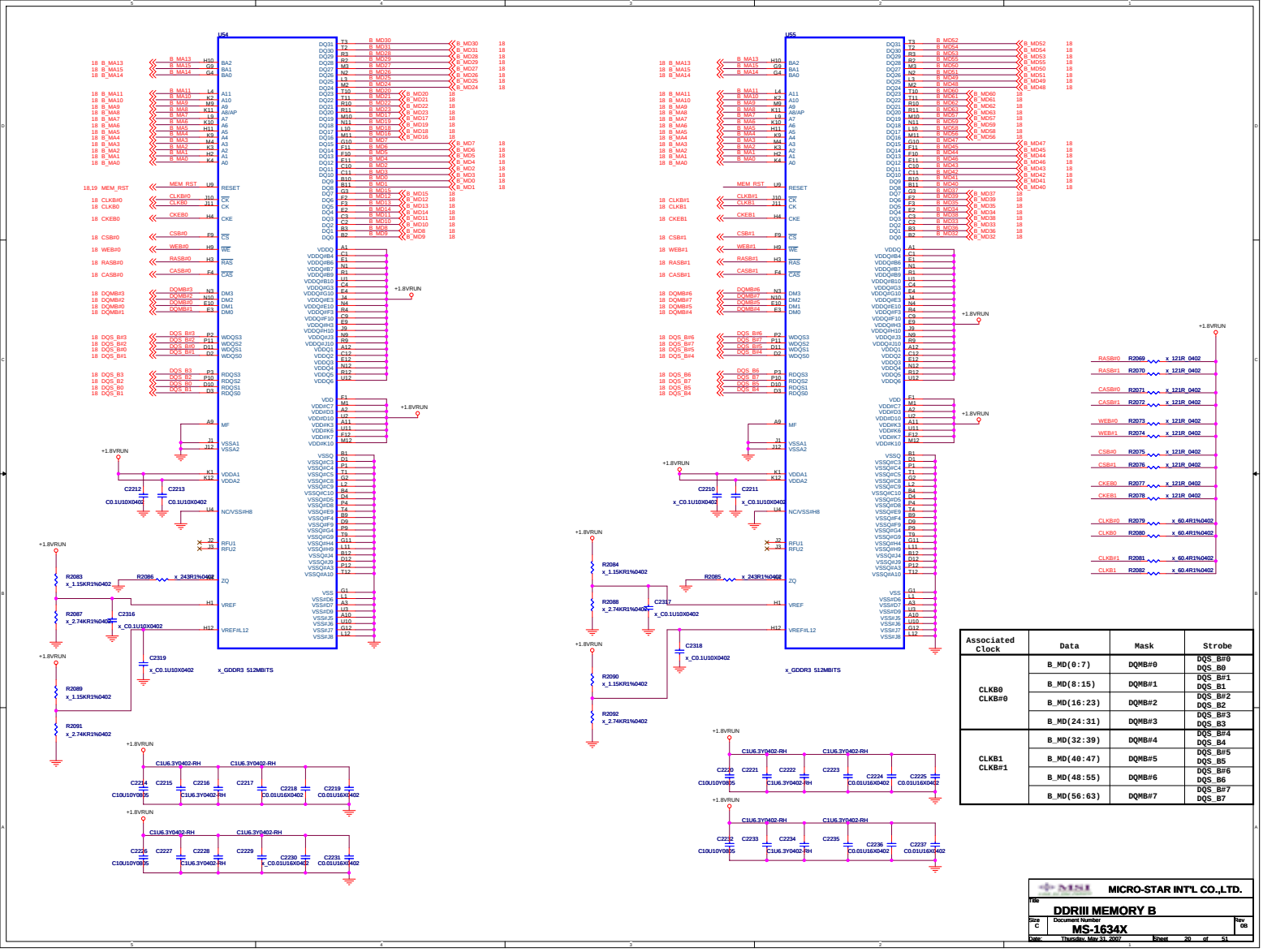
MICRO-STAR INT'L CO.,LTD.			
Title: M7X MEMORY			
Size: C	Document Number: MS-1634X		Rev: 0B
Date: Thursday, May 31, 2007		Sheet 18 of 51	



Associated Clock	Data	Mask	Strobe
CLKA0 CLKA#0	A_MD(0:7)	DQMA#0	DQS_A#0 DQS_A0
	A_MD(8:15)	DQMA#1	DQS_A#1 DQS_A1
	A_MD(16:23)	DQMA#2	DQS_A#2 DQS_A2
	A_MD(24:31)	DQMA#3	DQS_A#3 DQS_A3
CLKA1 CLKA#1	A_MD(32:39)	DQMA#4	DQS_A#4 DQS_A4
	A_MD(40:47)	DQMA#5	DQS_A#5 DQS_A5
	A_MD(48:55)	DQMA#6	DQS_A#6 DQS_A6
	A_MD(56:63)	DQMA#7	DQS_A#7 DQS_A7

MICRO-STAR INT'L CO.,LTD.

Title	DDRIII MEMORY A	
Size C	Document Number MS-1634X	Rev 0B
Date: Thursday, May 31, 2007	Sheet 19 of 51	



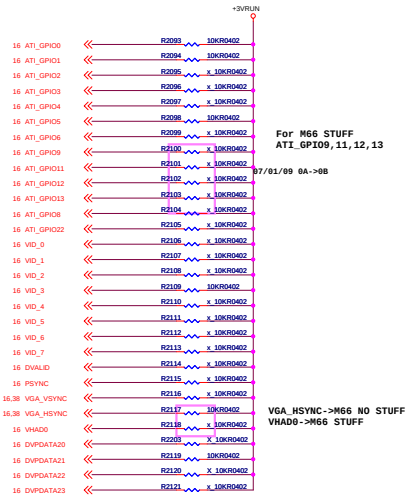
Associated Clock	Data	Mask	Strobe
CLKB0 CLKB#0	B_MD(0:7)	DQMB#0	DQS_B#0 DQS_B0
	B_MD(8:15)	DQMB#1	DQS_B#1 DQS_B1
	B_MD(16:23)	DQMB#2	DQS_B#2 DQS_B2
	B_MD(24:31)	DQMB#3	DQS_B#3 DQS_B3
CLKB1 CLKB#1	B_MD(32:39)	DQMB#4	DQS_B#4 DQS_B4
	B_MD(40:47)	DQMB#5	DQS_B#5 DQS_B5
	B_MD(48:55)	DQMB#6	DQS_B#6 DQS_B6
	B_MD(56:63)	DQMB#7	DQS_B#7 DQS_B7

MICRO-STAR INT'L CO.,LTD.

Title: DDRIII MEMORY B

Size: C | Document Number: MS-1634X | Rev: 0B

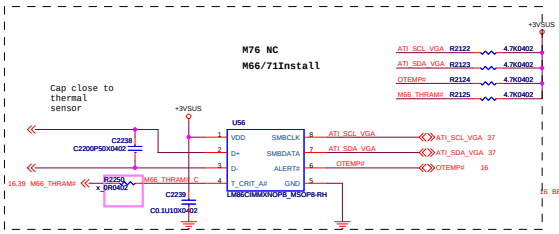
Date: Thursday, May 31, 2007 | Sheet 20 of 51

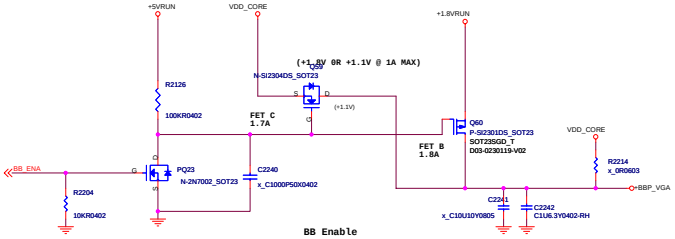


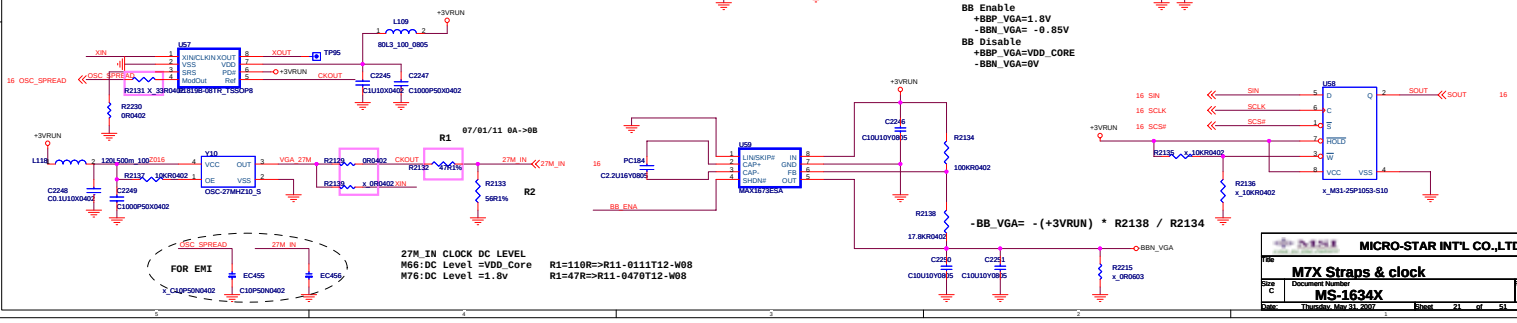
CONFIGURATION STRAPS

RECOMMENDED SETTINGS
0=DO NOT INSTALL RESISTOR
1=INSTALL 10K RESISTOR
X=DESIGN DEPENDANT
NA=NOT APPLICABLE
RSVD=ATI RESERVED

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	M66M,M71M	M72M,M76M
BIF_MSI_DIS	VID1	MESSAGE SIGNAL INTERRUPT ENABLED	NA	0
BIF_64BAR_EN_A	VID5	64 BIT BARS DISABLED	NA	0
TX_PWRS_ENB	GPIO0	PCIE FULL TX OUTPUT SWING	X	X
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	1	1
BIF_DEBUG_ACCESS	GPIO4	DEBUG SIGNALS NOT MUXED OUT	0	0
PLL_IBIAS_RD_1	GPIO6	(M66/71)BIAS CURRENT FOR PCIE PHY PLL MSBIT (M72/76)RSVD	0	0
PLL_IBIAS_RD_0	GPIO5	(M66/71)BIAS CURRENT FOR PCIE PHY PLL MSBIT (M72/76)RSVD	1	0
BIOS_ROM_EN	GPIO_22_ROMCSB	DISABLE EXTERNAL BIOS ROM	NA	X
ROMIDCFG(3:0)	GPIO[13,11,19]	SERIAL ROM TYPE OR MEMORY APERATURE SIZE SELECT	XX XX	XX XX
VIP_DEVICE_STRAP_ENA	VSYNC	IGNORE VIP DEVICE STRAPS	X	X
BIF_VGA DIS	PSYNC	VGA ENABLED	NA	0
MEM_TYPE	UNUSED DVPDATA [23.22.21.20]	MEMORY TYPE,MAKE AND SIZE INFO	XXXX	XXXX
Samsung		GPU Ver.A14		
Infineon		K4J52324QC-BC14=>M12-K4J5285-S02	1000	0001
		HYB18H512321BF-14=>M12-18H5185-Q16	0010	0010
		GPU Ver.A15		1001
				1010



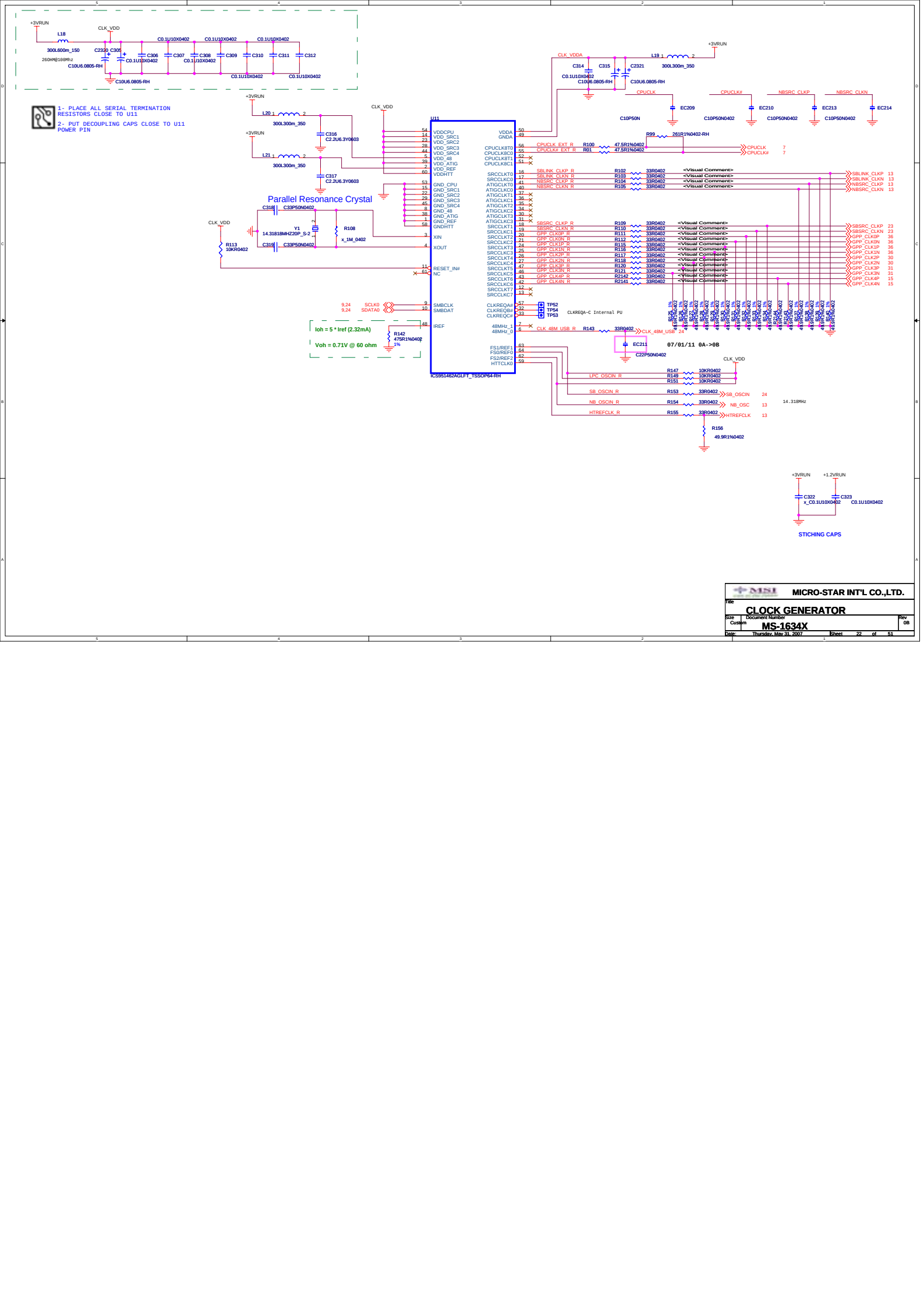




27M_IN CLOCK DC LEVEL
M66:DC Level =VDD_Core R1=110R=>R11-0111T12-W08
M76:DC Level =1.8v R1=47R=>R11-0470T12-W08

MICRO-STAR INT'L CO.,LTD.

Title	M7X Straps & clock	
Size C	Document Number MS-1634X	Rev 0B
Date: Thursday, May 31, 2007	Sheet 21 of 51	


