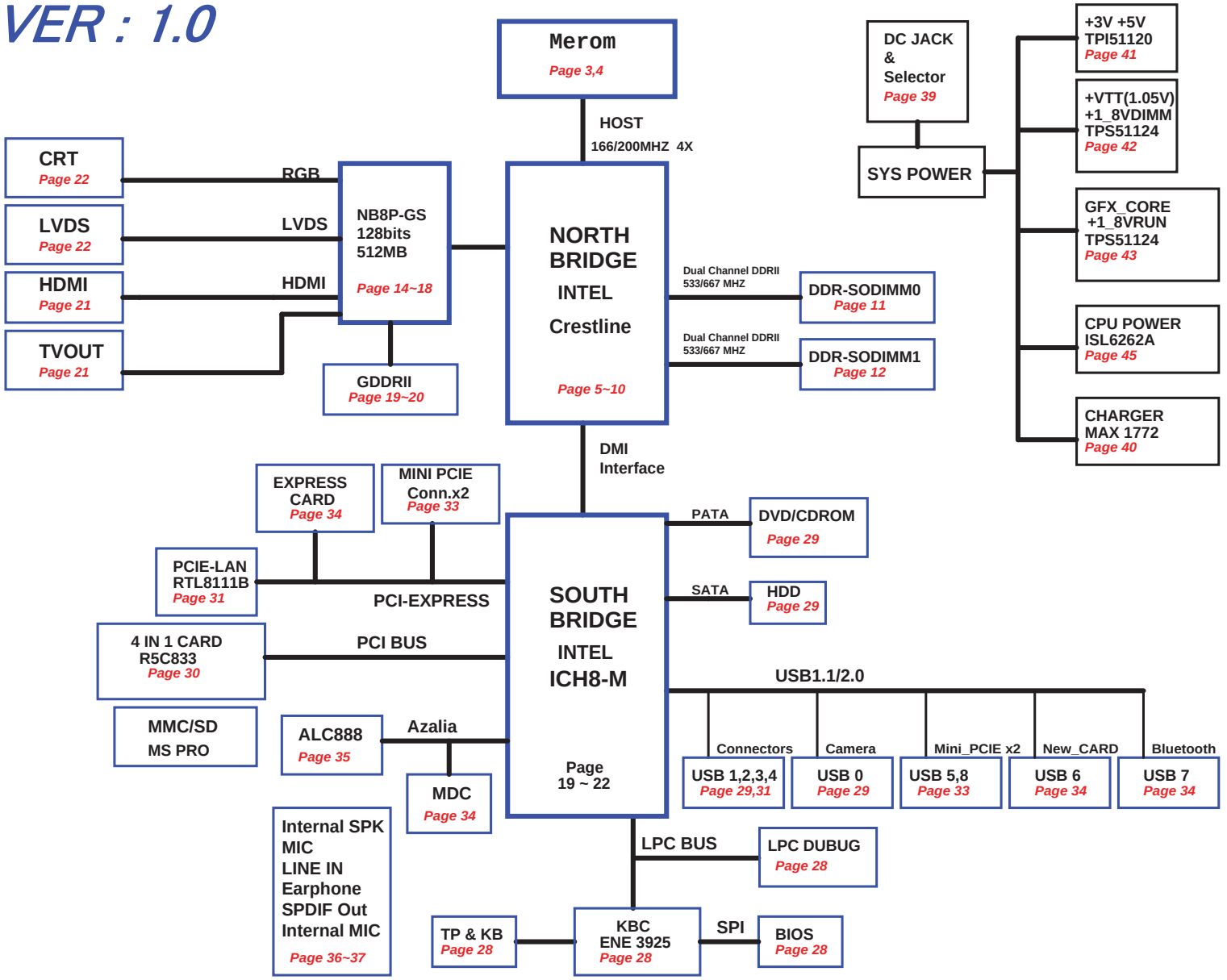
MS-163A VER : 1.0



MSI CORPORATION

Title: BLOCK DIAGRAM

Size: C | Document Number: MS-163A | Rev: 0C

Date: Tuesday, July 17, 2007 | Sheet 1 of 54

Voltage Rails

Voltage	Description	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
VHCORE	Core Voltage for Processor	VR_ON
+VTT	1.05 rail for Processor & 965PM & ICH8M	PM_SLP_S3# (RUN_ON)
+1_5VRUN	1.5V LDO power rail(off in S3-S5)	PM_SLP_S3# (RUN_ON)
+1_25VRUN	1.25V powe rail NB PLL and PXE (off in S3-S5)	+1_5VRUN
+3VRUN	3.3V switched power rail(off in S3-S5)	RUND (RUN_ON)
+5VRUN	5.0V switched power rail(off in S3-S5)	RUND (RUN_ON)
SMDDR_VTERM	0.9V DDR Termination voltage (off in S4-S5)	PM_SLP_S3# (RUN_ON)
+1_8VDIMM	1.8V power rail DDR (off in S4-S5)	PM_SLP_S4# (DIMM_ON)
+3VSUS	3.3V power rail (off in S4-S5)	SUS_ON
+5VSUS	5.0V power rail (off in S4-S5)	SUS_ON
+3VALW	3.3V always on power rail	PWR_SRC
+5VALW	5.0V always on power rail	PWR_SRC
+V5_AUDIO	5.0V Power rail Audio codec(off in S3-S5)	RUND

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
S1(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

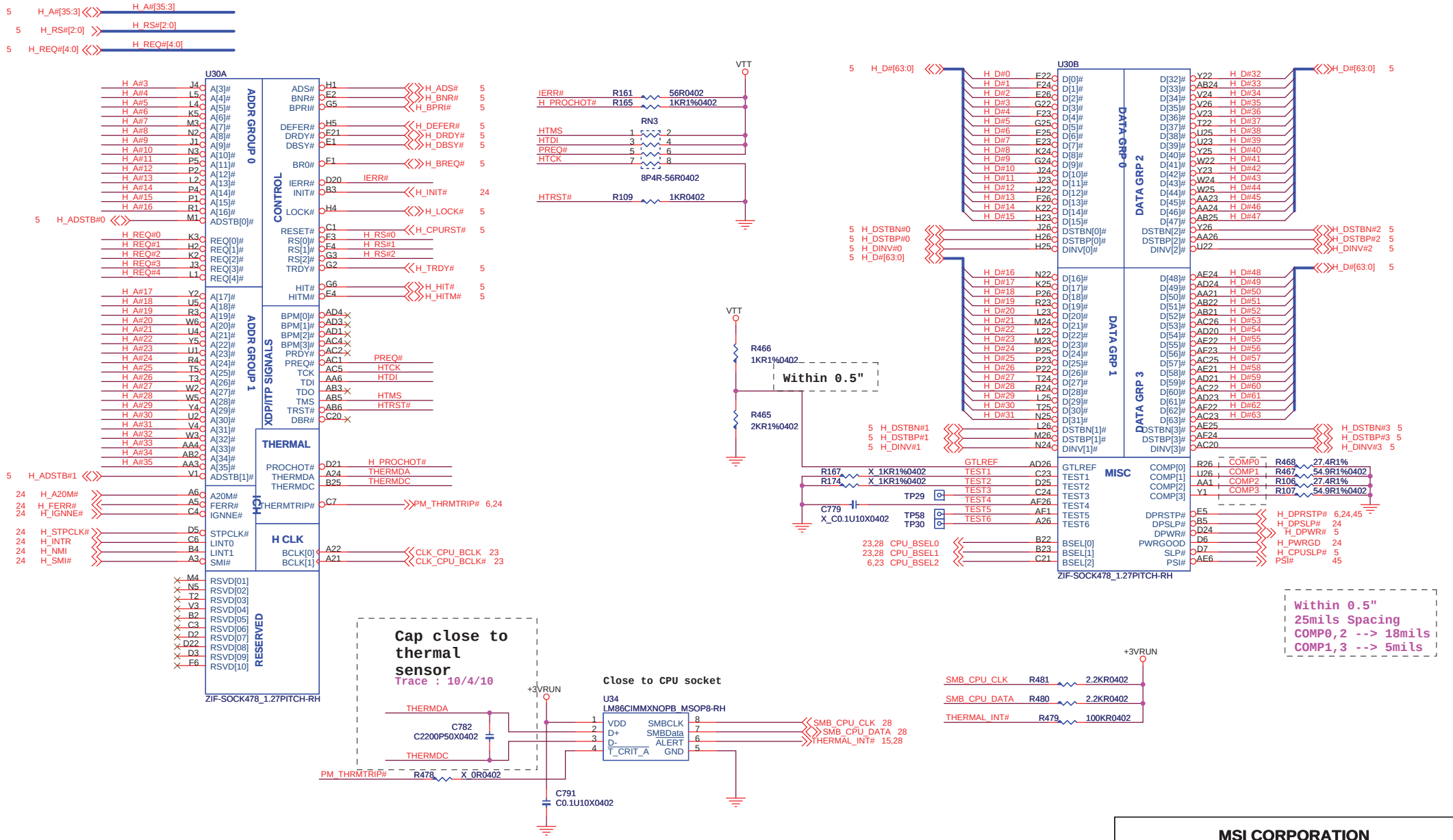
*Note : WHEN AC MODE , System turn on then +V*SUS will always keep high*

MSI CORPORATION

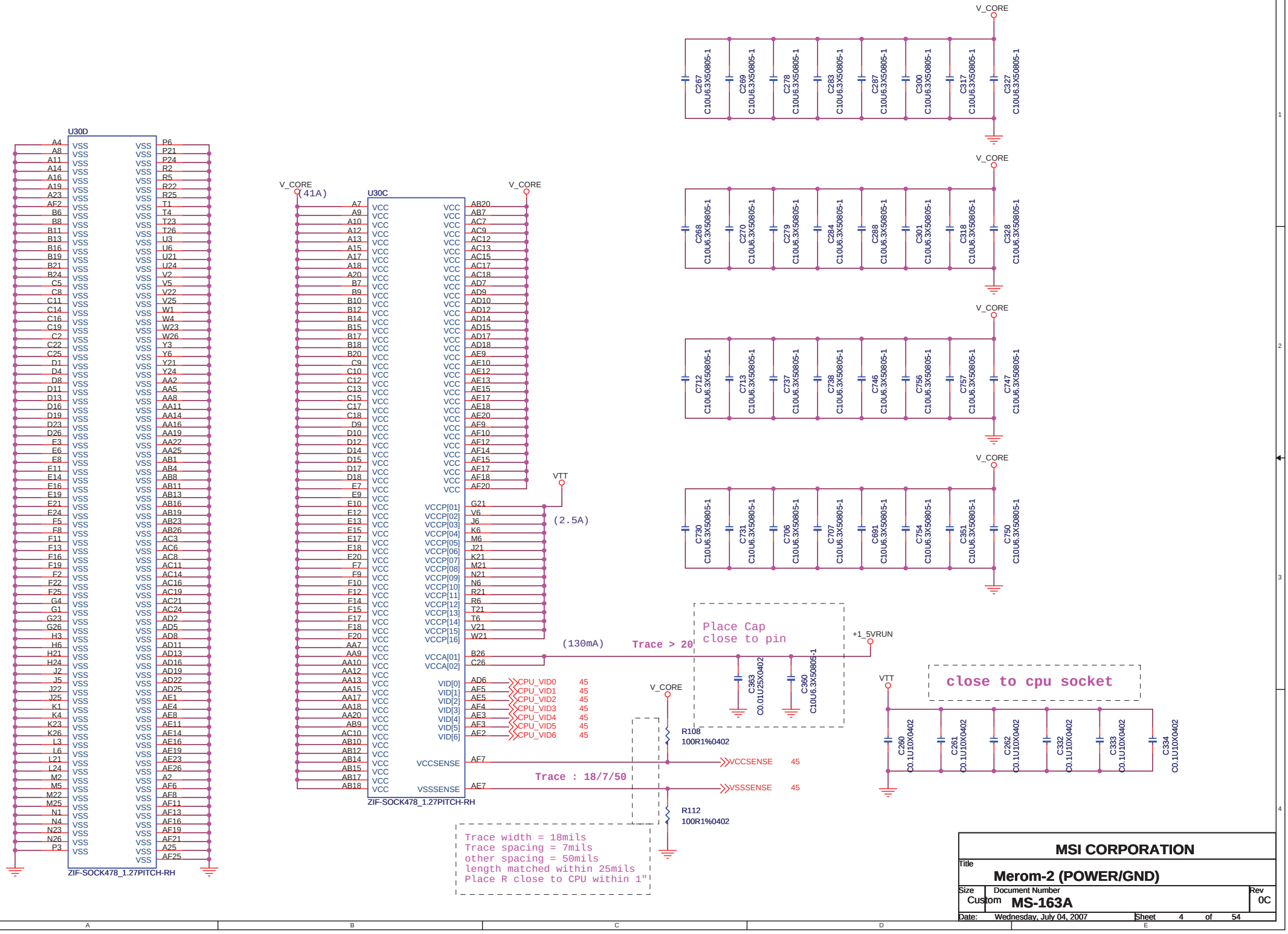
Title: PLATFORM

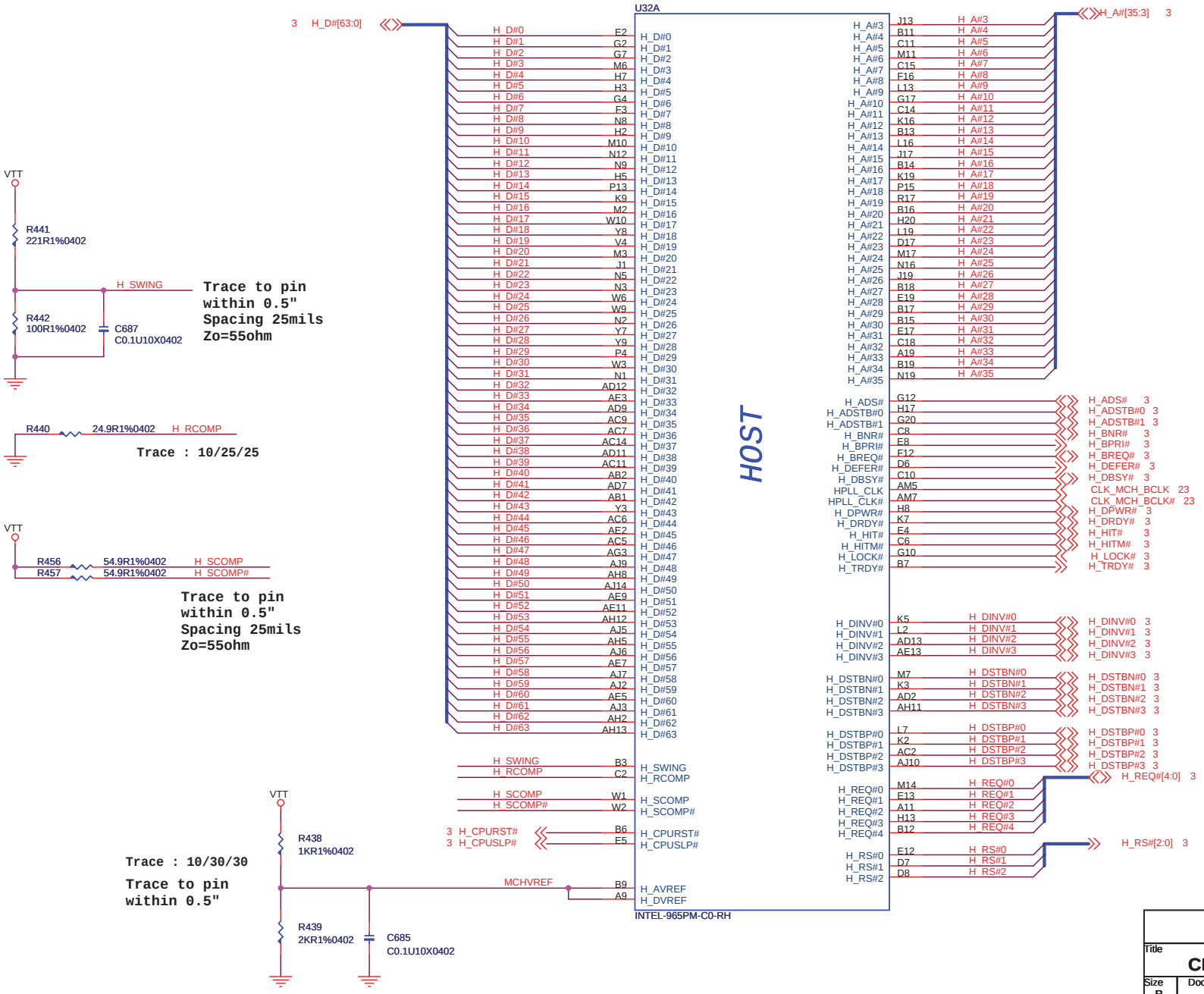
Size: Custom | Document Number: MS-163A | Rev: 0C

Date: Monday, May 07, 2007 | Sheet 2 of 54

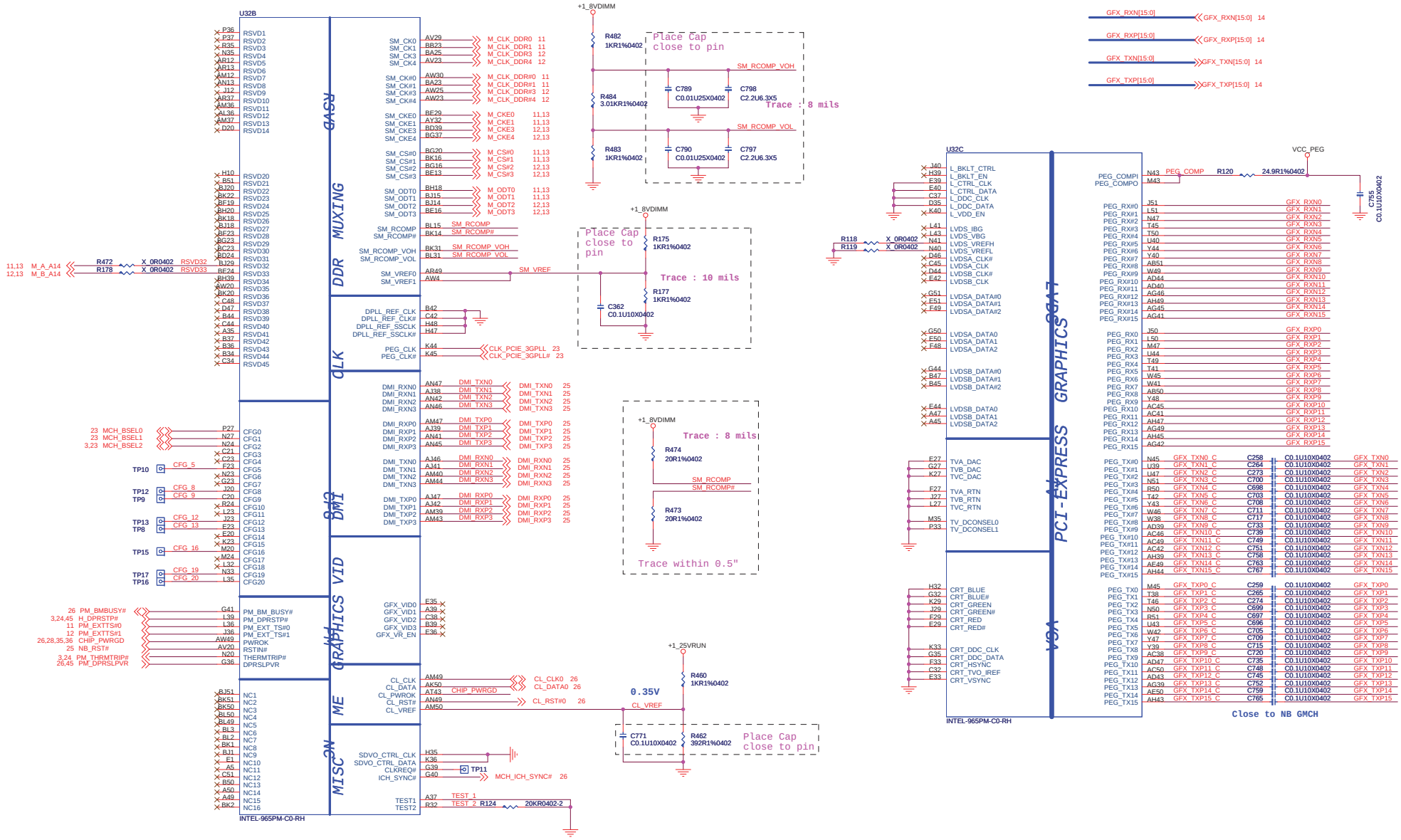


MSI CORPORATION			
Title: Merom-1 (HOST BUS)			
Size: Custom	Document Number: MS-163A		Rev: 0C
Date: Thursday, July 05, 2007	Sheet 3 of 54		


U30D
ZIF-SOCK478_1.27PITCH-RH
U30C
ZIF-SOCK478_1.27PITCH-RH
V_CORE
(41A)
VTT
(2.5A)
(130mA)
Trace > 20
Place Cap
close to pin
+1_5VRUN
close to cpu socket
R108
100R1%0402
R112
100R1%0402
Trace : 18/7/50
Trace width = 18mils
Trace spacing = 7mils
other spacing = 50mils
length matched within 25mils
Place R close to CPU within 1"
MSI CORPORATION
Merom-2 (POWER/GND)
MS-163A
Custom
Wednesday, July 04, 2007
Sheet 4 of 54



MSI CORPORATION		
Title: CRESTLINE-1 (HOST BUS)		
Size: B	Document Number: MS-163A	Rev: 0C
Date: Wednesday, July 04, 2007	Sheet 5 of 54	



Strapping Configulation

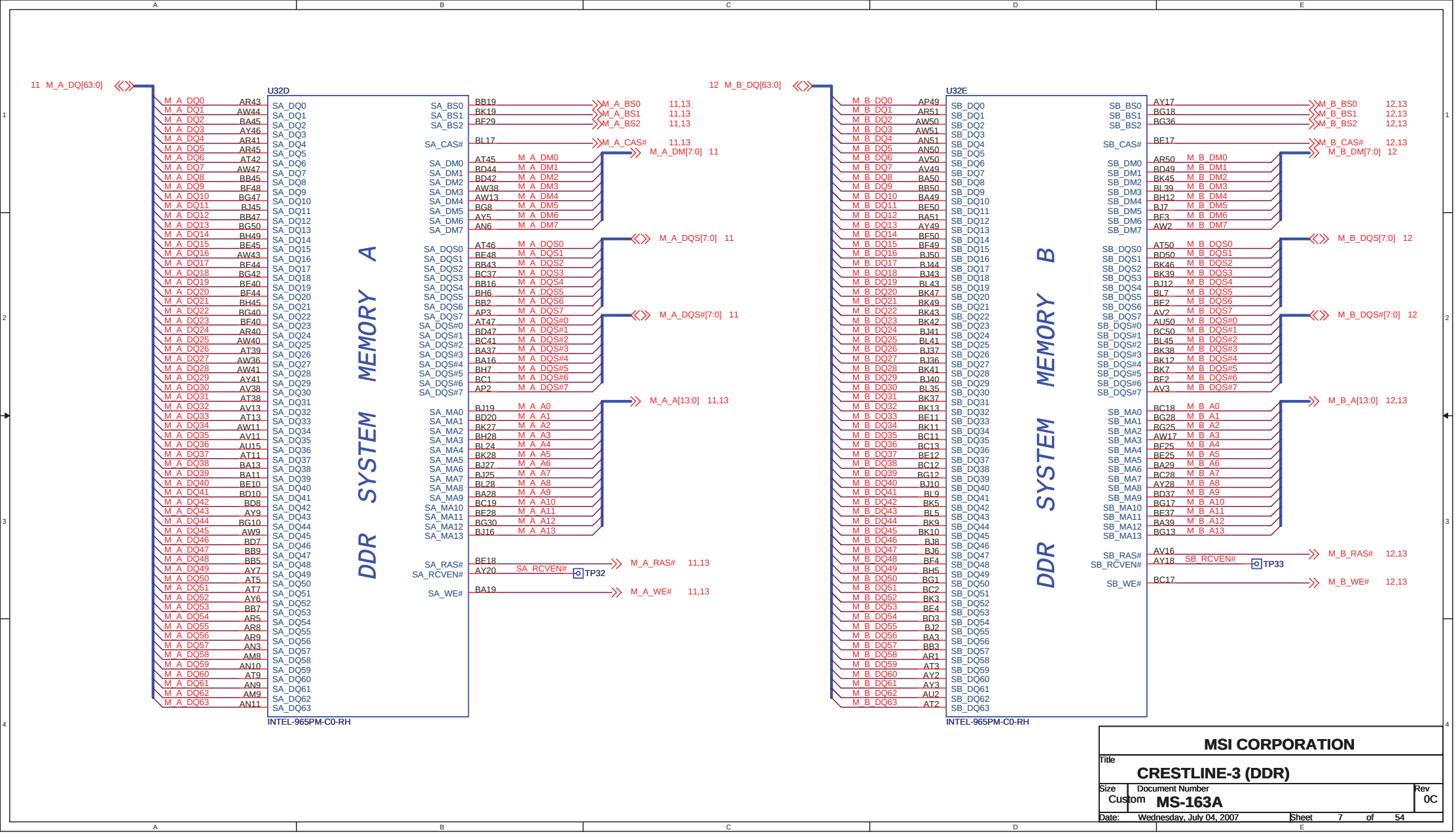
CFG5 (Default=High)	CFG9 (Default=High)	CFG16 (Default=High)	CFG19 (Default=Low)	CFG20 (Default=Low)
0= DMI x2 1= DMI x4 (default)	0= Reverse Lanes 1= Normal (default) PCIE X16	0=Dynamic ODT Disabled 1=Dynamic ODT Enabled (default)	0= Normal (default) 1= Lanes Reversed DMI	Only SDVO or PCIE is operational

MSI CORPORATION

Title: CRESTLINE-2 (DMI/VGA)

