2/4X AGP BUS

Note: +5V connection on AGP connector needs at least 3 vias to the corresponding power plane.

SYMBOL LEGEND

DNI	DO NOT INSTALL
#	ACTIVE LOW
⏚	DIGITAL GROUND
▽	ANALOG GROUND

AVSS PVSS TPVSS TXVSSR MPVSS VSS_DAC AVSSQ VSSDI

VDDP
C3 10nF
C4 100nF

+12V
C434 100uF 16V
ALUMINUM

+5V
C435 100uF 16V

AGP_C/BE#[3..0] AGP_C/BE#[3..0] (4)
AGP_AD[31..0] AGP_AD[31..0] (4)
AGP_SBA[7..0] AGP_SBA[7..0] (4)
AGP_ST[2..0] AGP_ST[2..0] (4)

(4) AGP_INTR#

+3.3V
VDDP   +12V

+5V ▪▪▪   VDDP
+3.3V

MAGP1

(4,13) RESET#   R3 100R   U1B SN74ACT86PW
AGP_RESET#
(4) AGP_GNT#

R4 180R

AGP_ST1

A1	12V	OVRCNT#	B1
A2	TYPEDET#	5.0V	B2
A3	RESERVED	5.0V	B3
A4	USB-	USB+	B4
A5	GND	GND	B5
A6	INTA#	INTB#	B6
A7	RST#	CLK	B7
A8	GNT#	REQ#	B8
A9	VCC3.3	VCC3.3	B9
A10	ST1	ST0	B10
A11	RESERVED	ST2	B11
A12	PIPE#	RBF#	B12
A13	GND	GND	B13
A14	WBF#	RESERVED	B14
A15	SBA1	VCC3.3	B15
A16	VCC3.3	SBA2	B16
A17	SBA3	SB_STB	B17
A18	SB_STB#	GND	B18
A19	GND	SBA4	B19
A20	SBA5	SBA6	B20
A21	SBA7	KEY	B21
A22	KEY	KEY	B22
A23	KEY	KEY	B23
A24	KEY	KEY	B24
A25	KEY	AD31	B25
A26	AD30	AD29	B26
A27	AD28	VCC3.3	B27
A28	VCC3.3	AD27	B28
A29	AD26	AD25	B29
A30	AD24	GND	B30
A31	GND	AD_STB1	B31
A32	AD_STB1#	AD23	B32
A33	C/BE3#	VDDQ	B33
A34	VDDQ	AD21	B34
A35	AD22	AD19	B35
A36	AD20	GND	B36
A37	GND	AD17	B37
A38	AD18	C/BE2#	B38
A39	AD16	VDDQ	B39
A40	VDDQ	IRDY#	B40
A41	FRAME#	KEY	B41
A42	KEY	KEY	B42
A43	KEY	KEY	B43
A44	KEY	KEY	B44
A45	KEY	DEVSEL#	B45
A46	TRDY#	VDDQ	B46
A47	STOP#	PERR#	B47
A48	PME#	GND	B48
A49	GND	SERR#	B49
A50	PAR	C/BE1#	B50
A51	AD15	VDDQ	B51
A52	VDDQ	AD14	B52
A53	AD13	AD12	B53
A54	AD11	GND	B54
A55	GND	AD10	B55
A56	AD9	VDDQ	B56
A57	C/BE0#	AD_STB0	B57
A58	VDDQ	AD7	B58
A59	AD_STB0#	GND	B59
A60	AD6	AD5	B60
A61	GND	AD3	B61
A62	AD4	VDDQ	B62
A63	AD2	AD1	B63
A64	VDDQ	VREFCG	B64
A65	AD0		B65
A66	VREFGC		B66