+3VRUN
L18
300L600m_150
260HM@100Mhz
CLK_VDD
C2320
C305
C0.1U10X0402
C306
C307
C308
C309
C310
C311
C312
C10U6.0805-RH
1- PLACE ALL SERIAL TERMINATION RESISTORS CLOSE TO U11
2- PUT DECOUPLING CAPS CLOSE TO U11 POWER PIN
L20
300L300m_350
C316
C2.2U6.3Y0603
L21
C317
U11
VDDCPU
VDD_SRC1
VDD_SRC2
VDD_SRC3
VDD_SRC4
VDD_48
VDD_ATIG
VDD_REF
VDDHTT
GND_CPU
GND_SRC1
GND_SRC2
GND_SRC3
GND_SRC4
GND_48
GND_ATIG
GND_REF
GNDHTT
XIN
XOUT
RESET_IN#
NC
SMBCLK
SMBDAT
IREF
VDDA
GNDA
SRCCLKT0
SRCCLKC0
ATIGCLKT0
ATIGCLKC0
ATIGCLKT1
ATIGCLKC1
ATIGCLKT2
ATIGCLKC2
ATIGCLKT3
ATIGCLKC3
SRCCLKT1
SRCCLKC1
SRCCLKT2
SRCCLKC2
SRCCLKT3
SRCCLKC3
SRCCLKT4
SRCCLKC4
SRCCLKT5
SRCCLKC5
SRCCLKT6
SRCCLKC6
SRCCLKT7
SRCCLKC7
CLKREQA#
CLKREQB#
CLKREQC#
48MHz_1
48MHz_0
FS1/REF1
FS0/REF0
FS2/REF2
HTTCLK0
ICS951462AGLFT_TSSOP64-RH
Parallel Resonance Crystal
Y1
14.31818MHZ20P_S-2
C318
C33P50N0402
C319
R108
x_1M_0402
R113
10KR0402
SCLK0
SDATA0
R142
475R1%0402
Ioh = 5 * Iref (2.32mA)
Voh = 0.71V @ 60 ohm
TP52
TP54
TP53
CLKREQA-C Internal PU
CPUCLK_EXT_R
CPUCLK#_EXT_R
R100
R01
47.5R1%0402
R99
261R1%0402-RH
CPUCLK
CPUCLK#
SBLINK_CLKP_R
SBLINK_CLKN_R
NBSRC_CLKP_R
NBSRC_CLKN_R
R102
R103
R104
R105
33R0402
<Visual Comment>
SBLINK_CLKP
SBLINK_CLKN
NBSRC_CLKP
NBSRC_CLKN
SBSRC_CLKP_R
SBSRC_CLKN_R
GPP_CLK0P_R
GPP_CLK0N_R
GPP_CLK1P_R
GPP_CLK1N_R
GPP_CLK2P_R
GPP_CLK2N_R
GPP_CLK3P_R
GPP_CLK3N_R
GPP_CLK4P_R
GPP_CLK4N_R
R109
R110
R111
R112
R115
R116
R117
R118
R120
R121
R2142
R2141
SBSRC_CLKP
SBSRC_CLKN
GPP_CLK0P
GPP_CLK0N
GPP_CLK1P
GPP_CLK1N
GPP_CLK2P
GPP_CLK2N
GPP_CLK3P
GPP_CLK3N
GPP_CLK4P
GPP_CLK4N
CLK_48M_USB_R
R143
CLK_48M_USB
EC211
C22P50N0402
07/01/11 0A->0B
CLK_VDDA
C314
C315
C2321
L19
300L300m_350
C0.1U10X0402
C10U6.0805-RH
CPUCLK
CPUCLK#
NBSRC_CLKP
NBSRC_CLKN
EC209
EC210
EC213
EC214
C10P50N
C10P50N0402
LPC_OSCIN_R
SB_OSCIN_R
NB_OSCIN_R
HTREFCLK_R
R147
R149
R151
R153
R154
R155
10KR0402
33R0402
SB_OSCIN
NB_OSC
HTREFCLK
14.318MHz
R156
49.9R1%0402
+1.2VRUN
C322
C323
x_C0.1U10X0402
STICHING CAPS
MICRO-STAR INT'L CO.,LTD.
Title
CLOCK GENERATOR
Size
Custom
Document Number
MS-1634X
Rev
0B
Date:
Thursday, May 31, 2007
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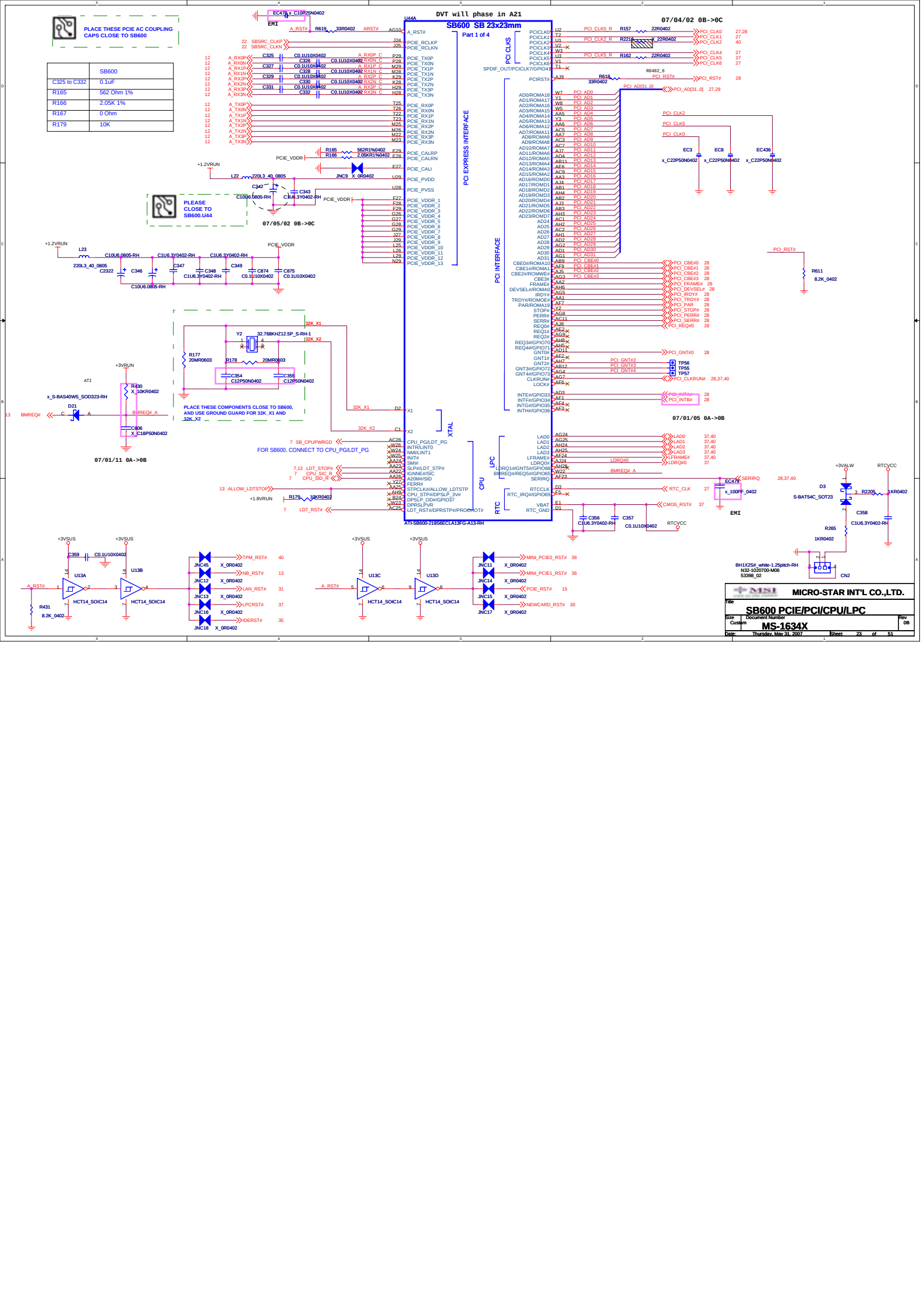
of
51


PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB600
SB600
C325 to C332 0.1uF
R165 562 Ohm 1%
R166 2.05K 1%
R167 0 Ohm
R179 10K
DVT will phase in A21
07/04/02 0B->0C
U44A
SB600 SB 23x23mm
Part 1 of 4
PCI CLKS
PCI EXPRESS INTERFACE
PCI INTERFACE
LPC
CPU
RTC
XTAL
PLEASE CLOSE TO SB600.U44
07/05/02 0B->0C
PLACE THESE COMPONENTS CLOSE TO SB600, AND USE GROUND GUARD FOR 32K_X1 AND 32K_X2
FOR SB600, CONNECT TO CPU_PG/LDT_PG
07/05/05 0A->0B
07/01/11 0A->0B
ATI-SB600-218S6ECLA13FG-A13-RH
MICRO-STAR INT'L CO.,LTD.
SB600 PCIE/PCI/CPU/LPC
MS-1634X
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23
51

DVT will phase in A21

U44D

SB600 SB 23x23mm Part 4 of 4

ATI-SB600-218S6ECLA13FG-A13-RH

ACPI / WAKE UP EVENTS

USB INTERFACE

OSC / RST

GPIO

USB OC

AZALIA

AC97

USB PWR

EMI

07/01/11 0A->0B

07/01/05 0A->0B

PLACE C370 AND C371 CLOSE TO SB600

MICRO-STAR INT'L CO.,LTD.

Title: SB600 ACPI/GPIO/USB/AUDIO

Size: Custom | Document Number: MS-1634X | Rev: 0B

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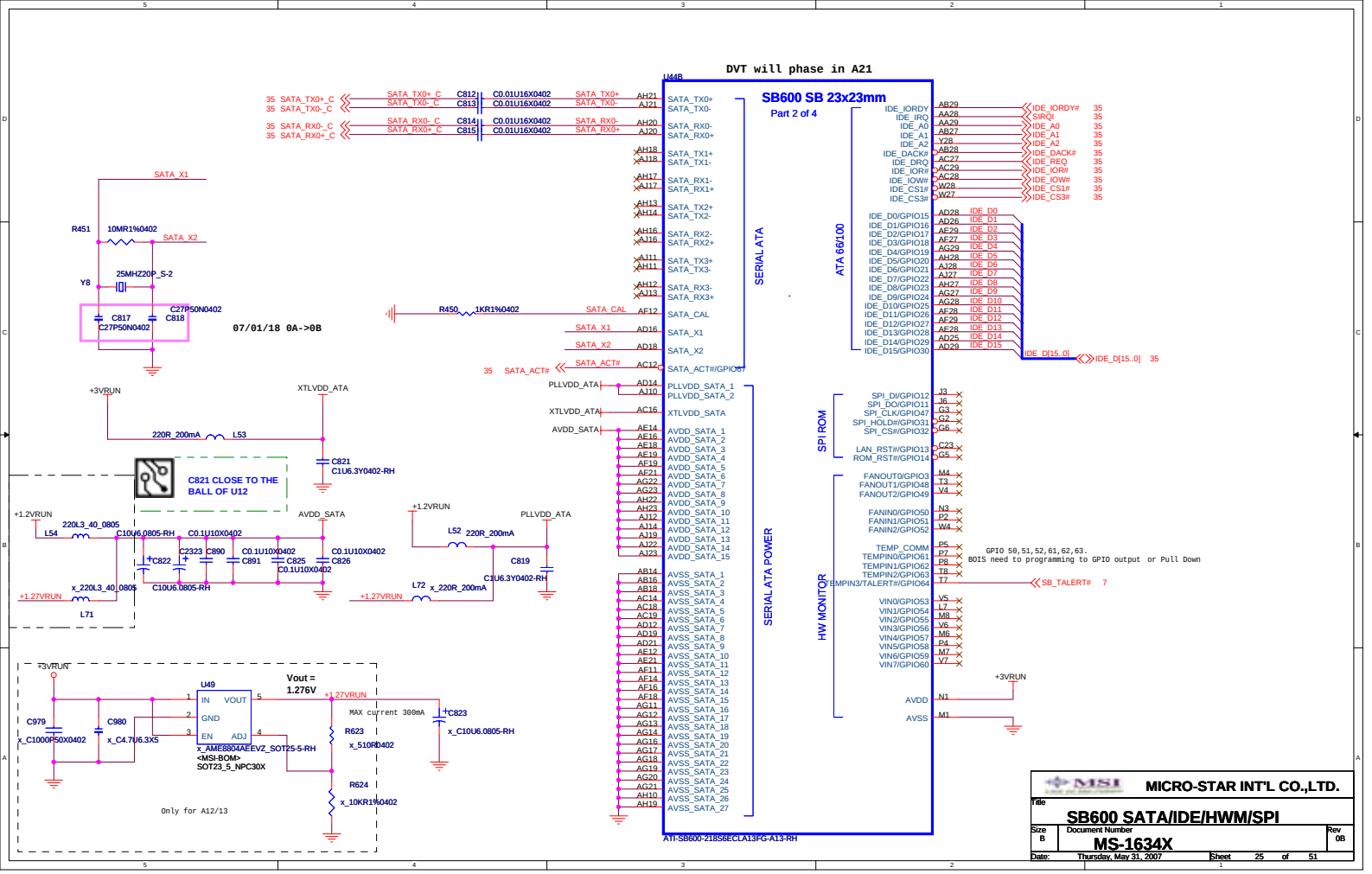
DVT will phase in A21
SB600 SB 23x23mm
Part 2 of 4
U44B
ATI-SB600-218S6ECLA13FG-A13-RH
SERIAL ATA
ATA 66/100
SPI ROM
HW MONITOR
SERIAL ATA POWER
07/01/18 0A->0B
C821 CLOSE TO THE BALL OF U12
Only for A12/13
MICRO-STAR INT'L CO.,LTD.
SB600 SATA/IDE/HWM/SPI
MS-1634X
Thursday, May 31, 2007
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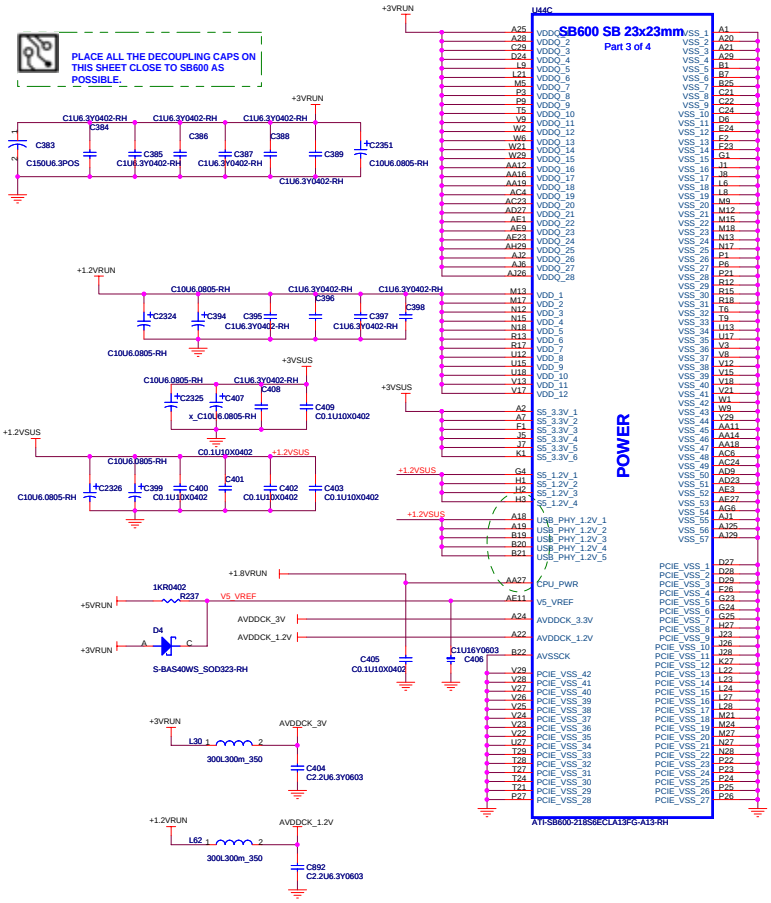
DVT will phase in A21



MICRO-STAR INT'L CO.,LTD.

Title: SB600 POWER & GND

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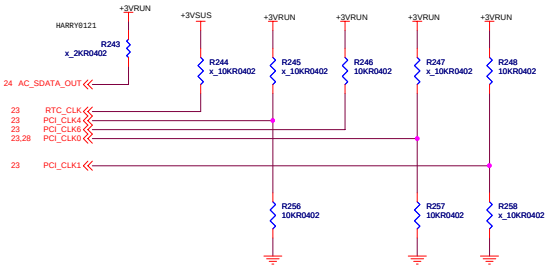
REQUIRED STRAPS

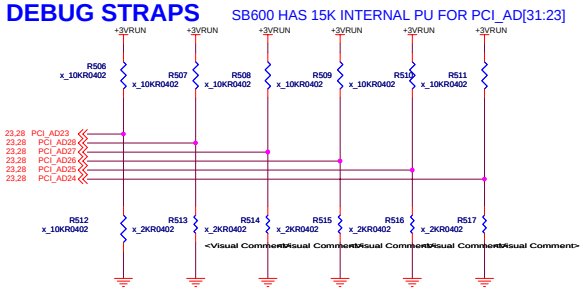
NPTE: FOR SB460, EXTERNAL PU/PD ARE REQUIRED



					SB600	
	AC_SDOUT	RTC_CLK	PCI_CLK4	PCI_CLK6	PCI_CLK0	PCI_CLK1
PULL HIGH	USE DEBUG STRAPS	INTERNAL RTC DEFAULT	USE INT. PLL48	CPU IF=K8 DEFAULT	ROM TYPE: H, H = PCI ROM H, L = SPI ROM L, H = LPC ROM DEFAULT L, L = FWH ROM	
PULL LOW	IGNORE DEBUG STRAPS DEFAULT	EXTERNAL RTC	USE EXT. 48MHZ DEFAULT	CPU IF=P4		

DEBUG STRAPS

SB600 HAS 15K INTERNAL PU FOR PCI_AD[31:23]



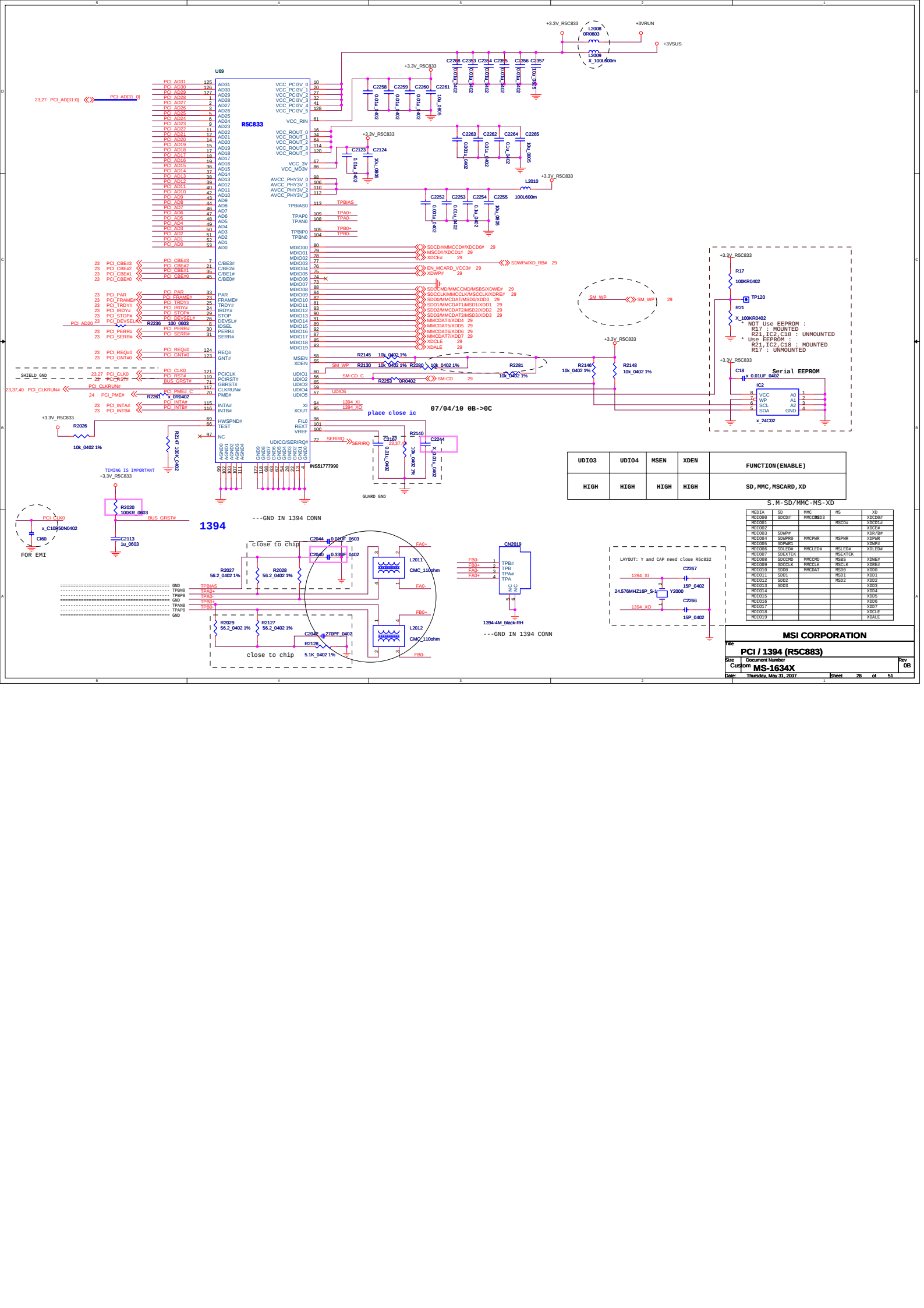
	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	Bootfail timer disable default defoult
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	Bootfail timer enable

MICRO-STAR INT'L CO.,LTD.