Size: Custom | Document Number: MS-163A | Rev: 0C

Date: Wednesday, July 11, 2007 | Sheet 6 of 54


11 M_A_DQ[63:0]
U32D
M_A_DQ0 AR43
M_A_DQ1 AW44
M_A_DQ2 BA45
M_A_DQ3 AY46
M_A_DQ4 AR41
M_A_DQ5 AR45
M_A_DQ6 AT42
M_A_DQ7 AW47
M_A_DQ8 BB45
M_A_DQ9 BF48
M_A_DQ10 BG47
M_A_DQ11 BJ45
M_A_DQ12 BB47
M_A_DQ13 BG50
M_A_DQ14 BH49
M_A_DQ15 BE45
M_A_DQ16 AW43
M_A_DQ17 BF44
M_A_DQ18 BG42
M_A_DQ19 BF40
M_A_DQ20 BF44
M_A_DQ21 BH45
M_A_DQ22 BG40
M_A_DQ23 BF40
M_A_DQ24 AR40
M_A_DQ25 AW40
M_A_DQ26 AT39
M_A_DQ27 AW36
M_A_DQ28 AW41
M_A_DQ29 AY41
M_A_DQ30 AV38
M_A_DQ31 AT38
M_A_DQ32 AV13
M_A_DQ33 AT13
M_A_DQ34 AW11
M_A_DQ35 AV11
M_A_DQ36 AU15
M_A_DQ37 AT11
M_A_DQ38 BA13
M_A_DQ39 BA11
M_A_DQ40 BE10
M_A_DQ41 BD10
M_A_DQ42 BD8
M_A_DQ43 AY9
M_A_DQ44 BG10
M_A_DQ45 AW9
M_A_DQ46 BD7
M_A_DQ47 BB9
M_A_DQ48 BB5
M_A_DQ49 AY7
M_A_DQ50 AT5
M_A_DQ51 AT7
M_A_DQ52 AY6
M_A_DQ53 BB7
M_A_DQ54 AR5
M_A_DQ55 AR8
M_A_DQ56 AR9
M_A_DQ57 AN3
M_A_DQ58 AM8
M_A_DQ59 AN10
M_A_DQ60 AT9
M_A_DQ61 AN9
M_A_DQ62 AM9
M_A_DQ63 AN11
SA_DQ0
SA_DQ1
SA_DQ2
SA_DQ3
SA_DQ4
SA_DQ5
SA_DQ6
SA_DQ7
SA_DQ8
SA_DQ9
SA_DQ10
SA_DQ11
SA_DQ12
SA_DQ13
SA_DQ14
SA_DQ15
SA_DQ16
SA_DQ17
SA_DQ18
SA_DQ19
SA_DQ20
SA_DQ21
SA_DQ22
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SA_DQ42
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SA_DQ45
SA_DQ46
SA_DQ47
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SA_DQ51
SA_DQ52
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SA_DQ54
SA_DQ55
SA_DQ56
SA_DQ57
SA_DQ58
SA_DQ59
SA_DQ60
SA_DQ61
SA_DQ62
SA_DQ63
DDR SYSTEM MEMORY A
SA_BS0 BB19
SA_BS1 BK19
SA_BS2 BF29
SA_CAS# BL17
SA_DM0 AT45
SA_DM1 BD44
SA_DM2 BD42
SA_DM3 AW38
SA_DM4 AW13
SA_DM5 BG8
SA_DM6 AY5
SA_DM7 AN6
SA_DQS0 AT46
SA_DQS1 BE48
SA_DQS2 BB43
SA_DQS3 BC37
SA_DQS4 BB16
SA_DQS5 BH6
SA_DQS6 BB2
SA_DQS7 AP3
SA_DQS#0 AT47
SA_DQS#1 BD47
SA_DQS#2 BC41
SA_DQS#3 BA37
SA_DQS#4 BA16
SA_DQS#5 BH7
SA_DQS#6 BC1
SA_DQS#7 AP2
SA_MA0 BJ19
SA_MA1 BD20
SA_MA2 BK27
SA_MA3 BH28
SA_MA4 BL24
SA_MA5 BK28
SA_MA6 BJ27
SA_MA7 BJ25
SA_MA8 BL28
SA_MA9 BA28
SA_MA10 BC19
SA_MA11 BE28
SA_MA12 BG30
SA_MA13 BJ16
SA_RAS# BE18
SA_RCVEN# AY20
SA_WE# BA19
M_A_BS0 11,13
M_A_BS1 11,13
M_A_BS2 11,13
M_A_CAS# 11,13
M_A_DM[7:0] 11
M_A_DQS[7:0] 11
M_A_DQS#[7:0] 11
M_A_A[13:0] 11,13
M_A_RAS# 11,13
M_A_WE# 11,13
SA_RCVEN#
TP32
INTEL-965PM-C0-RH
12 M_B_DQ[63:0]
U32E
M_B_DQ0 AP49
M_B_DQ1 AR51
M_B_DQ2 AW50
M_B_DQ3 AW51
M_B_DQ4 AN51
M_B_DQ5 AN50
M_B_DQ6 AV50
M_B_DQ7 AV49
M_B_DQ8 BA50
M_B_DQ9 BB50
M_B_DQ10 BA49
M_B_DQ11 BE50
M_B_DQ12 BA51
M_B_DQ13 AY49
M_B_DQ14 BE50
M_B_DQ15 BF49
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M_B_DQ26 BJ37
M_B_DQ27 BJ36
M_B_DQ28 BK41
M_B_DQ29 BJ40
M_B_DQ30 BL35
M_B_DQ31 BK37
M_B_DQ32 BK13
M_B_DQ33 BE11
M_B_DQ34 BK11
M_B_DQ35 BC11
M_B_DQ36 BC13
M_B_DQ37 BE12
M_B_DQ38 BC12
M_B_DQ39 BG12
M_B_DQ40 BJ10
M_B_DQ41 BL9
M_B_DQ42 BK5
M_B_DQ43 BL5
M_B_DQ44 BK9
M_B_DQ45 BK10
M_B_DQ46 BJ8
M_B_DQ47 BJ6
M_B_DQ48 BF4
M_B_DQ49 BH5
M_B_DQ50 BG1
M_B_DQ51 BC2
M_B_DQ52 BK3
M_B_DQ53 BE4
M_B_DQ54 BD3
M_B_DQ55 BJ2
M_B_DQ56 BA3
M_B_DQ57 BB3
M_B_DQ58 AR1
M_B_DQ59 AT3
M_B_DQ60 AY2
M_B_DQ61 AY3
M_B_DQ62 AU2
M_B_DQ63 AT2
SB_DQ0
SB_DQ1
SB_DQ2
SB_DQ3
SB_DQ4
SB_DQ5
SB_DQ6
SB_DQ7
SB_DQ8
SB_DQ9
SB_DQ10
SB_DQ11
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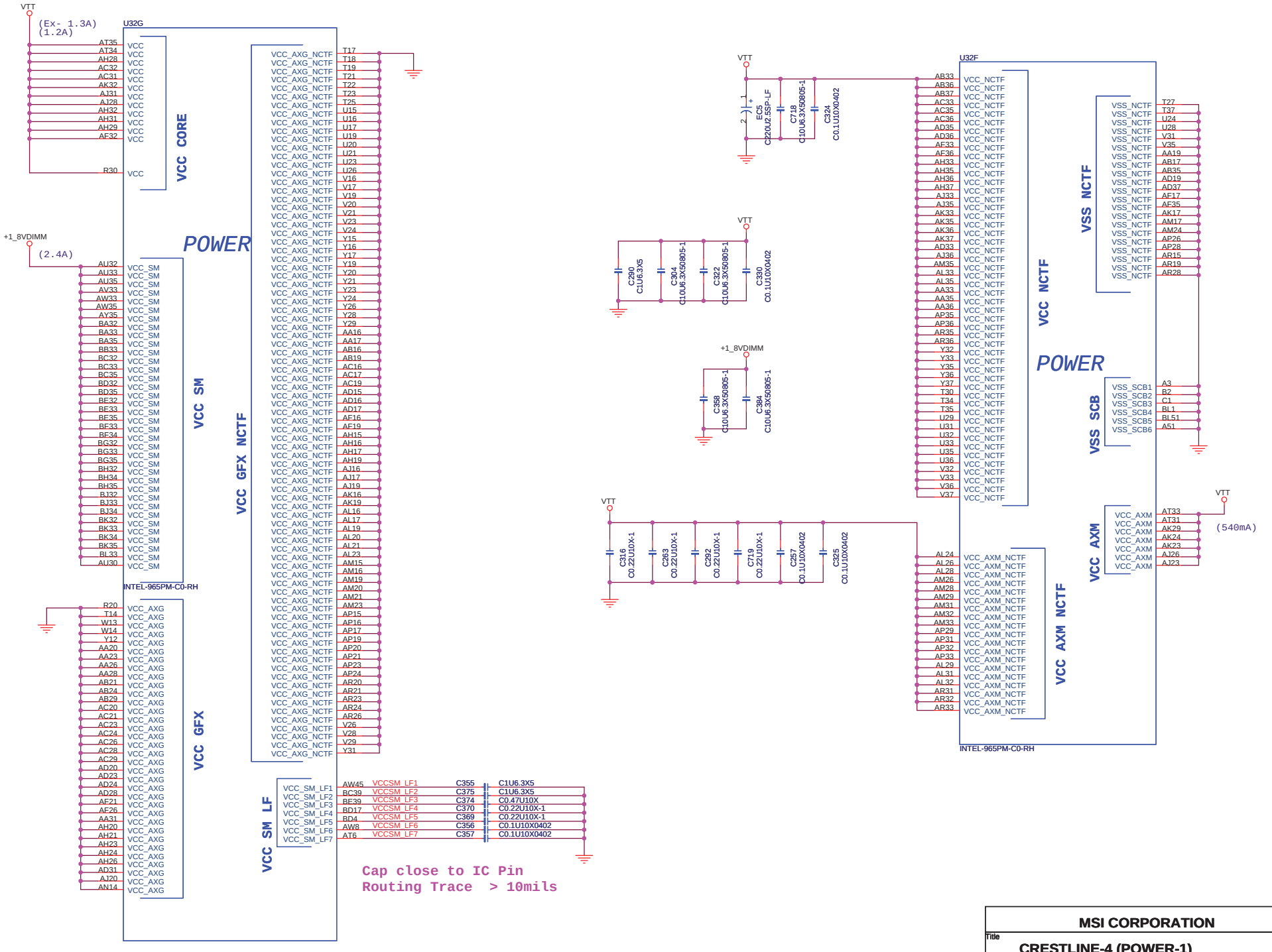
SB_DQ58
SB_DQ59
SB_DQ60
SB_DQ61
SB_DQ62
SB_DQ63
DDR SYSTEM MEMORY B
SB_BS0 AY17
SB_BS1 BG18
SB_BS2 BG36
SB_CAS# BE17
SB_DM0 AR50
SB_DM1 BD49
SB_DM2 BK45
SB_DM3 BL39
SB_DM4 BH12
SB_DM5 BJ7
SB_DM6 BF3
SB_DM7 AW2
SB_DQS0 AT50
SB_DQS1 BD50
SB_DQS2 BK46
SB_DQS3 BK39
SB_DQS4 BJ12
SB_DQS5 BL7
SB_DQS6 BE2
SB_DQS7 AV2
SB_DQS#0 AU50
SB_DQS#1 BC50
SB_DQS#2 BL45
SB_DQS#3 BK38
SB_DQS#4 BK12
SB_DQS#5 BK7
SB_DQS#6 BF2
SB_DQS#7 AV3
SB_MA0 BC18
SB_MA1 BG28
SB_MA2 BG25
SB_MA3 AW17
SB_MA4 BF25
SB_MA5 BE25
SB_MA6 BA29
SB_MA7 BC28
SB_MA8 AY28
SB_MA9 BD37
SB_MA10 BG17
SB_MA11 BE37
SB_MA12 BA39
SB_MA13 BG13
SB_RAS# AV16
SB_RCVEN# AY18
SB_WE# BC17
M_B_BS0 12,13
M_B_BS1 12,13
M_B_BS2 12,13
M_B_CAS# 12,13
M_B_DM[7:0] 12
M_B_DQS[7:0] 12
M_B_DQS#[7:0] 12
M_B_A[13:0] 12,13
M_B_RAS# 12,13
M_B_WE# 12,13
SB_RCVEN#
TP33
INTEL-965PM-C0-RH
MSI CORPORATION
Title
CRESTLINE-3 (DDR)
Size
Custom
Document Number
MS-163A
Rev
0C
Date: Wednesday, July 04, 2007
Sheet 7 of 54


VTT
(Ex- 1.3A)
(1.2A)
U32G
VCC CORE
VCC SM
VCC GFX NCTF
VCC GFX
VCC SM LF
POWER
+1_8VDIMM
(2.4A)
INTEL-965PM-C0-RH
Cap close to IC Pin
Routing Trace > 10mils
U32F
VCC NCTF
VSS NCTF
VSS SCB
VCC AXM
VCC AXM NCTF
(540mA)
MSI CORPORATION
CRESTLINE-4 (POWER-1)
Custom
MS-163A
0C
Tuesday, May 29, 2007
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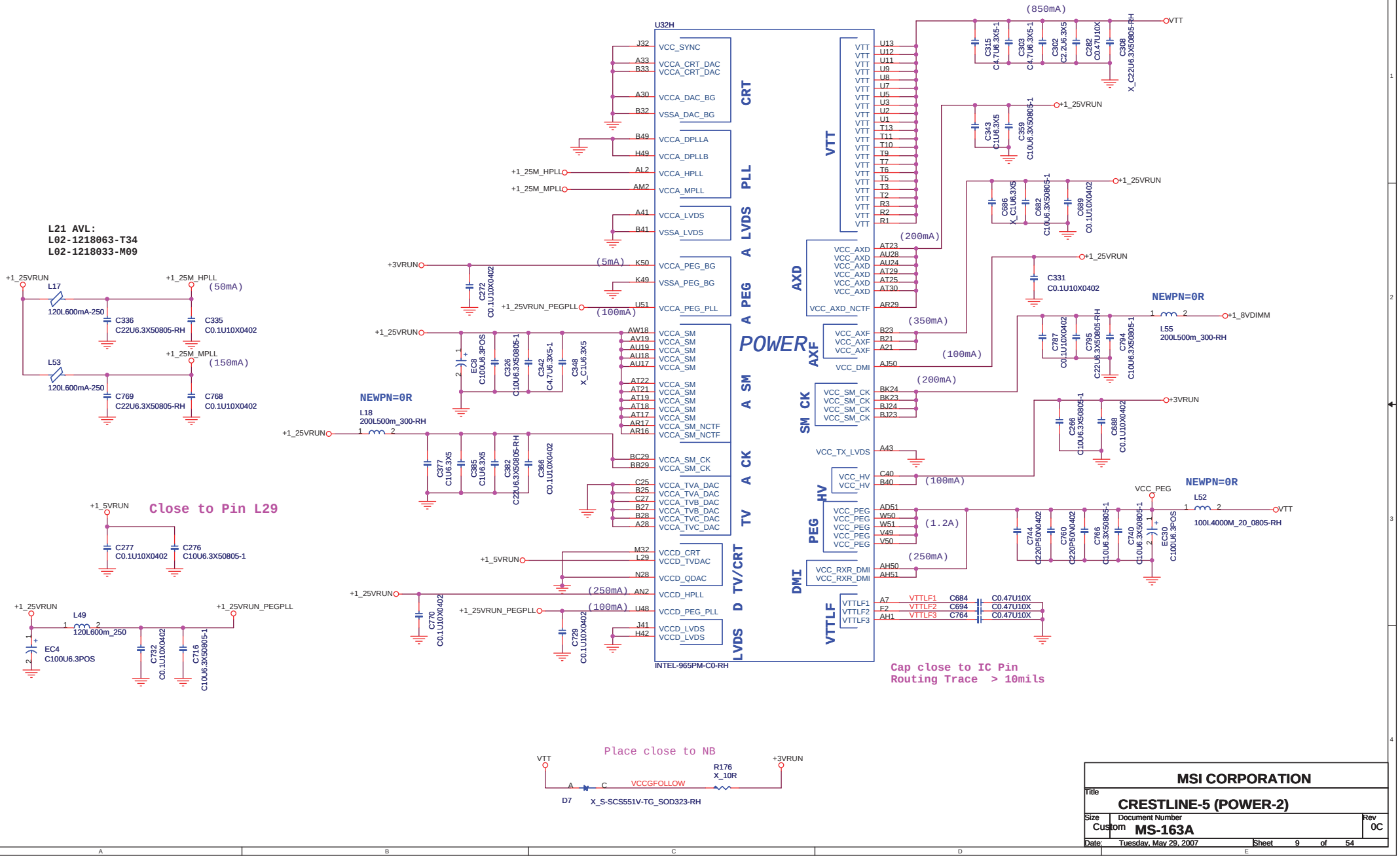
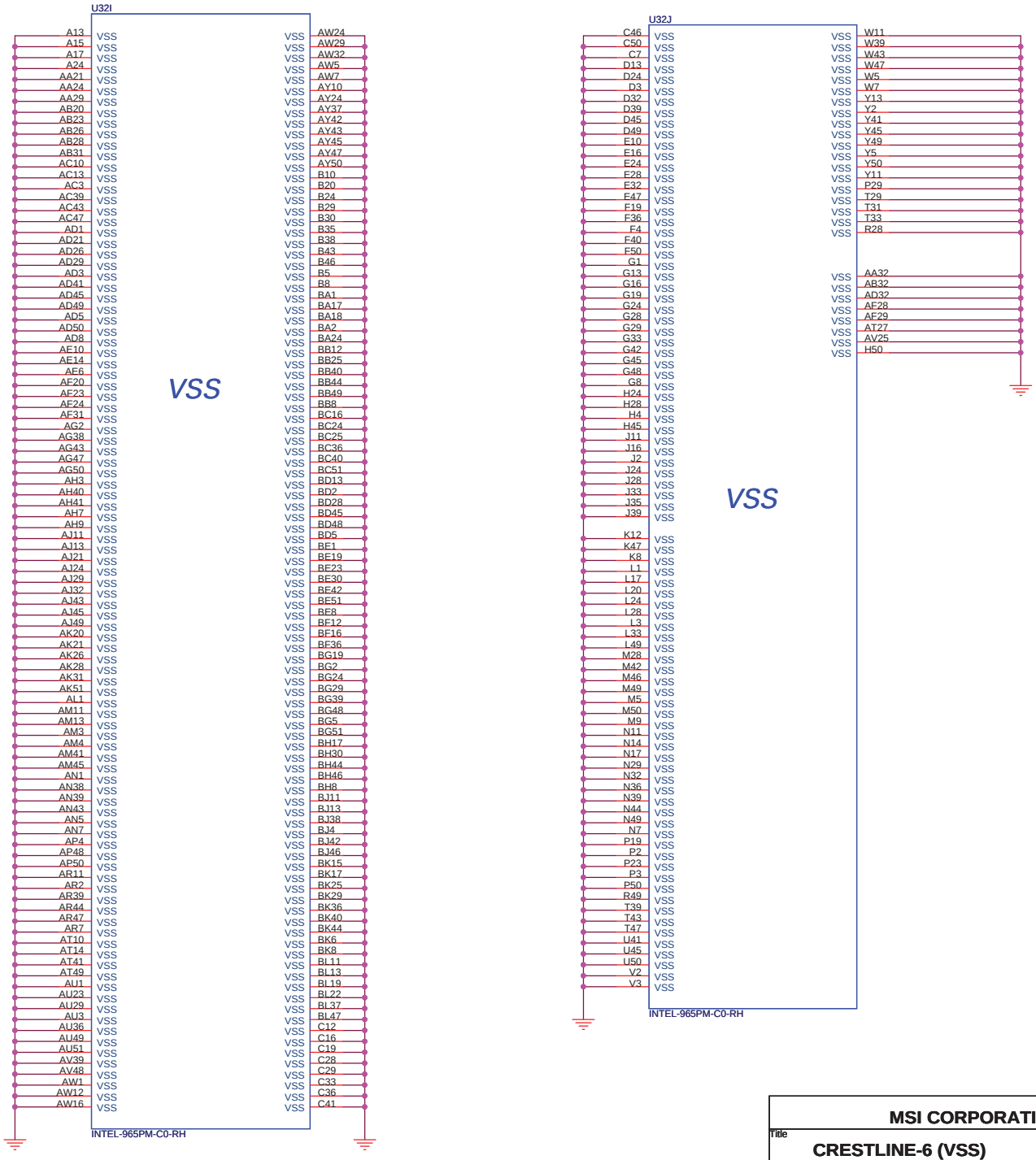
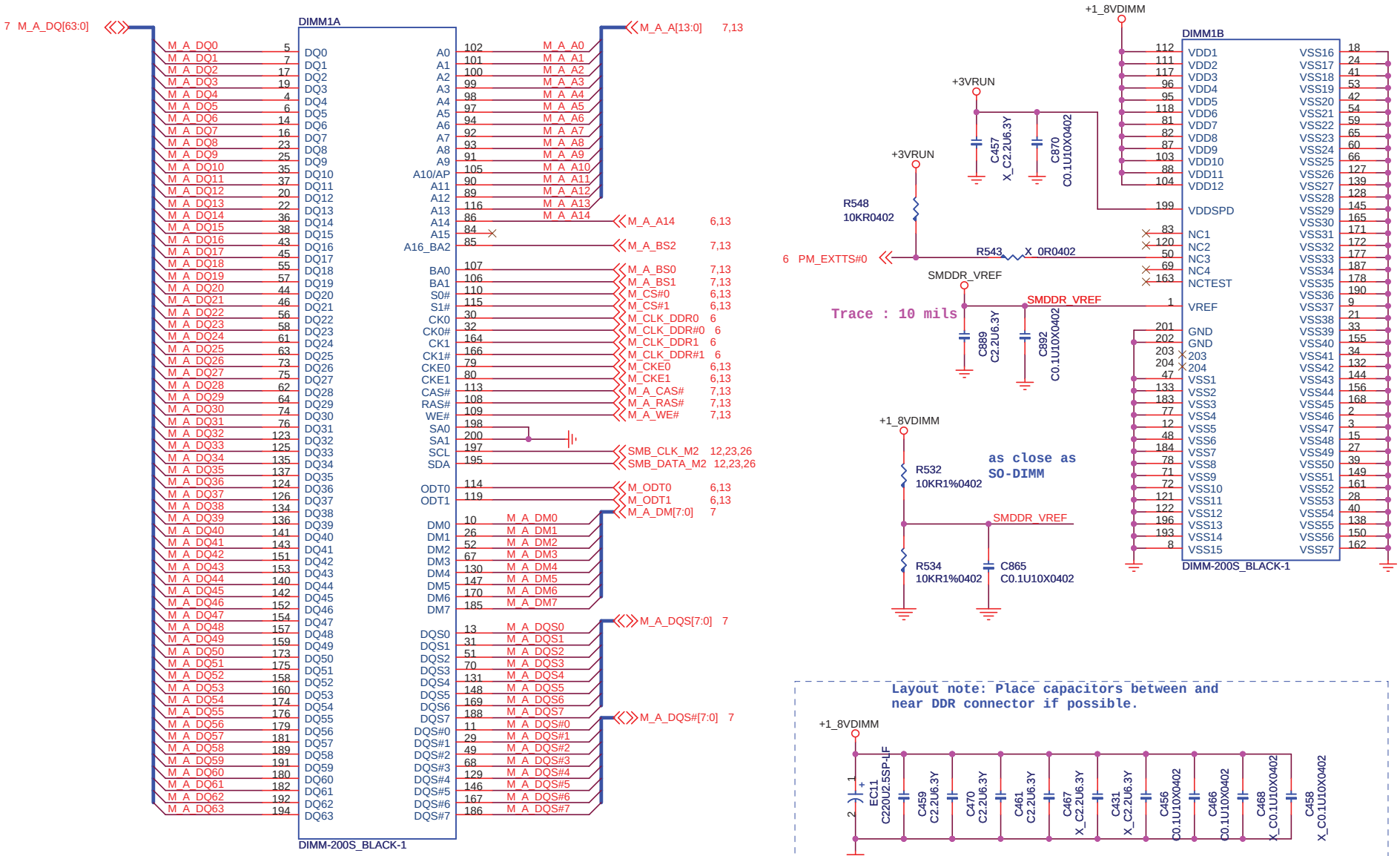
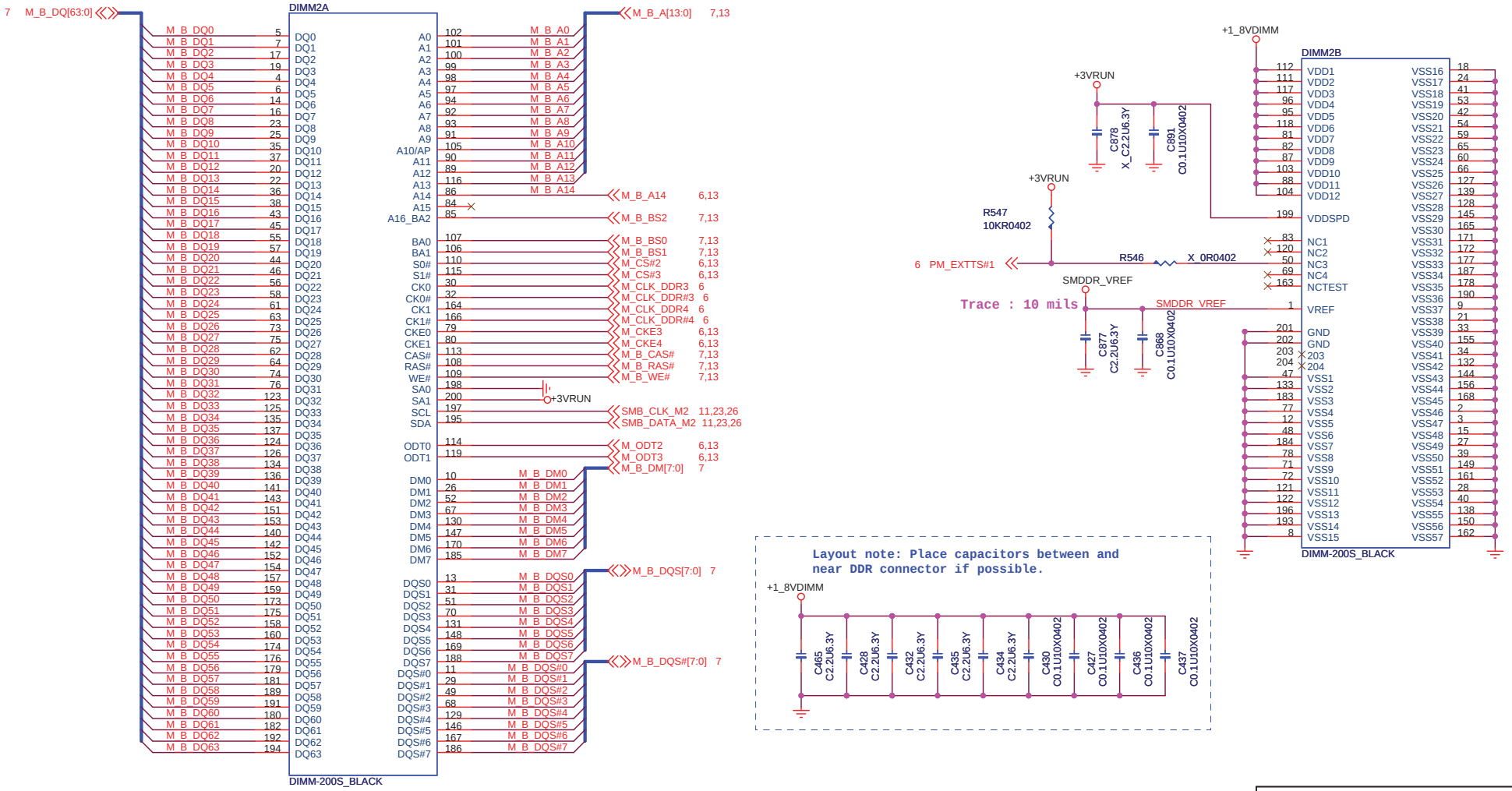

L21 AVL:
L02-1218063-T34
L02-1218033-M09
U32H
INTEL-965PM-C0-RH
POWER
CRT
PLL
LVDS
A PEG
A SM
A CK
TV
TV/CRT
D LVDS
VTT
AXD
AXF
SM CK
HV
PEG
DMI
VTTLF
NEWPN=0R
Close to Pin L29
Cap close to IC Pin
Routing Trace > 10mils
Place close to NB
MSI CORPORATION
CRESTLINE-5 (POWER-2)
MS-163A
Tuesday, May 29, 2007



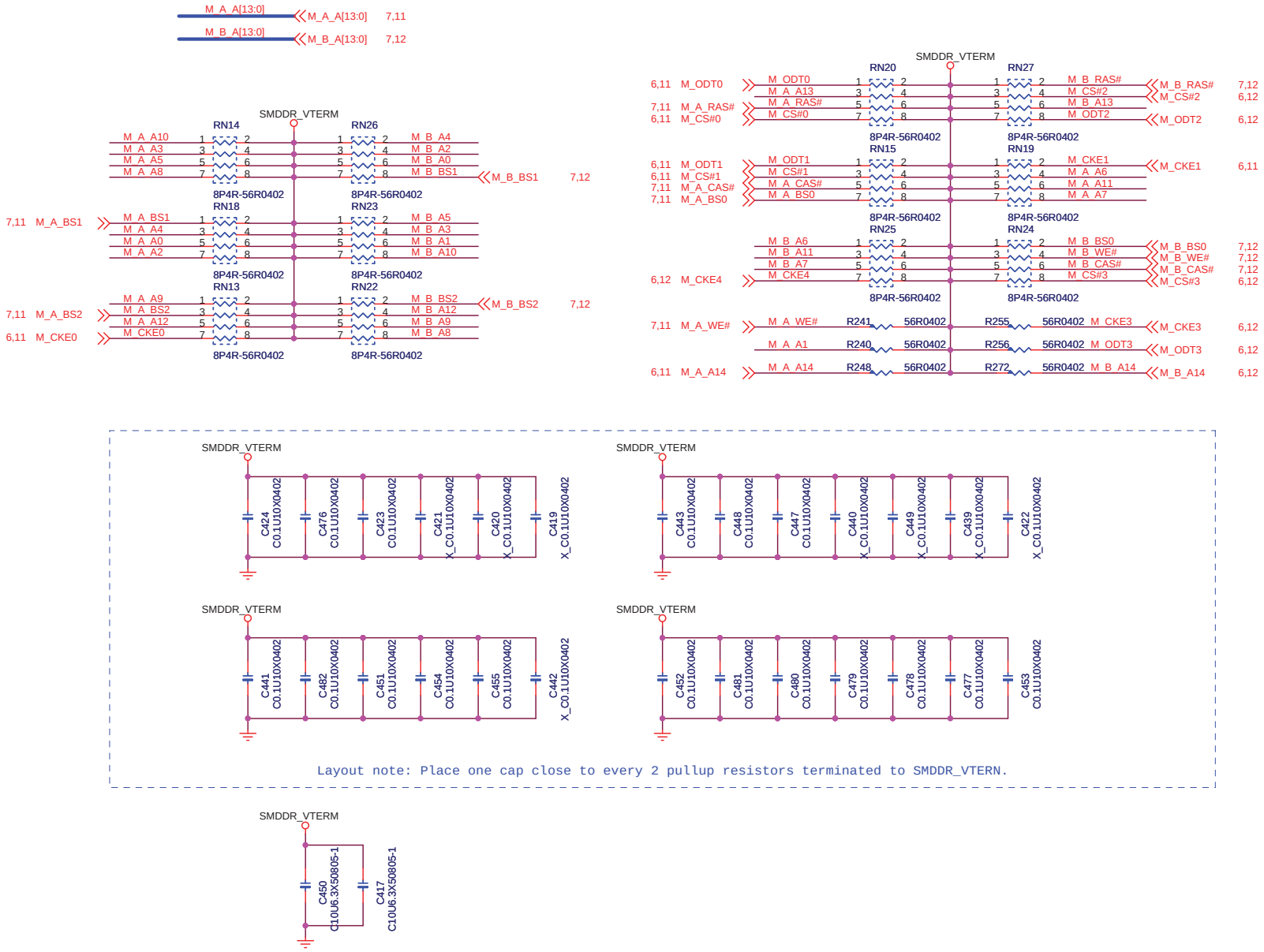
MSI CORPORATION		
Title: CRESTLINE-6 (VSS)		
Size: Custom	Document Number: MS-163A	Rev: 0C
Date: Monday, May 28, 2007	Sheet 10 of 54	



