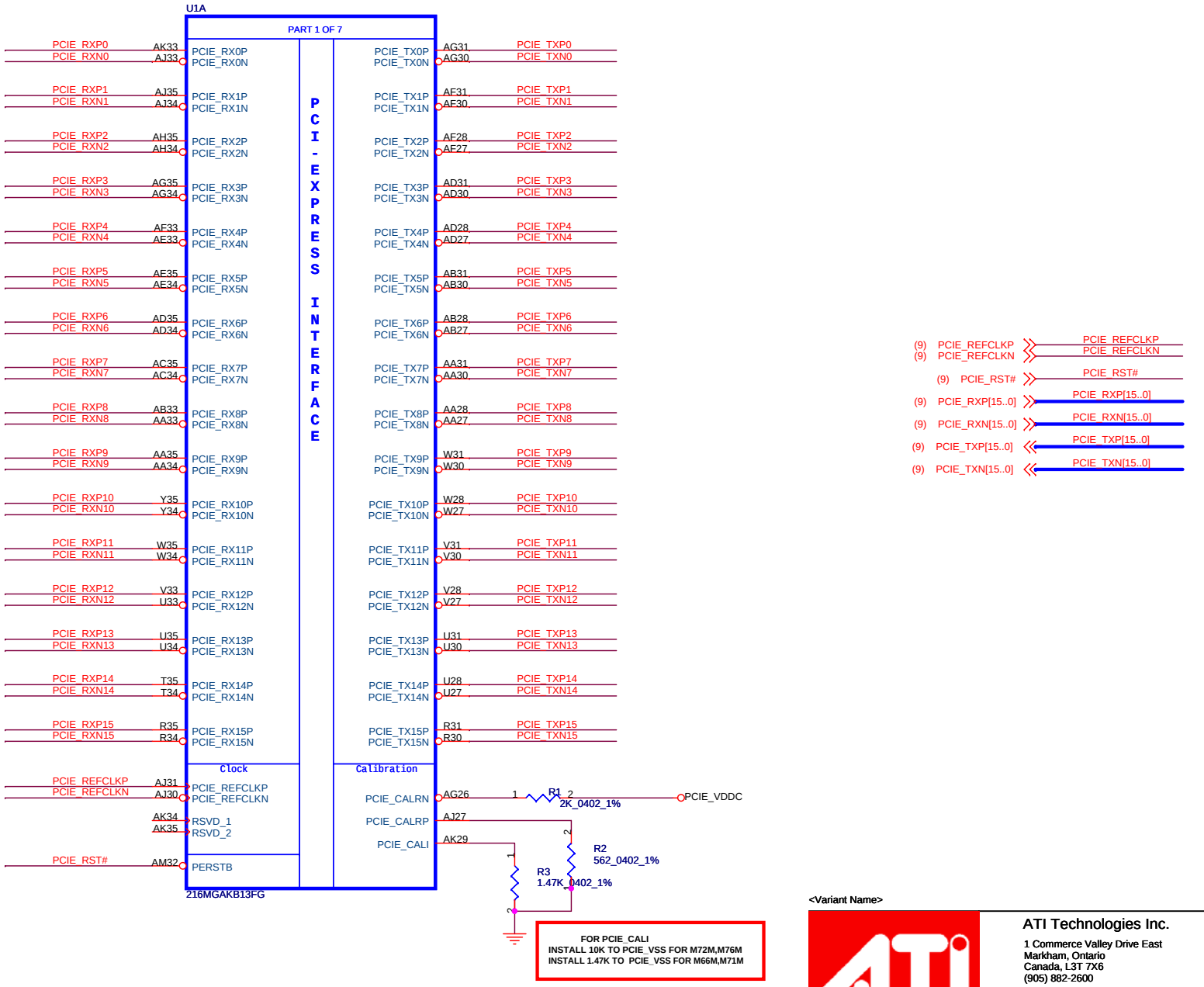
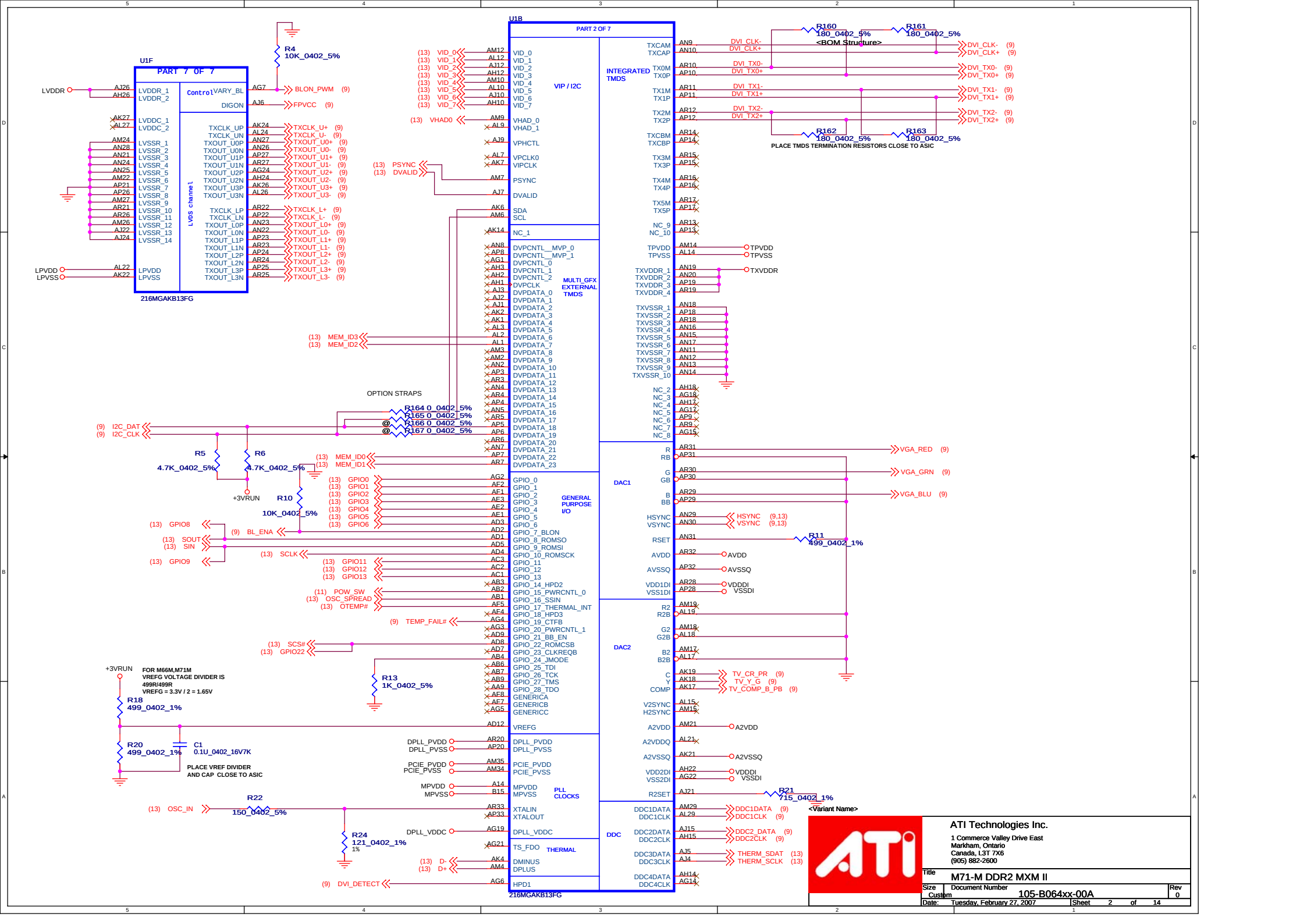
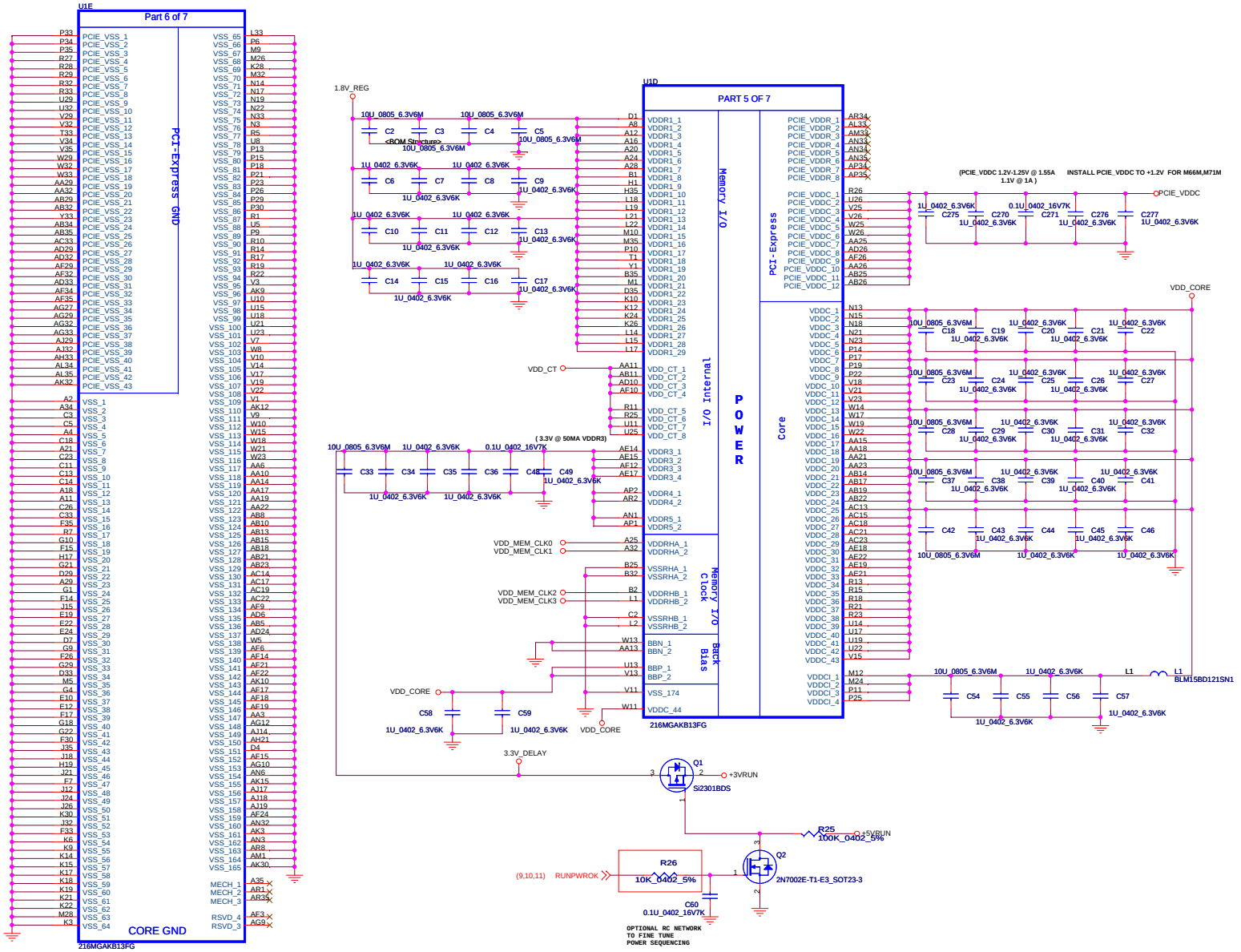