Title: SB600 STRAPS

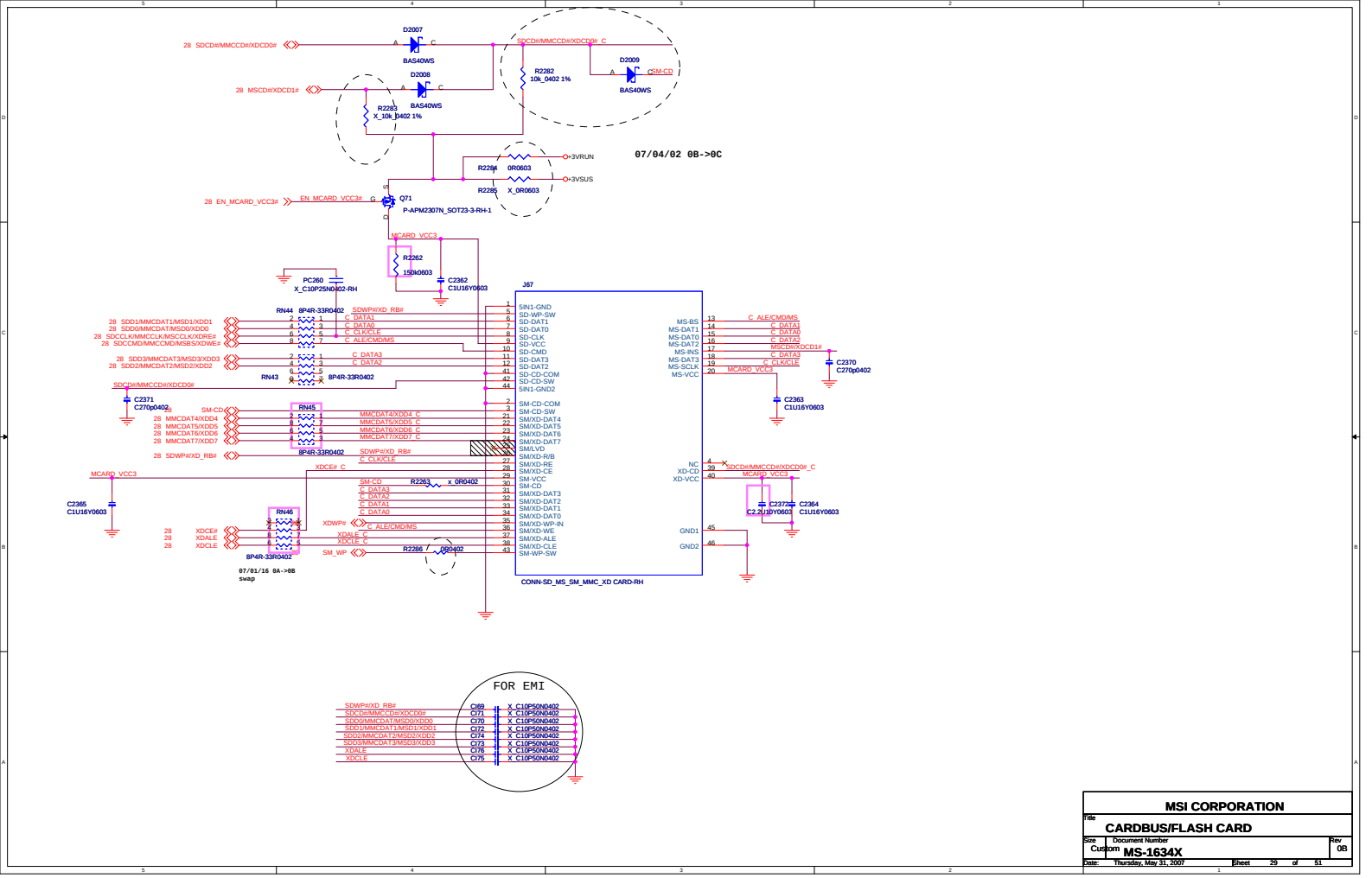
Size: Custom | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 27 of 51

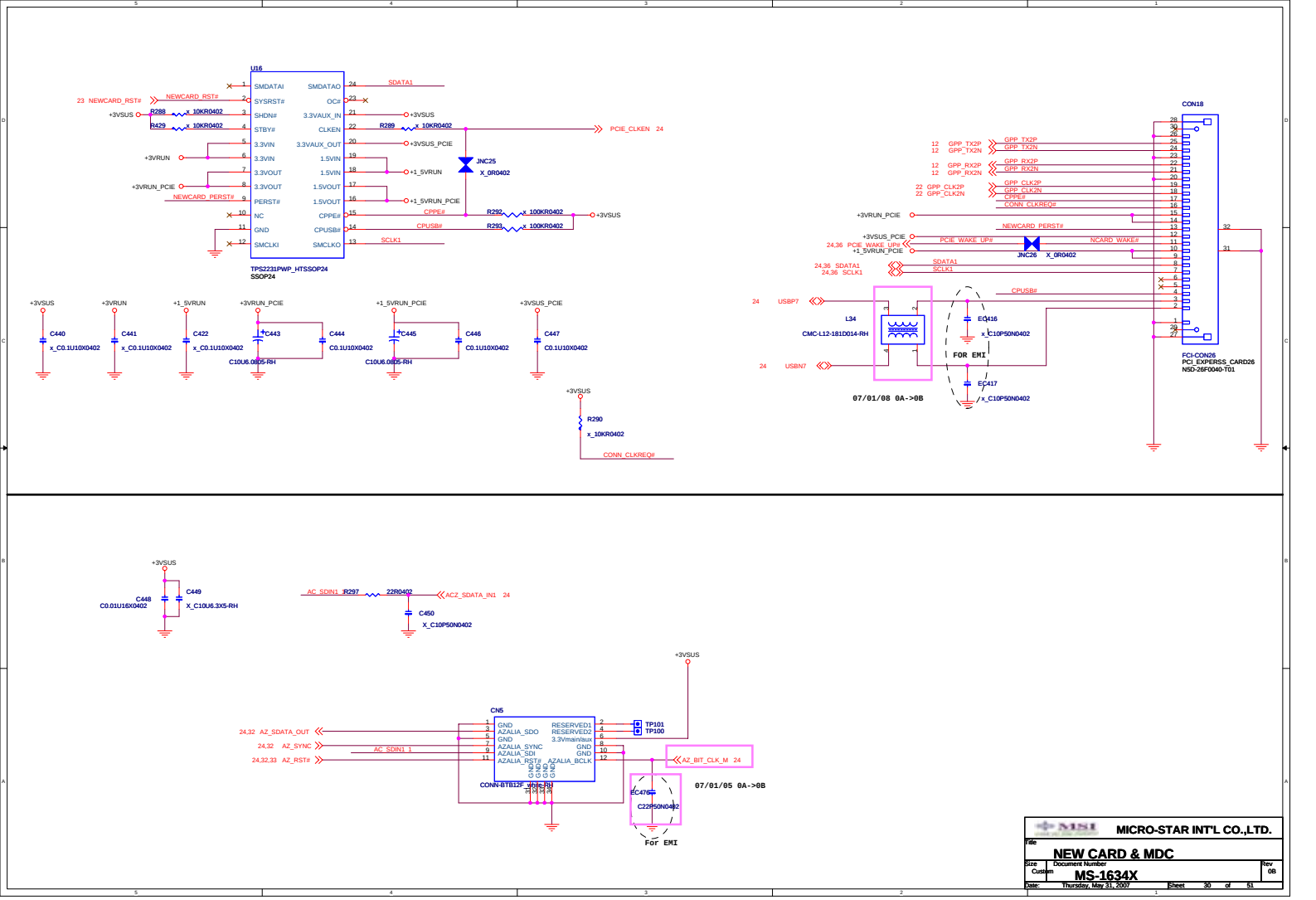


UDIO3	UDIO4	MSEN	XDEN	FUNCTION(ENABLE)
HIGH	HIGH	HIGH	HIGH	SD,MMC,MSCARD,XD

MEDIA	SD	MMC	MS	XD
MDIO00	SDCD#	MMCCD#/D3		XDCD0#
MDIO01			MSCD#	XDCD1#
MDIO02				XDCE#
MDIO03	SDWP#			XDR/B#
MDIO04	SDWPR0	MMCPWR	MSPWR	XDPWR
MDIO05	SDPWR1			XDWP#
MDIO06	SDLED#	MMCLED#	MSLED#	XDLED#
MDIO07	SDEXTCK		MSEXTCK	
MDIO08	SDCCKD	MMCCMD	MSBS	XDWE#
MDIO09	SDCCLK	MMCCLK	MSCLK	XDRE#
MDIO10	SDD0	MMCDAT	MSD0	XD00
MDIO11	SDD1		MSD1	XD01
MDIO12	SDD2		MSD2	XD02
MDIO13	SDD3			XD03
MDIO14				XD04
MDIO15				XD05
MDIO16				XD06
MDIO17				XD07
MDIO18				XDCLE
MDIO19				XDALE



MSI CORPORATION		
Title: CARDBUS/FLASH CARD		
Size: Custom	Document Number: MS-1634X	Rev: 0B
Date: Thursday, May 31, 2007	Sheet 29 of 51	


U16
TPS2231PWP_HTSSOP24
SSOP24
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
23 NEWCARD_RST#
NEWCARD_RST#
+3VSUS
R288 x 10KR0402
R429 x 10KR0402
+3VRUN
+3VRUN_PCIE
NEWCARD_PERST#
SDATA1
+3VSUS
R289 x 10KR0402
+3VSUS_PCIE
+1_5VRUN
+1_5VRUN_PCIE
CPPE#
CPUSB#
SCLK1
PCIE_CLKEN 24
JNC25
X_0R0402
R292 x 100KR0402
R293 x 100KR0402
+3VSUS
+3VSUS
C440 x_C0.1U10X0402
+3VRUN
C441 x_C0.1U10X0402
+1_5VRUN
C422 x_C0.1U10X0402
+3VRUN_PCIE
C443 C10U6.0805-RH
C444 C0.1U10X0402
+1_5VRUN_PCIE
C445 C10U6.0805-RH
C446 C0.1U10X0402
+3VSUS_PCIE
C447 C0.1U10X0402
+3VSUS
R290 x_10KR0402
CONN_CLKREQ#
CON18
FCI-CON26
PCI_EXPERSS_CARD26
N5D-26P0040-T01
12 GPP_TX2P
12 GPP_TX2N
GPP_TX2P
GPP_TX2N
12 GPP_RX2P
12 GPP_RX2N
GPP_RX2P
GPP_RX2N
22 GPP_CLK2P
22 GPP_CLK2N
GPP_CLK2P
GPP_CLK2N
CPPE#
CONN_CLKREQ#
+3VRUN_PCIE
NEWCARD_PERST#
+3VSUS_PCIE
PCIE_WAKE_UP#
24,36 PCIE_WAKE_UP#
+1_5VRUN_PCIE
NCARD_WAKE#
JNC26 X_0R0402
24,36 SDATA1
24,36 SCLK1
SDATA1
SCLK1
CPUSB#
24 USBP7
L34
CMC-L12-181D014-RH
24 USBN7
EC416
x_C10P50N0402
FOR EMI
EC417
x_C10P50N0402
07/01/08 0A->0B

+3VSUS
C448 C0.01U16X0402
C449 X_C10U6.3X5-RH
AC_SDIN1 R297 22R0402
ACZ_SDATA_IN1 24
C450 X_C10P50N0402
+3VSUS
CN5
CONN-BTB12F_wide-RH
GND
AZALIA_SDO
GND
AZALIA_SYNC
AZALIA_SDI
AZALIA_RST#
RESERVED1
RESERVED2
3.3Vmainaux
GND
GND
AZALIA_BCLK
24,32 AZ_SDATA_OUT
24,32 AZ_SYNC
AC_SDIN1 1
24,32,33 AZ_RST#
TP101
TP100
AZ_BIT_CLK_M 24
EC476
C22P50N0402
For EMI
07/01/05 0A->0B
MICRO-STAR INT'L CO.,LTD.
Title
NEW CARD & MDC
Size
Custom
Document Number
MS-1634X
Rev
0B
Date:
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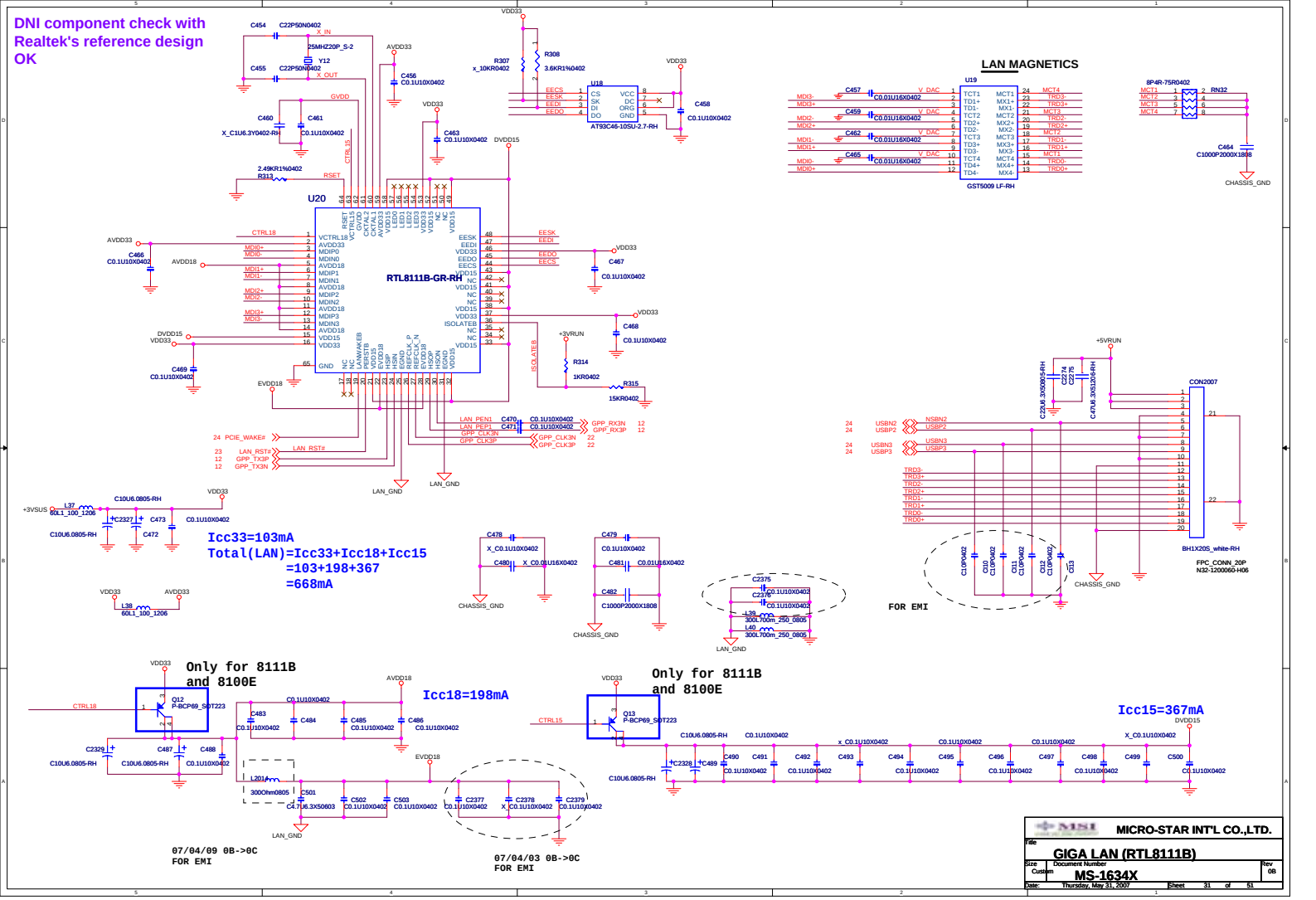
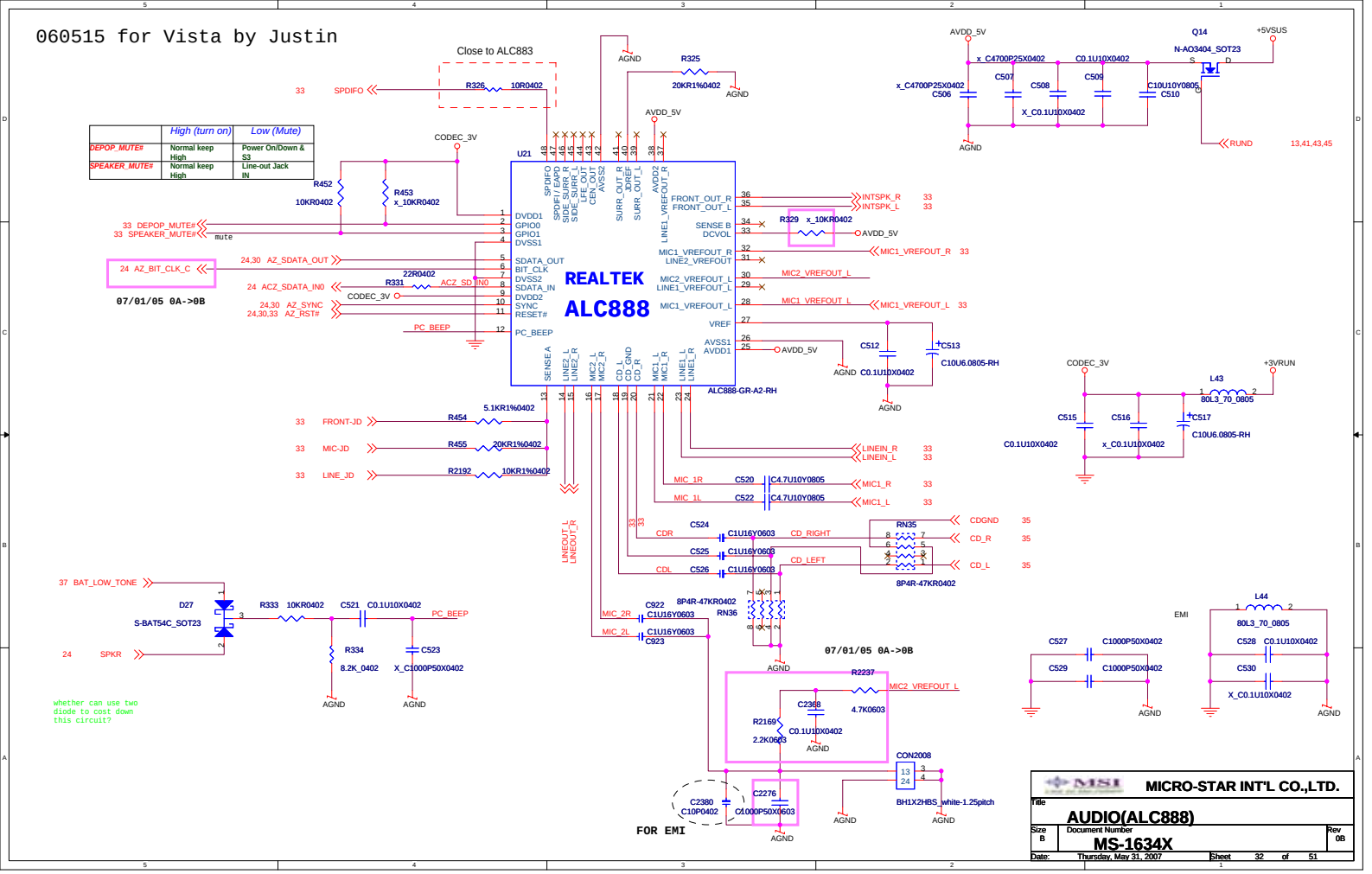
DNI component check with Realtek's reference design OK