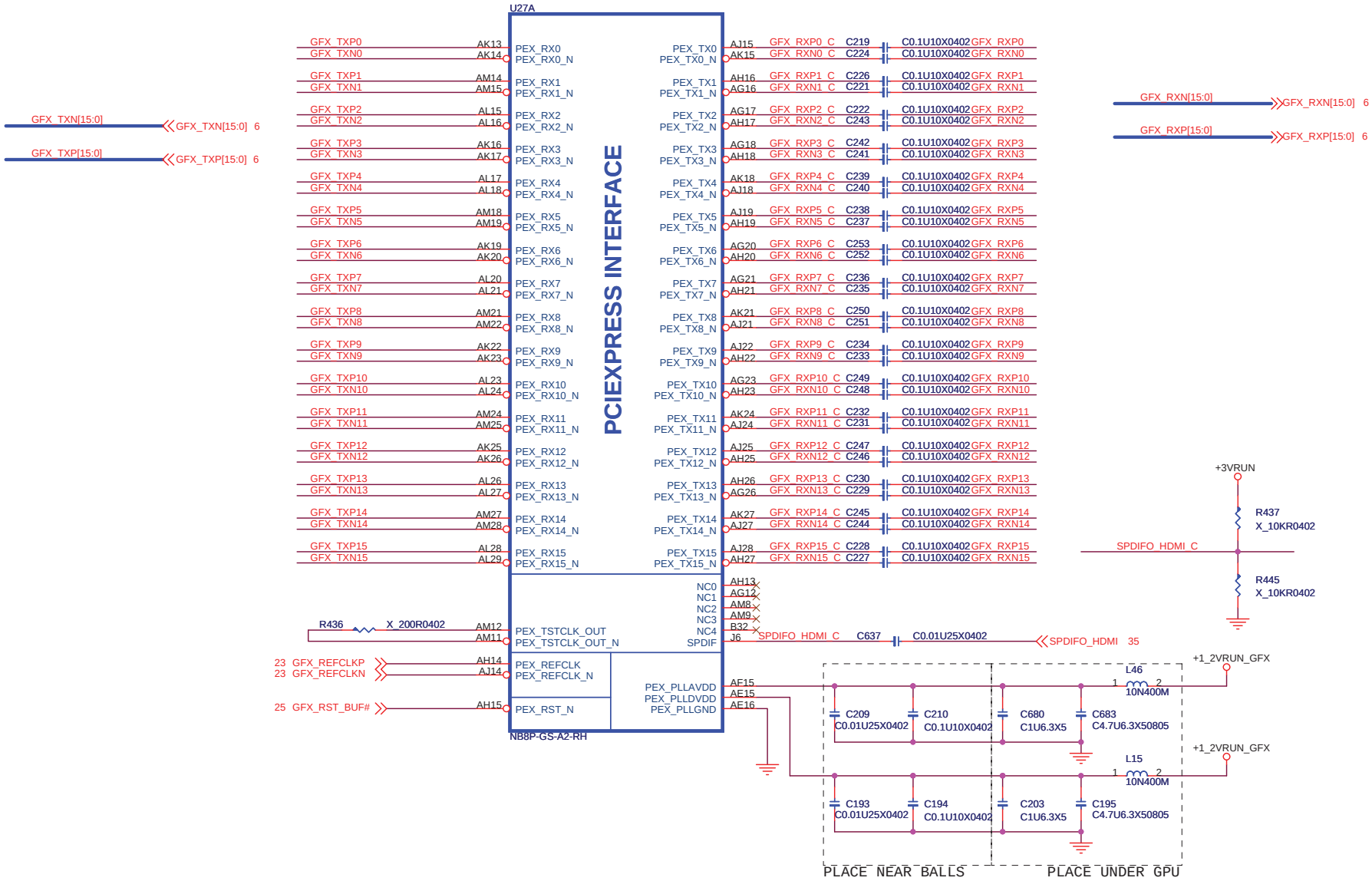
MSI CORPORATION		
Title: DDR2 SODIMM 0		
Size: Custom	Document Number: MS-163A	Rev: 0C
Date: Wednesday, July 04, 2007	Sheet 11 of 54	



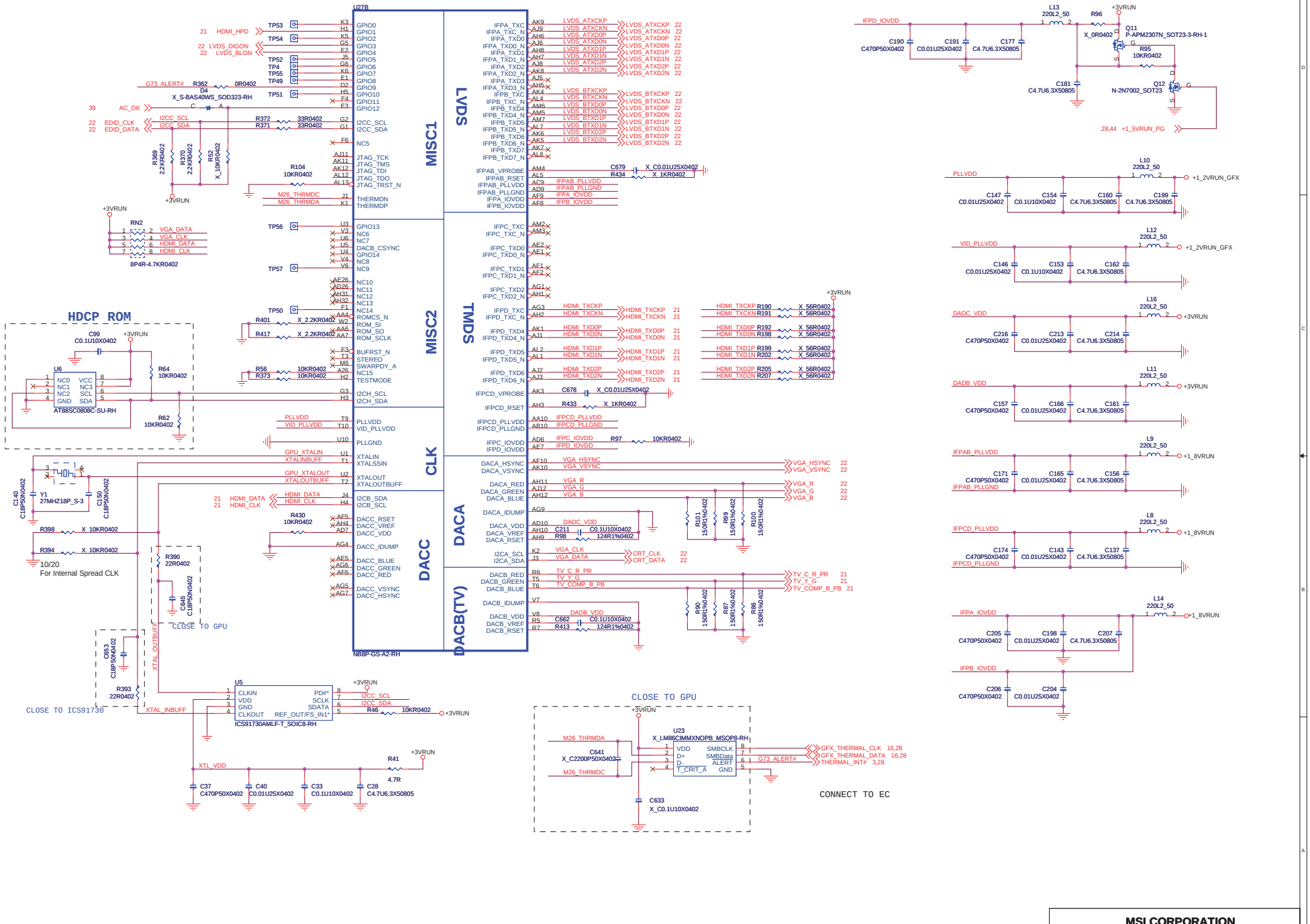
MSI CORPORATION		
Title: DDR2 SODIMM 1		
Size: Custom	Document Number: MS-163A	Rev: 0C
Date: Tuesday, July 10, 2007	Sheet 12 of 54	

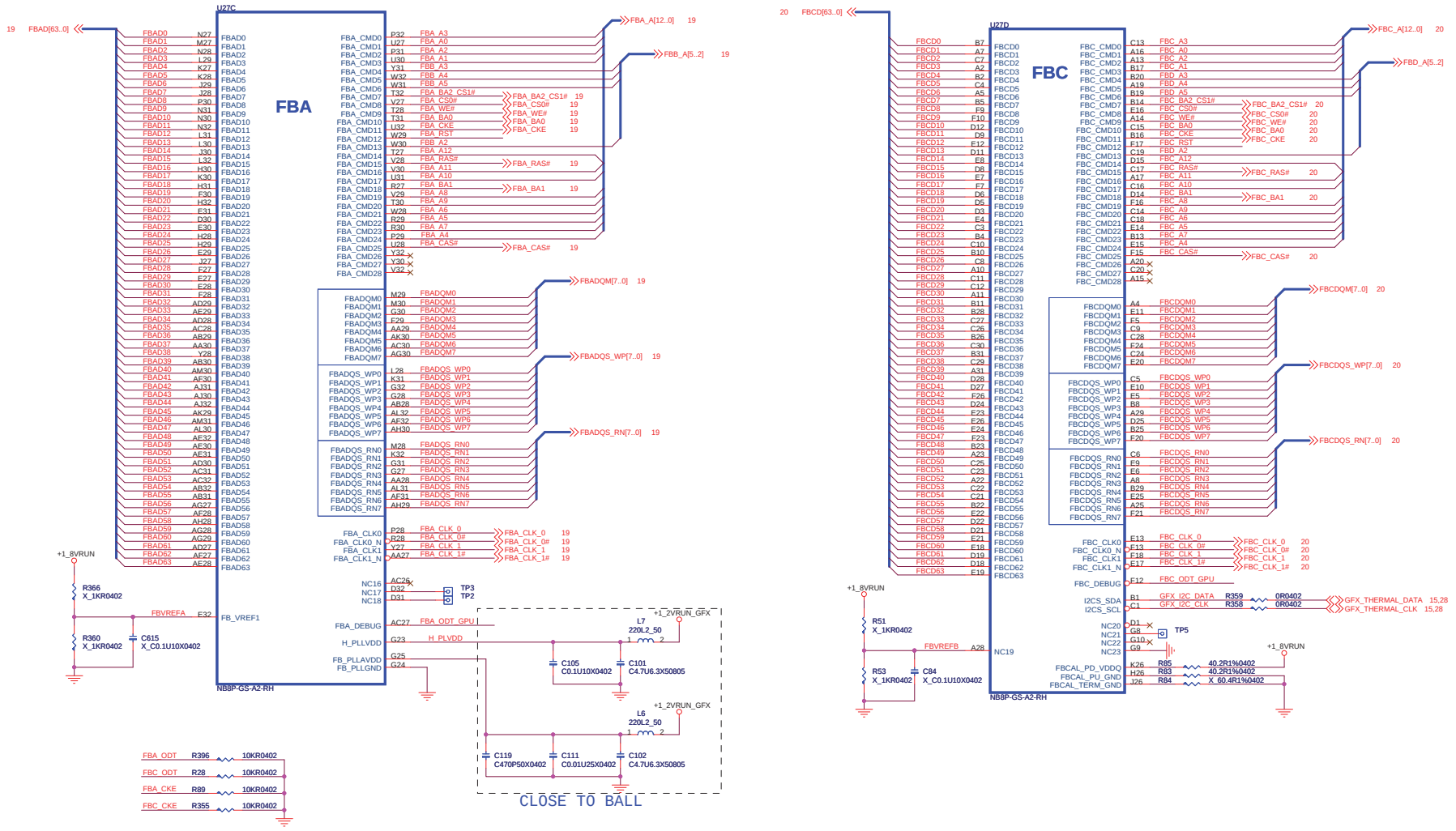


MSI CORPORATION			
Title: DDR2 TREMINATION			
Size: B	Document Number: MS-163A		Rev: 0C
Date: Wednesday, July 04, 2007	Sheet 13 of 54		

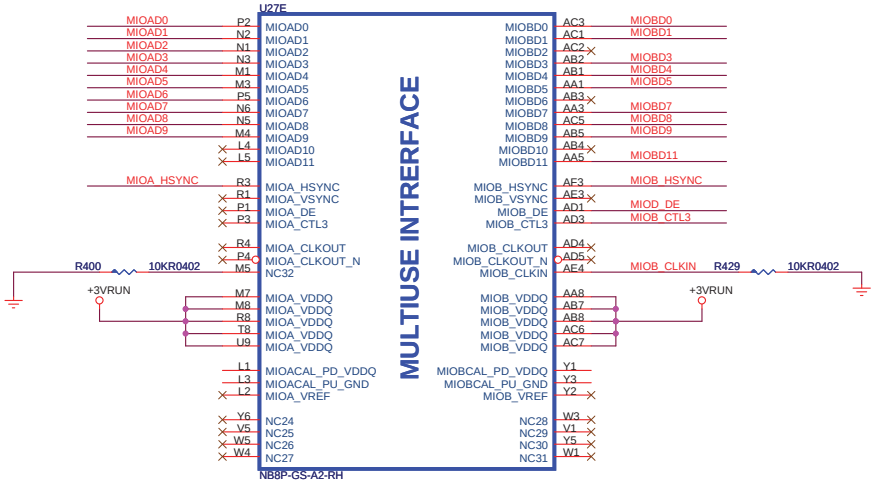


MSI CORPORATION	
Title	NB8P: Host Interface
Size	B
Document Number	MS-163A
Rev	0C
Date:	Tuesday, July 10, 2007
Sheet	14 of 54

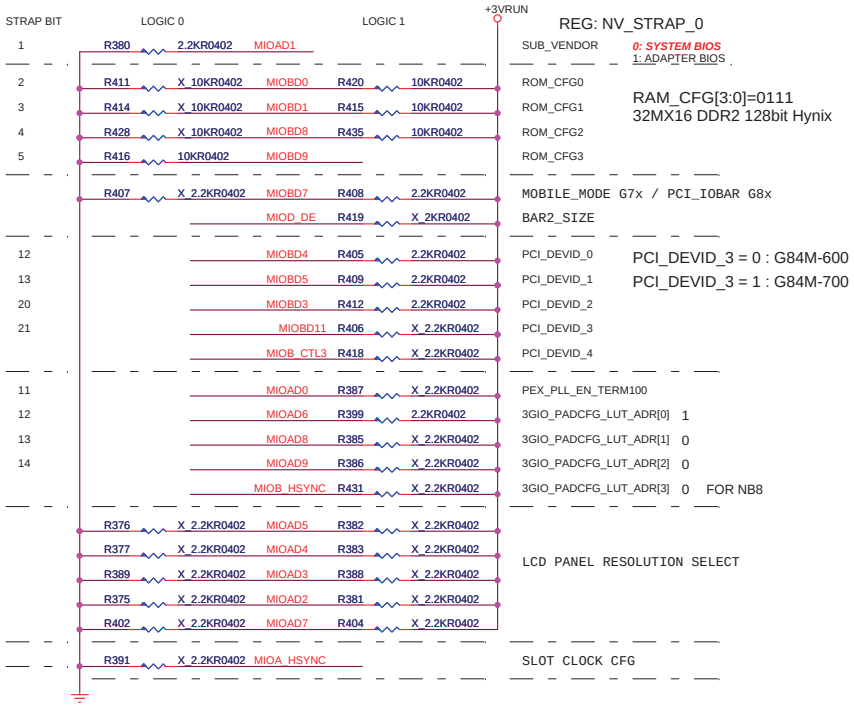

U27B
MISC1
MISC2
CLK
DACC
LVDS
TMDS
DACA
DACB(TV)
NB8P-GS-A2-RH
HDCP ROM
AT88SC0808C-SU-RH
ICS91730AMLF-T_SOIC8-RH
U23
X_LM86CIMMXNOPB_MSOP8-RH
CLOSE TO GPU
CLOSE TO ICS91730
CONNECT TO EC
10/20
For Internal Spread CLK
MSI CORPORATION
NB8P: IO Interface
MS-163A
Friday, July 06, 2007



MSI CORPORATION		
Title: NB8P: MEM Interface		
Size: C	Document Number: MS-163A	Rev: 0C
Date: Wednesday, July 04, 2007	Sheet 16 of 54	



PIN NAME	G8X FUNCTION	DEFAULT	VBIOS ROM NOT PRESENT	NB8
MIOBD2	CRYSTAL	0	NOT REQUIRED	0
MIOAD7	TVMODE0	1	NOT REQUIRED	X
MIOAD10	TVMODE1	0	NOT REQUIRED	0
MIOBD6	TVMODE2	0	NOT REQUIRED	0
MIOBD4	PCI_DEVID_0	0	2K PULL-UP RECOMMENDED	X
MIOBD5	PCI_DEVID_1	0	2K PULL-UP RECOMMENDED	X
MIOBD3	PCI_DEVID_2	0	2K PULL-UP RECOMMENDED	X
MIOBD11	PCI_DEVID_3	0	2K PULL-UP RECOMMENDED	X
MIOB_CTL3	PCI_DEVID_4	0	2K PULL-UP RECOMMENDED	X
MIOAD6	3GIO_PADCFG0	0	2K PULL-UP RECOMMENDED	1
MIOAD8	3GIO_PADCFG1	0	2K PULL-UP RECOMMENDED	0
MIOAD9	3GIO_PADCFG2	0	2K PULL-UP RECOMMENDED	0
MIOB_HSYNC	3GIO_PADCFG3	0	2K PULL-UP RECOMMENDED	0
MIOBD7	PCI_IOBAR	1	NOT REQUIRED	1
MIOB_DE	BAR2_SIZE	0	NOT REQUIRED	0

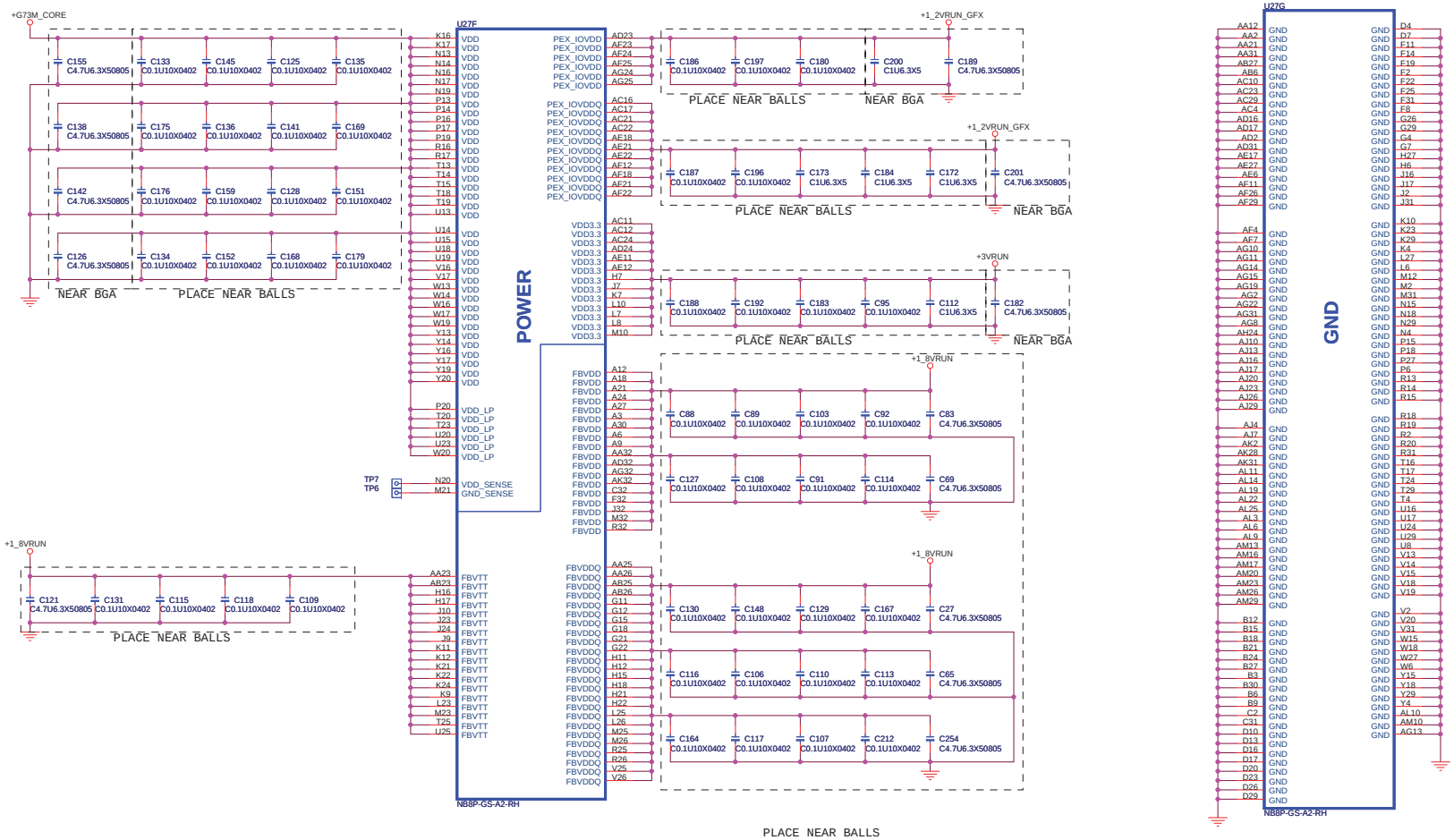


MSI CORPORATION

Title: NB8P: STRAP

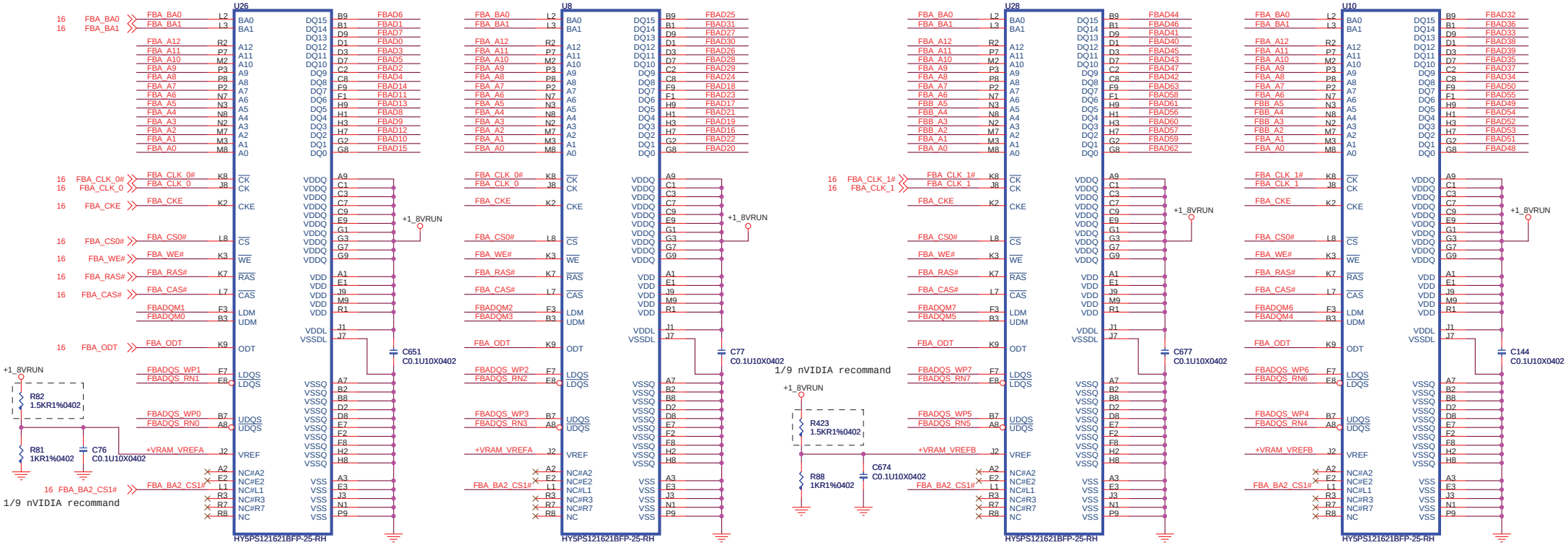
Size: Custom | Document Number: MS-163A | Rev: 0C

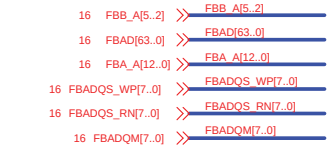
Date: Friday, July 06, 2007 | Sheet 17 of 54

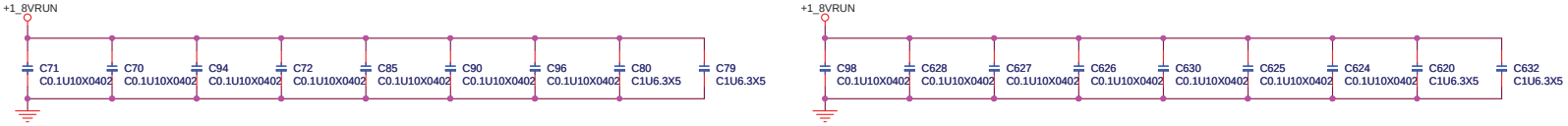


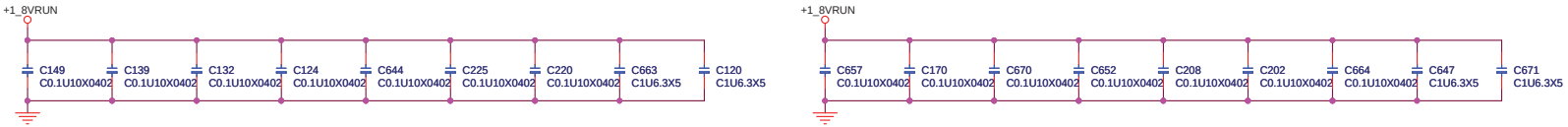
MSI CORPORATION		
Title: NB8P: POWER/GND		
Size: C	Document Number: MS-163A	Rev: 0C
Date: Wednesday, May 23, 2007	Sheet 18 of 54	

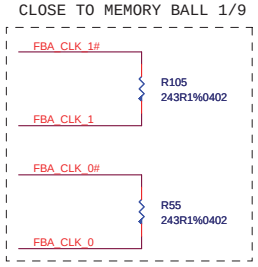
512 M GDDRII Channels A











MSI CORPORATION		
Title: GDDRII_32Mx16_BGA_A		
Size: Custom	Document Number: MS-163A	Rev: 0A
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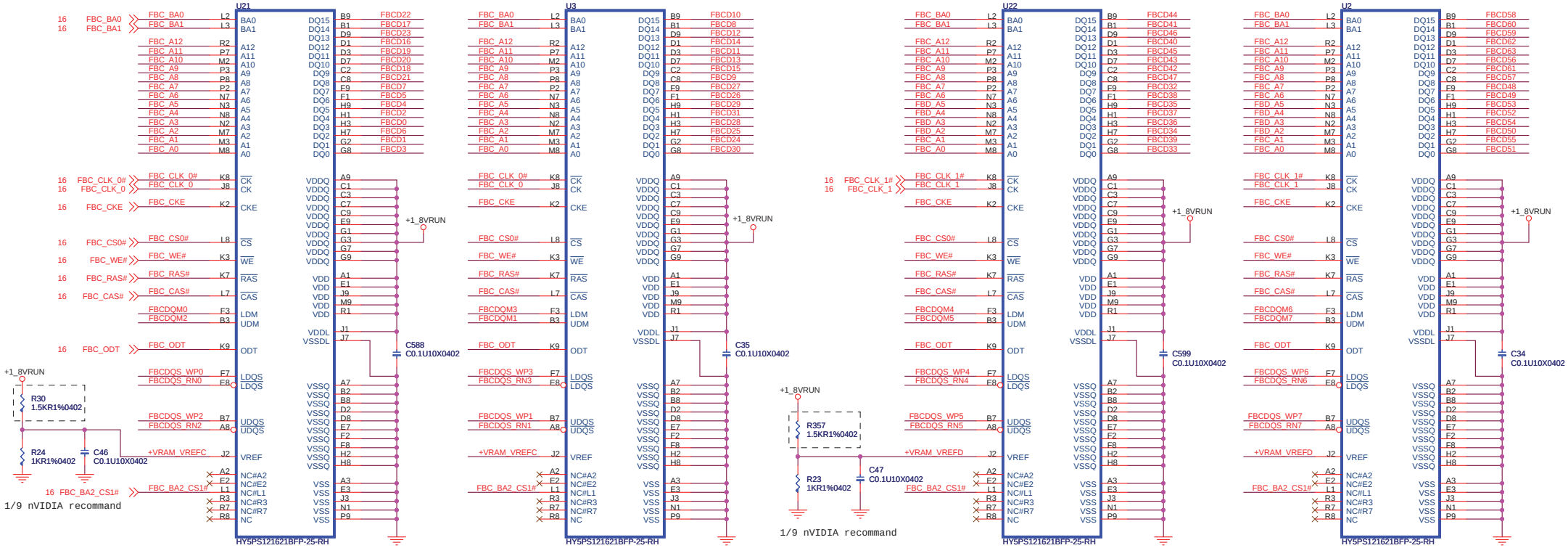
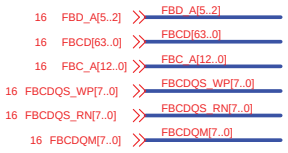
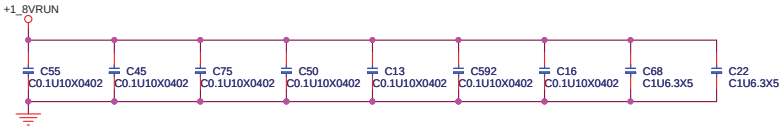
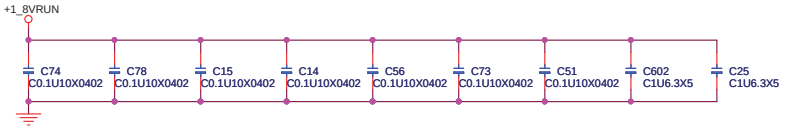
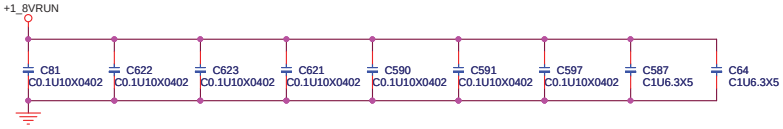
512 M GDDRII Channels B