<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title	M71-M DDR2 MXM II		
Size B	Document Number 105-B064xx-00A		Rev 0
Date: Monday, December 04, 2006	Sheet 1 of 14		

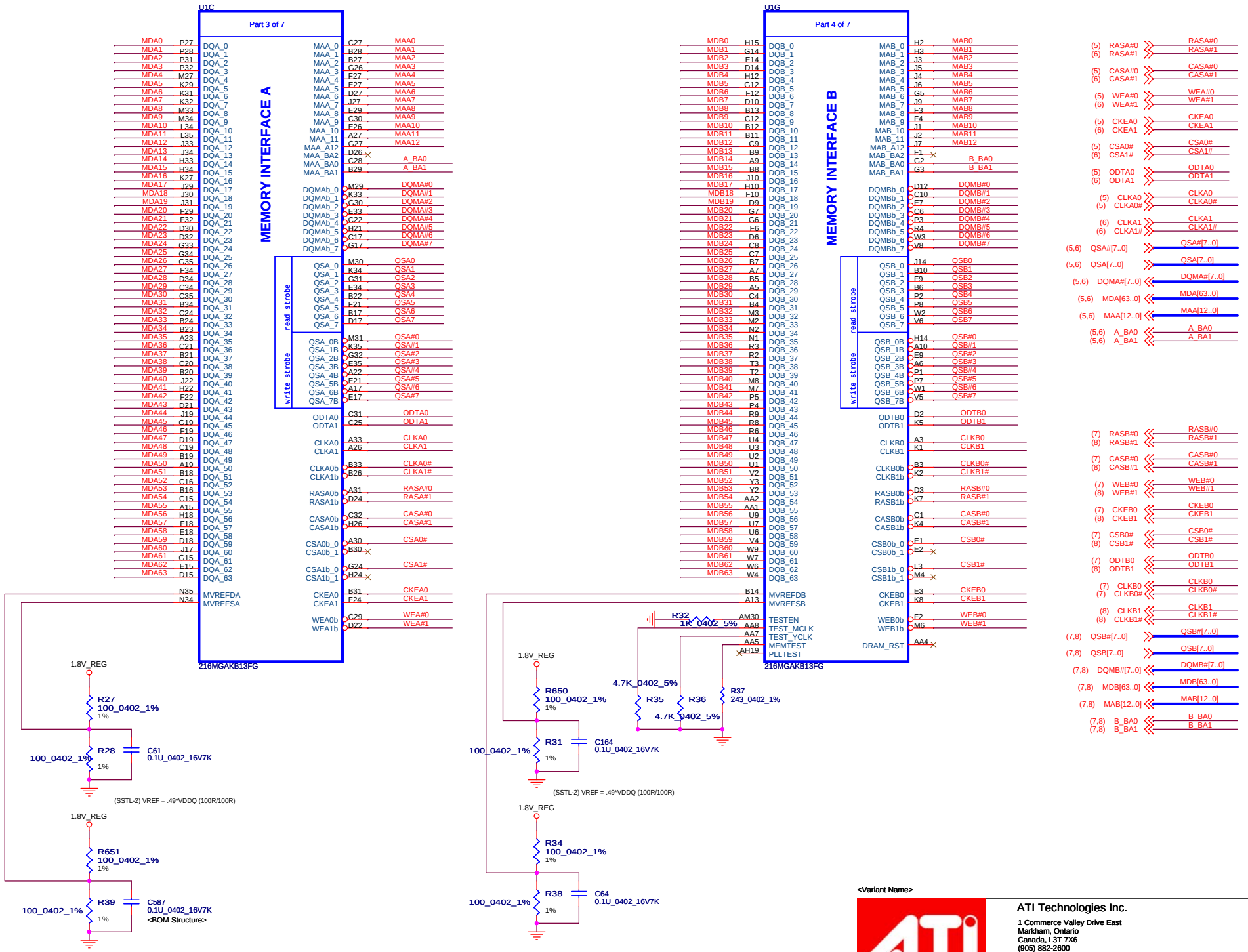

U1F
PART 7 OF 7
216MGAKB13FG
U1B
PART 2 OF 7
VIP / I2C
INTEGRATED TMDS
MULTI_GFX EXTERNAL TMDS
GENERAL PURPOSE I/O
DAC1
DAC2
DDC
PLL CLOCKS
THERMAL
OPTION STRAPS
R4 10K_0402_5%
R5 4.7K_0402_5%
R6 4.7K_0402_5%
R10 10K_0402_5%
R13 1K_0402_5%
R18 499_0402_1%
R20 499_0402_1%
C1 0.1U_0402_16V7K
PLACE VREF DIVIDER AND CAP CLOSE TO ASIC
FOR M66M,M71M VREFG VOLTAGE DIVIDER IS 499R/499R VREFG = 3.3V / 2 = 1.65V
R22 150_0402_5%
R24 121_0402_1% 1%
R160 180_0402_5%
R161 180_0402_5%
R162 180_0402_5%
R163 180_0402_5%
<BOM Structure>
PLACE TMDS TERMINATION RESISTORS CLOSE TO ASIC
R11 499_0402_1%
R21 715_0402_1%
<Variant Name>
ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600
Title M71-M DDR2 MXM II
Size Custom
Document Number 105-B064xx-00A
Rev 0
Date: Tuesday, February 27, 2007
Sheet 2 of 14