MICRO-STAR INT'L CO.,LTD.			
Title: GIGA LAN (RTL8111B)			
Size: Custom	Document Number: MS-1634X		Rev: 0B
Date: Thursday, May 31, 2007		Sheet 31 of 51	


060515 for Vista by Justin
Close to ALC883
REALTEK
ALC888
ALC888-GR-A2-RH
U21
07/01/05 0A->0B
07/01/05 0A->0B
FOR EMI
whether can use two diode to cost down this circuit?
MICRO-STAR INT'L CO.,LTD.
AUDIO(ALC888)
MS-1634X
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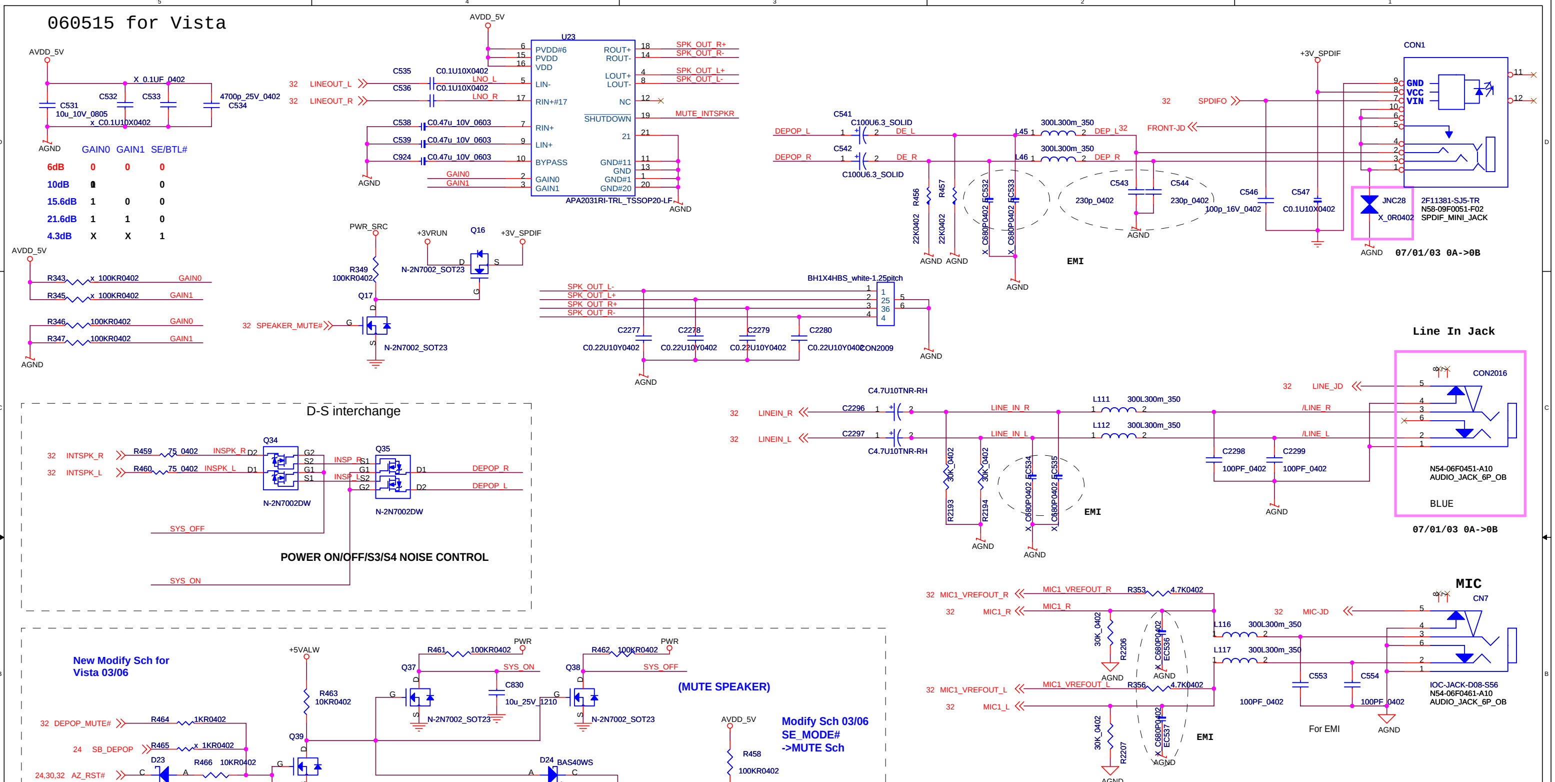
060515 for Vista



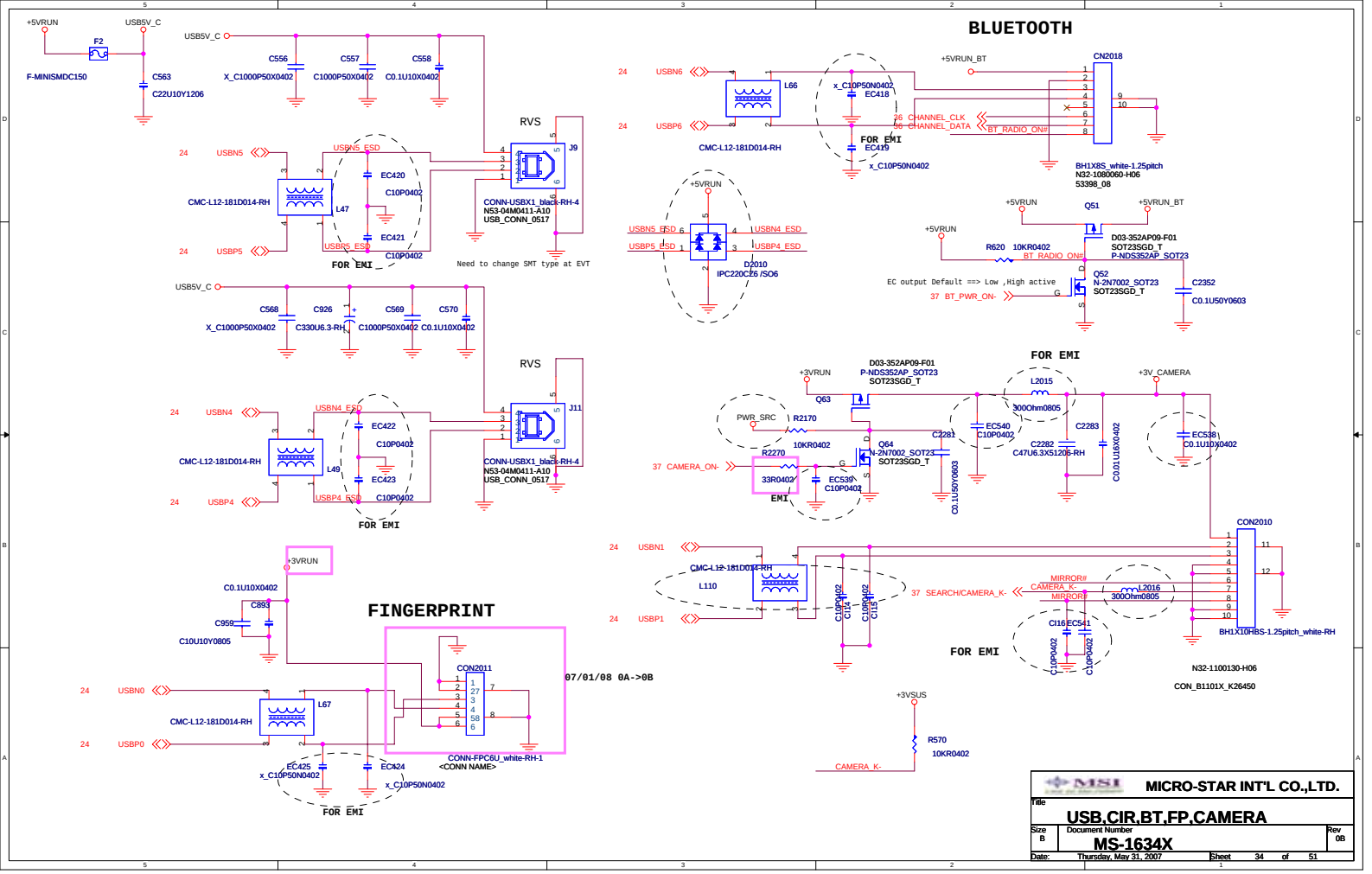
Mobile Configuation:

(3 external jacks, 1 internal Mic, 2 sets stereo internal speaker)

Pin Assignment	Location	Re-tasking
FRONT(pin-35/36)	SPDIF jack, AMP	SPDIF output, AMP output(Int.SPKR), ?
SURR (pin-39/41)	X	X
CEN/LFE (pin-43/44)	X	X
SIDESURR (pin-45/46)	X	X
LINE1 (pin-23/24)	Line-in jack	Line input, ?
MIC1 (pin-21/22)	MIC-in jack	Mic input, ?
MIC2 (pin-16/17)	Int.MIC	Int.Mic input

MICRO-STAR INT'L CO.,LTD.

Title: AMP & SPK & MIC & SPK		
Size: Custom	Document Number: MS-1634X	Rev: 0B
Date: Thursday, May 31, 2007	Sheet 33 of 51	


BLUETOOTH
FINGERPRINT
FOR EMI
RVS
+5VRUN
USB5V_C
+5VRUN_BT
+3VRUN
+3V_CAMERA
+3VSUS
F2
F-MINISMDC150
C563
C22U10Y1206
C556
C557
C558
X_C1000P50X0402
C1000P50X0402
C0.1U10X0402
USBN5
USBP5
USBN5_ESD
USBP5_ESD
EC420
EC421
C10P0402
L47
CMC-L12-181D014-RH
J9
CONN-USBX1_black-RH-4
N53-04M0411-A10
USB_CONN_0517
Need to change SMT type at EVT
C568
C926
C330U6.3-RH
C569
C570
USBN4
USBP4
USBN4_ESD
USBP4_ESD
EC422
EC423
L49
J11
USBN6
USBP6
L66
EC418
EC419
x_C10P50N0402
CMC-L12-181D014-RH
CN2018
BH1X8S_white-1.25pitch
N32-1080060-H06
53398_08
CHANNEL_CLK
CHANNEL_DATA
BT_RADIO_ON#
USBN5_ESD
USBP5_ESD
USBN4_ESD
USBP4_ESD
D2010
IPC220CC6 /SO6
Q51
D03-352AP09-F01
SOT23SGD_T
P-NDS352AP_SOT23
R620
10KR0402
Q52
N-2N7002_SOT23
SOT23SGD_T
C2352
C0.1U50Y0603
EC output Default ==> Low ,High active
BT_PWR_ON-
D03-352AP09-F01
P-NDS352AP_SOT23
SOT23SGD_T
Q63
L2015
300Ohm0805
PWR_SRC
R2170
10KR0402
Q64
N-2N7002_SOT23
SOT23SGD_T
R2270
33R0402
EC539
C10P0402
EC540
C2281
C2282
C47U6.3X5120S-RH
C2283
C0.1U10X0402
EC538
CAMERA_ON-
CON2010
BH1X10HBS-1.25pitch_white-RH
N32-1100130-H06
CON_B1101X_K26450
USBN1
USBP1
CMC-L12-181D014-RH
L110
C10P0402
C114
C115
MIRROR#
CAMERA_K-
L2016
300Ohm0805
C116
EC541
SEARCH/CAMERA_K-
USBN0
USBP0
L67
C0.1U10X0402
C893
C959
C10U10Y0805
CON2011
CONN-FPC6U_white-RH-1
<CONN NAME>
EC425
EC424
x_C10P50N0402
R570
10KR0402
07/01/08 0A->0B
MICRO-STAR INT'L CO.,LTD.
Title
USB,CIR,BT,FP,CAMERA
Size
B
Document Number
MS-1634X
Rev
0B
Date:
Thursday, May 31, 2007
Sheet
34
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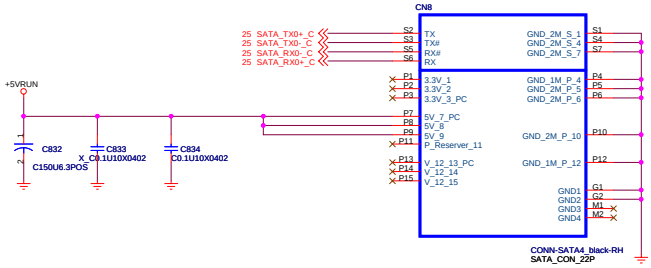
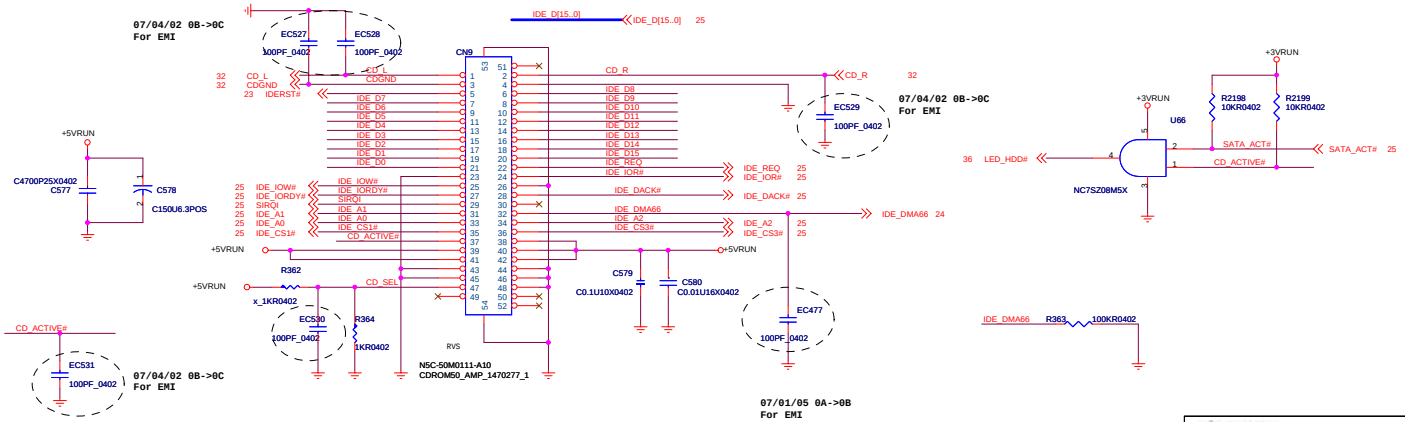
51