UNIVERSAL AGP BUS

AGP_SBA1
AGP_SBA3
(4) AGP_SBSTB# R1 SHORTED AGP_SBSTB#_R
AGP_SBA5
AGP_SBA7
(4) AGP_WBF#

AGP_AD30
AGP_AD28
AGP_AD26
AGP_AD24
(4) AGP_ADSTB1# R5 SHORTED AGP_ADSTB1#_R
AGP_C/BE#3
AGP_AD22
AGP_AD20
AGP_AD18
AGP_AD16
(4) AGP_FRAME# R7 SHORTED AGP_FRAME#_R

(4) AGP_TRDY# R9 SHORTED AGP_TRDY#_R
(4) AGP_STOP# R11 SHORTED AGP_STOP#_R
(4) AGP_PAR AGP_PAR_R
AGP_AD15
AGP_AD13
AGP_AD11
AGP_AD9
AGP_C/BE#0
(4) AGP_ADSTB0# R12 SHORTED AGP_ADSTB0#_R
AGP_AD6
AGP_AD4
AGP_AD2
AGP_AD0

AGP_ST0
AGP_ST2
(4) AGP_RBF#
AGP_SBA0
AGP_SBA2
AGP_SBSTB_R R2 SHORTED AGP_SBSTB (4)
AGP_SBA4
AGP_SBA6

AGP_AGPCLK_R AGP_REQ# (4) R18 SHORTED AGP_AGPCLK (4)
C15 10pF DNI

AGP_AD31
AGP_AD29
AGP_AD27
AGP_AD25
AGP_ADSTB1_R R6 SHORTED AGP_ADSTB1 (4)
AGP_AD23
AGP_AD21
AGP_AD19
AGP_AD17
AGP_C/BE#2
AGP_IRDY#_R R8 SHORTED AGP_IRDY# (4)

AGP_DEVSEL#_R R10 SHORTED AGP_DEVSEL# (4)

AGP_C/BE#1
AGP_AD14
AGP_AD12
AGP_AD10
AGP_AD8
AGP_ADSTB0_R R13 SHORTED AGP_ADSTB0 (4)
AGP_AD7
AGP_AD5
AGP_AD3
AGP_AD1
AGP_AGPREF (4)

VDDP
C12 470pF DNI
R14 1K
R15 75R DNI

R16 75R DNI
R17 1K
C14 470pF DNI

AGP_VREFGC

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VDDC(+1.5/1.25V) Switching Regulator

IRF7201TR (2020005500)
for Iout > 5A (rated 7A)

Q1
IRF7201
2020005500

R61 10R

+5V
B5 60R
+PW_VDDC
C81 1.0uF
C88 470uF 4262047700

Alternative 1

+12V
C79 1.0uF

U3
Vcc / HDrv 5
Vc
SS / LDrv 3
Comp
GND / Fb 1

BOOT_VDDC
SS_VDDC
COMP_VDDC

IRU3037ACS
VDDC_IRU
Alternate part IRU3037CS

Q2
IRF7413A
2020005600

IRF7413ATR (2020005600)
for Iout > 5A (rated 12A),
lower Rds on than
IRF72201

L1 2.2uH

C87 1nf
Cc1

R67 976R 3240976000 1%
Rc1

R68 1.5K 2020005600
Rc4

Fb_VDDC

R69 1.21K DNI 3240121100
Rc3

PVDD

VDDC
C84 470uF | C440 470uF | C86 22uF | C82 22uF
Cout1

R70 1.62K 3240162100 1%
Rc2

Alternative 2

R72 10K
VDDC_ISL

U4
1 RT / VCC 14
2 OCSET / PVCC 13
3 SS / LGATE 12
4 COMP / PGND 11
5 FB / BOOT 10
6 EN / UGATE 9
7 GND / PHASE 8

R71 51K
R73 3K
+PW_VDDC
SS_VDDC
COMP_VDDC
Fb_VDDC

BOOT_VDDC

ISL6522CB
VDDC_ISL

ISL6522CB : SOIC
ISL6522CV : TSSOP

Compensation Options for VDDC Regulator

Alt. Compensation 1

This compensation circuit is simplified and will only work with the IRU3037(A) Regulator