<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

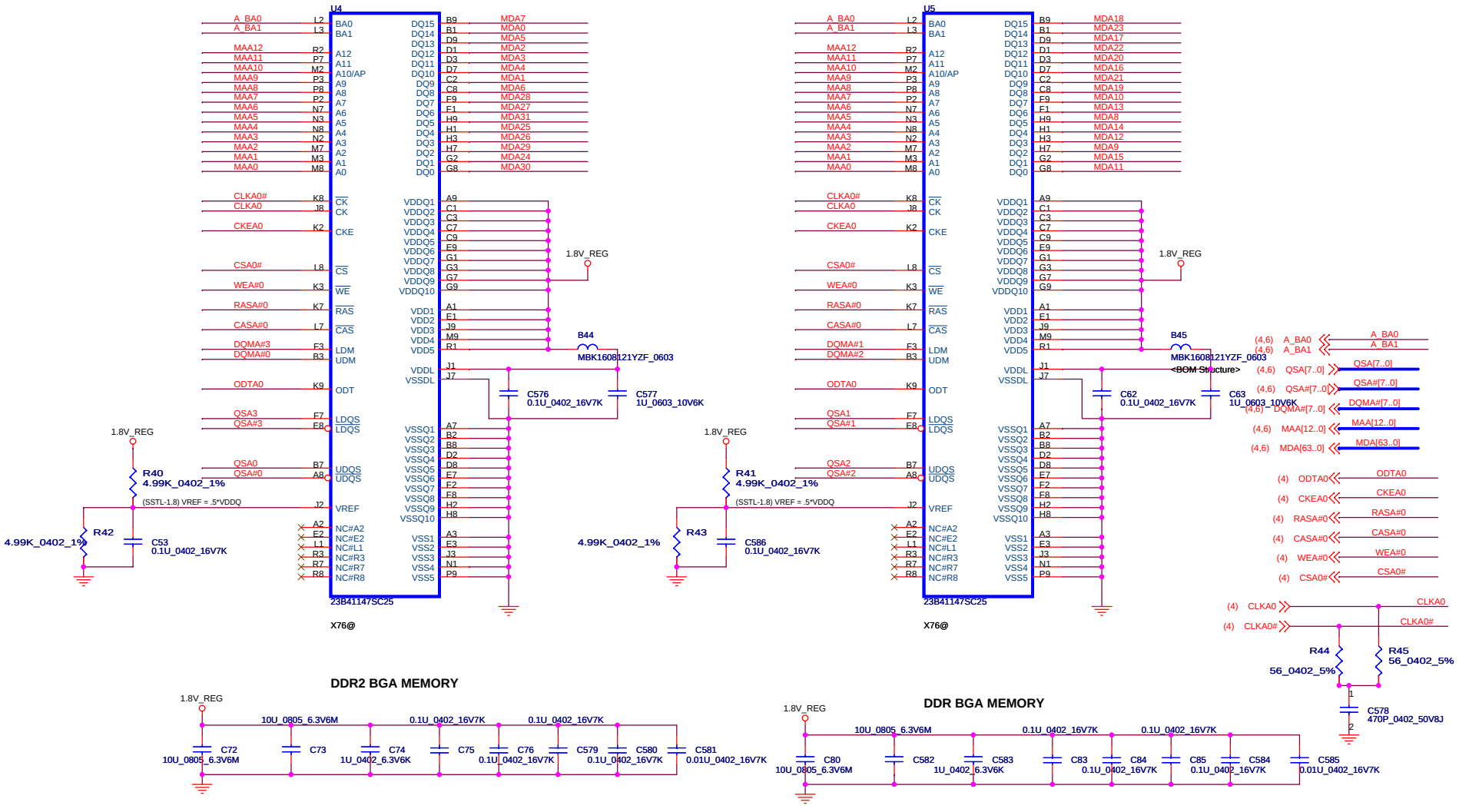
Title	M71-M DDR2 MXM II		
Size C	Document Number 105-B064xx-00A		Rev 0
Date: Monday, December 04, 2006	Sheet 3	of 14	



<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size B	Document Number 105-B064xx-00A	Rev 0
Date: Monday, December 04, 2006	Sheet 4 of 14	

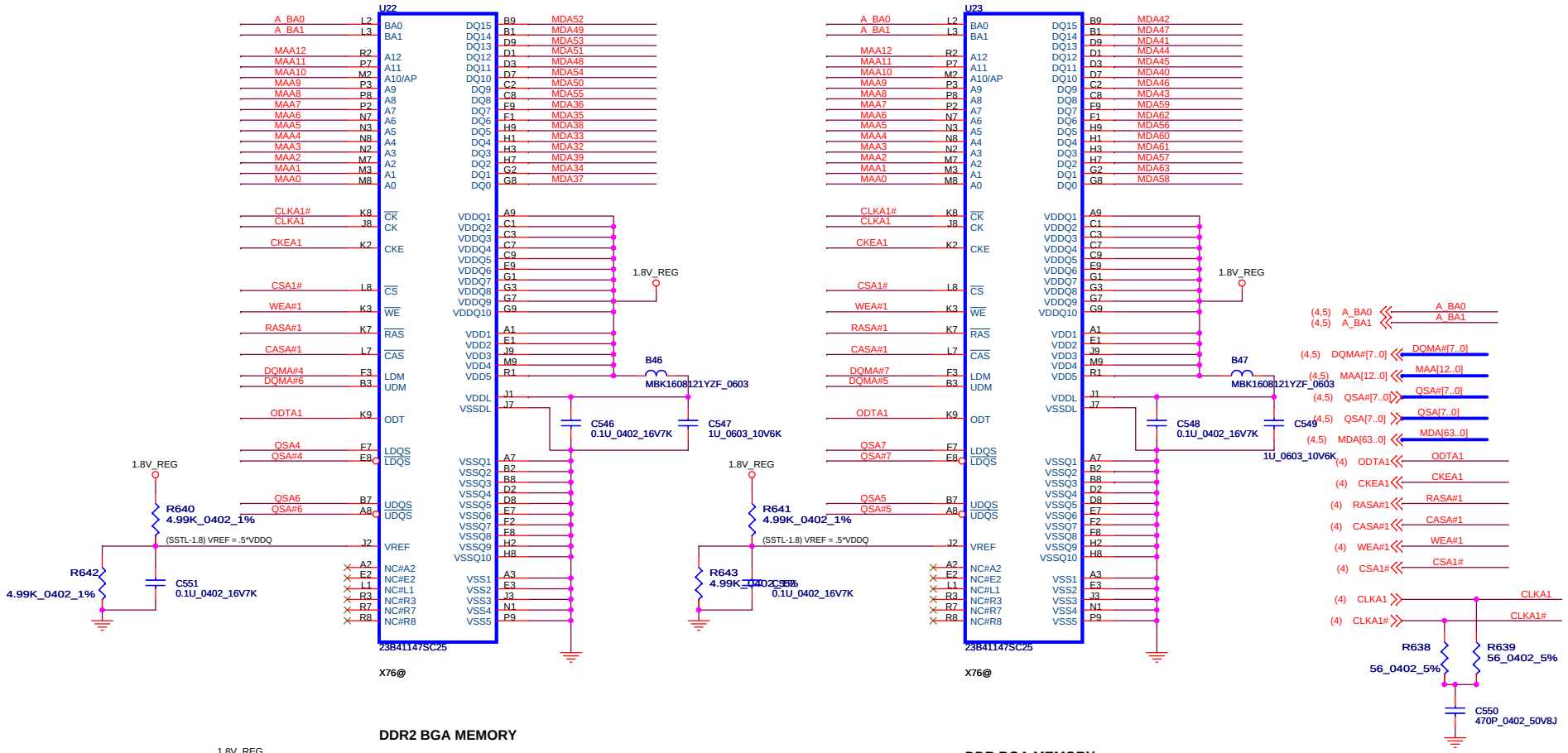


CHAN A RANK 0 DDR2 BGA MEMORY

<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size: Custom	Document Number: 105-B064xx-00A	Rev: 0
Date: Monday, December 04, 2006	Sheet 5 of 14	