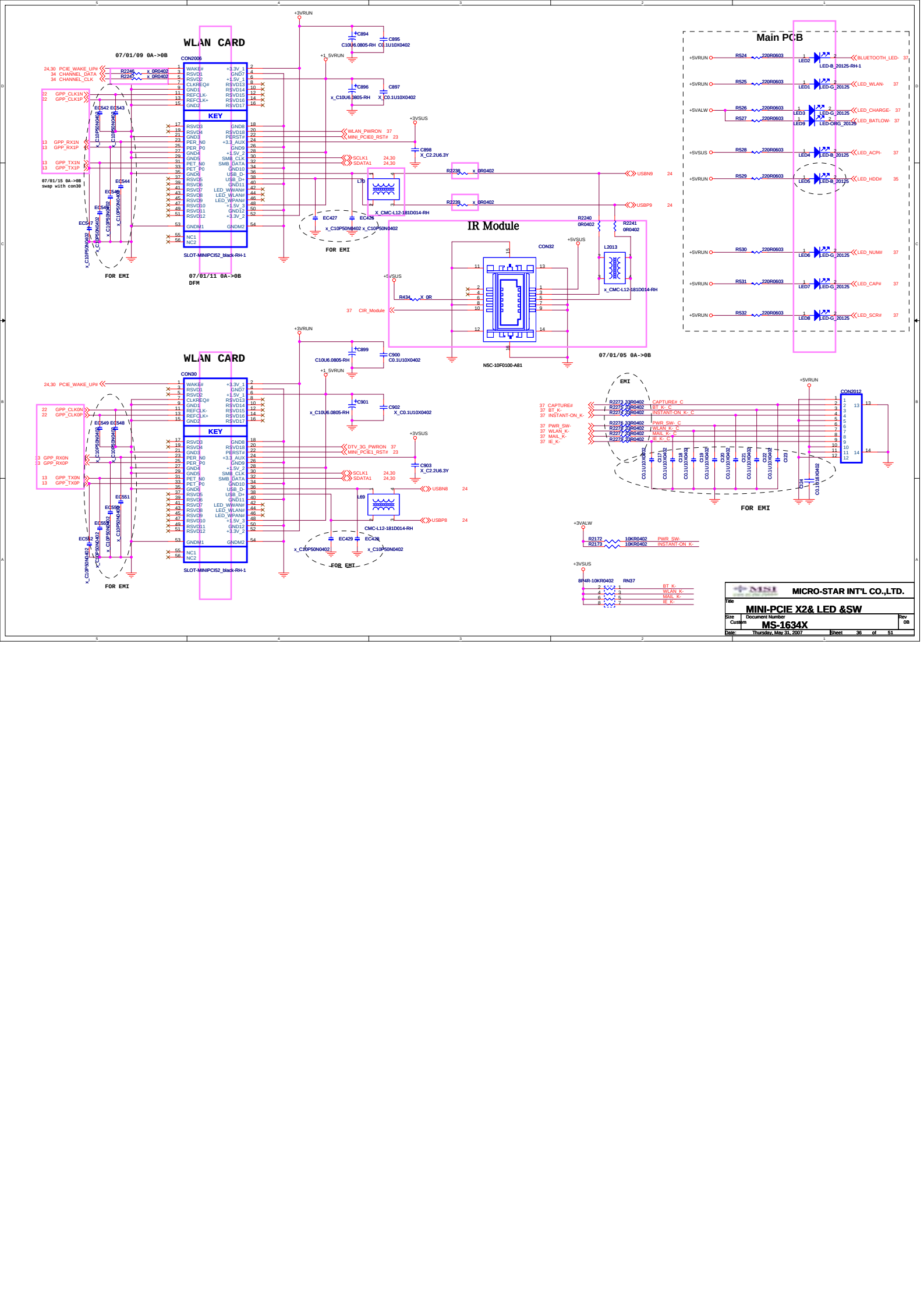
2.5"HD DRIVE

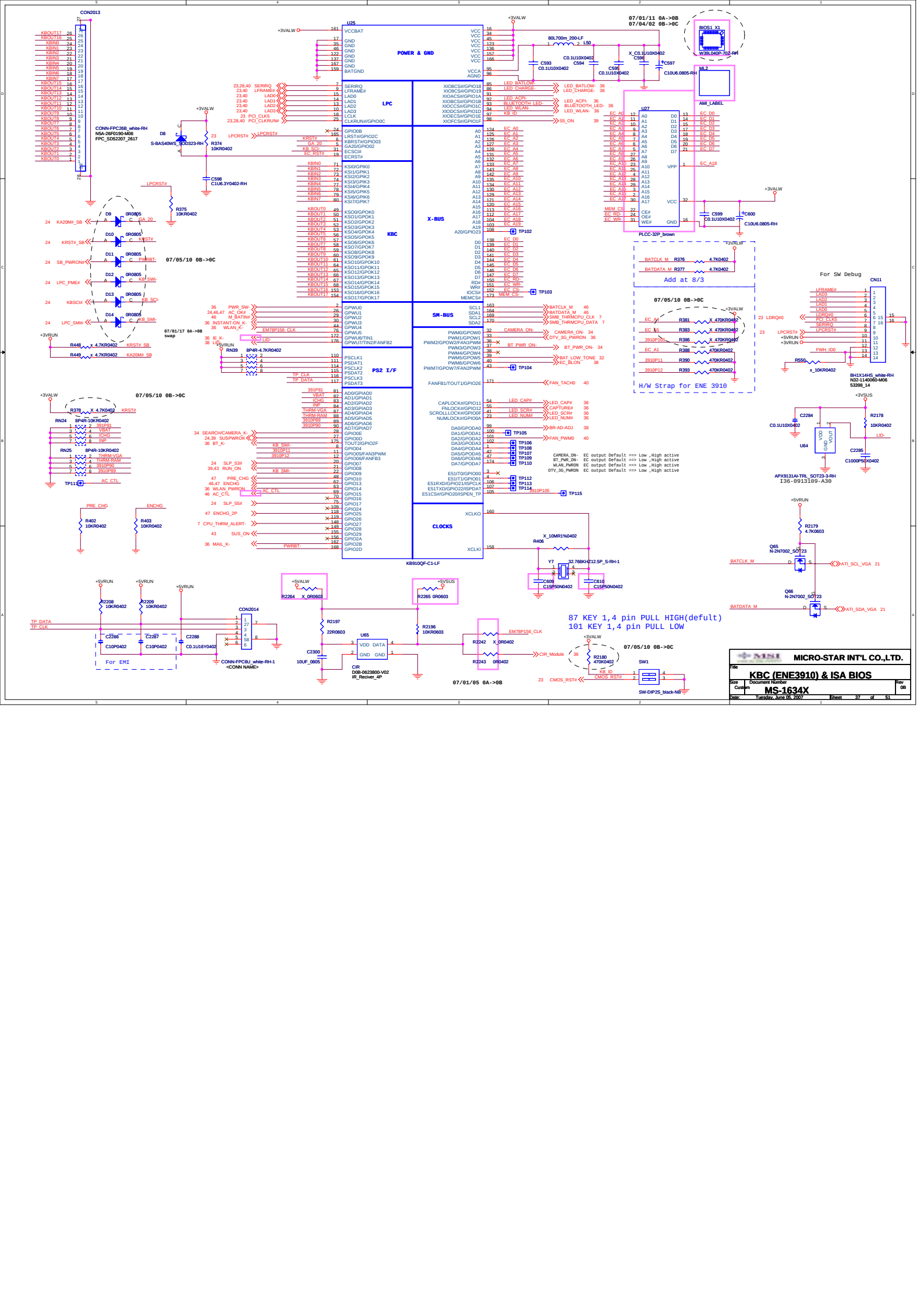


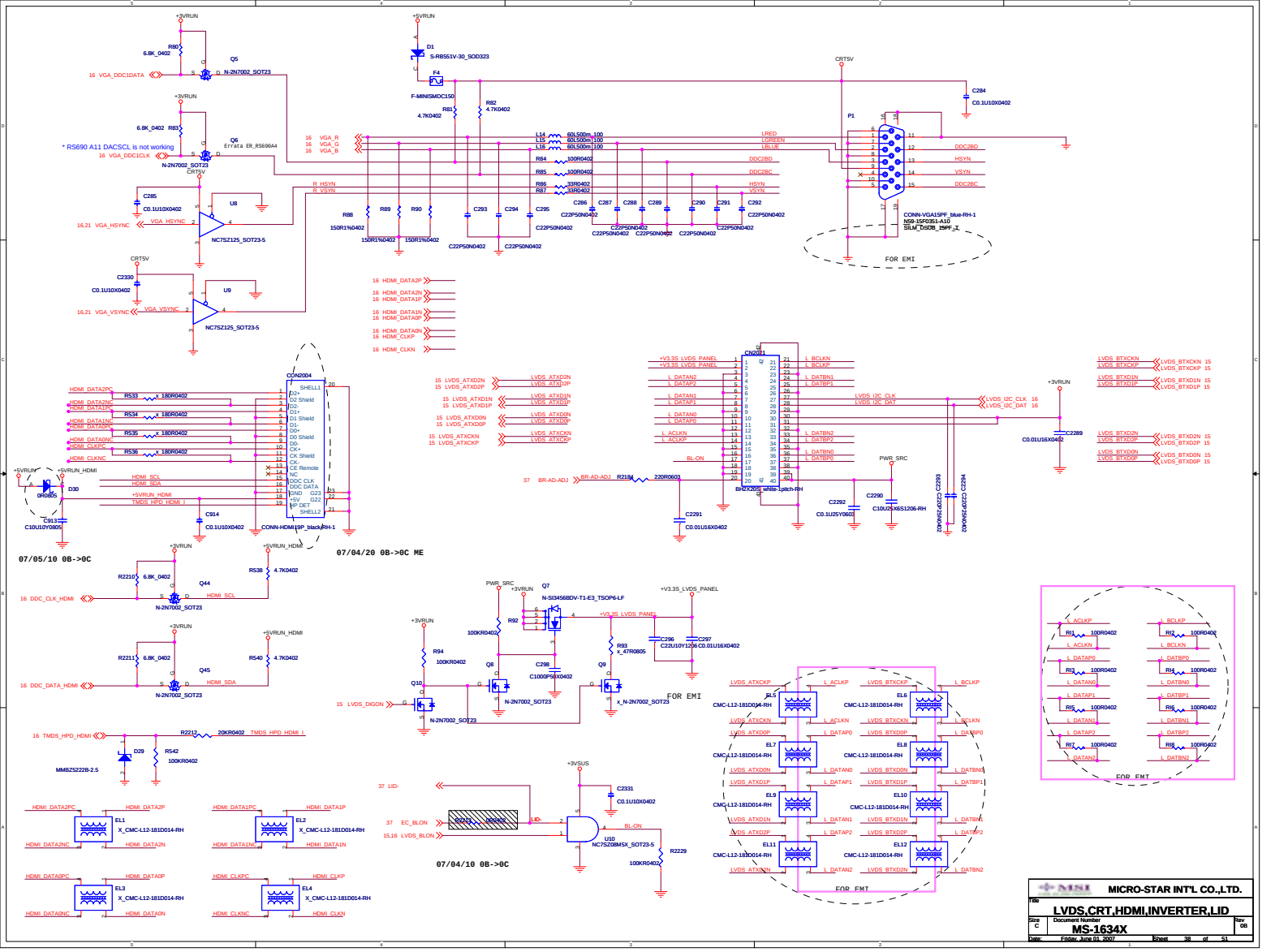


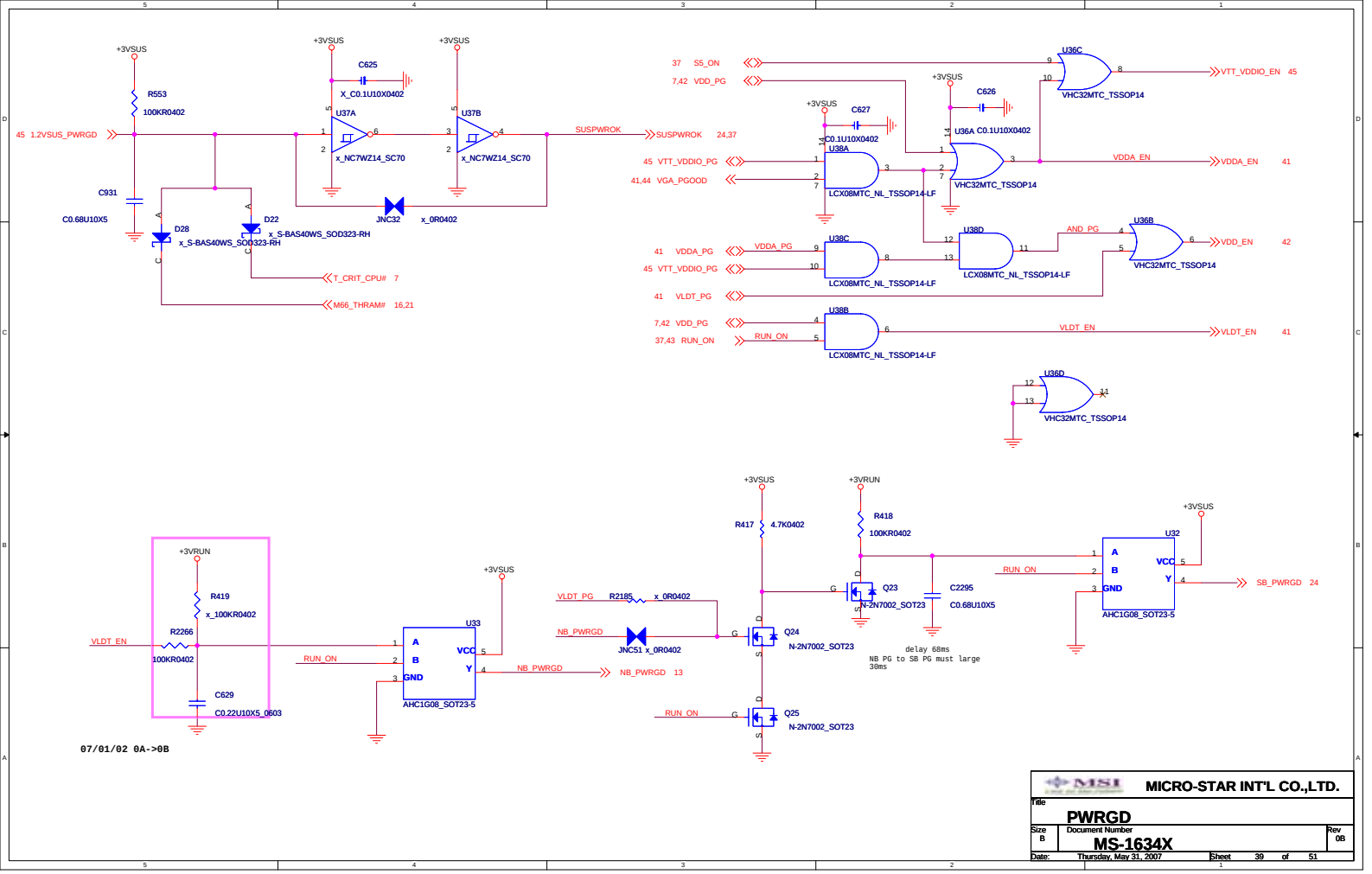
PIN32:PDIAG
PIN37:PASP
PIN47:CABLE SELECT->Low:Master
NC or High:Slave

	MICRO-STAR INT'L CO.,LTD.	
Title	SATA HDD/PATA CDROM CONN	
Size: Custom	Document Number: MS-1634X	Rev: 0B
Date: Thursday, May 31, 2007	Sheet 35 of 51	


WLAN CARD
07/01/09 0A->0B
CON2006
KEY
SLOT-MINIPCI52_black-RH-1
07/01/11 0A->0B
DFM
07/01/15 0A->0B
swap with con30
FOR EMI
+3VRUN
+1_5VRUN
+3VSUS
WLAN_PWRON 37
MINI_PCIE0_RST# 23
SCLK1 24,30
SDATA1 24,30
USBN9 24
USBP9 24
L70
X_CMC-L12-181D014-RH
IR Module
CON32
N5C-10F0100-A81
07/01/05 0A->0B
37 CIR_Module
Main PCB
LED2 LED-B_20125-RH-1
LED1 LED-G_20125
LED3 LED-G_20125
LED9 LED-ORG_20125
LED4 LED-B_20125
LED5 LED-B_20125
LED6 LED-G_20125
LED7 LED-G_20125
LED8 LED-G_20125
WLAN CARD
CON30
USBN8 24
USBP8 24
CMC-L12-181D014-RH
EMI
CON2012
+3VALW
RN37
MICRO-STAR INT'L CO.,LTD.
MINI-PCIE X2& LED &SW
MS-1634X
Thursday, May 31, 2007
Sheet 36 of 51


CON2013
U25
POWER & GND
LPC
X-BUS
KBC
SM-BUS
PS2 I/F
CLOCKS
KB910QF-C1-LF
U27
PLCC-32P_brown
07/01/11 0A->0B
07/04/02 0B->0C
07/05/10 0B->0C
07/01/17 0A->0B swap
Add at 8/3
H/W Strap for ENE 3910
For SW Debug
87 KEY 1,4 pin PULL HIGH(defult)
101 KEY 1,4 pin PULL LOW
For EMI
MICRO-STAR INT'L CO.,LTD.
KBC (ENE3910) & ISA BIOS
MS-1634X
Tuesday, June 05, 2007
37 of 51