COMP_VDDC
C805 2.2nF VDDC
Cc4
R563 27K VDDC
Rc6

Common

SS_VDDC
C806 100nF

Alt. Compensation 2

This is required for the ISL6522CB regulator, and provides maximum regulation speed for IRU3037 Regultor

COMP_VDDC
C807 33pF VDDC_ISL
Cc3
C808 10nF VDDC_ISL
Cc2
R564 15K VDDC_ISL
Rc5
Fb_VDDC

Note: Alternative Compensation Circuit 2 will only work if Rc1 is a 1k Ohm Resistor. Alternative Compensation Circuit 1 has no requirements for the divider circuit.

Cout1 470uF thru hole capacitor (P/N 4051047700) has 30mR ESR where as 470uF SMT (P/N 4262047700) capacitor has 150mR ESR. For current below 4.5A, 1 thru 470uF is enough.

*** Indicates number of vias required for the connection

Regulator for VDD_CORE/VDDC (R200 Core)

Vin =5V AGP
Vout = 1.5V
Iout = 5A MAX (load consumption)

Part	INSTALL	Compensation Circuit	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Common, and Either Alt. Compensation 1, or Alt. Compensation 2	Cc4, Rc6 Alternative 2
ISL6522CB	Alternative2	Common and Alt. Compensation 2	Alternative1

Table for IRU3037 and IRU3037A with Alt. Compensation Circuit 1

Part		Rc1	Rc2	Rc3
IRU3037	0.9V	887R 1%	DNI	1.40K 1%
	1.2V	110R 1%	DNI	1.21K 1%
	1.25V	1.00K 1%	DNI	DNI
	1.4V	511R 1%	6.49K 1%	DNI
	1.5V	1.33K 1% 511R 1%	6.49k 1% 2.43K 1%	DNI DNI
IRU3037A	0.9V	1.00K 1%	8.06K 1%	DNI
	1.2V	1.00K 1%	2.00K 1%	DNI
	1.25V	976R 1% 1.00K 1%	1.62K 1% 1.78K 1%	DNI DNI
	1.5V	1.00K 1%	1.15k 1%	DNI

Table for IRU3037, IRU3037A and ISL6522 with Alt. Compensation Circuit 2

Part		Rc1	Rc2	Rc3
IRU3037	0.9V	1.00K 1%	DNI	1.56K 1%
	1.2V	1.00K 1%	DNI	11K 1%
	1.25V	1.00K 1%	DNI	DNI
	1.5V	1.00K 1%	4.99K 1%	DNI
IRU3037A ISL6522C	0.9V	1.00K 1%	8.06K 1%	DNI
	1.2V	1.00K 1%	2.00K 1%	DNI
	1.25V	1.00K 1%	1.78K 1%	DNI
	1.5V	1.00K 1%	1.15k 1%	DNI