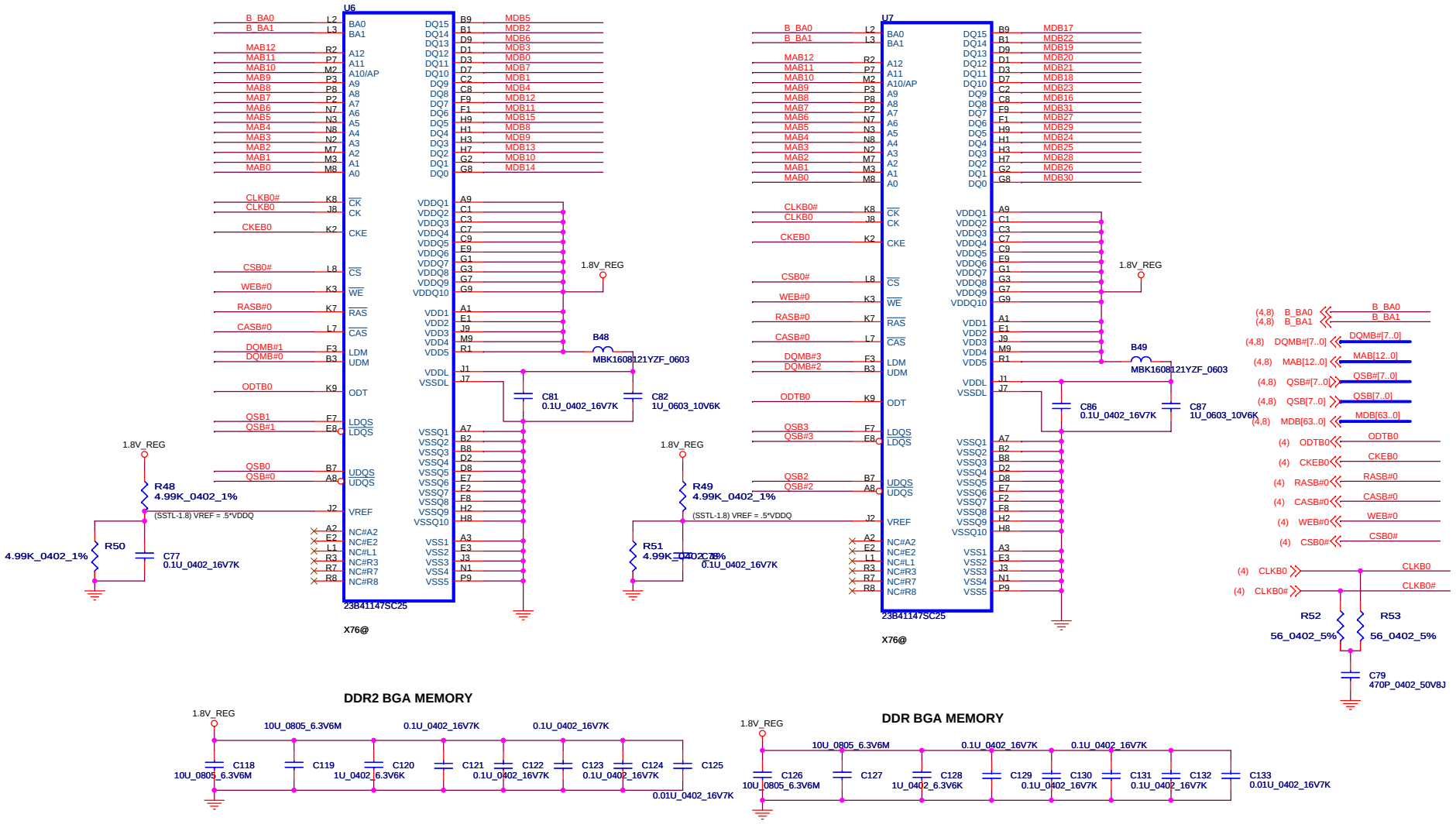
CHAN B RANK 0 DDR2 BGA MEMORY

<Variant Name>

ATI Technologies Inc.

1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size: Custom	Document Number: 105-B064xx-00A	Rev: 0
Date: Monday, December 04, 2006	Sheet 6 of 14	

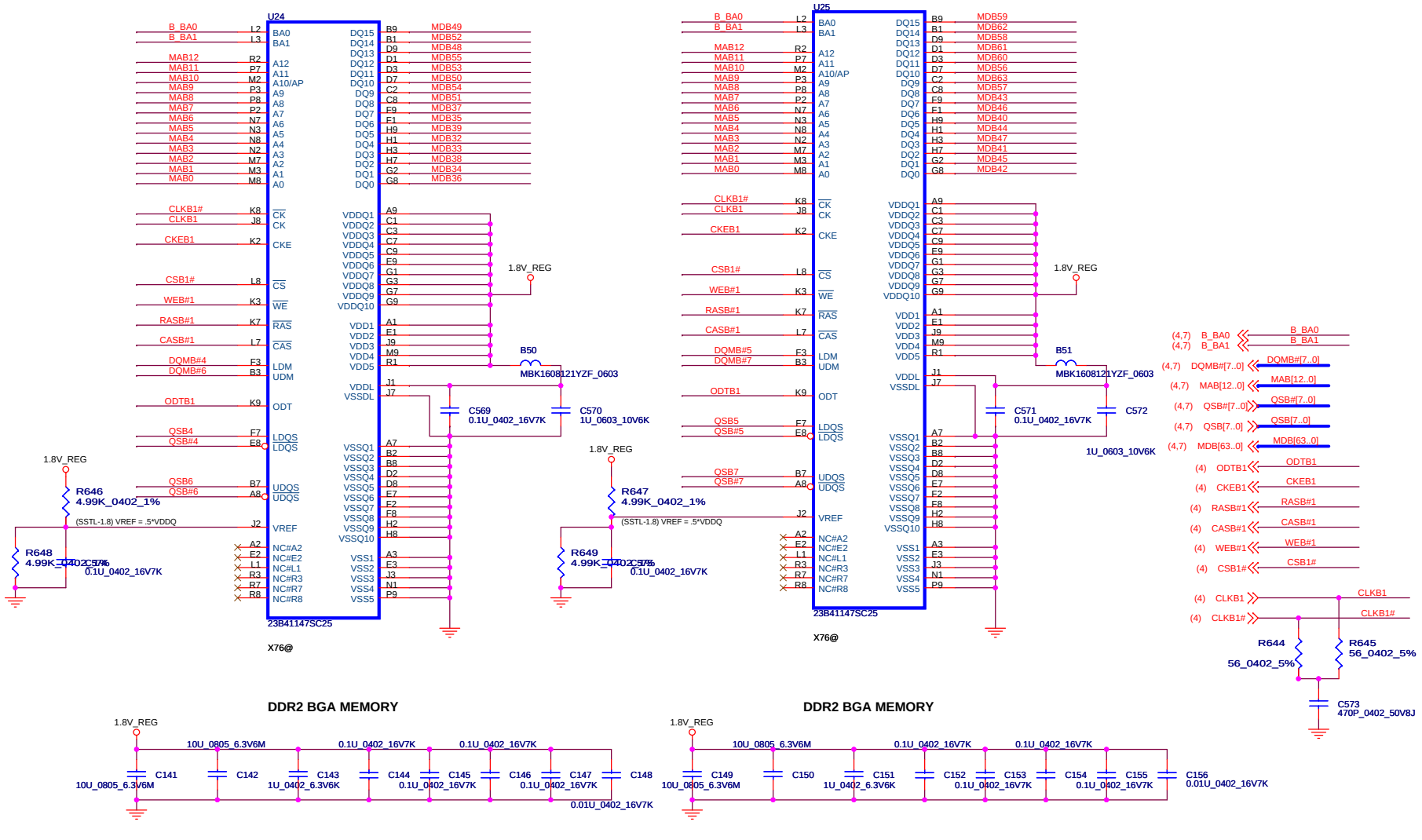


CHAN C RANK0 DDR2 BGA MEMORY

<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size: Custom	Document Number: 105-B064xx-00A	Rev: 0
Date: Monday, December 04, 2006	Sheet 7 of 14	