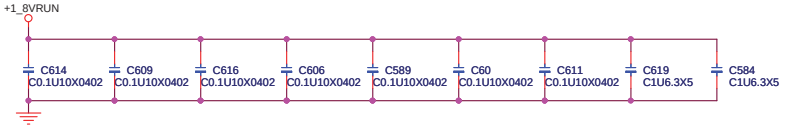


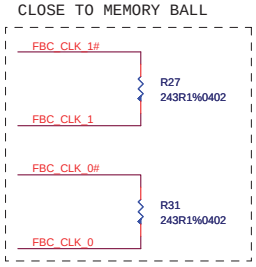




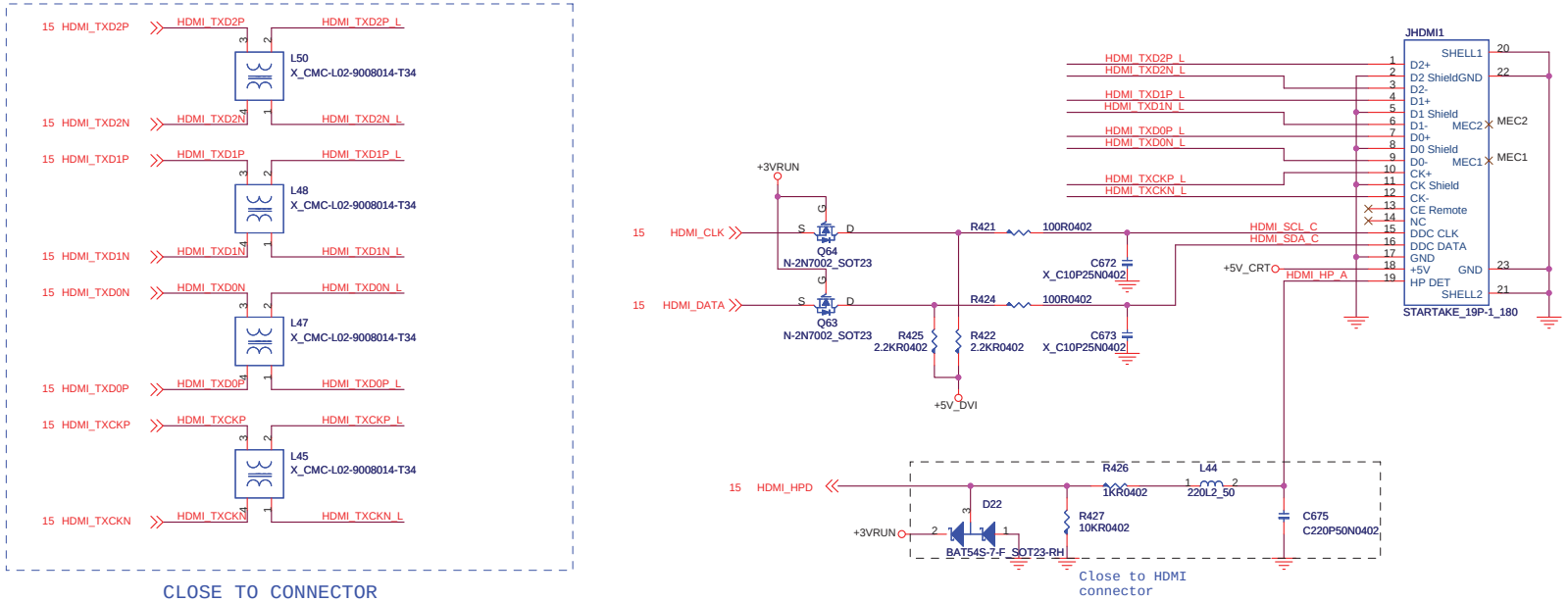




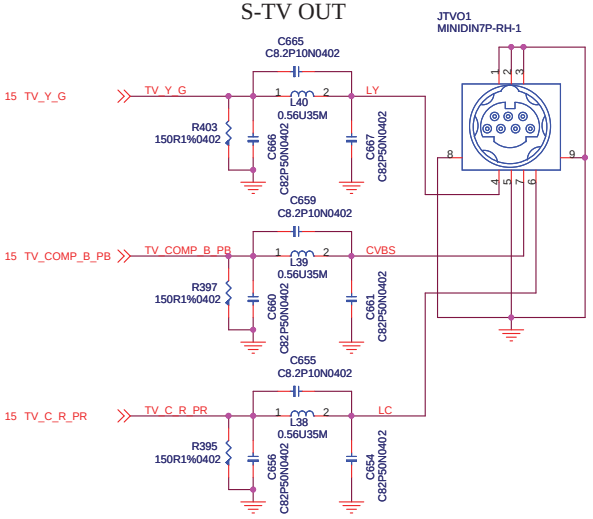




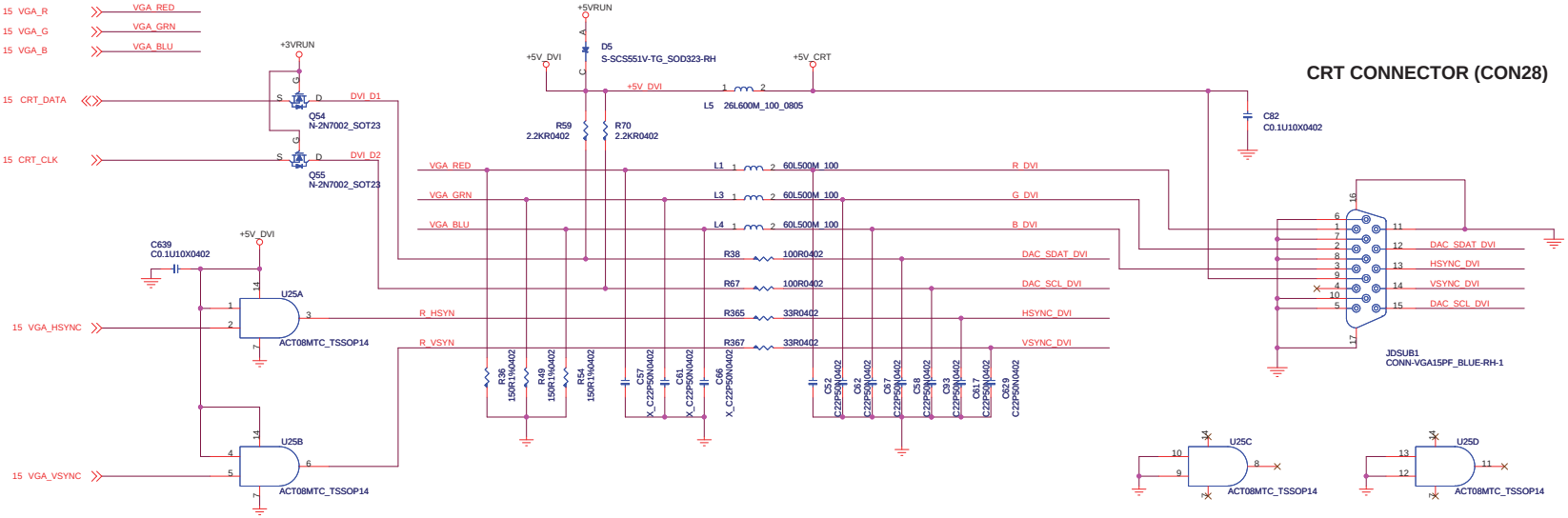
MSI CORPORATION			
Title: GDDRII_32Mx16_BGA_B			
Size: Custom	Document Number: MS-163A		Rev: 0A
Date: Wednesday, July 04, 2007		Sheet 20 of 54	

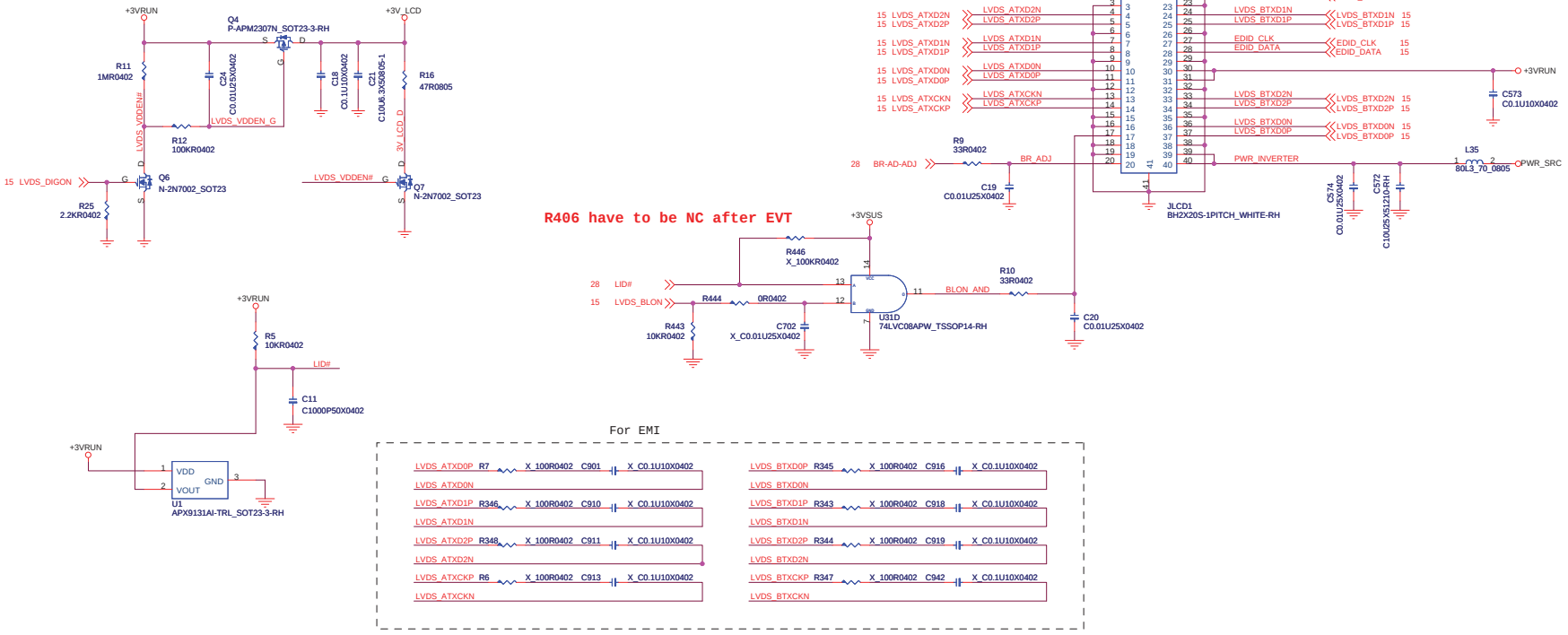


S-TV OUT

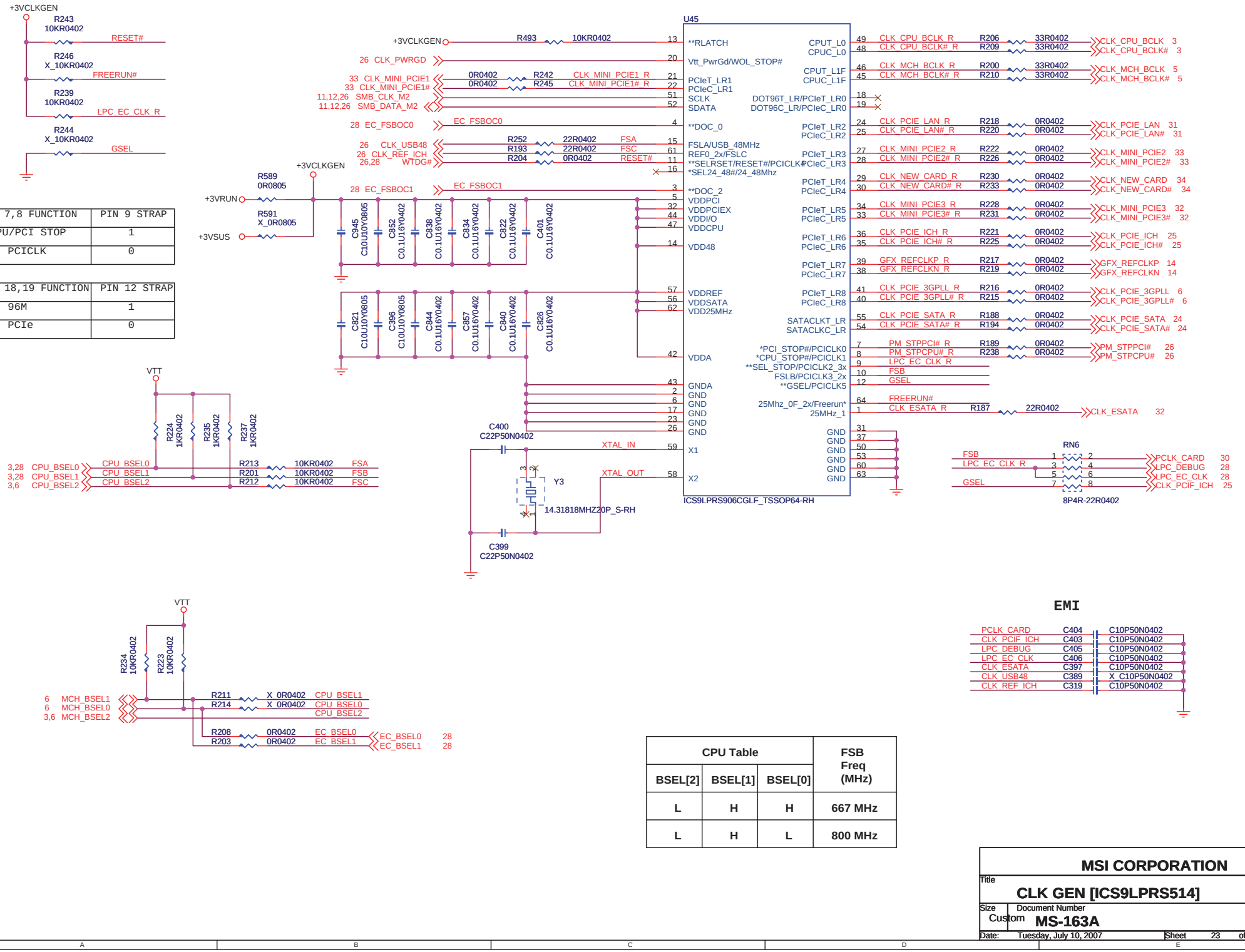


MSI CORPORATION		
Title: HDMI & TV connector		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 04, 2007	Sheet 21 of 54	





MSI CORPORATION		
Title: CRT & LVDS & BL		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 04, 2007	Sheet 22 of 54	



PIN 7,8 FUNCTION	PIN 9 STRAP
CPU/PCI STOP	1
PCICLK	0

PIN 18,19 FUNCTION	PIN 12 STRAP
96M	1
PCIe	0

CPU Table			FSB Freq (MHz)
BSEL[2]	BSEL[1]	BSEL[0]	
L	H	H	667 MHz
L	H	L	800 MHz

MSI CORPORATION

Title: CLK GEN [ICS9LPRS514]

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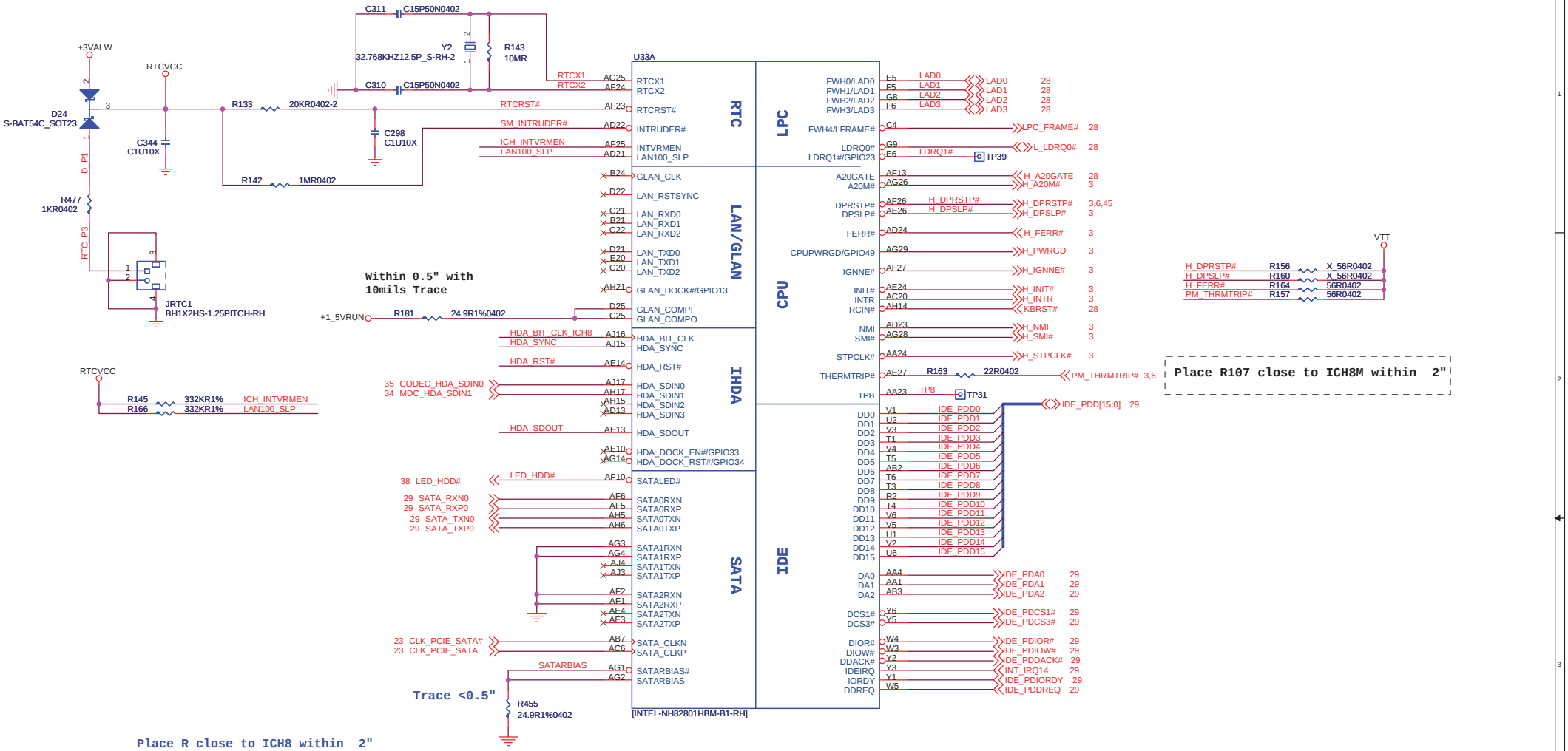
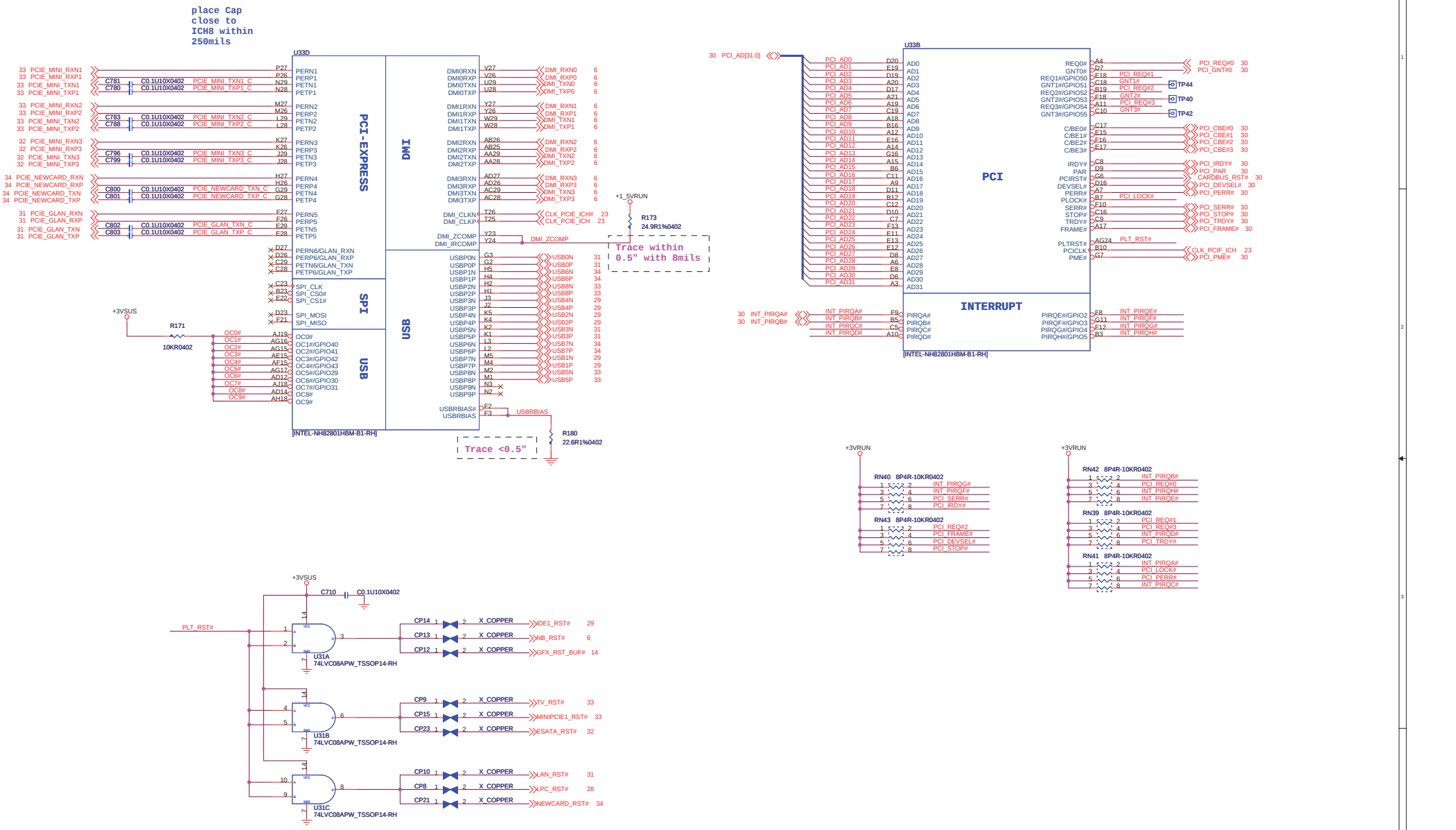
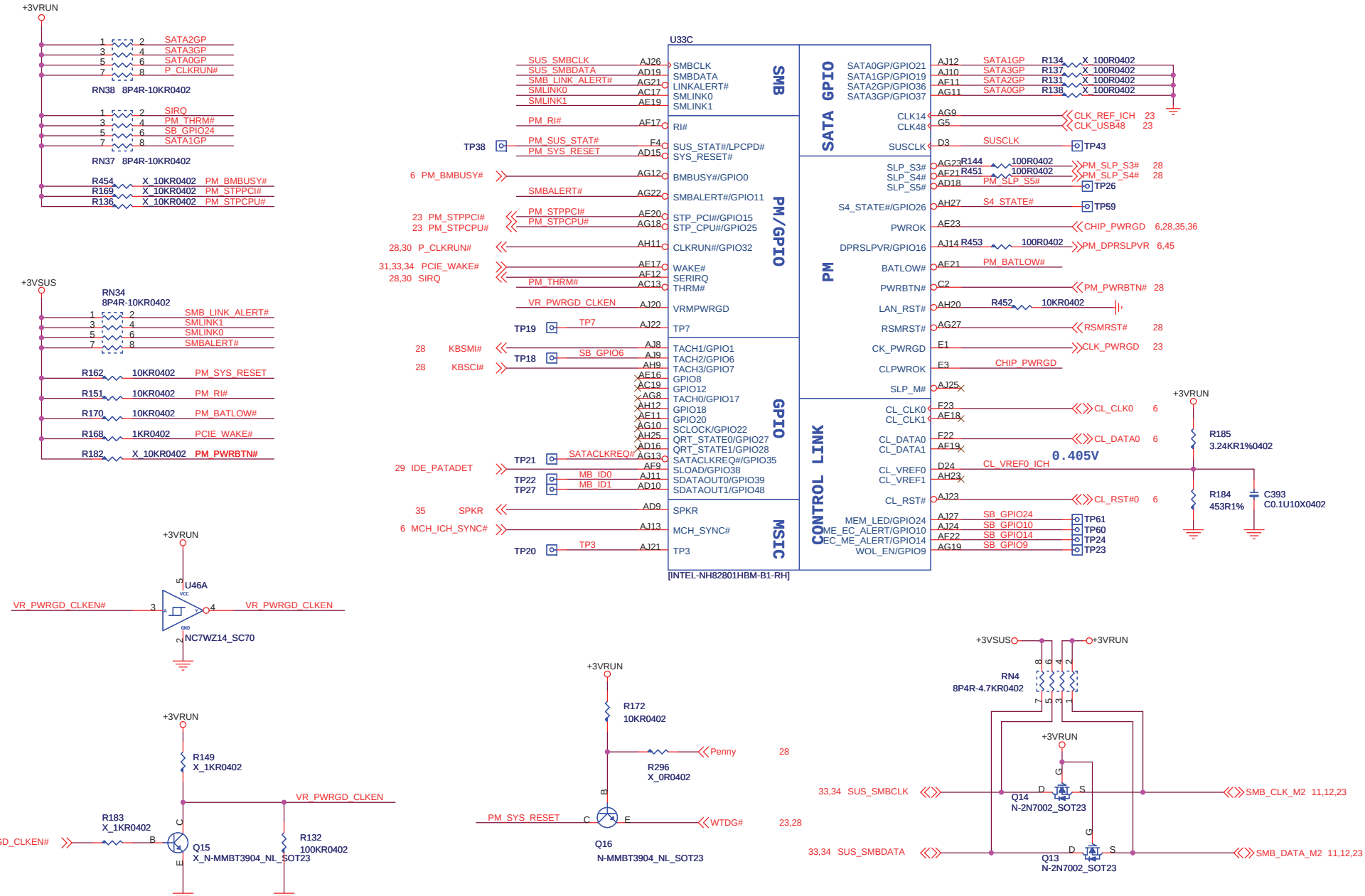
Date: Tuesday, July 10, 2007 | Sheet 23 of 54