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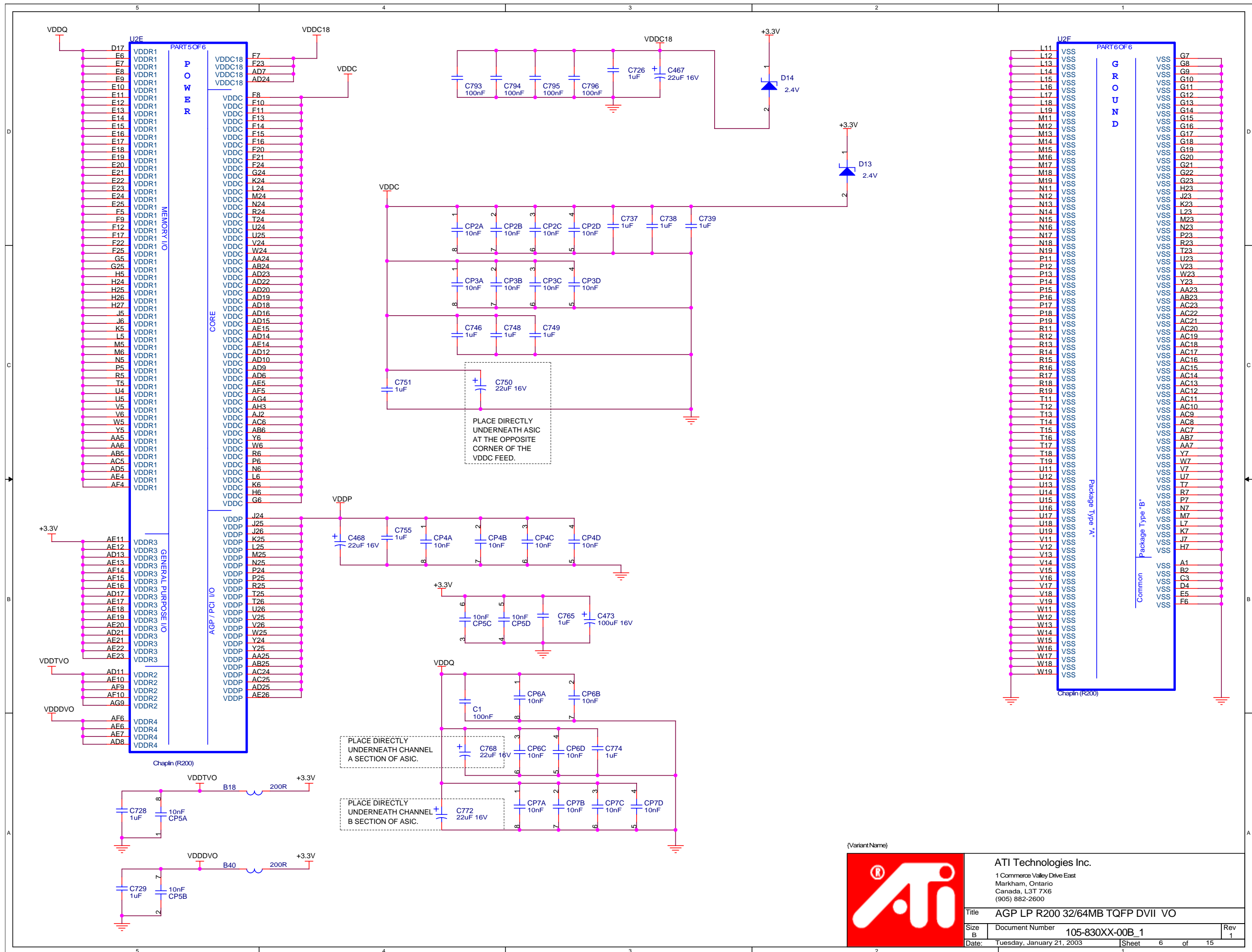1 Commerce Valley Drive East
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