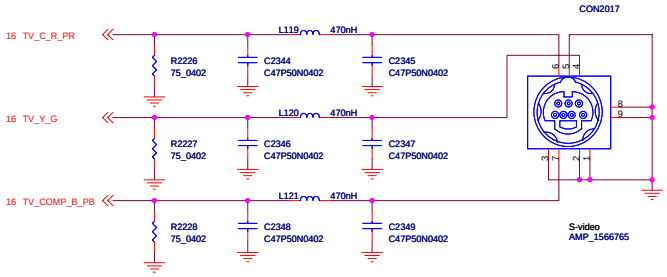

+3VRUN
R80
6.8K_0402
Q5
N-2N7002_SOT23
16 VGA_DDC1DATA
* RS690 A11 DACSCL is not working
16 VGA_DDC1CLK
R83
Q6
E7741a ER_RS690A4
CRTSV
C285
C0.1U10X0402
U8
16,21 VGA_HSYNC
VGA_HSYNC
NC7SZ125_SOT23-5
C2330
U9
16,21 VGA_VSYNC
VGA_VSYNC
+5VRUN
D1
S-RB551V-30_SOD323
F4
F-MINISMDC150
R81
4.7K0402
R82
16 VGA_R
16 VGA_G
16 VGA_B
L14 60L500m_100
L15 60L500m_100
L16 60L500m_100
R84 100R0402
R85 100R0402
R86 33R0402
R87 33R0402
R_HSYN
R_VSYN
HSYN
VSYN
DDC2BD
DDC2BC
C286
C287
C288
C289
C290
C291
C292
C22P50N0402
R88
R89
R90
150R1%0402
C293
C294
C295
C22P50N0402
LRED
LGREEN
LBLUE
CRTSV
C284
C0.1U10X0402
P1
CONN-VGA15PF_blue-RH-1
N59-15F0351-A10
SILM_DSUB_15PF_T
FOR EMI
16 HDMI_DATA2P
16 HDMI_DATA2N
16 HDMI_DATA1P
16 HDMI_DATA1N
16 HDMI_DATA0P
16 HDMI_DATA0N
16 HDMI_CLKP
16 HDMI_CLKN
CON2004
SHELL1
SHELL2
CONN-HDMI19P_black/RH-1
HDMI_DATA2PC
HDMI_DATA2NC
HDMI_DATA1PC
HDMI_DATA1NC
HDMI_DATA0PC
HDMI_DATA0NC
HDMI_CLKPC
HDMI_CLKNC
R533 x 180R0402
R534 x 180R0402
R535 x 180R0402
R536 x 180R0402
HDMI_SCL
HDMI_SDA
+5VRUN_HDMI
TMDS_HPD_HDMI_I
D30
0R0805
C913
C10U10Y0805
C914
C0.1U10X0402
07/05/10 0B->0C
07/04/20 0B->0C ME
15 LVDS_ATXD2N
15 LVDS_ATXD2P
15 LVDS_ATXD1N
15 LVDS_ATXD1P
15 LVDS_ATXD0N
15 LVDS_ATXD0P
15 LVDS_ATXCKN
15 LVDS_ATXCKP
LVDS_ATXD2N
LVDS_ATXD2P
LVDS_ATXD1N
LVDS_ATXD1P
LVDS_ATXD0N
LVDS_ATXD0P
LVDS_ATXCKN
LVDS_ATXCKP
CN2001
+V3.3S_LVDS_PANEL
L_DATAN2
L_DATAP2
L_DATAN1
L_DATAP1
L_DATAN0
L_DATAP0
L_ACLKN
L_ACLKP
L_BCLKN
L_BCLKP
L_DATBN2
L_DATBP2
L_DATBN1
L_DATBP1
L_DATBN0
L_DATBP0
BL-ON
BR-AD-ADJ
R2184
220R0603
BH2X20S_white-1pitch-RH
C2291
C0.01U16X0402
C2292
C0.1U25Y0603
PWR_SRC
C2290
C10U25X6S1206-RH
C2293
C2294
C22P50N0402
LVDS_I2C_CLK
LVDS_I2C_DAT
C2289
C0.01U16X0402
LVDS_BTXCKN
LVDS_BTXCKP
LVDS_BTXD1N
LVDS_BTXD1P
LVDS_BTXD2N
LVDS_BTXD2P
LVDS_BTXD0N
LVDS_BTXD0P
16 DDC_CLK_HDMI
16 DDC_DATA_HDMI
R2210 6.8K_0402
R2211 6.8K_0402
Q44
Q45
N-2N7002_SOT23
R538 4.7K0402
R540 4.7K0402
HDMI_SCL
HDMI_SDA
16 TMDS_HPD_HDMI
R2212 20KR0402
TMDS_HPD_HDMI_I
D29
MMBZ5222B-2.5
RS42 100KR0402
PWR_SRC
Q7
N-SI3456BDV-T1-E3_TSOP6-LF
R92
100KR0402
R94
100KR0402
Q8
Q9
Q10
C298
C1000P50X0402
R93 x_47R0805
C296
C22U10Y1206
C297
C0.01U16X0402
15 LVDS_DIGON
FOR EMI
EL1
EL2
EL3
EL4
EL5
EL6
EL7
EL8
EL9
EL10
EL11
EL12
X_CMC-L12-181D014-RH
CMC-L12-181D014-RH
L_ACLKP
L_ACLKN
L_DATAP0
L_DATAN0
L_DATAP1
L_DATAN1
L_DATAP2
L_DATAN2
L_BCLKP
L_BCLKN
L_DATBP0
L_DATBN0
L_DATBP1
L_DATBN1
L_DATBP2
L_DATBN2
LVDS_ATXCKP
LVDS_ATXCKN
LVDS_ATXD0P
LVDS_ATXD0N
LVDS_ATXD1P
LVDS_ATXD1N
LVDS_ATXD2P
LVDS_ATXD2N
LVDS_BTXCKP
LVDS_BTXCKN
LVDS_BTXD0P
LVDS_BTXD0N
LVDS_BTXD1P
LVDS_BTXD1N
LVDS_BTXD2P
LVDS_BTXD2N
R11 100R0402
R12 100R0402
R13 100R0402
R14 100R0402
R15 100R0402
R16 100R0402
R17 100R0402
R18 100R0402
37 LID-
37 EC_BLON
15,16 LVDS_BLON
C2331
C0.1U10X0402
U10
NC7SZ08M5X_SOT23-5
R2229
100KR0402
07/04/10 0B->0C
MICRO-STAR INT'L CO.,LTD.
LVDS,CRT,HDMI,INVERTER,LID
MS-1634X
Size C
Document Number
Rev 0B
Date: Friday, June 01, 2007
Sheet 38 of 51



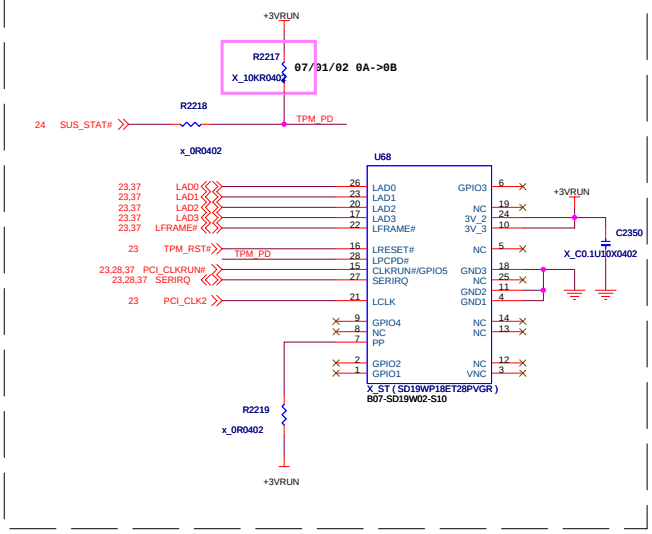
07/01/02 0A->0B

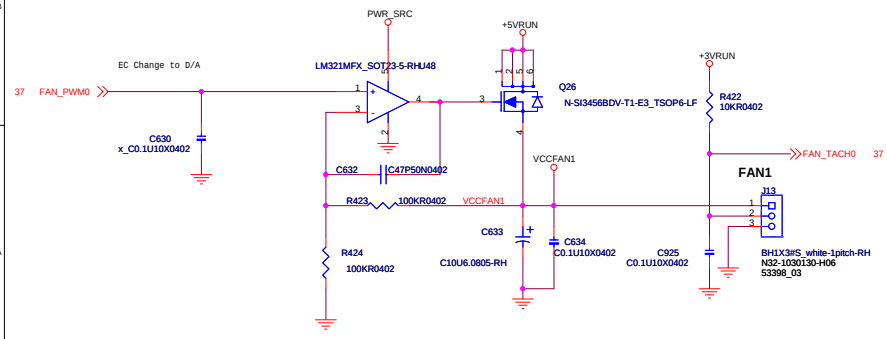
MICRO-STAR INT'L CO.,LTD.

Title	PWRGD	
Size: B	Document Number: MS-1634X	Rev: 0B
Date: Thursday, May 31, 2007	Sheet 39 of 51	



07/04/02 0B->0C no stuff





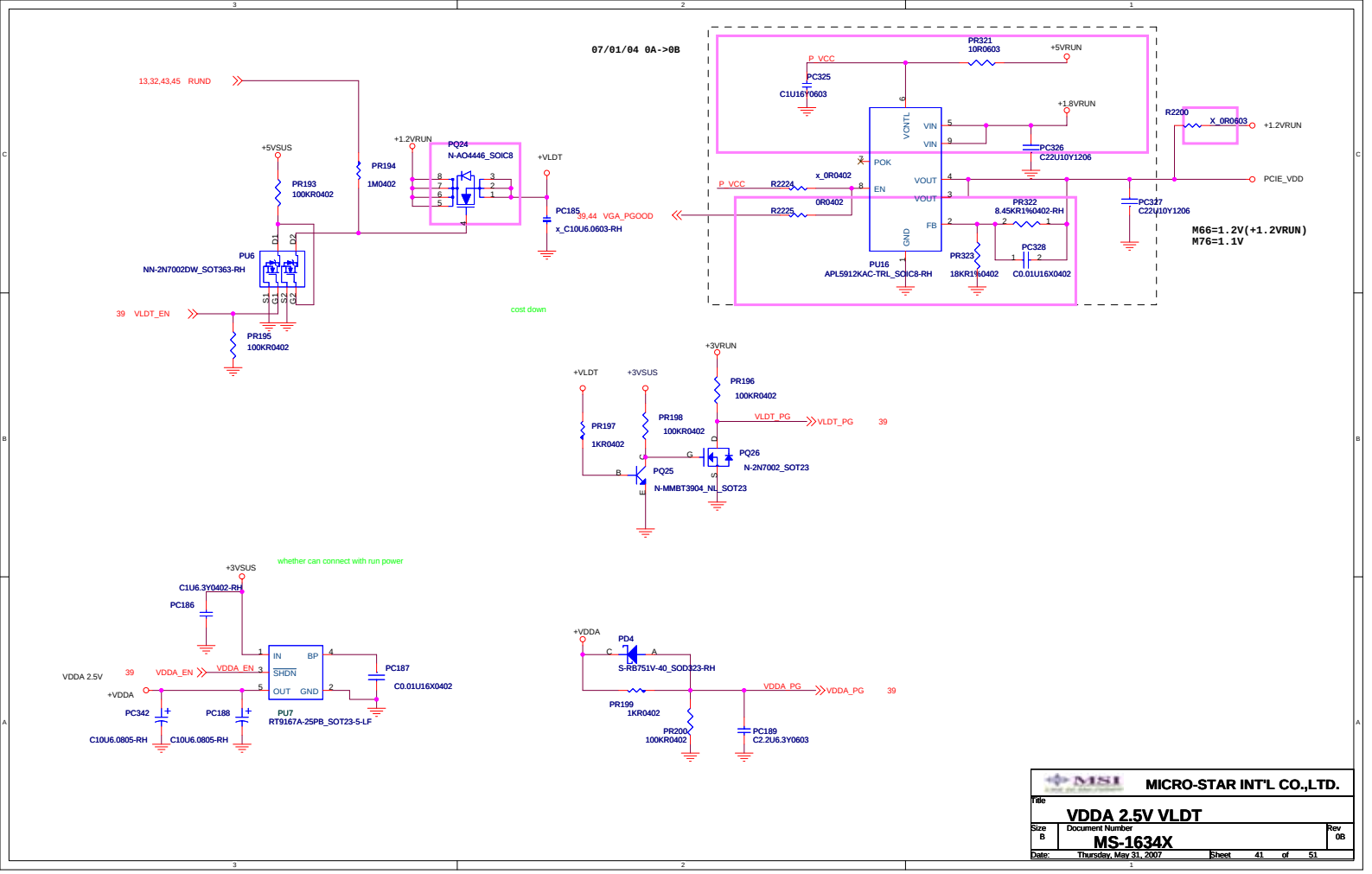
FOR EMI

MICRO-STAR INT'L CO.,LTD.

Title: FAN&TRM&S-VIDEO

Size: B | Document Number: MS-1634X | Rev: 0B

Date: Thursday, May 31, 2007 | Sheet 40 of 51

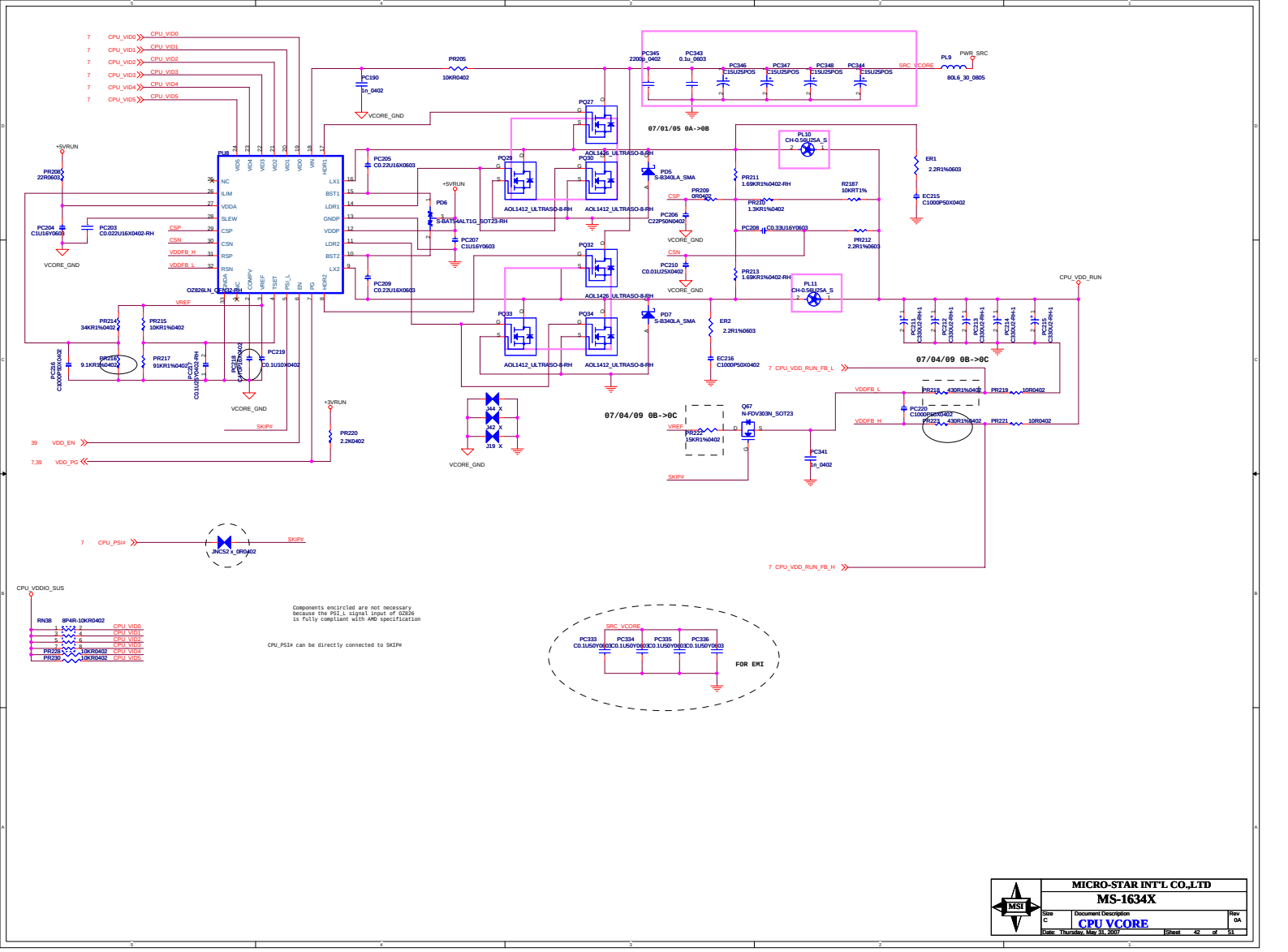


MICRO-STAR INT'L CO.,LTD.