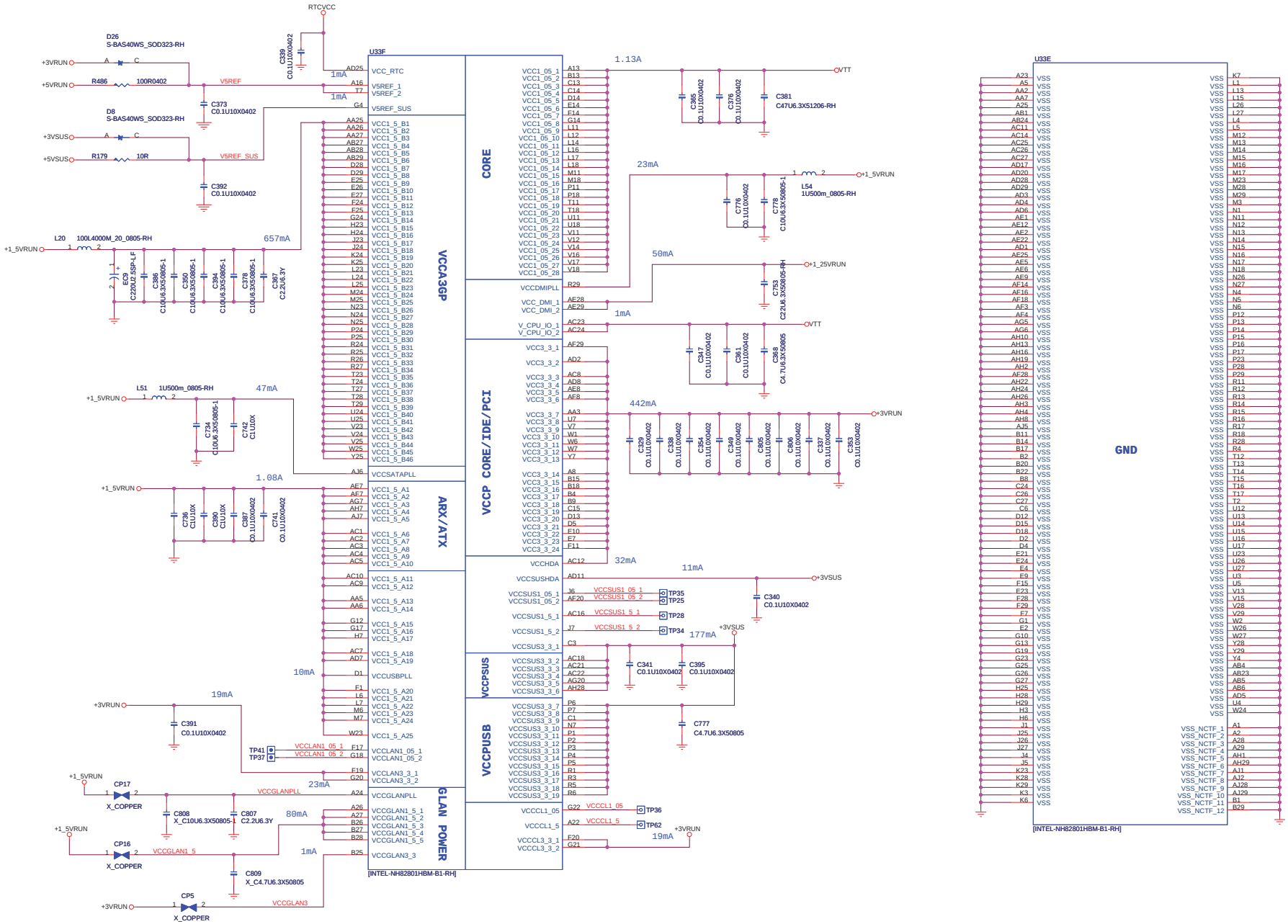
MSI CORPORATION		
Title: ICH8M-1 (CPU/IDE/Azalia)		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 04, 2007	Sheet 24 of 54	



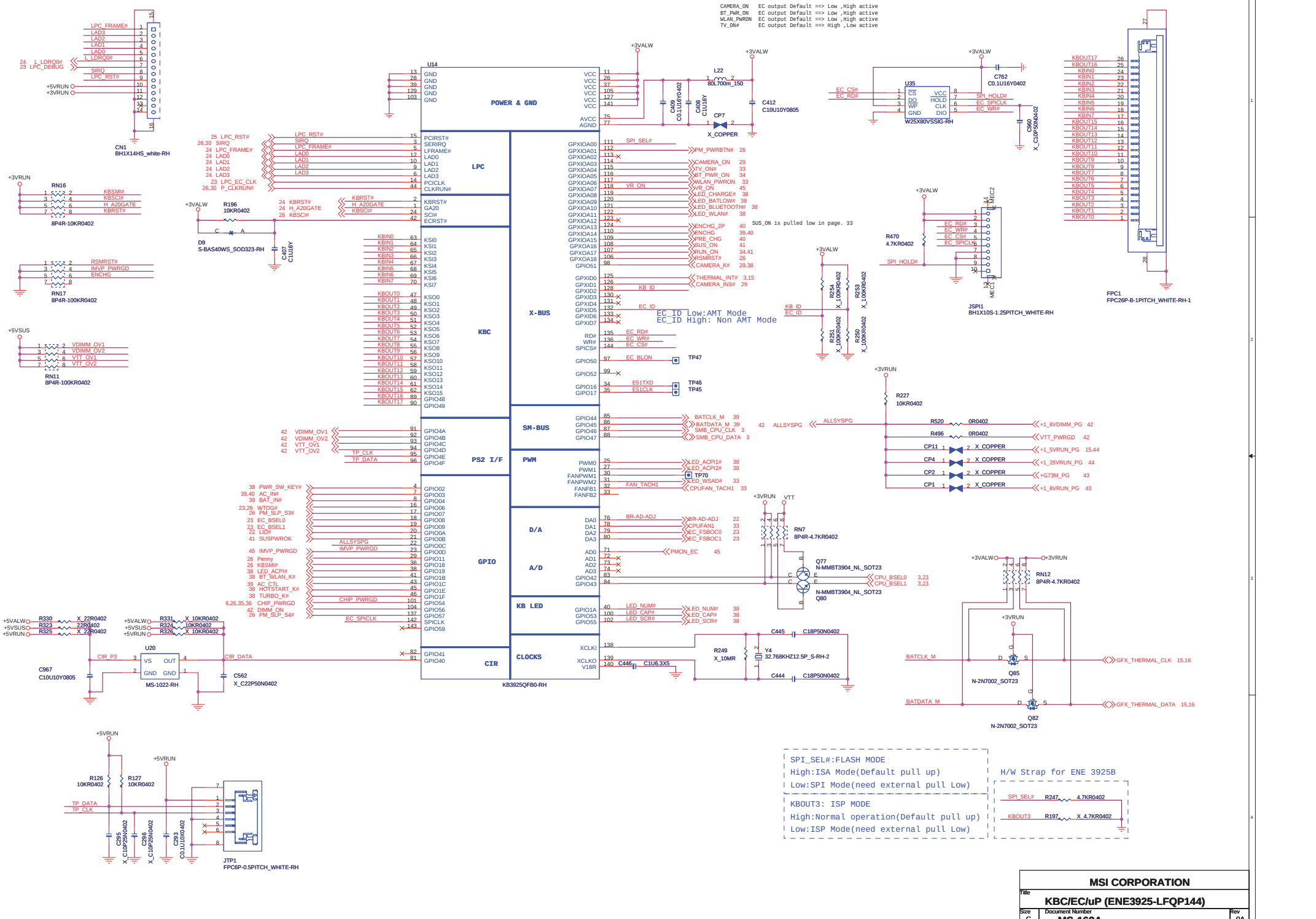
MSI CORPORATION		
Title: ICH8M-2 (PCI/USB/PCIE/DMI)		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 04, 2007	Sheet 25 of 54	



MSI CORPORATION	
Title	ICH8M-3 (SM BUS/GPIO)
Size: Custom	Document Number: MS-163A
Rev	0A
Date: Tuesday, July 10, 2007	Sheet 26 of 54

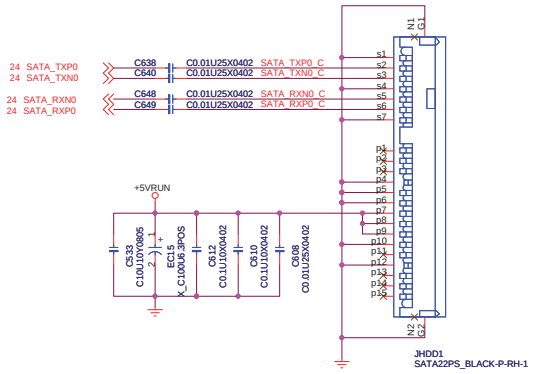


MSI CORPORATION		
Title: ICH8M-4 (POWER/GND)		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Monday, May 28, 2007	Sheet 27 of 54	

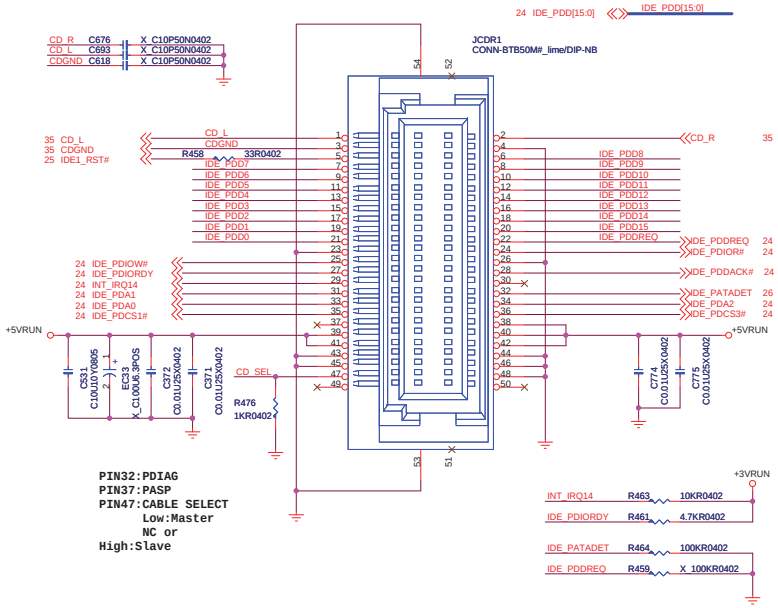


MSI CORPORATION		
Title: KBC/EC/uP (ENE3925-LFQP144)		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Thursday, July 05, 2007	Sheet 28 of 54	

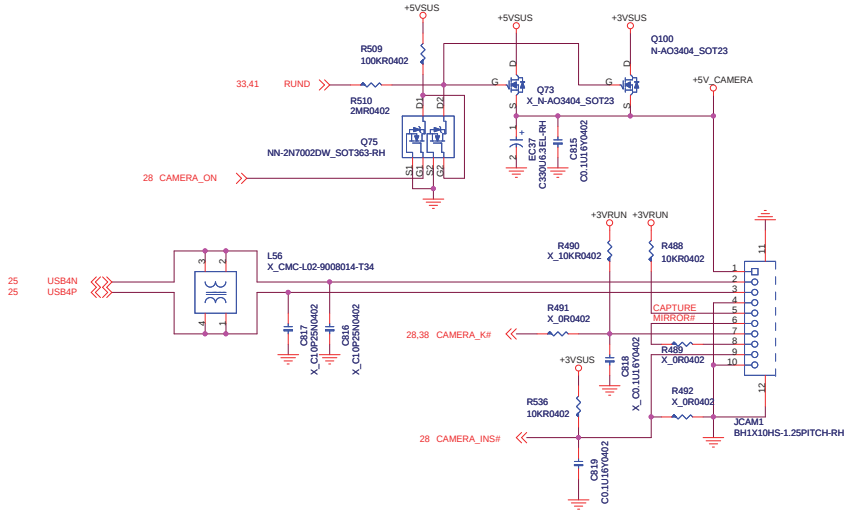
HDD CONN



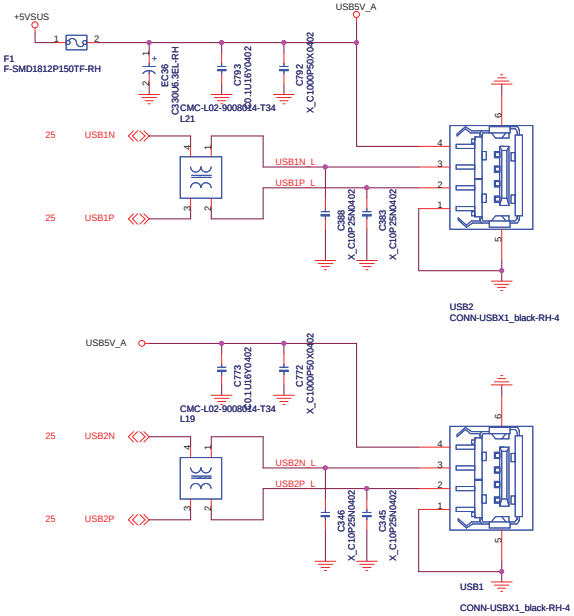
ODD CONN



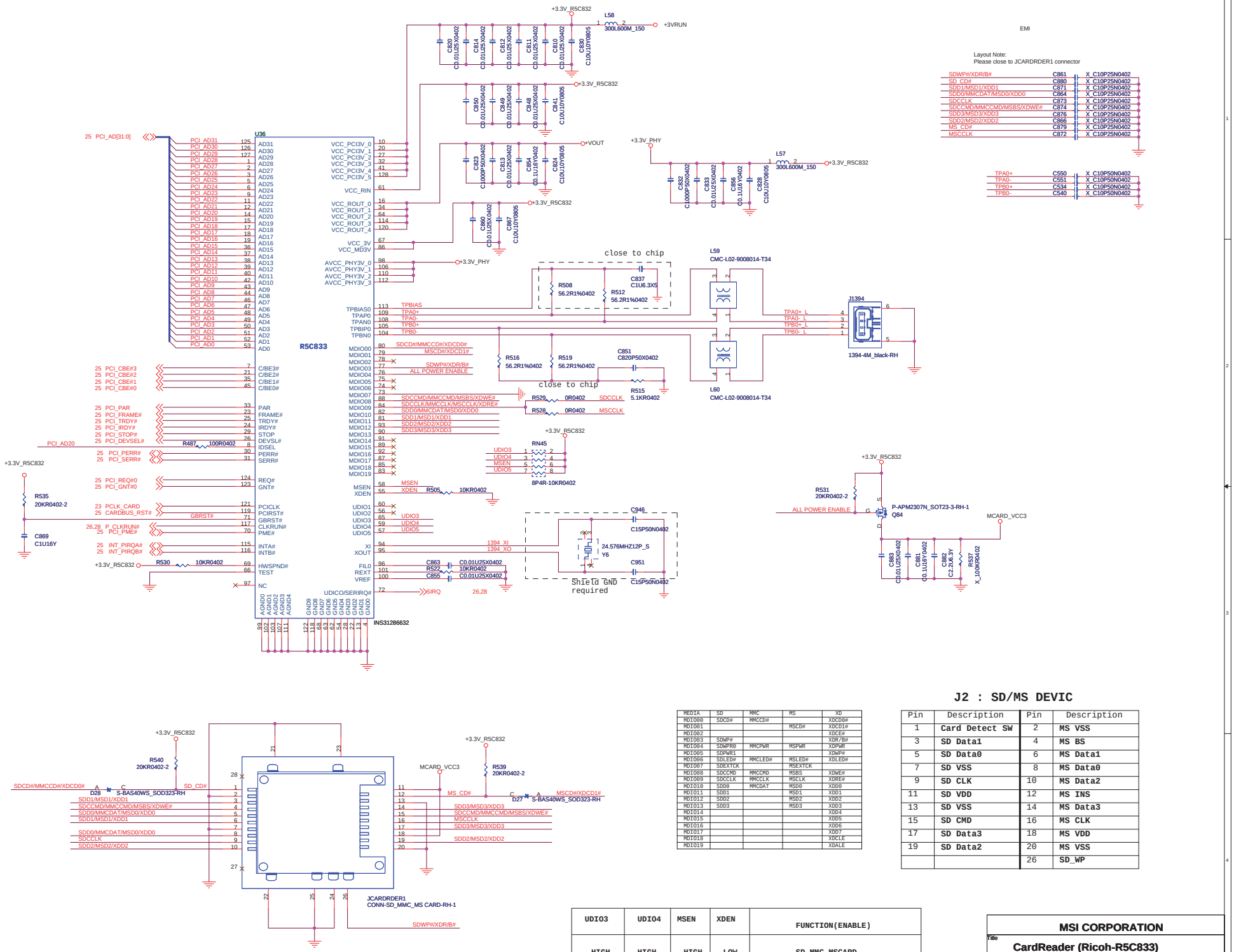
CAMERA CONN



USB CONN



MSI CORPORATION		
Title: HDD & CDROM CONN		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 11, 2007	Sheet 29 of 54	



MEDIA	SD	MMC	MS	XD
MDIO00	SDCD#	MMCCD#		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	SDCCMD	MMCCMD	MSBS	XDWE#
MDIO09	SDCCLK	MMCCLK	MSCLK	XDRE#
MDIO10	SDD0	MMCDAT	MSD0	XDD0
MDIO11	SDD1		MSD1	XDD1
MDIO12	SDD2		MSD2	XDD2
MDIO13	SDD3		MSD3	XDD3
MDIO14				XDD4
MDIO15				XDD5
MDIO16				XDD6
MDIO17				XDD7
MDIO18				XDCLE
MDIO19				XDALE

J2 : SD/MS DEVIC

Pin	Description	Pin	Description
1	**Card Detect SW**	2	**MS VSS**
3	**SD Data1**	4	**MS BS**
5	**SD Data0**	6	**MS Data1**
7	**SD VSS**	8	**MS Data0**
9	**SD CLK**	10	**MS Data2**
11	**SD VDD**	12	**MS INS**
13	**SD VSS**	14	**MS Data3**
15	**SD CMD**	16	**MS CLK**
17	**SD Data3**	18	**MS VDD**
19	**SD Data2**	20	**MS VSS**
		26	**SD_WP**

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

MSI CORPORATION

Title: **CardReader (Ricoh-R5C833)**

Size	Document Number	Rev
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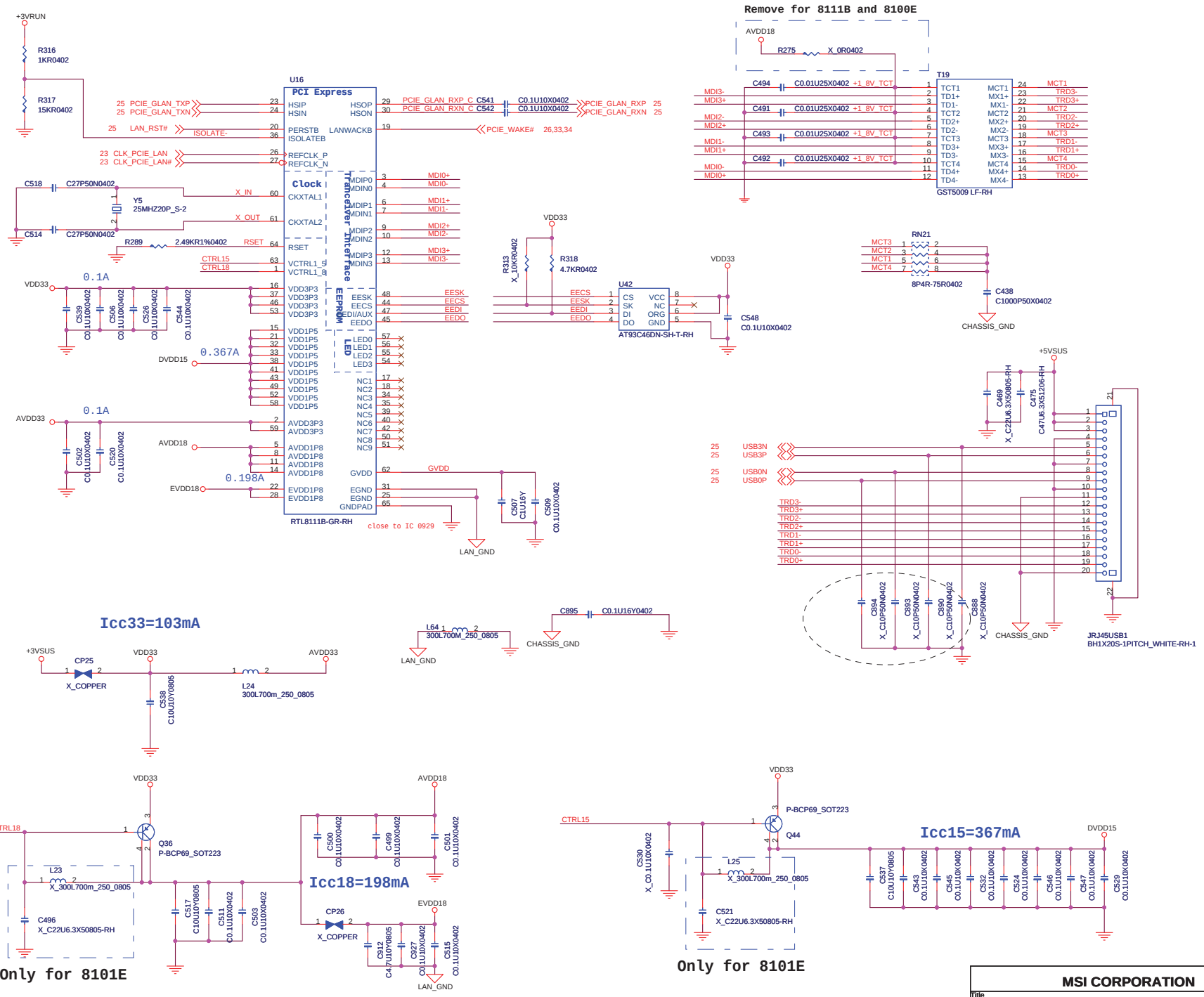
Remove for 8111B and 8100E
+3VRUN
R316
1KR0402
R317
15KR0402
U16
PCI Express
HSIP
HSIN
HSOP
HSON
PERSTB
LANWACKB
ISOLATEB
REFCLK_P
REFCLK_N
Clock
CKXTAL1
CKXTAL2
RSET
VCTRL1_5
VCTRL1_8
Transceiver Interface
MDIP0
MDIN0
MDIP1
MDIN1
MDIP2
MDIN2
MDIP3
MDIN3
EEPROM
EESK
EECS
EEDI/AUX
EEDO
LED
LED0
LED1
LED2
LED3
VDD3P3
VDD1P5
AVDD3P3
AVDD1P8
GVDD
EGND
GNDPAD
NC1
NC2
NC3
NC4
NC5
NC6
NC7
NC8
NC9
RTL8111B-GR-RH
close to IC 0929
LAN_GND
PCIE_GLAN_TXP
PCIE_GLAN_TXN
LAN_RST#
ISOLATE-
CLK_PCIE_LAN
CLK_PCIE_LAN#
PCIE_GLAN_RXP_C C541
PCIE_GLAN_RXN_C C542
C0.1U10X0402
PCIE_GLAN_RXP
PCIE_GLAN_RXN
PCIE_WAKE#
26,33,34
C518
C27P50N0402
C514
Y5
25MHZ20P_S-2
X_IN
X_OUT
R289
2.49KR1%0402
RSET
CTRL15
CTRL18
VDD33
0.1A
C539
C506
C526
C544
DVDD15
0.367A
AVDD33
C502
C520
AVDD18
EVDD18
0.198A
C507
C1U16Y
C509
C0.1U10X0402
AVDD18
R275
X_0R0402
T19
GST5009 LF-RH
C494
C491
C493
C492
C0.01U25X0402
+1_8V_TCT
MDI3-
MDI3+
MDI2-
MDI2+
MDI1-
MDI1+
MDI0-
MDI0+
TCT1
TCT2
TCT3
TCT4
TD1+
TD1-
TD2+
TD2-
TD3+
TD3-
TD4+
TD4-
MCT1
MCT2
MCT3
MCT4
MX1+
MX1-
MX2+
MX2-
MX3+
MX3-
MX4+
MX4-
TRD3-
TRD3+
TRD2-
TRD2+
TRD1-
TRD1+
TRD0-
TRD0+
R318
4.7KR0402
X_10KR0402
U42
AT93C46DN-SH-T-RH
CS
SK
DI
DO
VCC
NC
ORG
GND
EECS
EESK
EEDI
EEDO
C548
C0.1U10X0402
RN21
8P4R-75R0402
C438
C1000P50X0402
CHASSIS_GND
+5VSUS
C469
X_C22U6.3X50805-RH
C475
C47U6.3X51206-RH
USB3N
USB3P
USB0N
USB0P
C894
C893
C890
C888
X_C10P50N0402
JRJ45USB1
BH1X20S-1PITCH_WHITE-RH-1
Icc33=103mA
+3VSUS
CP25
X_COPPER
C538
C10U10Y0805
L24
300L700m_250_0805
L64
300L700M_250_0805
C895
C0.1U16Y0402
Q36
P-BCP69_SOT223
L23
X_300L700m_250_0805
C496
X_C22U6.3X50805-RH
C517
C511
C503
Icc18=198mA
C500
C499
C501
CP26
C512
C47U10Y0805
C927
C515
Only for 8101E
Q44
L25
C530
C521
Icc15=367mA
C537
C543
C545
C532
C524
C546
C547
C529
MSI CORPORATION
PCIE LAN (RTL 8111B)
Custom
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0A
Wednesday, July 04, 2007
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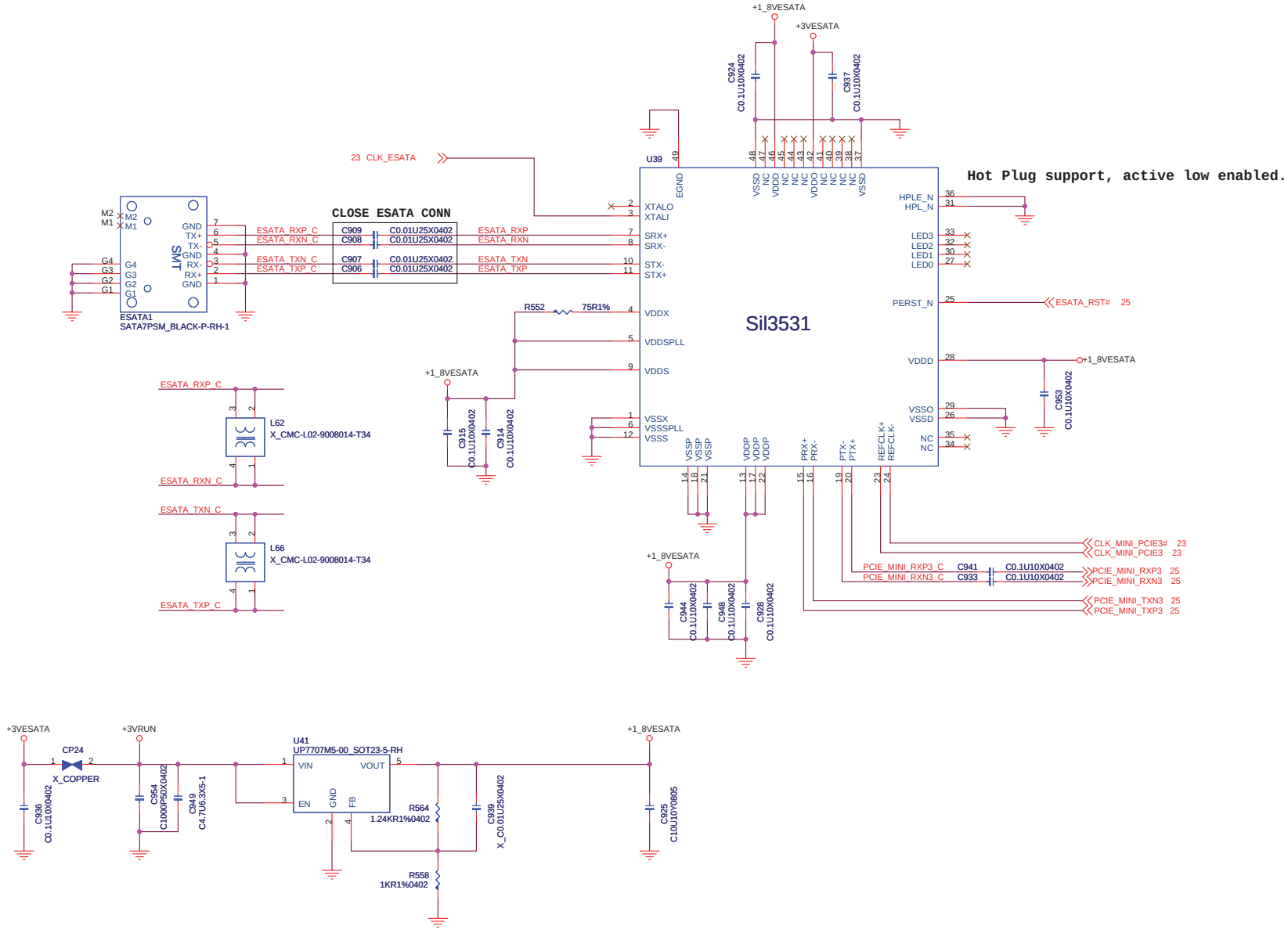
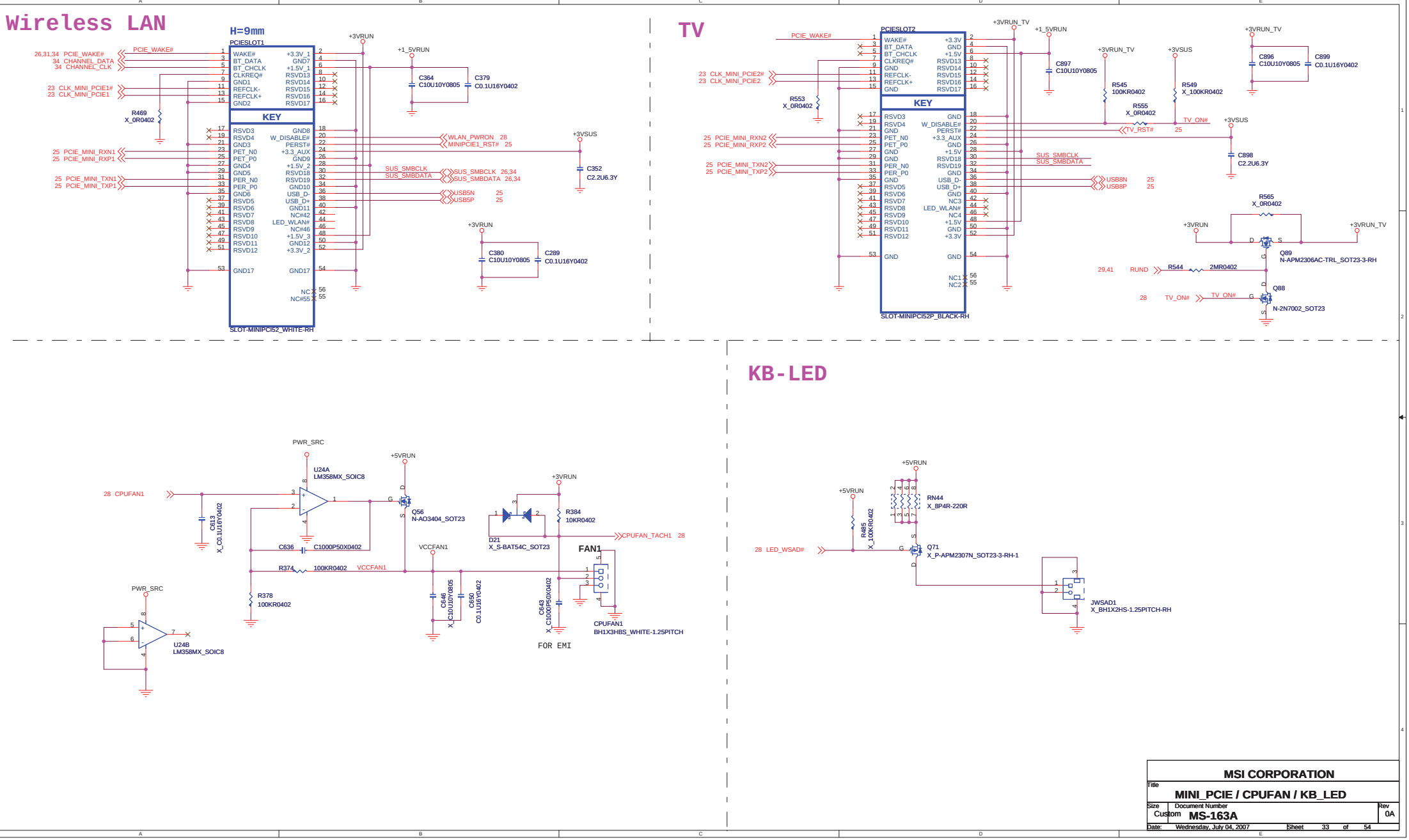