CHAN D RANK0 DDR2 BGA MEMORY

<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size: Custom	Document Number: 105-B064xx-00A	Rev: 0
Date: Monday, December 04, 2006	Sheet 8 of 14	

PLACE CAPS ON THIS PAGE AS CLOSE TO CONNECTOR AS POSSIBLE

MPCIE1

G_PWR_SRC

C352 0.1U_0805_50V7K
C353 0.001U_0402_50V7M
C354 0.1U_0805_50V7K

PWR_SRC_A1 PWR_SRC_A2 PWR_SRC_A3 PWR_SRC_A4 PWR_SRC_A5 PWR_SRC_A6 PWR_SRC_A7 PWR_SRC_A8
GND_A9 GND_A10 GND_A11 GND_A12
Mechanical Key
PRSNT2#
PERn15 PERp15 GND_A21 PERn14 PERp14 GND_A24 PERn13 PERp13 GND_A27 PERn12 PERp12 GND_30 PERn11 PERp11 GND_A33 PERn10 PERp10 GND_A36 PERn9 PERp9 GND_A39 PERn8 PERp8 GND_A42 PERn7 PERp7 GND_A45 PERn6 PERp6 GND_A48 PERn5 PERp5 GND_A51 PERn4 PERp4 GND_A54 PERn3 PERp3 GND_A57 PERn2 PERp2 GND_A60 PERn1 PERp1 GND_A63 PERn0 PERp0 GND_A66
REFCLK- REFCLK+
RSVD_A69 PERST#
RSVD_A71 RSVD_A72
SMB_CLK SMB_DAT THERM#
VGA_HSYNC VGA_VSYNC VGA_DDCCLK VGA_DDCDAT
RSVD_A80 RSVD_A81 GND_A82 RSVD_A83 RSVD_A84 RSVD_A85 RSVD_A86 RSVD_A87 GND_A88 RSVD_A89 RSVD_A90 GND_A91 RSVD_A92 RSVD_A93 GND_A94 RSVD_A95 RSVD_A96 RSVD_A97 RSVD_A98 RSVD_A99 GND_A100 RSVD_A101 RSVD_A102 GND_A103 RSVD_A104 RSVD_A105 GND_A106 RSVD_A107 RSVD_A108
DVI_HPD DVI_CLK- DVI_CLK+ GND_A112 DVI_TX2- DVI_TX2+ GND_A115 DVI_TX1- DVI_TX1+ GND_A118 DVI_TX0- DVI_TX0+ GND_A121
PCIE_PLUS

+1.8VRUN_B1 +1.8VRUN_B2 +1.8VRUN_B3 +1.8VRUN_B4 +1.8VRUN_B5 +1.8VRUN_B6 +1.8VRUN_B7 RUNPWROK +5VRUN GND_B10 GND_B11 GND_B12
PETn15 PETp15 GND_B22 PETn14 PETp14 GND_B25 PETn13 PETp13 GND_B28 PETn12 PETp12 GND_B31 PETn11 PETp11 GND_B34 PETn10 PETp10 GND_B37 PETn9 PETp9 GND_B40 PETn8 PETp8 GND_B43 PETn7 PETp7 GND_B46 PETn6 PETp6 GND_B49 PETn5 PETp5 GND_B52 PETn4 PETp4 GND_B55 PETn3 PETp3 GND_B58 PETn2 PETp2 GND_B61 PETn1 PETp1 GND_B64 PETn0 PETp0
PRSNT1#
TV_CR_PR GND_B69 TV_Y_G GND_B71 TV_COMP_B_PB GND_B73 VGA_RED GND_B75 VGA_GRN GND_B77 VGA_BLU GND_B79
LVDS_UCLK- LVDS_UCLK+ GND_B82 LVDS_UTX3- LVDS_UTX3+ GND_B85 LVDS_UTX2- LVDS_UTX2+ GND_B88 LVDS_UTX1- LVDS_UTX1+ GND_B91 LVDS_UTX0- LVDS_UTX0+ GND_B94 LVDS_LCLK- LVDS_LCLK+ GND_B97 LVDS_LTX3- LVDS_LTX3+ GND_B100 LVDS_LTX2- LVDS_LTX2+ GND_B103 LVDS_LTX1- LVDS_LTX1+ GND_B106 LVDS_LTX0- LVDS_LTX0+ GND_B109
I2C_DAT I2C_CLK LVDS_DIGON LVDS_PWM LVDS_BLON DVI_SDAT DVI_SCLK +2.5VRUN GND_B118 +3.3VRUN_B119 +3.3VRUN_B120 +3.3VRUN_B121
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B19 B20 B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32 B33 B34 B35 B36 B37 B38 B39 B40 B41 B42 B43 B44 B45 B46 B47 B48 B49 B50 B51 B52 B53 B54 B55 B56 B57 B58 B59 B60 B61 B62 B63 B64 B65 B66 B67 B68 B69 B70 B71 B72 B73 B74 B75 B76 B77 B78 B79 B80 B81 B82 B83 B84 B85 B86 B87 B88 B89 B90 B91 B92 B93 B94 B95 B96 B97 B98 B99 B100 B101 B102 B103 B104 B105 B106 B107 B108 B109 B110 B111 B112 B113 B114 B115 B116 B117 B118 B119 B120 B121

PCIE_TXN15 PCIE_TXP15 C357 C358 0.1U_0402_16V7K
PCIE_TXN14 PCIE_TXP14 C359 C361 0.1U_0402_16V7K
PCIE_TXN13 PCIE_TXP13 C362 C363 0.1U_0402_16V7K
PCIE_TXN12 PCIE_TXP12 C364 C365 0.1U_0402_16V7K
PCIE_TXN11 PCIE_TXP11 C366 C367 0.1U_0402_16V7K
PCIE_TXN10 PCIE_TXP10 C368 C369 0.1U_0402_16V7K
PCIE_TXN9 PCIE_TXP9 C370 C371 0.1U_0402_16V7K
PCIE_TXN8 PCIE_TXP8 C372 C373 0.1U_0402_16V7K
PCIE_TXN7 PCIE_TXP7 C374 C375 0.1U_0402_16V7K
PCIE_TXN6 PCIE_TXP6 C376 C377 0.1U_0402_16V7K
PCIE_TXN5 PCIE_TXP5 C378 C379 0.1U_0402_16V7K
PCIE_TXN4 PCIE_TXP4 C380 C381 0.1U_0402_16V7K
PCIE_TXN3 PCIE_TXP3 C382 C383 0.1U_0402_16V7K
PCIE_TXN2 PCIE_TXP2 C384 C385 0.1U_0402_16V7K
PCIE_TXN1 PCIE_TXP1 C386 C387 0.1U_0402_16V7K
PCIE_TXN0 PCIE_TXP0 C388 C389 0.1U_0402_16V7K