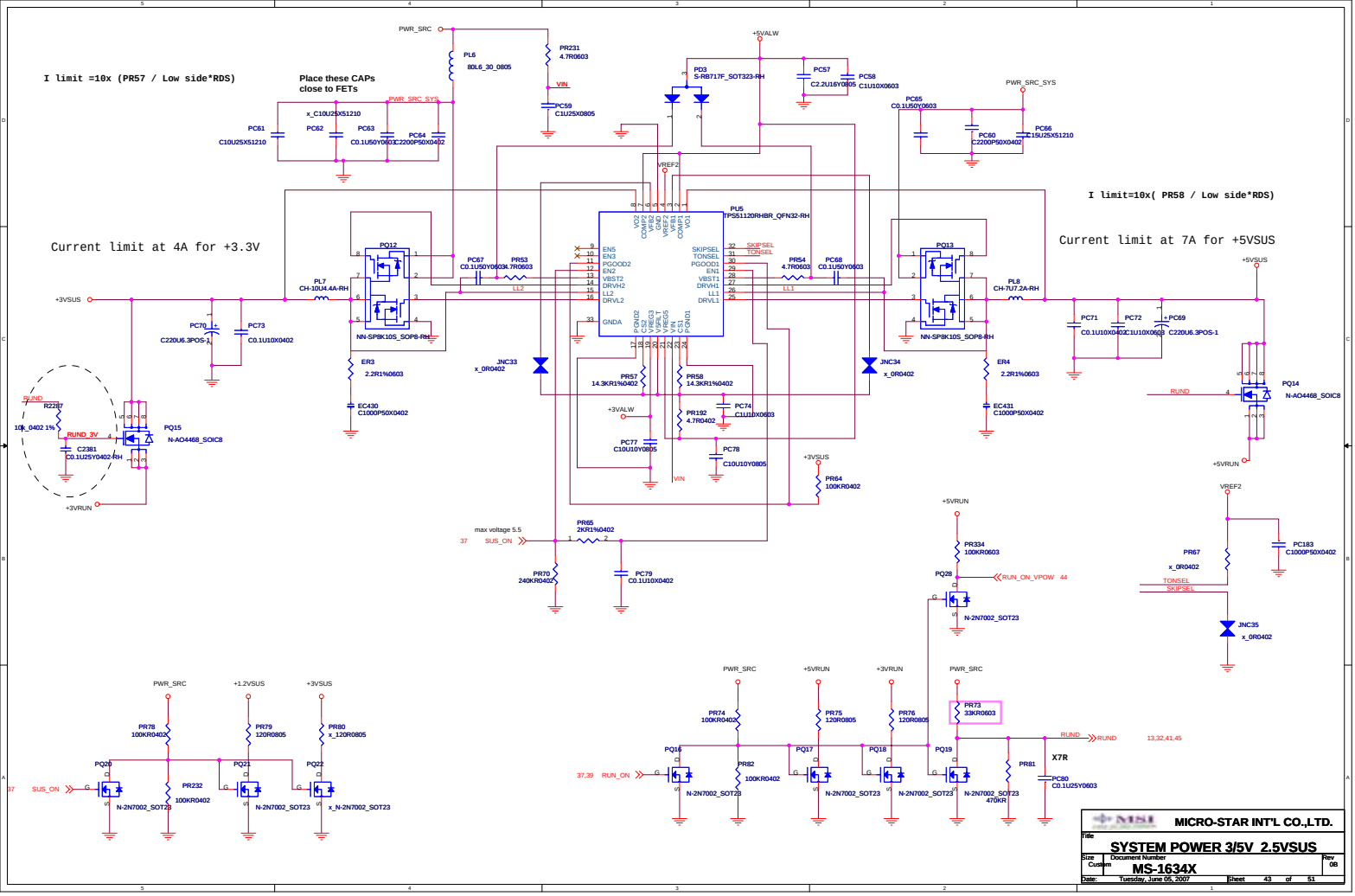
Title: VDDA 2.5V VLDT

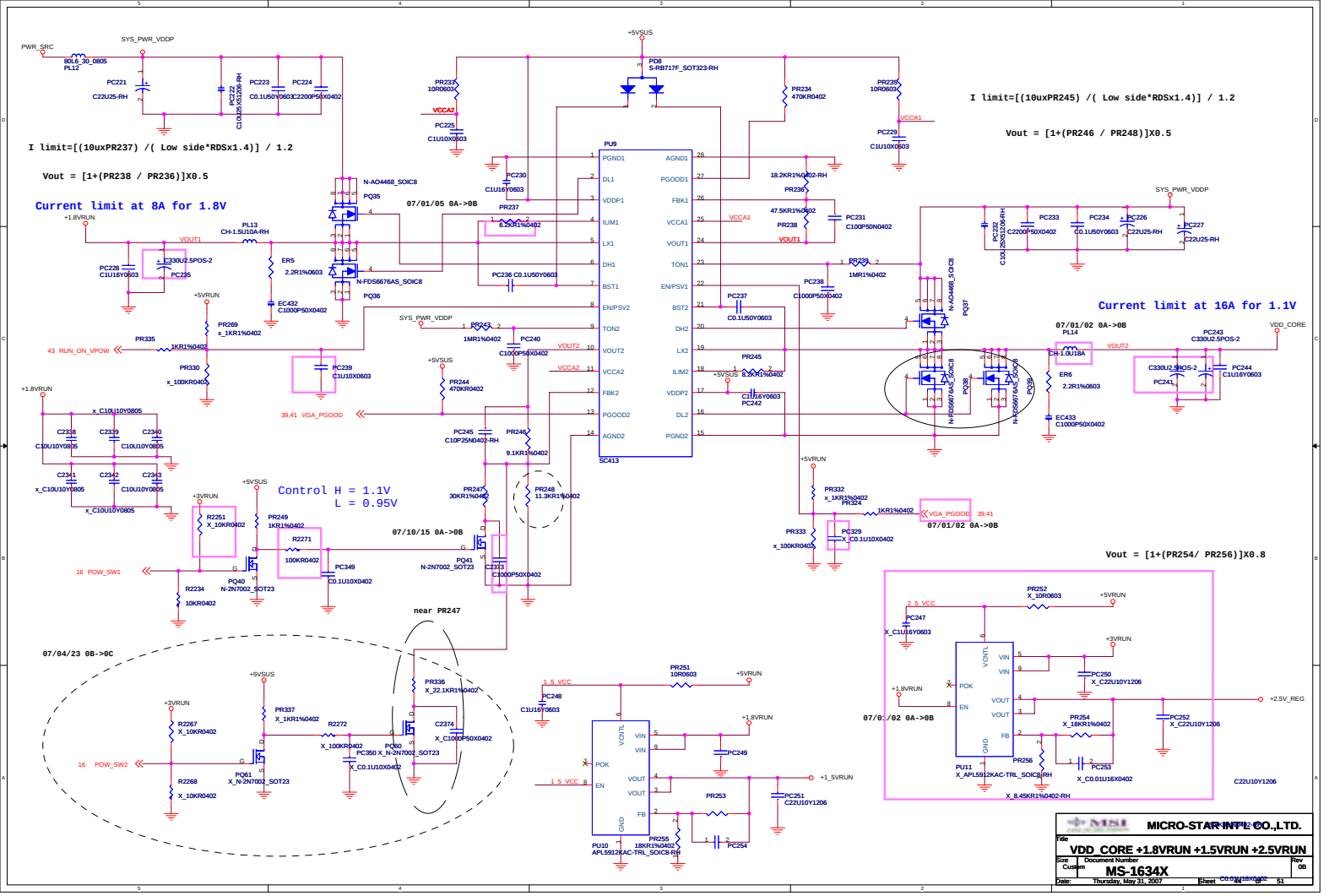
Size	Document Number	Rev
B	MS-1634X	0B

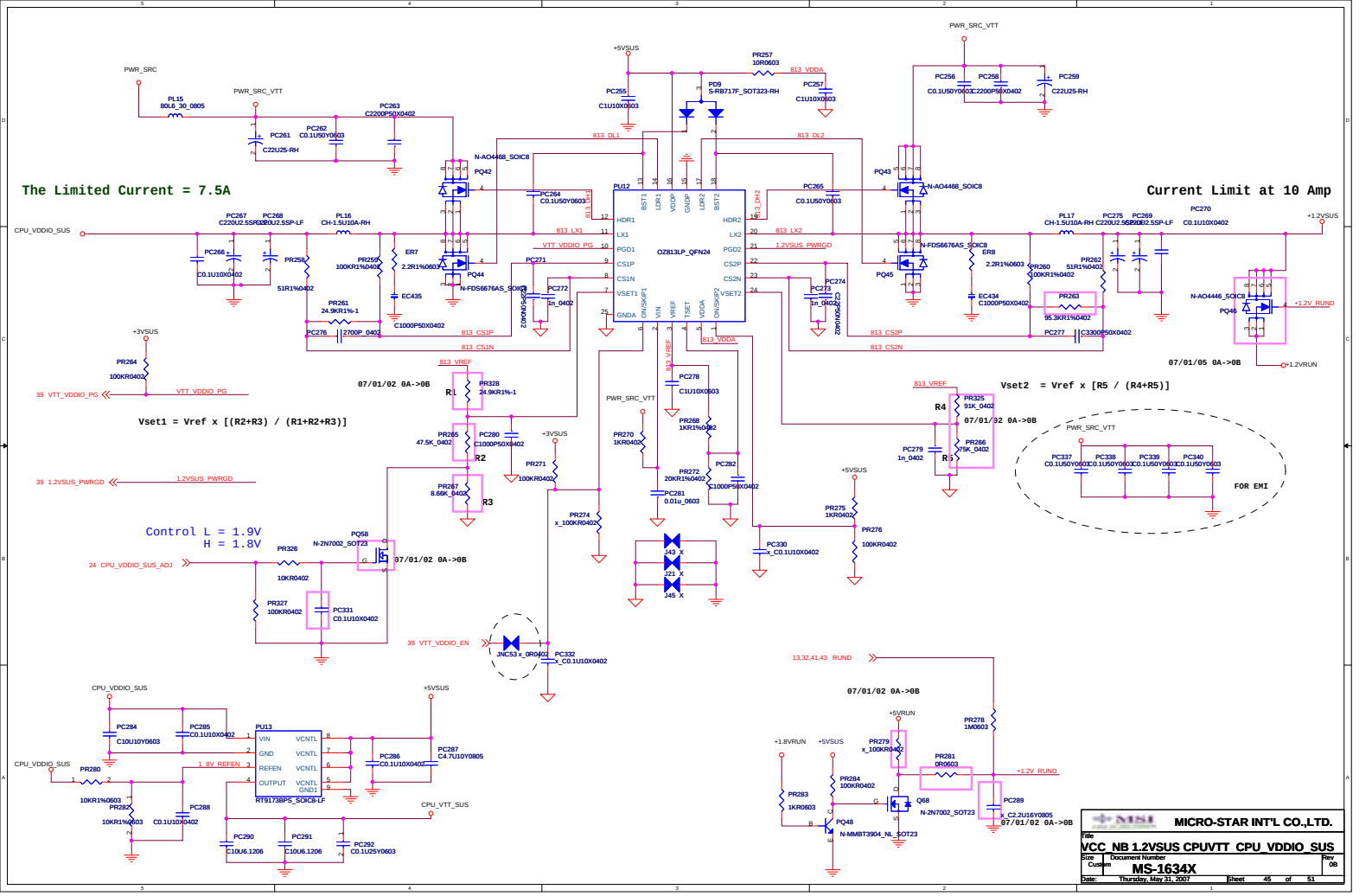
Date: Thursday, May 31, 2007 Sheet 41 of 51



MICRO-STAR INT'L CO.,LTD	
MS-1634X	
Size: C	Document Description: CPU VCORE
Rev: 0A	
Date: Thursday, May 31, 2007	Sheet 42 of 51


I limit =10x (PR57 / Low side*RDS)
Place these CAPs close to FETs
Current limit at 4A for +3.3V
I limit=10x(PR58 / Low side*RDS)
Current limit at 7A for +5VSUS
PWR_SRC
PWR_SRC_SYS
+5VALW
VREF2
VIN
PL6 80L6_30_0805
PR231 4.7R0603
PD3 S-RB717F_SOT323-RH
PC57 C2.2U16Y0805
PC58 C1U10X0603
PC59 C1U25X0805
PC61 C10U25X51210
PC62 x_C10U25X51210
PC63 C0.1U50Y0603
PC64 C2200P50X0402
PC65 C0.1U50Y0603
PC66 C15U25X51210
PC60 C2200P50X0402
PU5 TPS51120RHBR_QFN32-RH
PQ12 NN-SP8K10S_SOP8-RH
PQ13 NN-SP8K10S_SOP8-RH
PL7 CH-10U4.4A-RH
PL8 CH-7U7.2A-RH
PC67 C0.1U50Y0603
PR53 4.7R0603
PR54 4.7R0603
PC68 C0.1U50Y0603
LL2
LL1
SKIPSEL
TONSEL
+3VSUS
+5VSUS
PC70 C220U6.3POS-1
PC73 C0.1U10X0402
PC71 C0.1U10X0402
PC72 C1U10X0603
PC69 C220U6.3POS-1
ER3 2.2R1%0603
ER4 2.2R1%0603
EC430 C1000P50X0402
EC431 C1000P50X0402
JNC33 x_0R0402
JNC34 x_0R0402
PR57 14.3KR1%0402
PR58 14.3KR1%0402
PR192 4.7R0402
PC74 C1U10X0603
PC77 C10U10Y0805
PC78 C10U10Y0805
PR64 100KR0402
RUND
R2287 10K_0402 1%
RUND_3V
C2381 C0.1U25Y0402-RH
PQ15 N-AO4468_SOIC8
PQ14 N-AO4468_SOIC8
+3VRUN
+5VRUN
max voltage 5.5
SUS_ON
PR65 2KR1%0402
PR70 240KR0402
PC79 C0.1U10X0402
PR334 100KR0603
PQ28 N-2N7002_SOT23
RUN_ON_VPOW 44
VREF2
PR67 x_0R0402
PC183 C1000P50X0402
TONSEL
SKIPSEL
JNC35 x_0R0402
+1.2VSUS
+3VSUS
PR78 100KR0402
PR79 120R0805
PR80 x_120R0805
PQ20
PQ21
PQ22
PR232 100KR0402
N-2N7002_SOT23
x_N-2N7002_SOT23
PR74 100KR0402
PR75 120R0805
PR76 120R0805
PR73 33KR0603
PQ16
PQ17
PQ18
PQ19
PR82 100KR0402
PR81 470KR
X7R
PC80 C0.1U25Y0603
RUND
RUN_ON
37,39
13,32,41,45
MICRO-STAR INT'L CO.,LTD.
Title
SYSTEM POWER 3/5V 2.5VSUS
Size Custom
Document Number MS-1634X
Rev 0B
Date: Tuesday, June 05, 2007
Sheet 43 of 51


I limit=[(10uxPR237) /(Low side*RDSx1.4)] / 1.2
Vout = [1+(PR238 / PR236)]X0.5
Current limit at 8A for 1.8V
I limit=[(10uxPR245) /(Low side*RDSx1.4)] / 1.2
Vout = [1+(PR246 / PR248)]X0.5
Current limit at 16A for 1.1V
Control H = 1.1V
L = 0.95V
Vout = [1+(PR254/ PR256)]X0.8
07/01/05 0A->0B
07/01/02 0A->0B
07/10/15 0A->0B
07/04/23 0B->0C
near PR247
PU9
S-RB717F_SOT323-RH
SC413
PU10
APL5912KAC-TRL_SOIC8-RH
PU11
X_APL5912KAC-TRL_SOIC8-RH
MICRO-STAR INTE CO.,LTD.
VDD_CORE +1.8VRUN +1.5VRUN +2.5VRUN
MS-1634X
Thursday, May 31, 2007


The Limited Current = 7.5A
Current Limit at 10 Amp
Vset1 = Vref x [(R2+R3) / (R1+R2+R3)]
Vset2 = Vref x [R5 / (R4+R5)]
Control L = 1.9V
H = 1.8V
07/01/02 0A->0B
07/01/05 0A->0B
FOR EMI
OZ813LP_QFN24
RT9173BPS_SOIC8-LF
MICRO-STAR INT'L CO.,LTD.
VCC_NB 1.2VSUS CPUVTT_CPU_VDDIO_SUS
MS-1634X
Thursday, May 31, 2007
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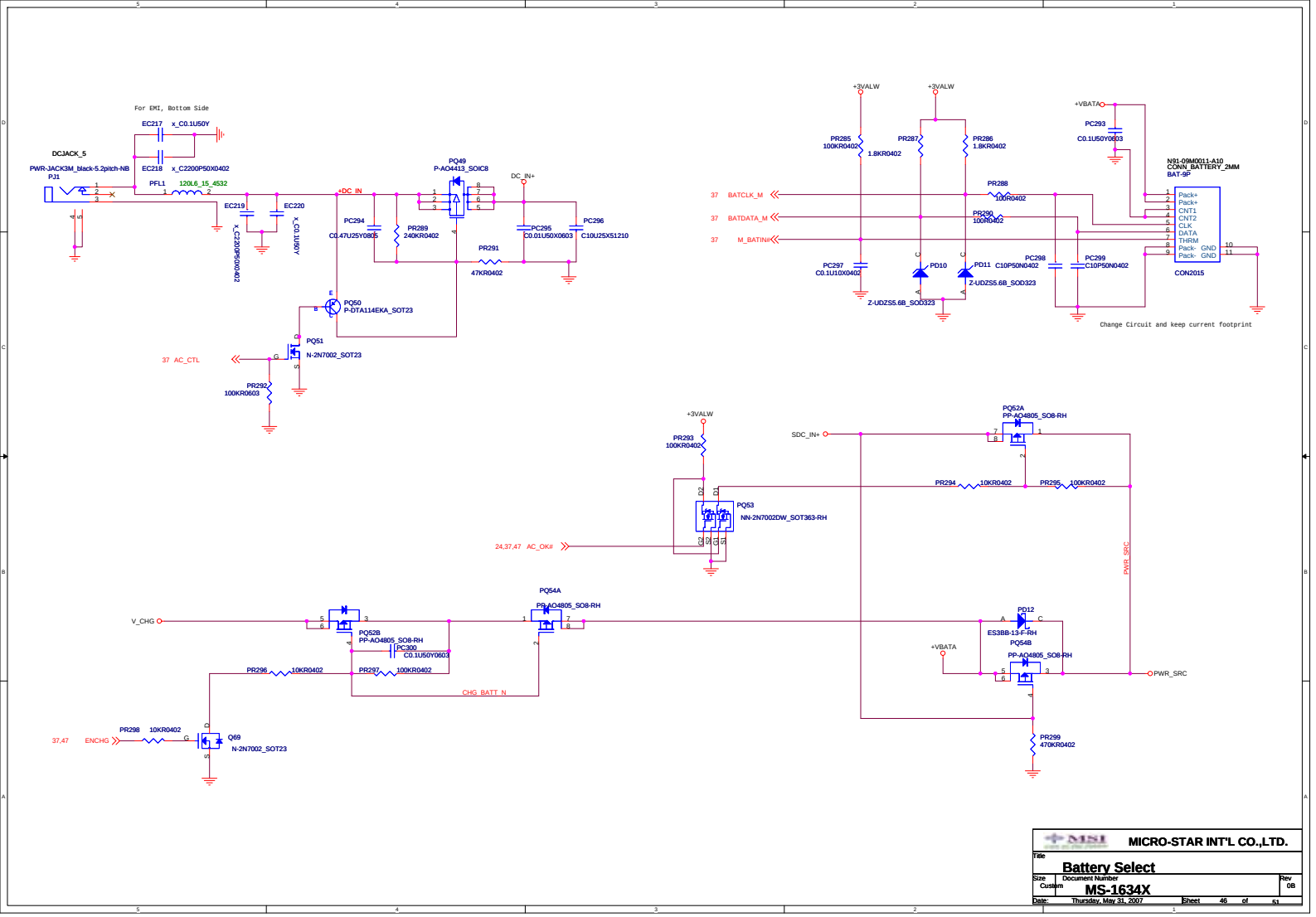

MICRO-STAR INT'L CO.,LTD.