MSI CORPORATION		
Title: ESATA (SIL3531)		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 04, 2007	Sheet 32 of 54	



Title	MSI CORPORATION
	MINI_PCIE / CPUFAN / KB_LED
Size	Custom
Document Number	MS-163A
Rev	0A
Date:	Wednesday, July 04, 2007
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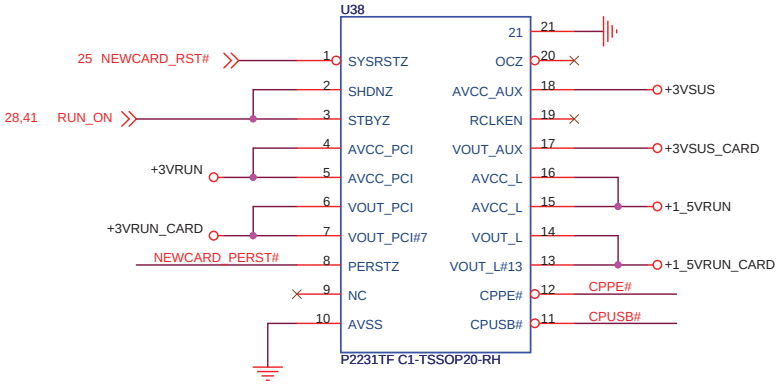
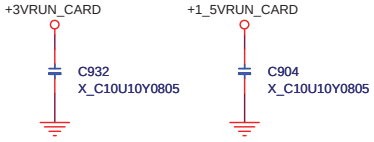
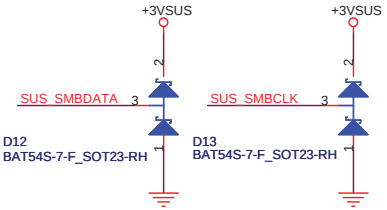
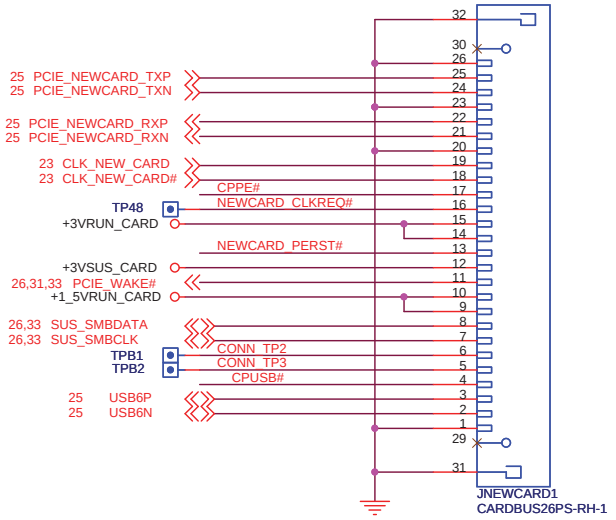
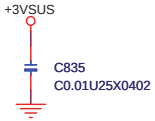


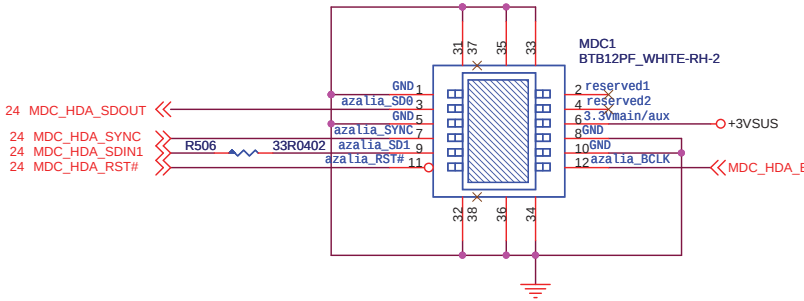




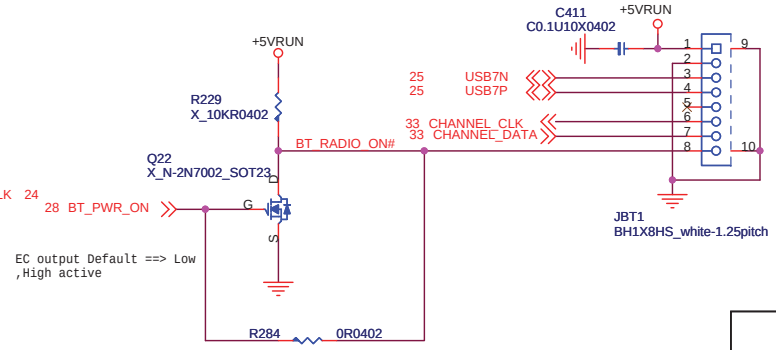




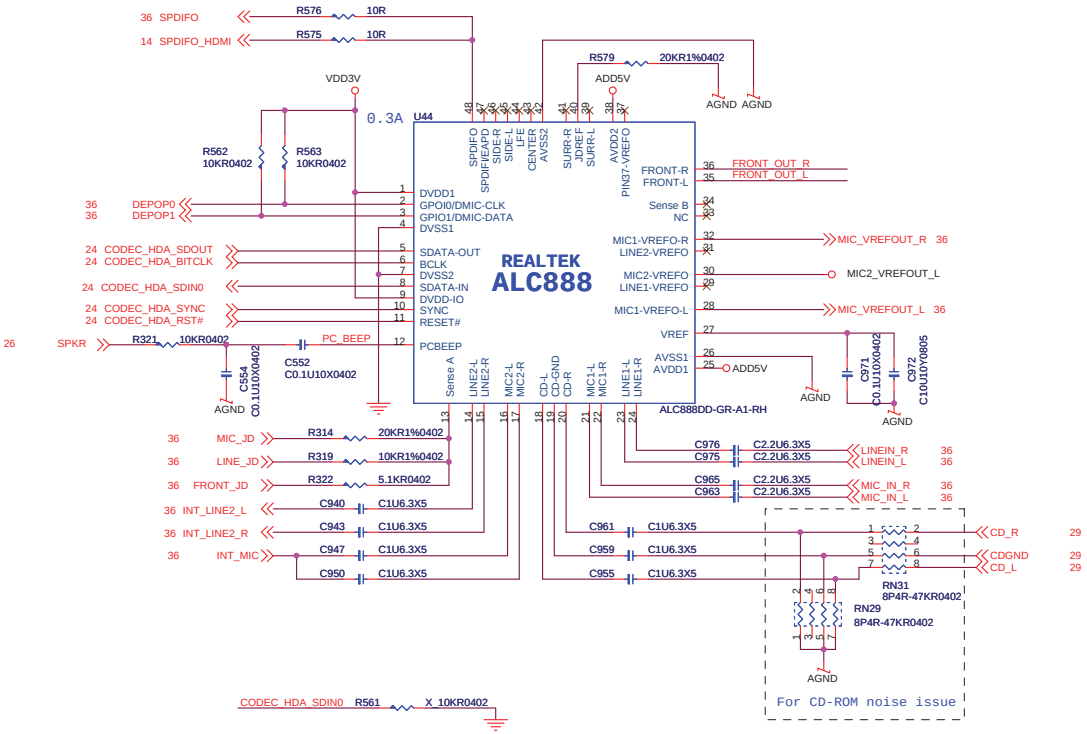
MDC Connector Ver 1.5

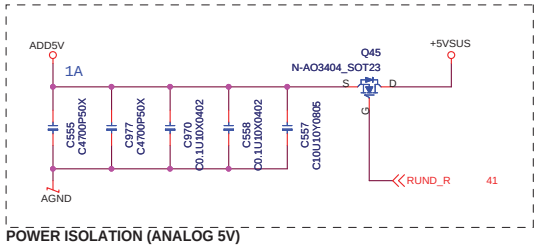


BLUETOOTH

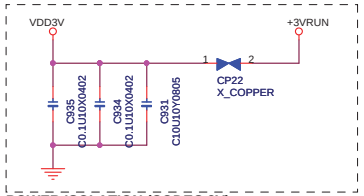


MSI CORPORATION		
Title: NEWCARD & MDC & BT		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Friday, July 06, 2007	Sheet 34 of 54	

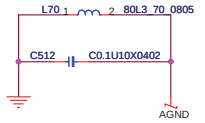




POWER ISOLATION (ANALOG 5V)

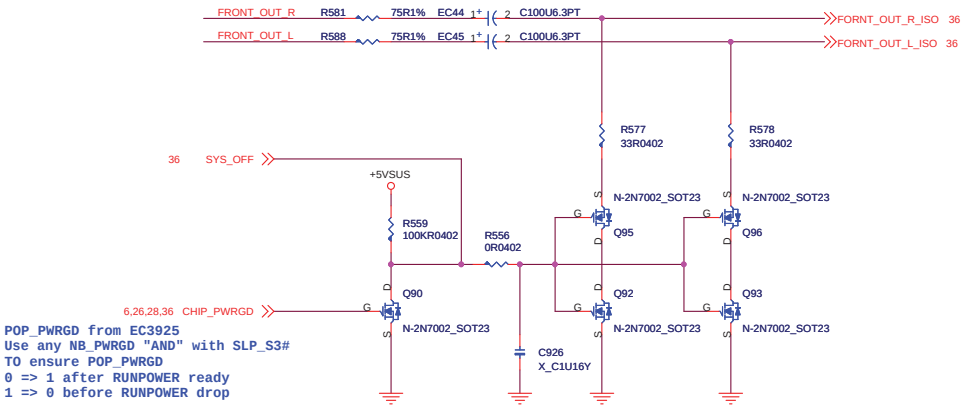


POWER ISOLATION (CODEC 3V)



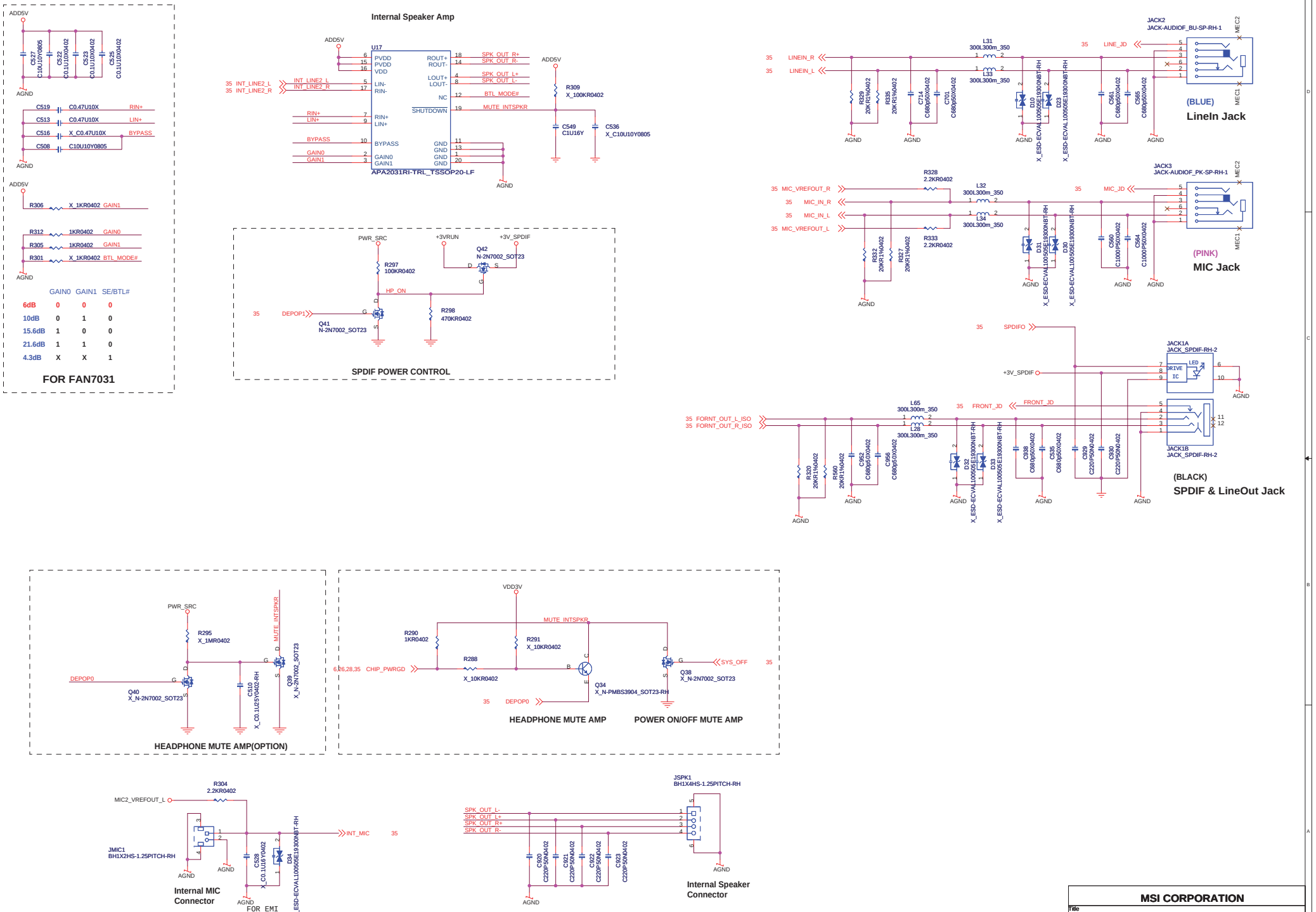
For EMI solution

ANTIPOP CIRCUIT



POWER ON/OFF/S3/S4 NOISE CONTROL D-S interchange

MSI CORPORATION			
Title: AZALIA CODEC(ALC888)			
Size: Custom	Document Number: MS-163A		Rev: 0A
Date: Wednesday, July 11, 2007	Sheet 35 of 54		


ADD5V
C527 C10U10Y0805
C522 C0.1U10X0402
C523 C0.1U10X0402
C525 C0.1U10X0402
AGND
C519 C0.47U10X RIN+
C513 C0.47U10X LIN+
C516 X_C0.47U10X BYPASS
C508 C10U10Y0805
R306 X_1KR0402 GAIN1
R312 1KR0402 GAIN0
R305 1KR0402 GAIN1
R301 X_1KR0402 BTL_MODE#
GAIN0 GAIN1 SE/BTL#
6dB 0 0 0
10dB 0 1 0
15.6dB 1 0 0
21.6dB 1 1 0
4.3dB X X 1
FOR FAN7031
Internal Speaker Amp
U17
PVDD PVDD VDD LIN- RIN- RIN+ LIN+ BYPASS GAIN0 GAIN1
ROUT+ ROUT- LOUT+ LOUT- NC SHUTDOWN GND GND GND GND
SPK_OUT_R+ SPK_OUT_R- SPK_OUT_L+ SPK_OUT_L- BTL_MODE# MUTE_INTSPKR
INT_LINE2_L INT_LINE2_R
APA2031RI-TRL_TSSOP20-LF
R309 X_100KR0402
C549 C1U16Y
C536 X_C10U10Y0805
PWR_SRC +3VRUN +3V_SPDIF
R297 100KR0402
Q42 N-2N7002_SOT23
HP_ON
DEPOP1
Q41 N-2N7002_SOT23
R298 470KR0402
SPDIF POWER CONTROL
JACK2 JACK-AUDIOF_BU-SP-RH-1
LINEIN_R LINEIN_L LINE_JD
L31 300L300m_350
L33 300L300m_350
R329 20KR1%0402
R335 20KR1%0402
C714 C680p50X0402
C701 C680p50X0402
D10 X_ESD-ECVAL1005050E1930NBT-RH
D23 X_ESD-ECVAL1005050E1930NBT-RH
C541 C680p50X0402
C545 C680p50X0402
(BLUE)
LineIn Jack
JACK3 JACK-AUDIOF_PK-SP-RH-1
MIC_VREFOUT_R MIC_IN_R MIC_IN_L MIC_VREFOUT_L MIC_JD
R328 2.2KR0402
R333 2.2KR0402
L32 300L300m_350
L34 300L300m_350
R332 20KR1%0402
R327 20KR1%0402
D31 X_ESD-ECVAL1005050E1930NBT-RH
D30 X_ESD-ECVAL1005050E1930NBT-RH
C550 C1000P50X0402
C554 C1000P50X0402
(PINK)
MIC Jack
SPDIFO +3V_SPDIF
JACK1A JACK_SPDIF-RH-2
JACK1B JACK_SPDIF-RH-2
LED DRIVE IC
FRONT_JD FORNT_OUT_L_ISO FORNT_OUT_R_ISO
L65 300L300m_350
L28 300L300m_350
R320 20KR1%0402
R560 20KR1%0402
C952 C680p50X0402
C956 C680p50X0402
D32 X_ESD-ECVAL1005050E1930NBT-RH
D33 X_ESD-ECVAL1005050E1930NBT-RH
C938 C680p50X0402
C535 C680p50X0402
C920 C220P50X0402
C930 C220P50X0402
(BLACK)
SPDIF & LineOut Jack
PWR_SRC
R295 X_1MR0402
MUTE_INTSPKR
DEPOP0
Q40 X_N-2N7002_SOT23
C510 X_C0.1U25Y0402-RH
Q39 X_N-2N7002_SOT23
HEADPHONE MUTE AMP(OPTION)
VDD3V
R290 1KR0402
R291 X_10KR0402
R288 X_10KR0402
CHIP_PWRGD
Q34 X_N-PMBS3904_SOT23-RH
SYS_OFF
Q38 X_N-2N7002_SOT23
HEADPHONE MUTE AMP
POWER ON/OFF MUTE AMP
R304 2.2KR0402
MIC2_VREFOUT_L
JMIC1 BH1X2HS-1.25PITCH-RH
C528 X_C0.1U16Y0402
D34 X_ESD-ECVAL1005050E1930NBT-RH
INT_MIC
Internal MIC Connector
FOR EMI
JSPK1 BH1X4HS-1.25PITCH-RH
SPK_OUT_L- SPK_OUT_L+ SPK_OUT_R+ SPK_OUT_R-
C920 C220P50X0402
C921 C220P50X0402
C922 C220P50X0402
C923 C220P50X0402
Internal Speaker Connector
MSI CORPORATION
Title
Audio Amp. & Jacks
Size C
Document Number MS-163A
Rev 0A
Date: Thursday, July 12, 2007
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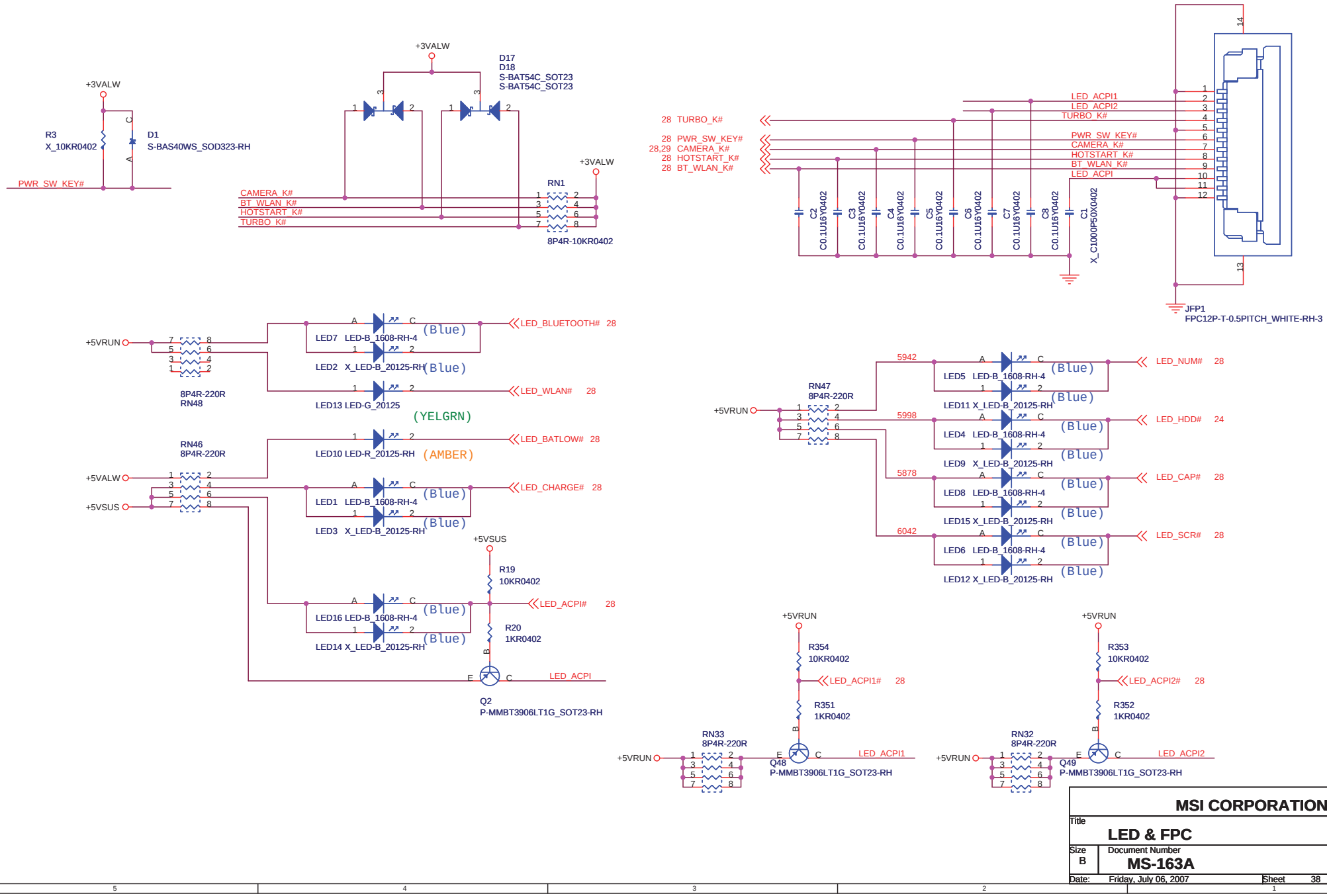
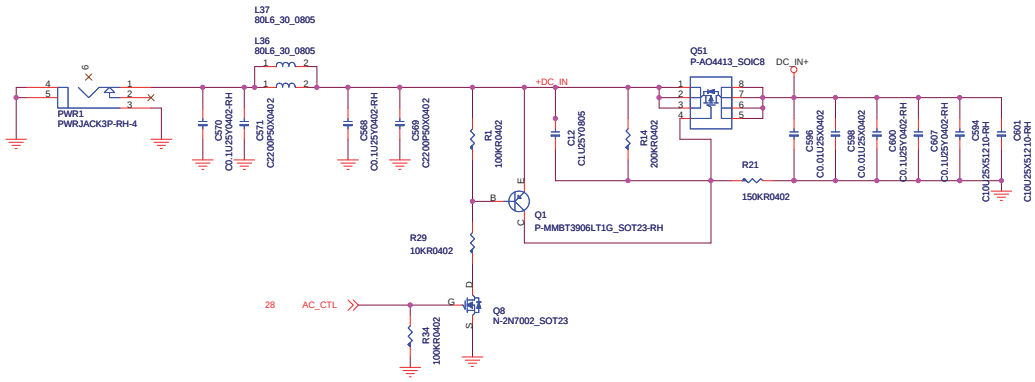
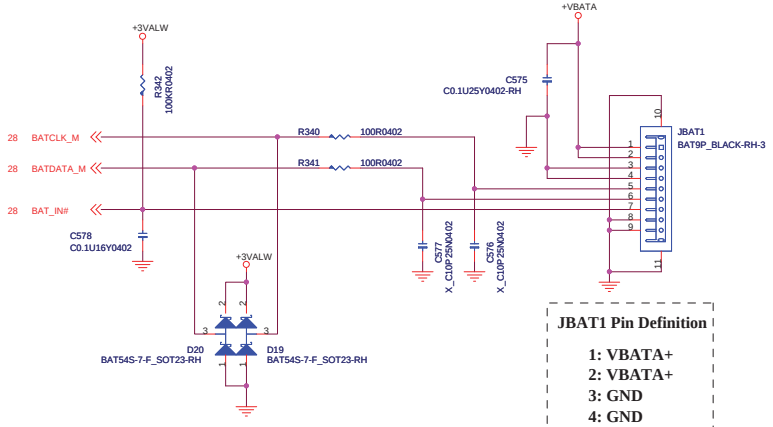


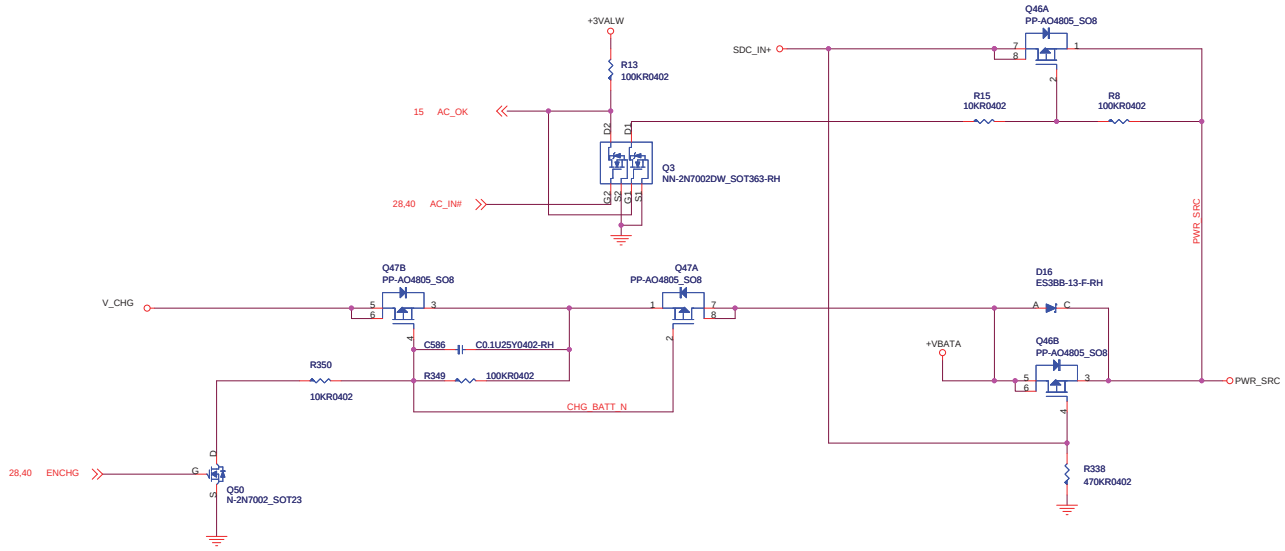
MSI CORPORATION		
Title: LED & FPC		
Size: B	Document Number: MS-163A	Rev: 0A
Date: Friday, July 06, 2007	Sheet 38 of 54	