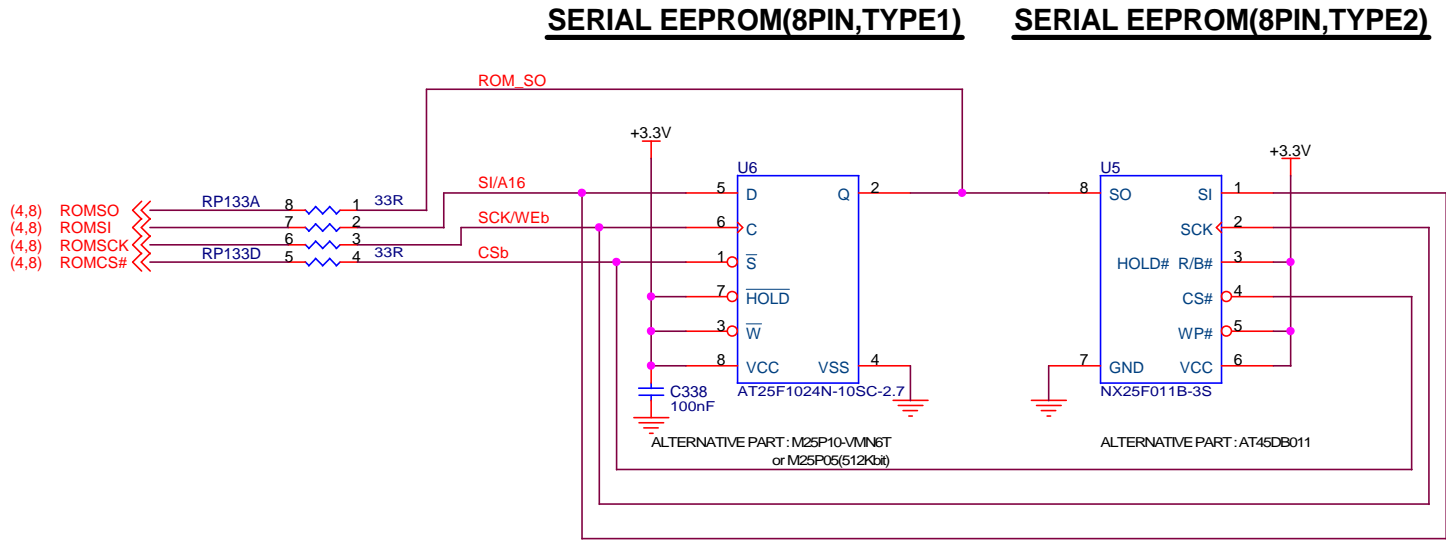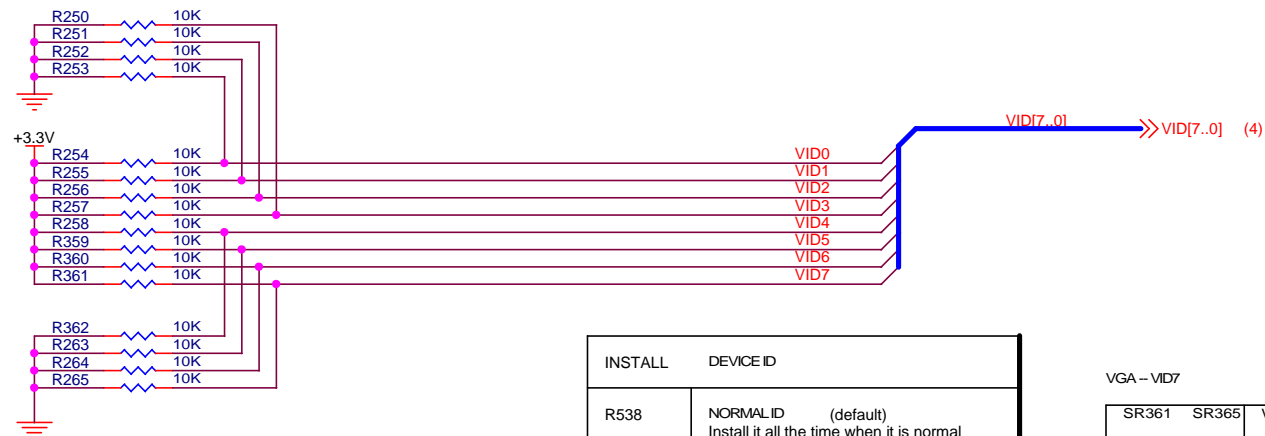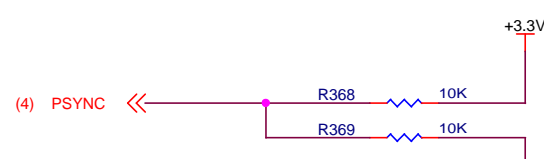(905) 882-2600