Title: Battery Select

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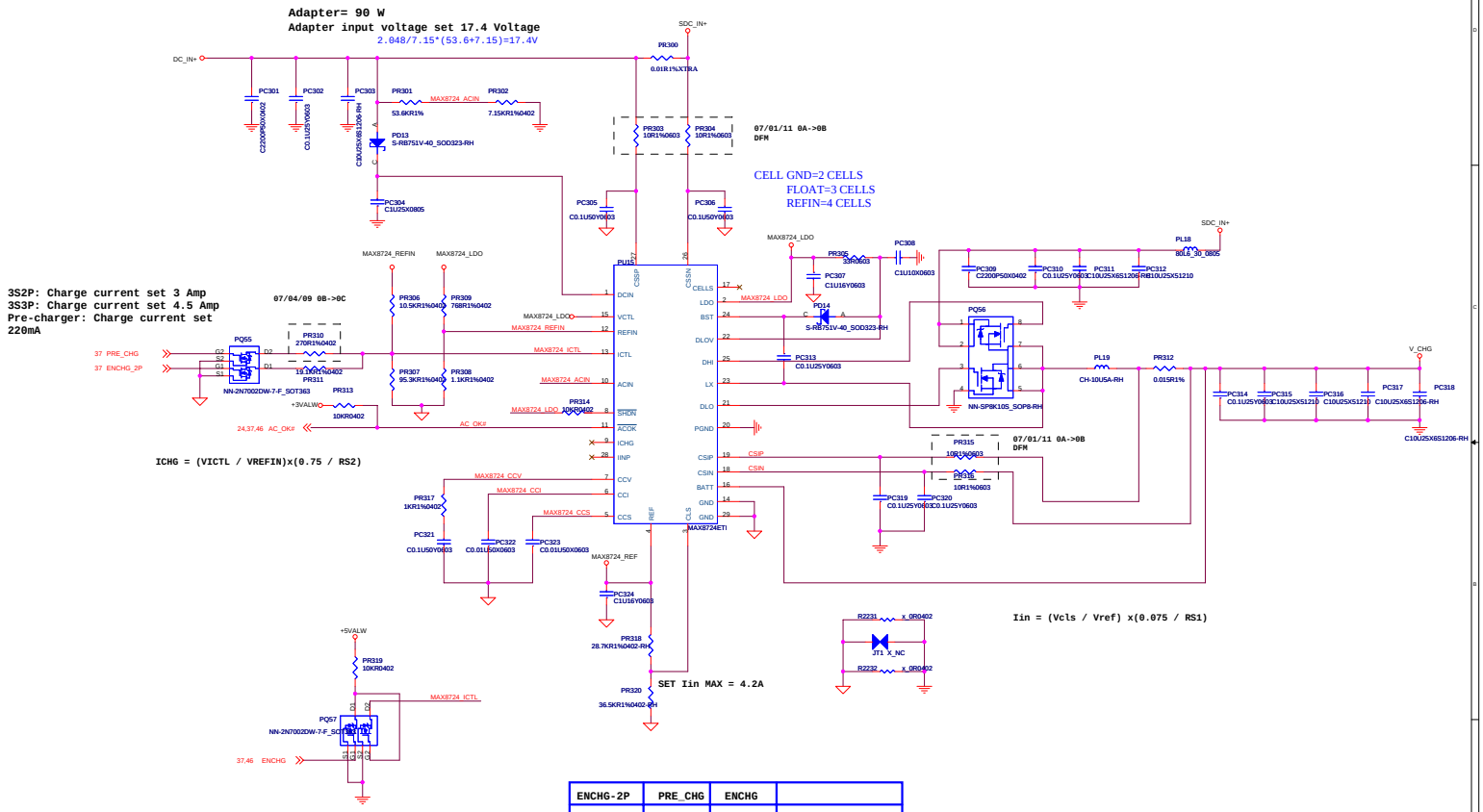

ENCHG-2P	PRE_CHG	ENCHG	
0	1	1	Pre-charge
1	0	1	3S2P-Fast charge
0	0	1	3S3P-Fast charge
0	0	0	STOP CHARGE

MSI CORPORATION		
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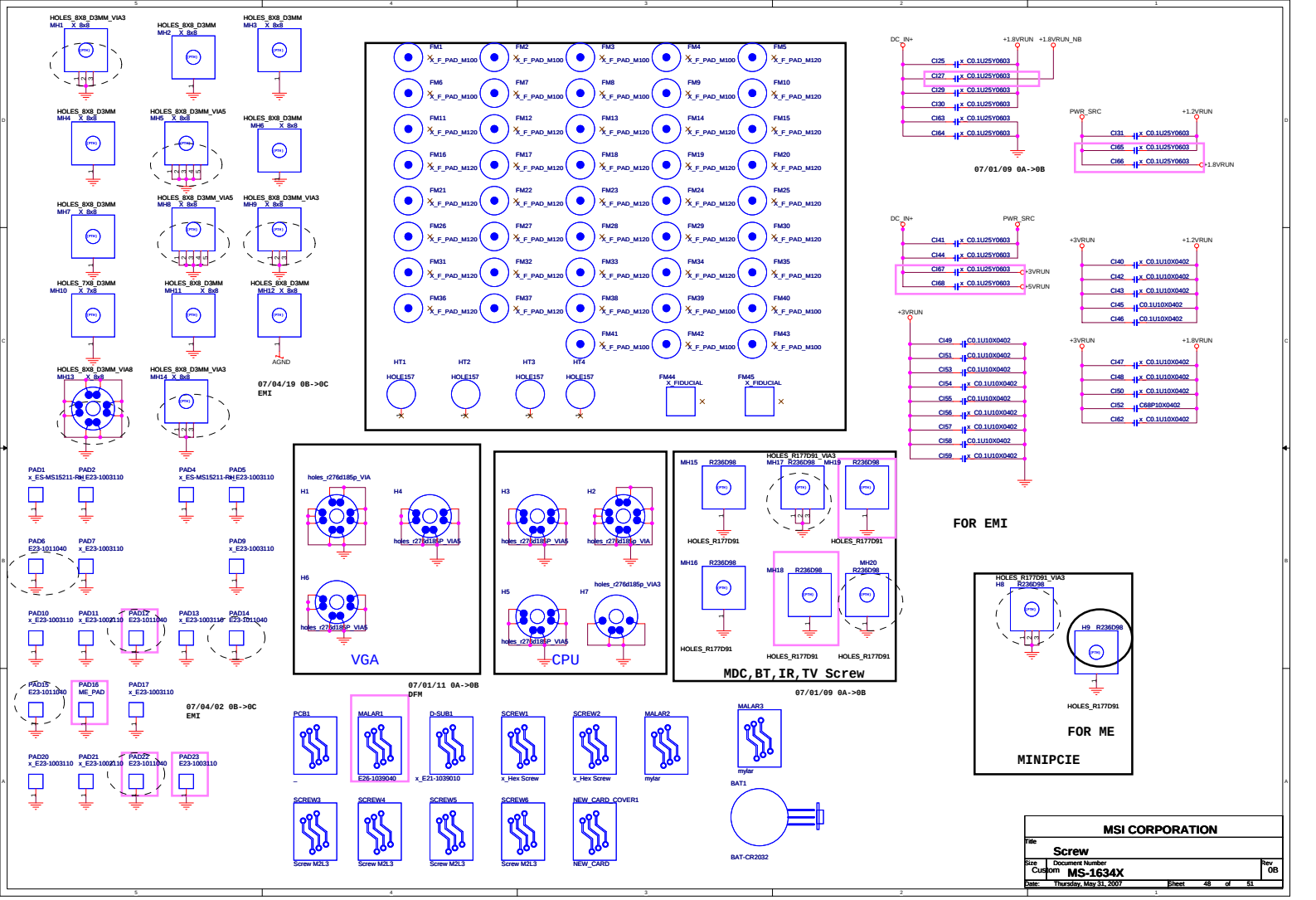

MSI CORPORATION			
Title: Screw			
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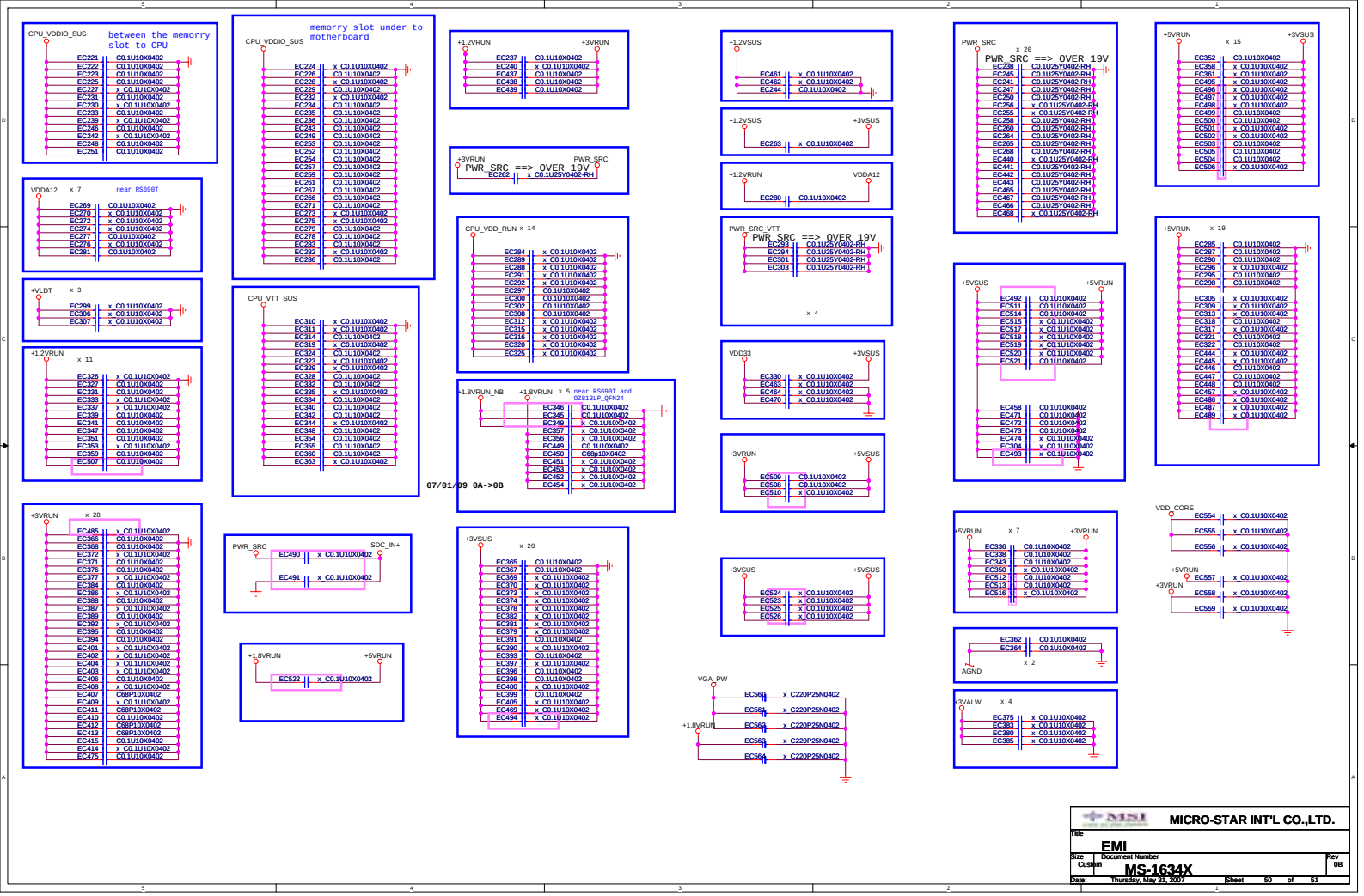
REFERENCE DESIGN	RESTRICTION NOTICE
THESE SCHEMATICS ARE SUBJECT TO MODIFICATION AND DESIGN IMPROVEMENTS. PLEASE CONTACT ATI FIELD APPLICATION ENGINEERS	THESE SCHEMATICS CONTAIN INFORMATION WHICH IS PROPRIETARY TO AND IS THE PROPERTY OF ATI, AND MAY NOT BE USED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT PERMISSION



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Title: EMI

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0A->0B

01.P13:NB +1.8VRUN change to +1.8VRUN_NB for timing control.
02.P07:R471,R473,R475 from 10K to 680 ohm.
P14:C2047 from 10u 0805 to 0.1u 0402.
P16:R2017 from 499R to 249R.
P16:U51.V2SYNC & U51.H2SYNC PU TO +3.3VRUN.
P16:U51.R2B,U51.G2B,U51.B2B PD 37.5 OHM TO GND.
P17:ADD +1.8VRUN TO CONTROL +3.3V_DELAY TIMING FOR M76.
P17:Q58 FROM 2N7002 TO BSS138.
P21:R2132 FROM 110R TO 47R.
P22:EC211 FROM 10pf TO 22pf.
P23:REMOVE "CARDBUS_RST-" NET FOR R5C833.
P23:ADD "PCI_INTB#" FOR R5C833 CARD READER.
P24:USB8 PAIR SWAP WITH USB6 PAIR.
P28:CARD READER CHIP FROM OZ711 TO R5C833.
P29:REMOVE CARD BUS FUNCTION.
P32:REMOVE "PCMSPK" FUNCTION.
P32:ADD R2237,C2368 TO REDUCE MIC NOISE.
P33:MODIFY LINE IN JACK(CON2016) PIN DEFINE.
P34:MODIFY GINGER PRINT CONNECTOR(CON2011) PIN DEFINE.
P36:CHANGE MINI-PCIE CONN FOR DFM.
P36:GPP_TX,GPP_RX,GPP_CLK SWAP WITH CON2006 & CON30.
P36:ADD IR MODULE.
P37:SWAP PIN WITH AC_CTL & IE_K-.
P37:IR RECIVER POWER FROM +5VALW TO +5VSUS.
P37:BIOS FROM 4M TO 8M.

Title: NOTE		
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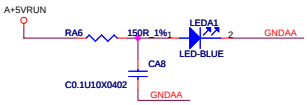
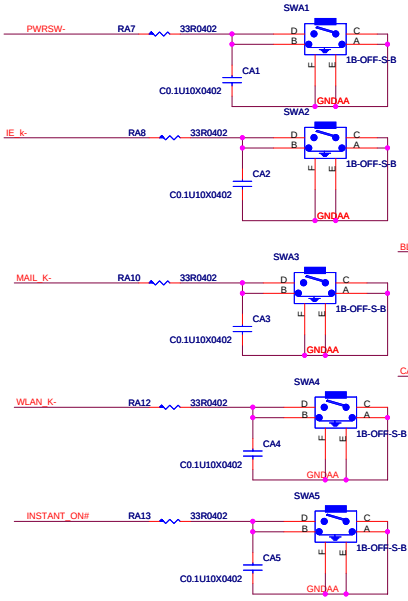
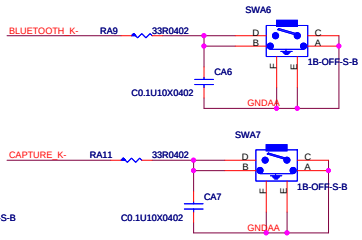
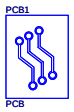
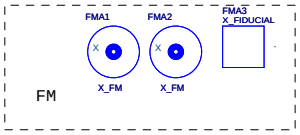


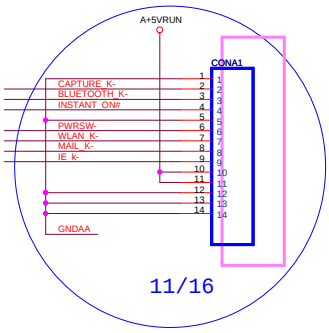




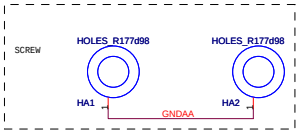
need apply!

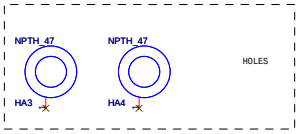






07/01/09 0A->0B





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Title: POWER BOARD

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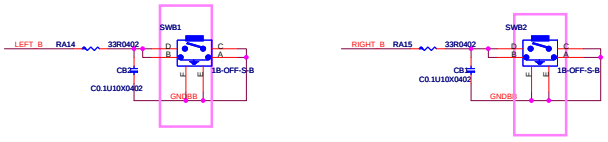
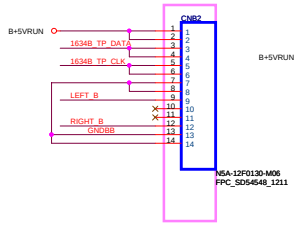
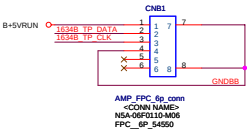
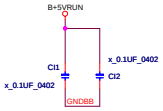


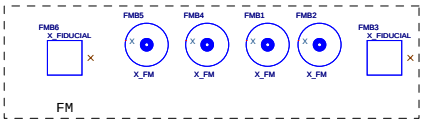
07/01/26 0A->0B ME
07/04/02 0B->0C swap

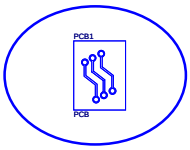
FOR TM61P-307 Pin define



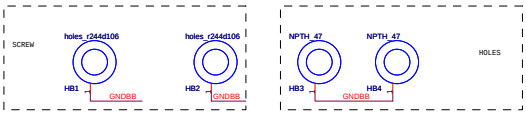








Need to apply



Title	**TP Board**		
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