PCIE_RXN15 PCIE_RXP15
PCIE_RXN14 PCIE_RXP14
PCIE_RXN13 PCIE_RXP13
PCIE_RXN12 PCIE_RXP12
PCIE_RXN11 PCIE_RXP11
PCIE_RXN10 PCIE_RXP10
PCIE_RXN9 PCIE_RXP9
PCIE_RXN8 PCIE_RXP8
PCIE_RXN7 PCIE_RXP7
PCIE_RXN6 PCIE_RXP6
PCIE_RXN5 PCIE_RXP5
PCIE_RXN4 PCIE_RXP4
PCIE_RXN3 PCIE_RXP3
PCIE_RXN2 PCIE_RXP2
PCIE_RXN1 PCIE_RXP1
PCIE_RXN0 PCIE_RXP0

C355 0.1U_0402_16V7K
C356 0.001U_0402_50V7M

(1) PCIE_REFCLKP
(1) PCIE_REFCLKN
(1) PCIE_RST#
(1) PCIE_RXP[15..0]
(1) PCIE_RXN[15..0]
(1) PCIE_TXP[15..0]
(1) PCIE_TXN[15..0]

(2) VGA_RED
(2) VGA_GRN
(2) VGA_BLU
(2) TV_Y_G
(2) TV_CR_PR
(2) TV_COMP_B_PB
(2) DVI_TX0-
DVI_TX0+
DVI_TX1-
DVI_TX1+
DVI_TX2-
DVI_TX2+
DVI_CLK-
DVI_CLK+
(2) DVI_DETECT

(2,13) HSYNC
(2,13) VSYNC
(2) DDC1CLK
(2) DDC1DATA

R211 2.2K_0402_5%
R212 2.2K_0402_5%
+3VRUN

(2) TXOUT_L0-
TXOUT_L0+
TXOUT_L1-
TXOUT_L1+
TXOUT_L2-
TXOUT_L2+
TXOUT_L3-
TXOUT_L3+
TXCLK_L-
TXCLK_L+
(2) TXOUT_U0-
TXOUT_U0+
TXOUT_U1-
TXOUT_U1+
TXOUT_U2-
TXOUT_U2+
TXOUT_U3-
TXOUT3+
TXCLK_U-
TXCLK_U+
(2) I2C_CLK
(2) I2C_DAT
(2) FPVCC

+5VRUN
+3VRUN

R196 10K_0402_5%
U16 NC7SZ08P5X_NL_SC70-5
C359 0.1U_0402_16V7K
(2) TEMP_FAIL#
OPTION STRAP
R197 0_0402_5% @
RUNPWROK (3,10,11)

BL_BRIGHT
BL_ENA
@R198 0_0402_5%
R199 0_0402_5%
@R200 0_0402_5%
OPTION STRAPS
BLON_PWM (2)
BL_ENA (2)

@R201 6.8K_0402_5%
THERM#
Q15 @2N7002E-T1-E3_SOT23-3
MB_THERM# (13)
R202 0_0402_5%
OPTION STRAP

R203 0_0402_5%
R204 150_0402_5%
R205 150_0402_5%
R206 150_0402_5%
PLACE TERMINATIONS CLOSE TO CONNECTOR

R207 150_0402_5%
R208 150_0402_5%
R209 150_0402_5%
TXCLK_U-
TXCLK_U+
TXOUT_U3-
TXOUT_U3+
R652 @0_0402_5%
TXOUT_U2-
TXOUT_U2+
TXOUT_U1-
TXOUT_U1+
TXOUT_U0-
TXOUT_U0+
TXCLK_L-
TXCLK_L+
TXOUT_L3-
TXOUT_L3+
TXOUT_L2-
TXOUT_L2+
TXOUT_L1-
TXOUT_L1+
TXOUT_L0-
TXOUT_L0+

6.8K_0402_5% @ R210
Q16 @2N7002E-T1-E3_SOT23-3
SMB_CLK
PBAT_SMBCLK (13)
R213 0_0402_5%

6.8K_0402_5% @ R214
Q17 @2N7002E-T1-E3_SOT23-3
SMB_DAT
PBAT_SMBDAT (13)
R217 0_0402_5%
OPTION STRAP

SM BUS 3V/5V LEVEL SHIFT

R215 2.2K_0402_5%
R216 2.2K_0402_5%
DDC2_DATA (2)
DDC2CLK (2)

C390 2.2U_0603_6.3V6K
C391 0.1U_0402_16V7K
C392 0.001U_0402_50V7M

DVI_DETECT
DVI_CLK-
DVI_CLK+
DVI_TX2-
DVI_TX2+
DVI_TX1-
DVI_TX1+
DVI_TX0-
DVI_TX0+

3V3RUN

<Variant Name>

ATI Technologies Inc.
1 Commerce Valley Drive East
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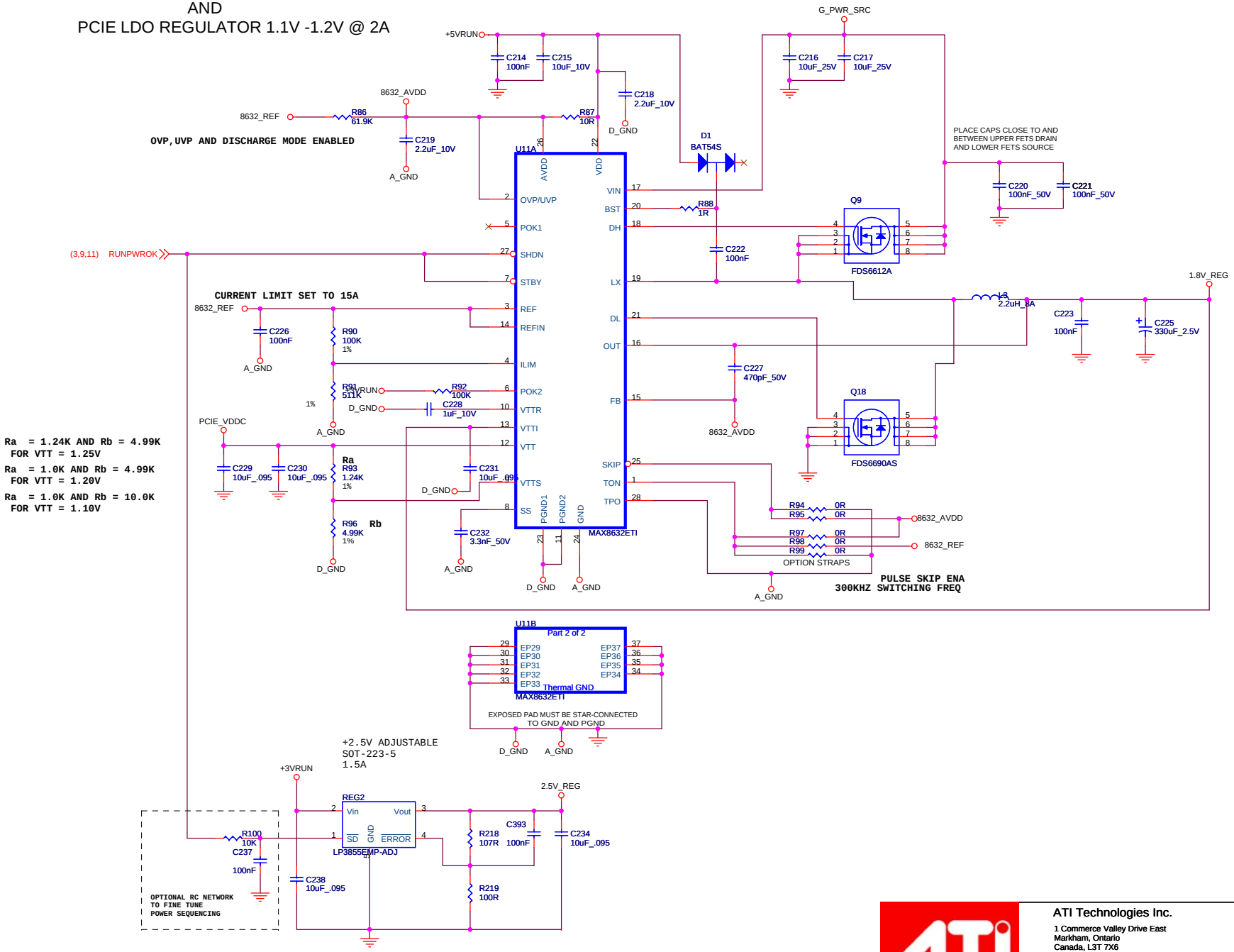
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size: Custom	Document Number: 105-B064xx-00A	Rev: 0
Date: Monday, December 04, 2006	Sheet 9 of 14	