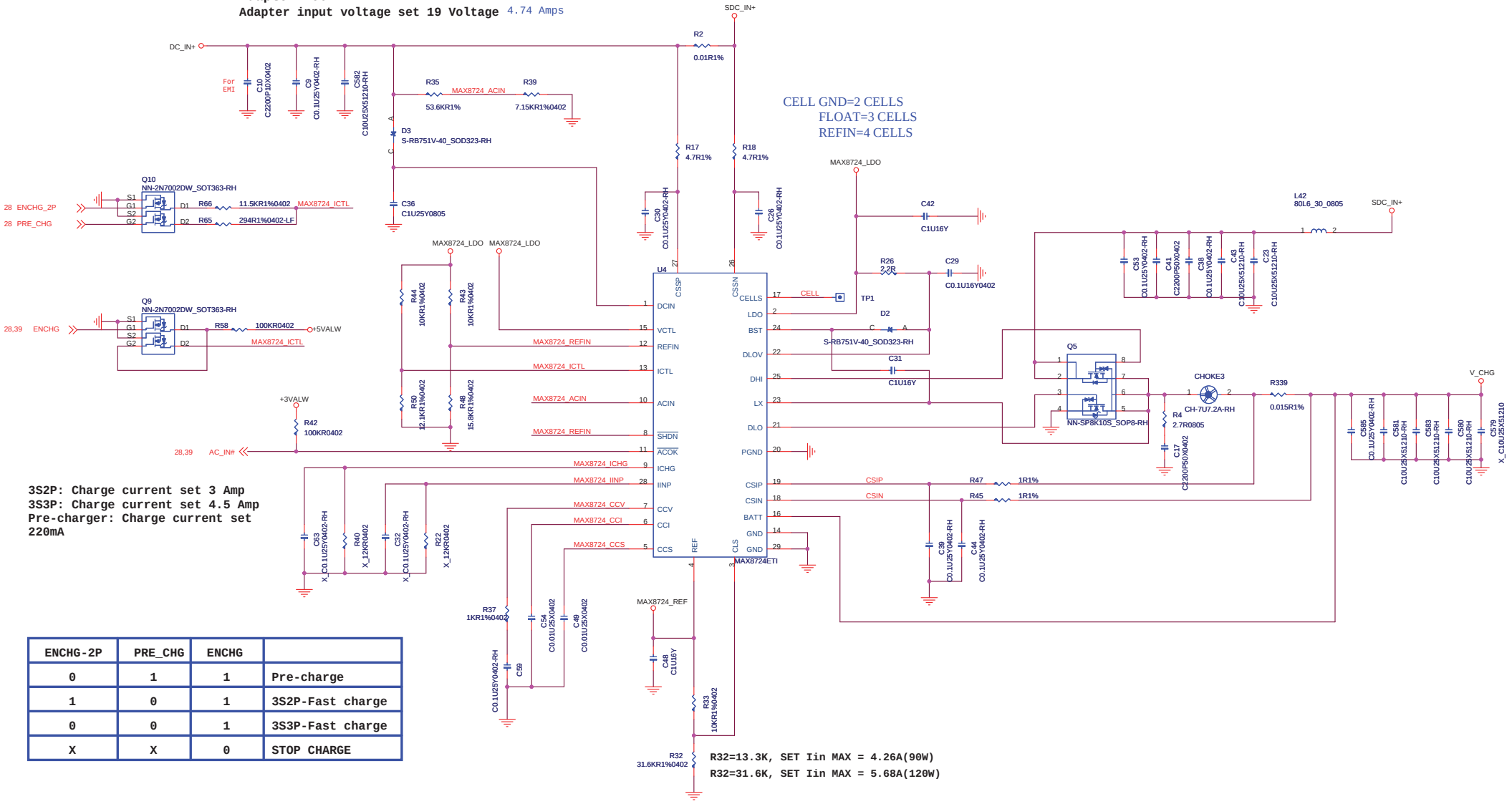
JBAT1 Pin Definition

1: VBATA+
2: VBATA+
3: GND
4: GND
5: SMBCLK
6: SMBDATA
7: BAT_IN#
8: GND
9: GND



MSI CORPORATION		
Title: Battery Select		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Thursday, July 12, 2007	Sheet 39 of 54	

Adapter= 120 W
Adapter input voltage set 19 Voltage 6.32 Amps
Adapter= 90 W
Adapter input voltage set 19 Voltage 4.74 Amps

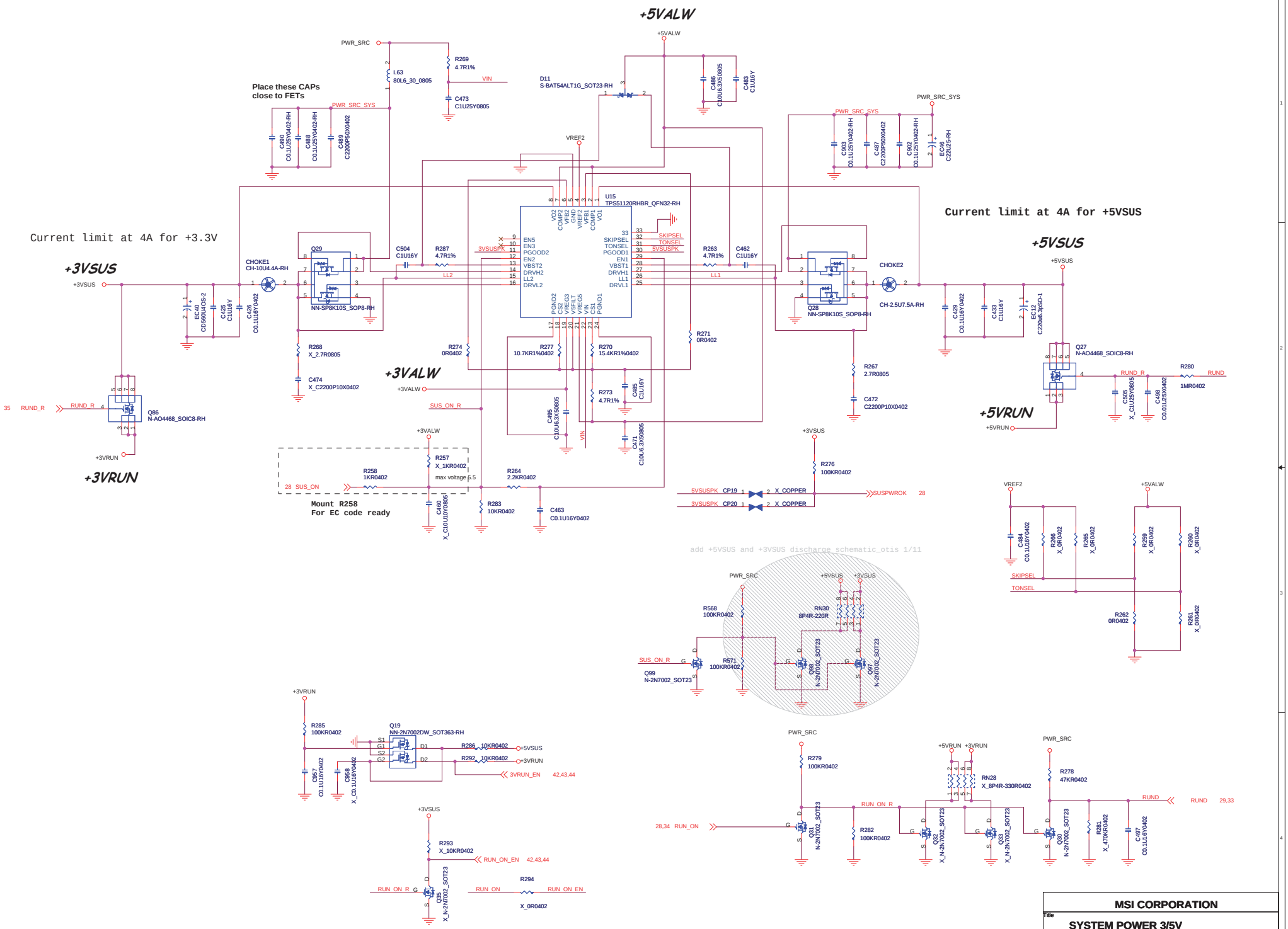


3S2P: Charge current set 3 Amp
3S3P: Charge current set 4.5 Amp
Pre-charger: Charge current set 220mA

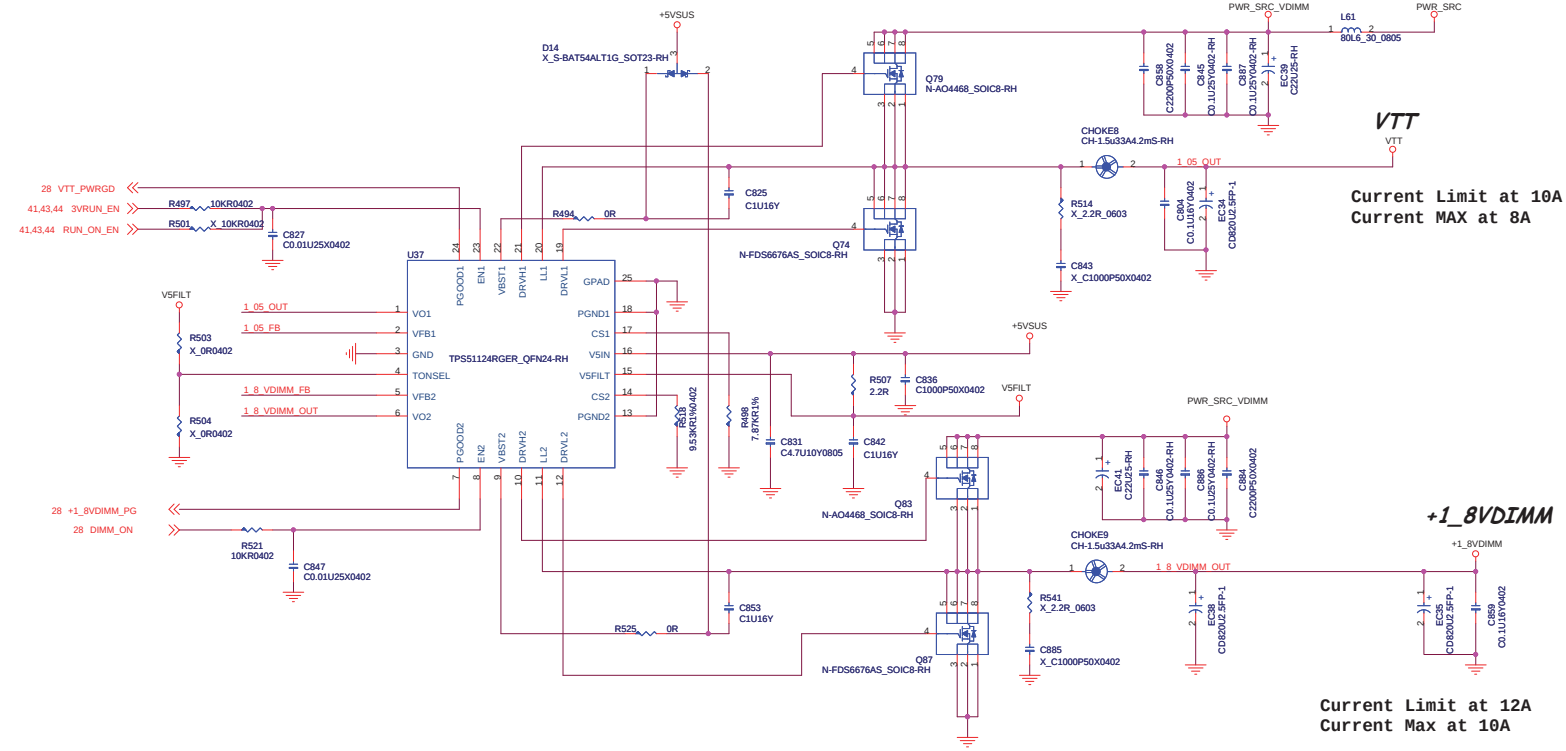
ENCHG-2P	PRE_CHG	ENCHG	
0	1	1	Pre-charge
1	0	1	3S2P-Fast charge
0	0	1	3S3P-Fast charge
X	X	0	STOP CHARGE

R32=13.3K, SET Iin MAX = 4.26A(90W)
R32=31.6K, SET Iin MAX = 5.68A(120W)

MSI CORPORATION			
Title: Battery Charger			
Size: Custom	Document Number: MS-163A		Rev: 0A
Date: Tuesday, July 10, 2007	Sheet 40 of 54		

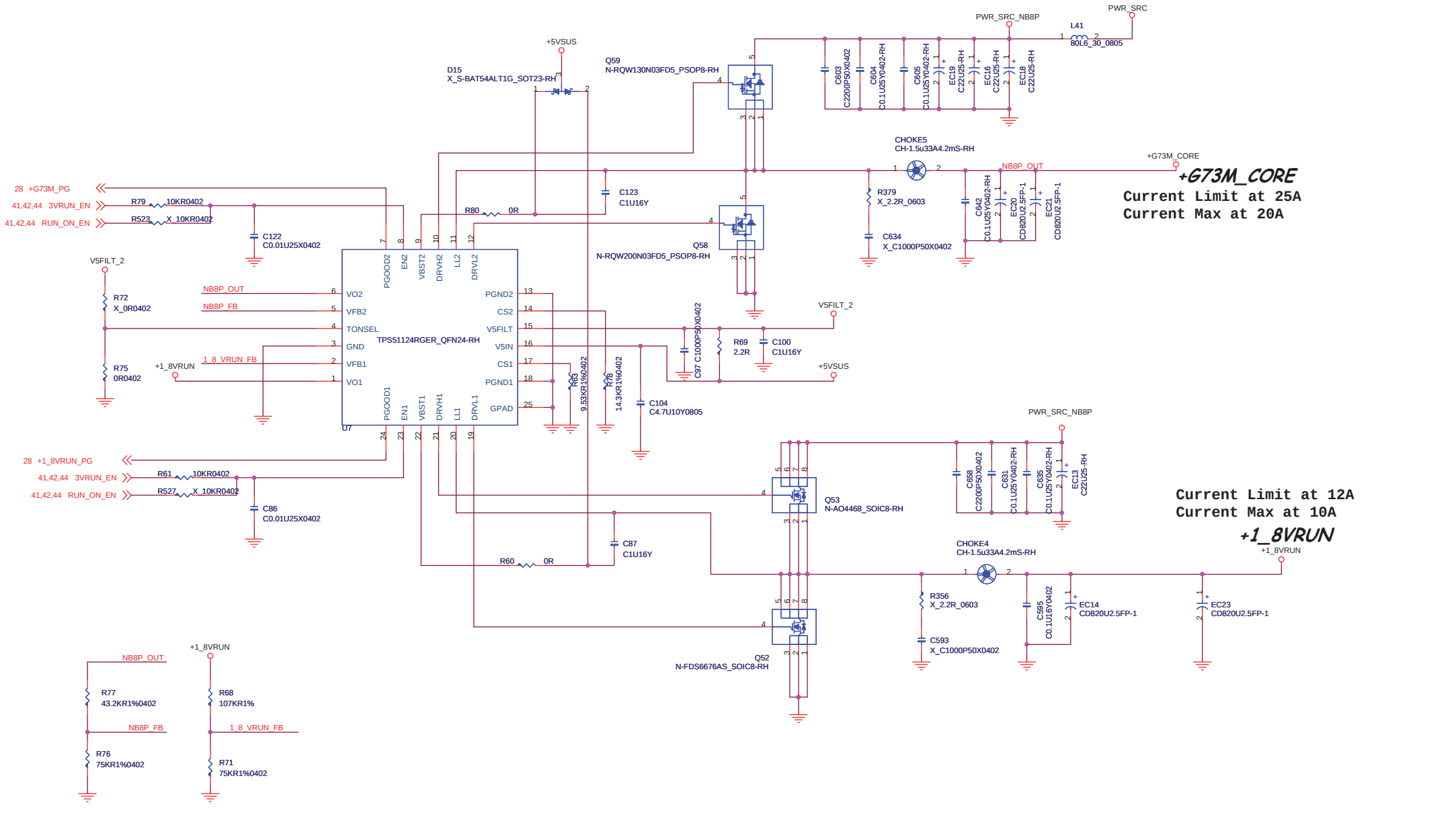


MSI CORPORATION		
Title: SYSTEM POWER 3/5V		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Wednesday, July 11, 2007	Sheet 41 of 54	

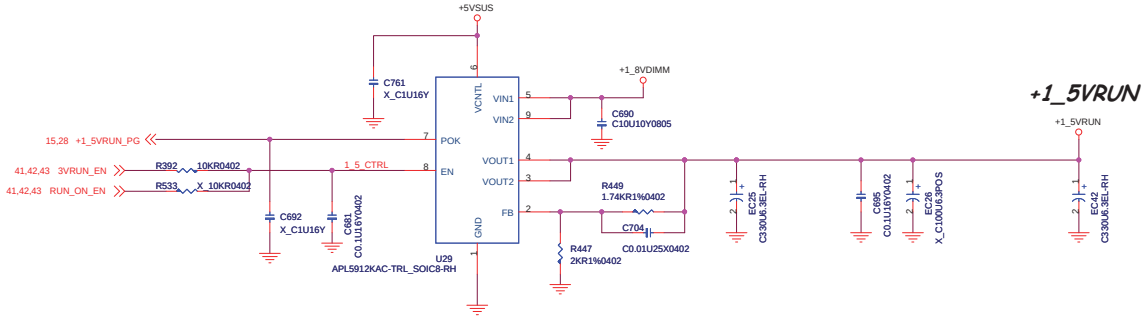


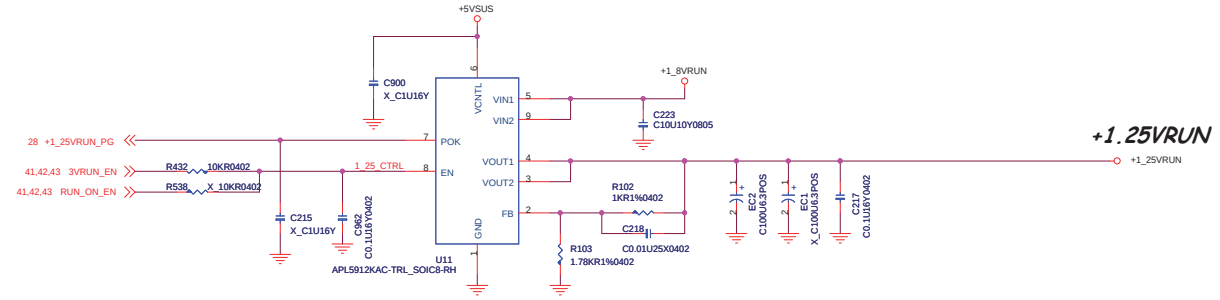
OV1	OV2	VTT OverVoltage
0	0	1.05V(default)
1	0	1.15V
0	1	1.25V

OV1	OV2	VDIMM OverVoltage
0	0	1.85V(default)
1	0	2V
0	1	2.15V



MSI CORPORATION			
Title: +G73M_CORE,1.8VRUN			
Size: Custom	Document Number: MS-163A		Rev: 0A
Date: Wednesday, July 11, 2007		Sheet 43 of 54	





+1_5VRUN

+1.25VRUN

+1_2VRUN_GFX

MSI CORPORATION		
Title: +1.2VGFX,+1.25VRUN,+1.5VRUN		
Size: C	Document Number: MS-163A	Rev: 0A
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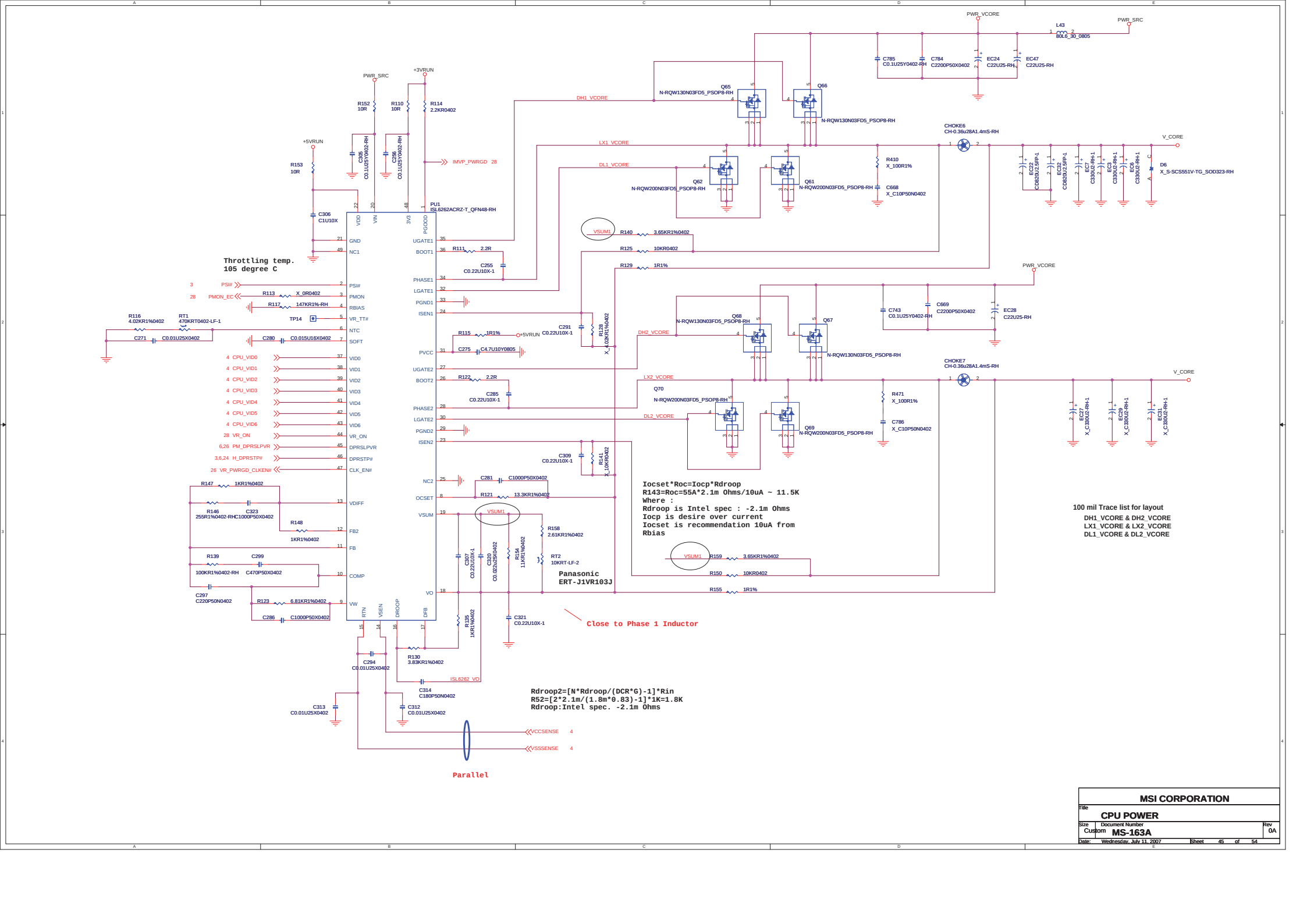
PWR_VCORE
PWR_SRC
L43
80L6_30_0805
C785
C0.1U25Y0402-RH
C784
C2200P50X0402
EC24
C22U25-RH
EC47
C22U25-RH
Q65
N-RQW130N03FD5_PSOP8-RH
Q66
N-RQW130N03FD5_PSOP8-RH
DH1_VCORE
LX1_VCORE
DL1_VCORE
CHOKE6
CH-0.36u28A1.4mS-RH
V_CORE
Q62
N-RQW200N03FD5_PSOP8-RH
Q61
N-RQW200N03FD5_PSOP8-RH
R410
X_100R1%
C668
X_C10P50N0402
EC22
CD820U2.5FP-1
EC23
CD820U2.5FP-1
EC7
C330U2-RH-1
EC3
C330U2-RH-1
EC5
C330U2-RH-1
D6
X_S-SCS551V-TG_SOD323-RH
+5VRUN
+3VRUN
R152
10R
R110
10R
R114
2.2KR0402
IMVP_PWRGD 28
R153
10R
C305
C0.1U25Y0402-RH
C298
C0.1U25Y0402-RH
C306
C1U10X
PU1
ISL8262ACRZ-T_QFN48-RH
VDD
VIN
3V3
PGOOD
GND
NC1
UGATE1
BOOT1
PHASE1
LGATE1
PGND1
ISEN1
PVCC
UGATE2
BOOT2
PHASE2
LGATE2
PGND2
ISEN2
NC2
OCSET
VSUM
VO
RTN
VSEN
DROOP
DFB
VSUM1
R140
3.65KR1%0402
R125
10KR0402
R129
1R1%
R111
2.2R
C255
C0.22U10X-1
R115
1R1%
+5VRUN
C275
C4.7U10Y0805
C291
C0.22U10X-1
R128
X_4.02KR1%0402
R122
2.2R
C285
C0.22U10X-1
C309
C0.22U10X-1
R141
X_10KR0402
C281
C1000P50X0402
R121
13.3KR1%0402
R158
2.61KR1%0402
R154
11KR1%0402
RT2
10KRT-LF-2
C307
C0.22U10X-1
C310
C0.022U25X0402
R135
1KR1%0402
C321
C0.22U10X-1
R130
3.83KR1%0402
C294
C0.01U25X0402
C314
C180P50N0402
C312
C0.01U25X0402
C313
C0.01U25X0402
ISL6262_VO
VCCSENSE 4
VSSSENSE 4
Parallel
Close to Phase 1 Inductor
Panasonic
ERT-J1VR103J
Throttling temp.
105 degree C
PSI# 3
PMON_EC 28
R113
X_0R0402
R117
147KR1%-RH
TP14
R116
4.02KR1%0402
RT1
470KRT0402-LF-1
C271
C0.01U25X0402
C280
C0.015U16X0402
CPU_VID0 4
CPU_VID1 4
CPU_VID2 4
CPU_VID3 4
CPU_VID4 4
CPU_VID5 4
CPU_VID6 4
VR_ON 28
PM_DPRSLPVR 6,26
H_DPRSTP# 3,6,24
VR_PWRGD_CLKEN# 26
PSI#
PMON
RBIAS
VR_TT#
NTC
SOFT
VID0
VID1
VID2
VID3
VID4
VID5
VID6
VR_ON
DPRSLPVR
DPRSTP#
CLK_EN#
R147
1KR1%0402
R146
255R1%0402-RH
C323
C1000P50X0402
R148
1KR1%0402
R139
100KR1%0402-RH
C299
C470P50X0402
C297
C220P50N0402
R123
6.81KR1%0402
C286
C1000P50X0402
VDIFF
FB2
FB
COMP
VW
Iocset*Roc=Iocp*Rdroop
R143=Roc=55A*2.1m Ohms/10uA ~ 11.5K
Where :
Rdroop is Intel spec : -2.1m Ohms
Iocp is desire over current
Iocset is recommendation 10uA from
Rbias
Rdroop2=[N*Rdroop/(DCR*G)-1]*Rin
R52=[2*2.1m/(1.8m*0.83)-1]*1K=1.8K
Rdroop:Intel spec. -2.1m Ohms
100 mil Trace list for layout
DH1_VCORE & DH2_VCORE
LX1_VCORE & LX2_VCORE
DL1_VCORE & DL2_VCORE
Q68
N-RQW130N03FD5_PSOP8-RH
Q67
N-RQW130N03FD5_PSOP8-RH
DH2_VCORE
LX2_VCORE
DL2_VCORE
CHOKE7
CH-0.36u28A1.4mS-RH
Q70
N-RQW200N03FD5_PSOP8-RH
Q69
N-RQW200N03FD5_PSOP8-RH
R471
X_100R1%
C786
X_C10P50N0402
C743
C0.1U25Y0402-RH
C669
C2200P50X0402
EC28
C22U25-RH
EC27
X_C330U2-RH-1
EC29
X_C330U2-RH-1
EC31
X_C330U2-RH-1
R159
3.65KR1%0402
R150
10KR0402
R155
1R1%
MSI CORPORATION
Title
CPU POWER
Size
Custom
Document Number
MS-163A
Rev
0A
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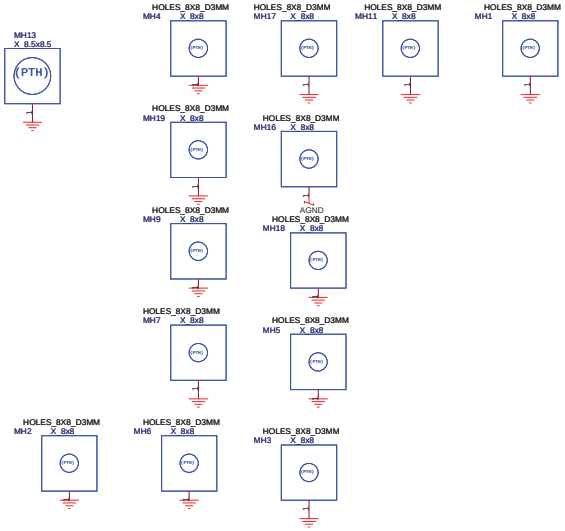