I/O PWM REGULATOR 1.8V @ 8A
AND
PCIE LDO REGULATOR 1.1V -1.2V @ 2A



ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
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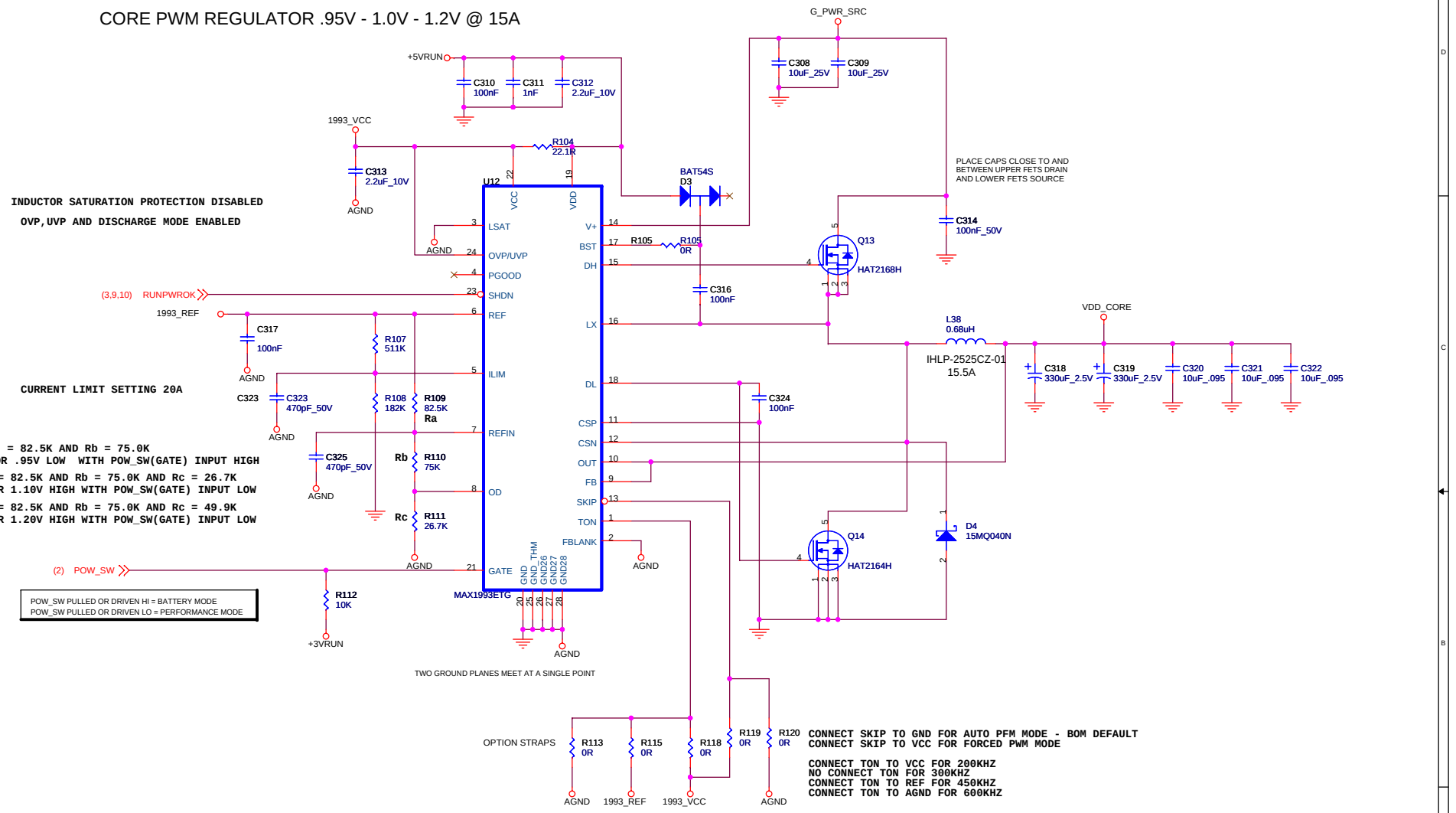
(905) 882-2600

Title	M71-M DDR2 MXM II		
Size B	Document Number 105-B064xx-00A		Rev 0
Date: Saturday, August 19, 2006	Sheet 10 of 14		

CORE PWM REGULATOR .95V - 1.0V - 1.2V @ 15A



ATI Technologies Inc.
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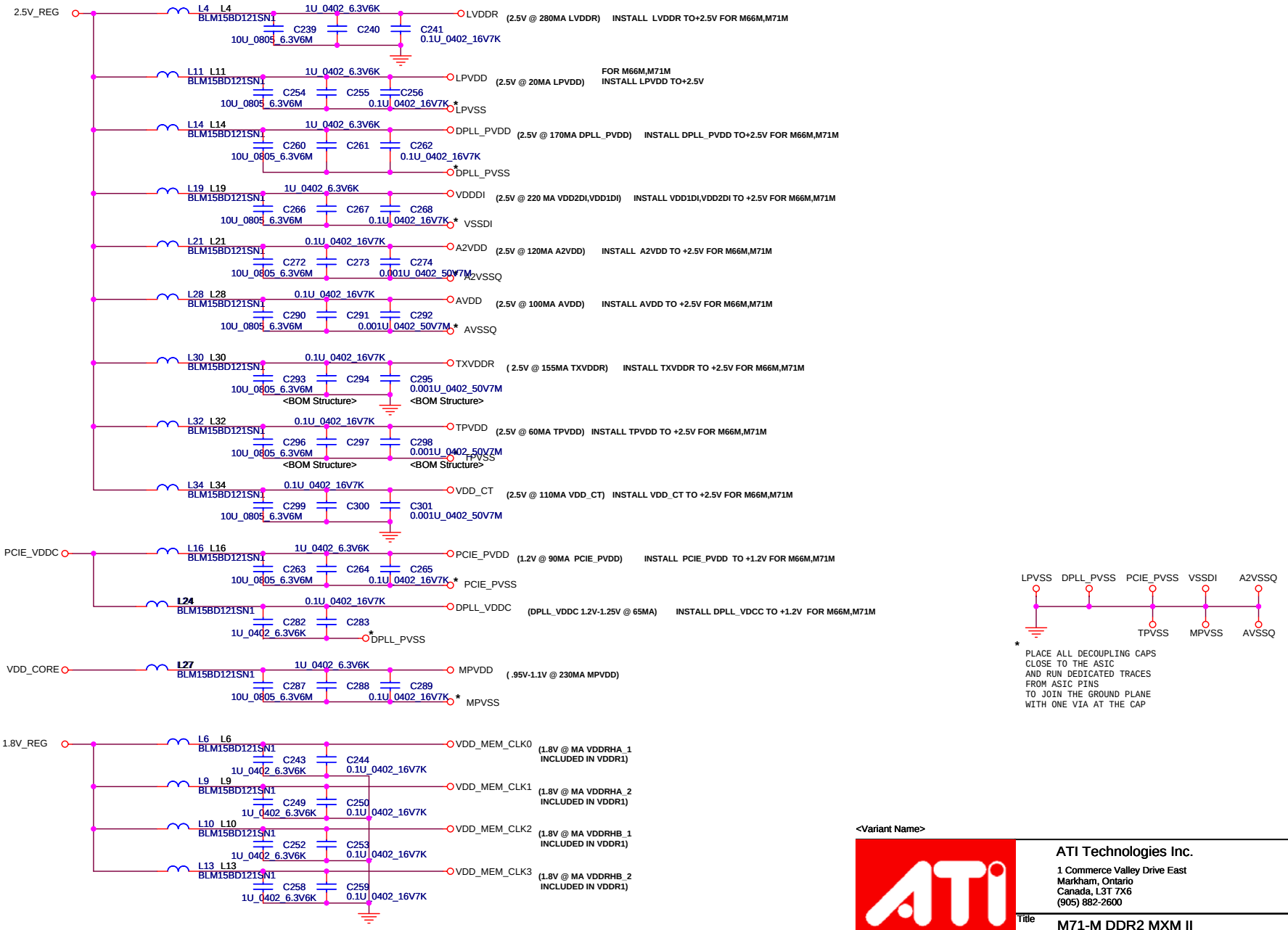
(905) 882-2600

Title	M71-M DDR2 MXM II	
Size: Custom	Document Number: 105-B064xx-00A	Rev: 0
Date: Saturday, August 19, 2006	Sheet 11 of 14	



<Variant Name>

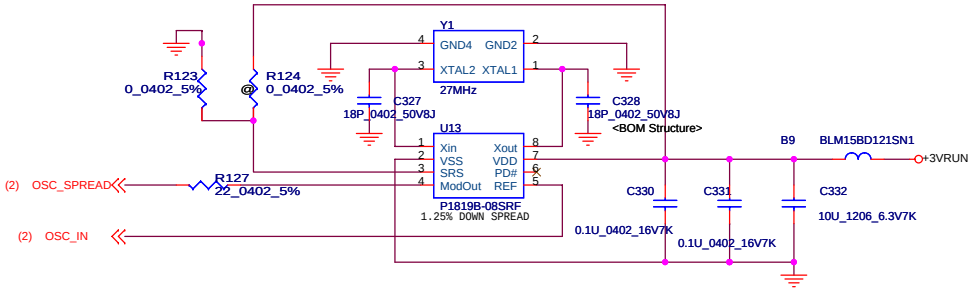
ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
(905) 882-2600

Title: M71-M DDR2 MXM II

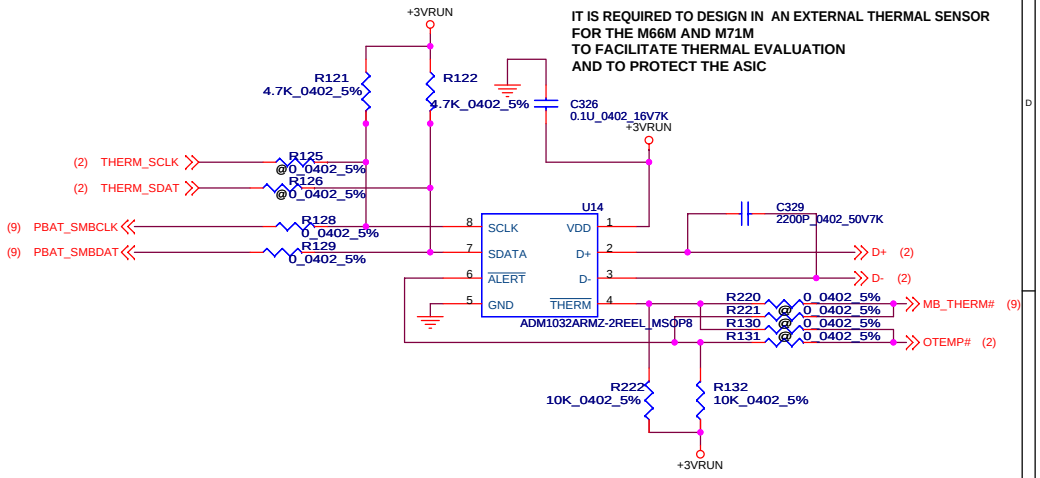
Size: B | Document Number: 105-B064xx-00A | Rev: 0

Date: Monday, December 04, 2006 | Sheet 12 of 14

MEMORY CLOCK SPREAD SPECTRUM



IT IS REQUIRED TO DESIGN IN AN EXTERNAL THERMAL SENSOR FOR THE M66M AND M71M TO FACILITATE THERMAL EVALUATION AND TO PROTECT THE ASIC

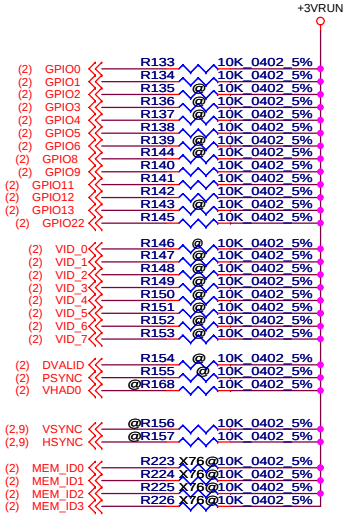


CONFIGURATION STRAPS

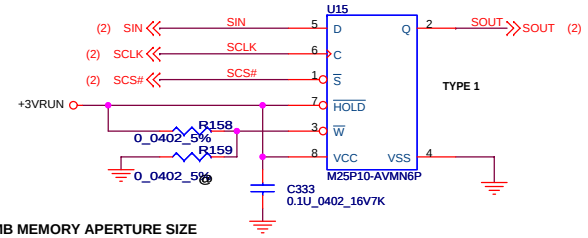
ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

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

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 LSBIT (M72/76)RSVD	1	0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	1	1
ROMIDCFG(3:0)	GPIO[9,13:11]	SERIAL ROM TYPE OR MEMORY APERATURE SIZE SELECT	XX X X	X X X X
VIP_DEVICE_STRAP_ENA	VSYNC	IGNORE VIP DEVICE STRAPS	X	X
BIF_VGA DIS	PSYNC	VGA ENABLED	NA	O
MEM_TYPE	UNUSED GPIO	MEMORY TYPE,MAKE AND SIZE INFO	X X X	X X X



FLASH ROM



A 256MB MEMORY APERTURE SIZE CAN BE DEFINED USING A SEPARATE ROM OR STRAPPING

Vedio Memory Config. (VGA Internal PD) 1.8V only							
MEM_ID3	MEM_ID2	MEM_ID1	MEM_ID0		Size	Vendor	Chips
0	0	0	0		64MB	16Mx16 Samsung	x2
0	0	0	1		128MB	16Mx16 Samsung	x4
0	0	1	0	Default	256MB	16Mx16 Samsung	x8
0	0	1	1		64MB	16Mx16 Hynix	x2
0	1	0	0		128MB	16Mx16 Hynix	x4
0	1	0	1		256MB	16Mx16 Hynix	x8
0	1	1	0		64MB	16Mx16 Infineon	x2
0	1	1	1		128MB	16Mx16 Infineon	x4
1	0	0	0		256MB	16Mx16 Infineon	x8

ATI RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

VID0 VID2 VID3 VID4 VID6 VID7 HSYNC DVALID GPIO2 GPIO3 GPIO5 GPIO6 GPIO8 VHAD0

PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO_28_TDO GENERICC GPIO21_BB_EN GPIO_23_CLKREQB (DRIVES LOW DURING RESET) H2SYNC V2SYNC

<Variant Name>

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Title	M71-M DDR2 MXM II	
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<variant_name>

Title	Schematic No.	Date:
M71-M DDR2 MXM II	105-B064xx-00A	**Monday, December 04, 2006**

REVISION HISTORY

NOTE: **This schematic represents the PCB, it does not represent any specific SKU. For Stuffing options (component values, DNI , ? please consult the product specific BOM. Please contact ATI representative to obtain latest BOM closest to the application desired.**

Rev 0

Sch Rev	PCB Rev	Date	REVISION DESCRIPTION
0	00A	12/08/05	PROTOTYPE BASED ON 105-A828XX-00B WITH FOLLOWING CHANGES: - Change to M71-M