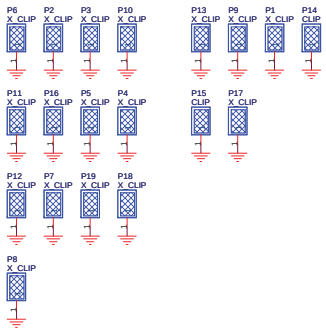

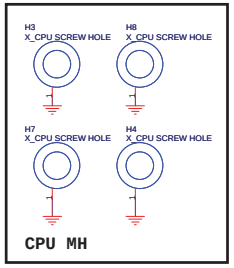

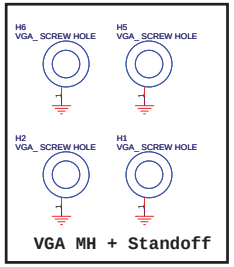

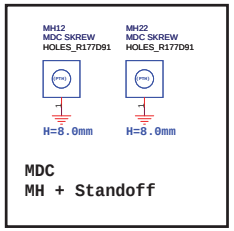

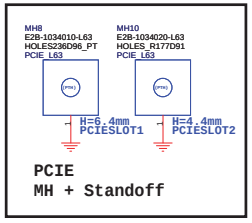

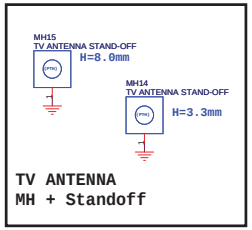

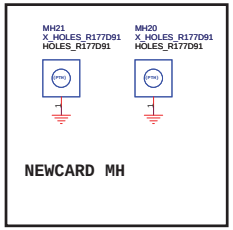

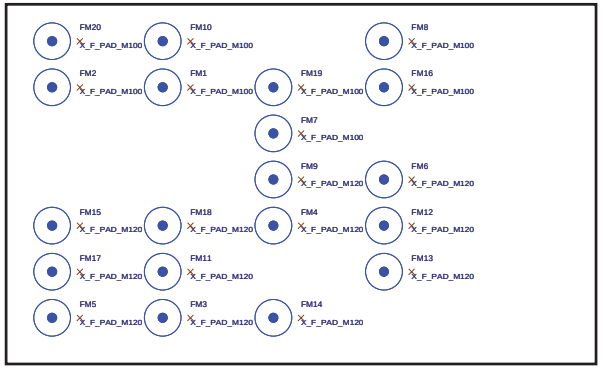

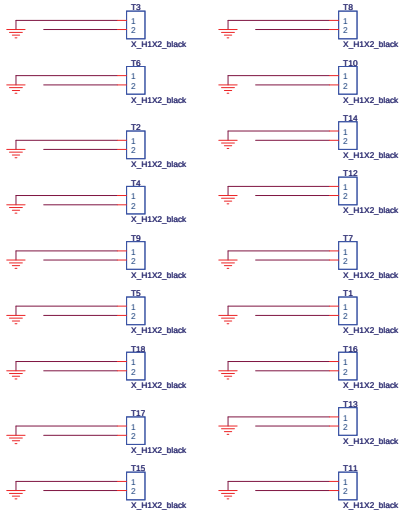

MSI CORPORATION

Title: Screw/EMI

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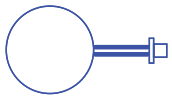
JBAT2



BAT-CR2032

JMDC1_1
X_MODEM_CARD

MDC改爲機構料

PCB1

P30-163A110-D05

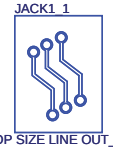
JPE1_4

NEW CARD_MYLAR

Y4_1

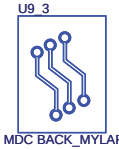
TOP SIZE Y4_MYLAR

JACK1_1



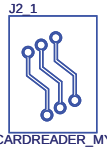
TOP SIZE LINE OUT_MYLAR

U9_3



MDC BACK_MYLAR

J2_1



CARDREADER_MYLAR

FOR MDC

MH3_1

X_SCREW_M4.5X2X3 mm

MH4_1

X_SCREW_M4.5X2X3 mm

FOR NEWCARD

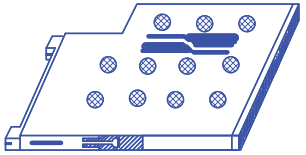
MH19_1

SCREW_M4.5X2X3 mm

MH20_1

SCREW_M4.5X2X3 mm

JPE1_1
NEW_CARD



另加上PCI
EXPRESS 鐵件:
E2M-6310711-SH4

FOR PCIE

MH17_1

SCREW_M4.5X2X3 mm

MH18_1

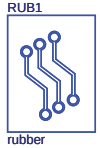
SCREW_M4.5X2X3 mm

FOR TV ANTENNA

MH22_1

SCREW_M4.5X2X3 mm

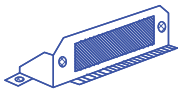
RUB1



rubber

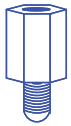
FOR D-SUB

JVGA1_1



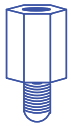
CRT SHIELDING
E2M-6312511-Y28

JVGA1_2



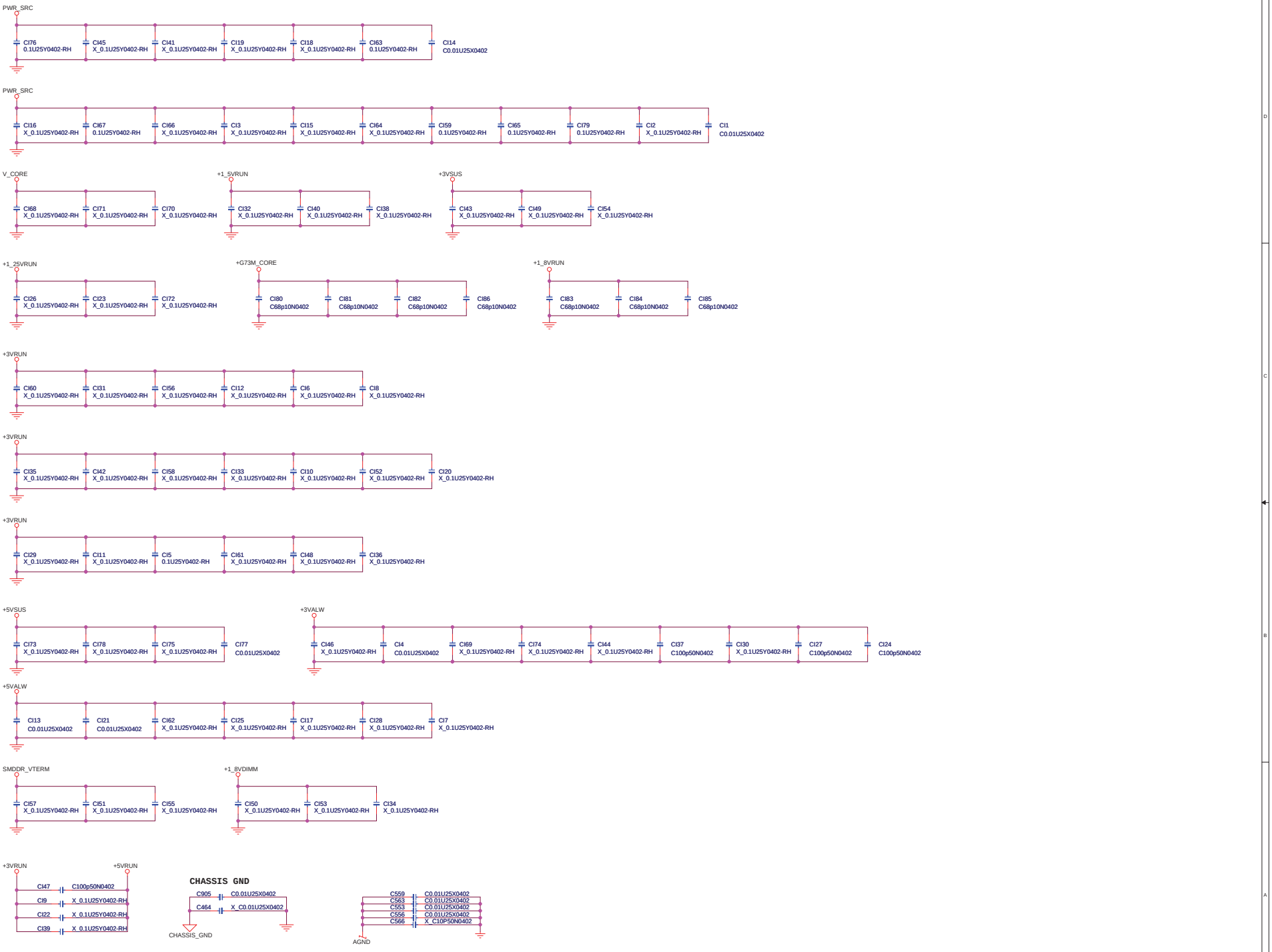
SCREW_4.75X4.9 mm

JVGA1_3

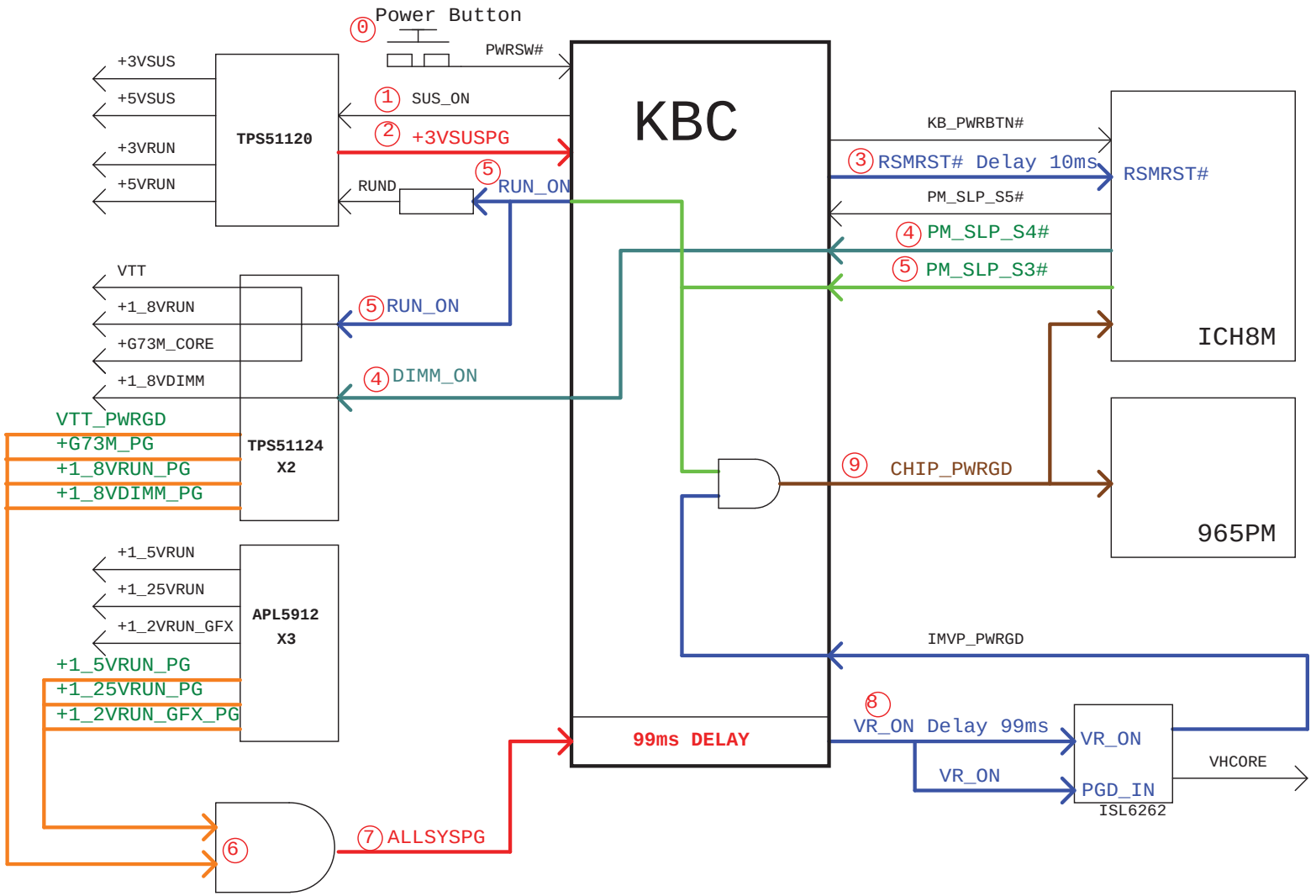


SCREW_4.75X4.9 mm

MSI CORPORATION		
Title: Manual Part		
Size: B	Document Number: MS-163A	Rev: 0A
Date: Tuesday, July 10, 2007	Sheet 47 of 54	



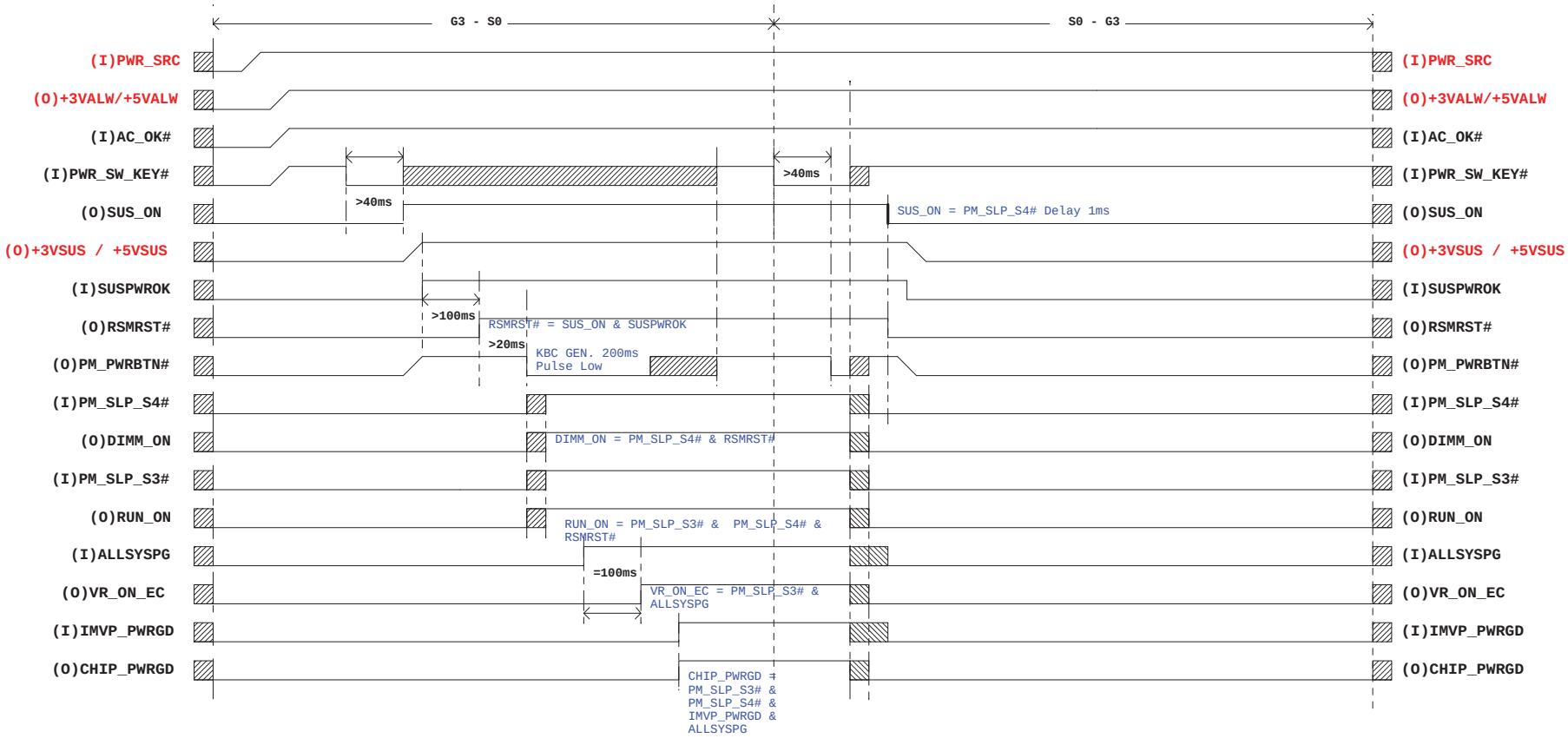
MSI CORPORATION		
Title: EMI		
Size: C	Document Number: MS-163A	Rev: 0A
Date: Tuesday, July 10, 2007	Sheet 48 of 54	



MSI CORPORATION		
Title: KBC_CTR_PWR		
Size: B	Document Number: MS-163A	Rev: 0A
Date: Monday, May 07, 2007	Sheet 49 of 54	

RED:POWER
BLACK:KBC

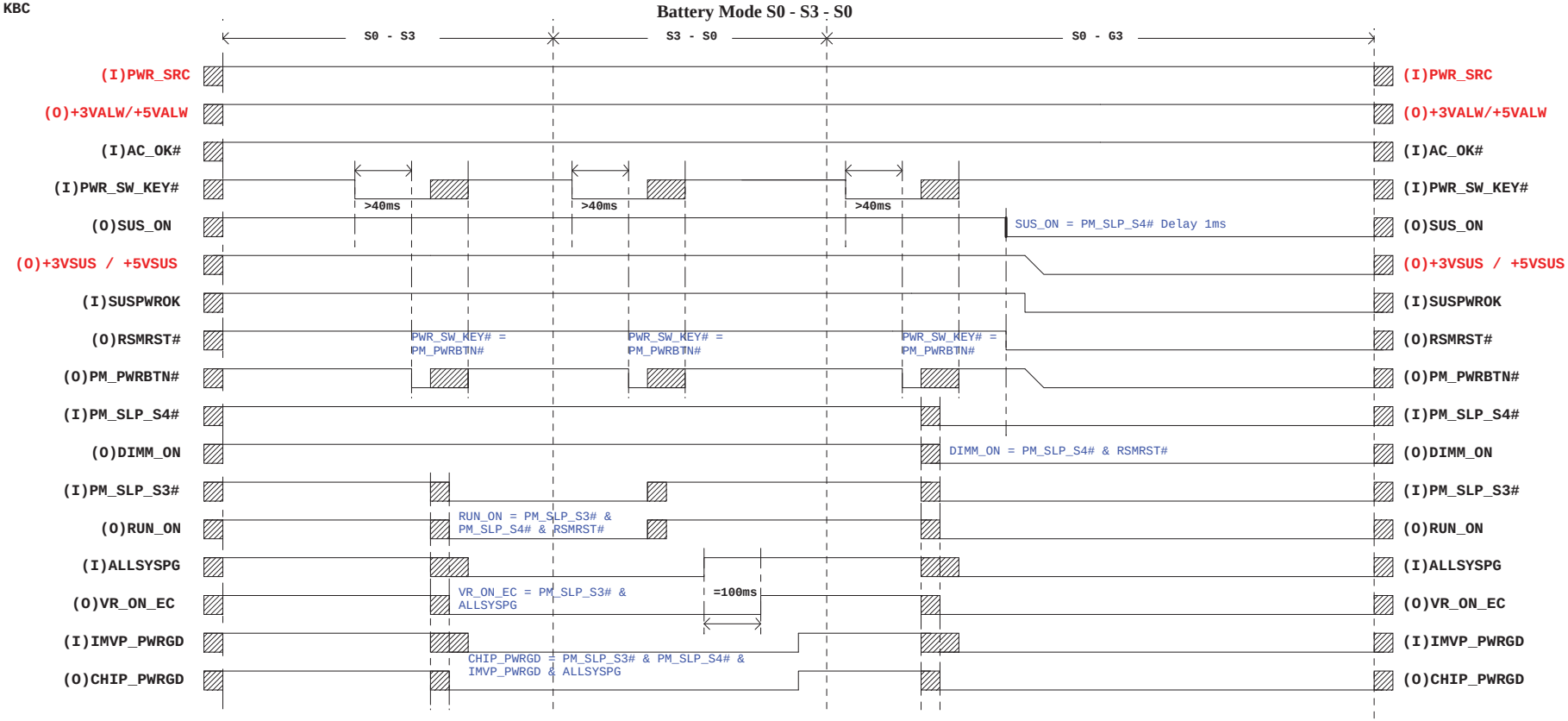
Battery Mode G3 - S0 - G3



MSI CORPORATION		
Title: AC/Battery timing 1		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Monday, May 07, 2007	Sheet 50 of 54	

RED:POWER
BLACK:KBC

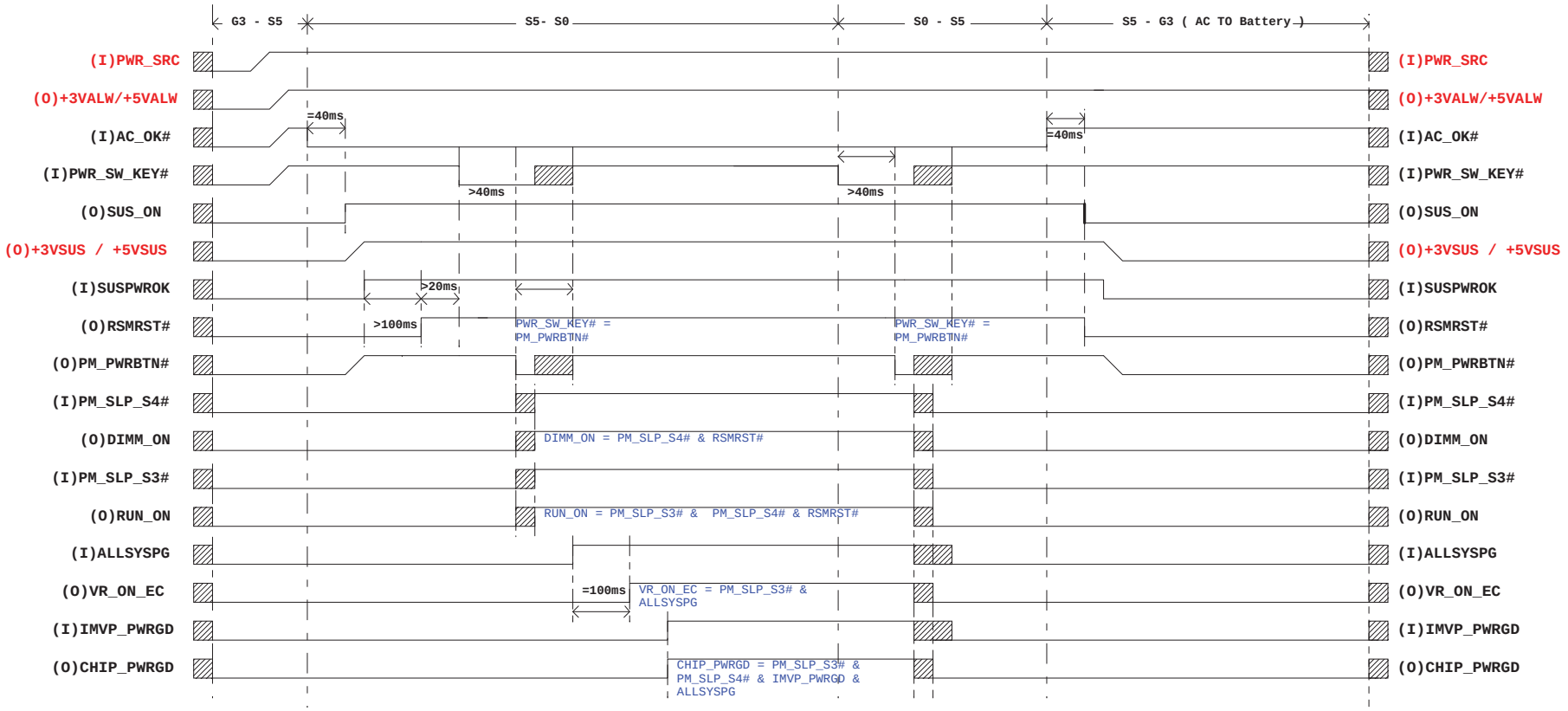
Battery Mode S0 - S3 - S0



MSI CORPORATION		
Title: AC/Battery timing 2		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Monday, May 07, 2007	Sheet 51 of 54	

RED:POWER
BLACK:KBC

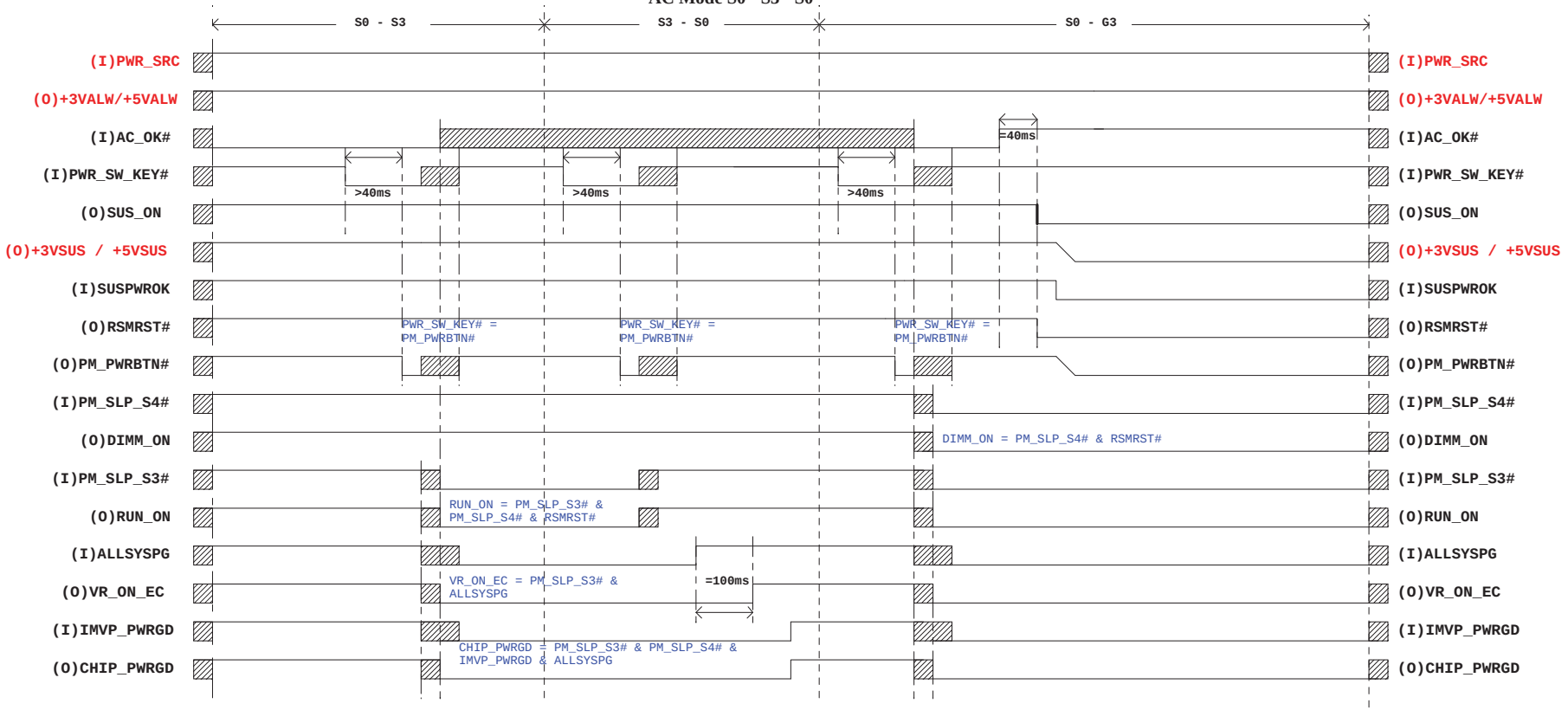
AC Mode G3 - S5 - S0 - S5 - G3



MSI CORPORATION		
Title: AC/Battery timing 3		
Size: Custom	Document Number: MS-163A	Rev: 0C
Date: Monday, May 07, 2007	Sheet 52 of 54	

RED:POWER
BLACK:KBC

AC Mode S0 - S3 - S0



MSI CORPORATION		
Title: AC/Battery timing 4		
Size: Custom	Document Number: MS-163A	Rev: 0A
Date: Monday, May 07, 2007	Sheet 53 of 54	

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