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+2.5V Regulator for Memory VDD (Core)

+3.3V
B10 60R
Q4 MTD3055V
VDD
B9 60R DNI AVDD
C105 100uF 16V
C106 100nF
C116 100nF
C114 100uF 6.3V
+12V
C115 100nF
R98 470R /.25W
R94 1.00K 1%
MREG6 AS432S
R97 2K
REG6 SC431LC5SK-1
NC NC
R95 1.00K 1%

+2.5V Regulator for VDDQ (Memory I/O)

+3.3V
B14 60R
Q7 MTD3055V
VDDQ
C122 22uF 16V
C123 100nF
C120 100nF
C121 100uF 16V
C72 100uF 16V
+12V
C124 100nF
R120 470R /.25W
Ra
R121 1.00K 1%
MREG5 AS432S
R122 2K
REG5 SC431LC5SK-1
NC NC
Rb
R123 1.00K 1%

VDDQ	Ra	Rb
2.5V	1K	1K
1.8V	681R	1.5K

+2.5V DAC AVDD

REGULATOR FOR AVDD(+2.5V)
USE ONLY IF VDD IS +3.3V

+3.3V
B8 200R
REG1
VIN VOUT
AVDD
C797 1.0uF
SHDN GND BYPASS
2.5V
C798 1.0uF
C799 470pF DNI
AVSS
AVSS

VDDQ   Vref
R125 1K 1%
R129 1K 1%
C125 100nF

REGULATOR FOR PVDD(+1.8V)

+3.3V
B12 200R
R114 15R
PVDD
AS432S
R116 681R 1%
REG3
MREG3
R118 1.5K 1%
NC NC
SC431LC5SK-1
PVSS

REGULATOR FOR MPVDD(+1.8V)

+3.3V
B13 200R
R115 33R
MPVDD
AS432S
R117 681R 1%
REG4
MREG4
R119 1.5K 1%
NC NC
SC431LC5SK-1
MPVSS

+1.8V Regulator for VDDC18 (Core Transform)

Vin = 3.3V   **Vout = 1.85V 0.8A MAX**

+3.3V
B11 60R
REG2 LT1117CST
VDDC18
Electrolytic caps for low frequencies between regulator and receiver plane
C109 100uF 6.3V
C110 1.0uF
IN OUT
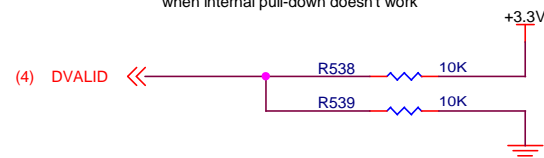ADJ CASE
R99 1.5K 1%
C108 100uF 6.3V
R103 681R 1%

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Note1 : PVSS goes to ground plan directly through its own dedicated via. No connection with other VSS..

Note2 : Seperate vias for AVSSQ and AVSSN to ground plane

Note3 : AVDD/AVSS power need to use a pair of short traces (20mil at least) and direct to link to AVDD & AVSS balls, the ground return point should be near the ground trace start point. and the Rset resistor ground point should link to AVSS trace

INSTALL ALL 1uF CAPS(DNI) ,WHEN C339,C340,SC526 AND C343 ARE ALUMINUM CAPS

Crystal Circuit

Oscillator Circuit

CLOCK SOURCE SELECTION

	XTAL/OSC.	INSTALL	NOT INSTALL
RAGE6 alone	CRYSTAL	R348,R354,R346 Crystal Circuit(27M)	R357,R349,R352 Oscillator circuit
	OSC (OPTION 1)	R354 Oscillator circuit(27M)	R348,R357,R349,R352,R346 Crystal Circuit
	OSC (OPTION 2)	R348,R346(0R) Oscillator circuit(27M)	R354,R357,R349,R352 Crystal Circuit
RAGE6 & Rage Theater	CRYSTAL	R357,R349,R346,R352 Crystal Circuit(27M)	R348,R354 Oscillator circuit
	OSC (OPTION 1)	R354,R352 Oscillator circuit(27M)	R348,R357,R354,R346 Crystal Circuit
	OSC (OPTION 2)	R348,,R346(0R),R349 Oscillator circuit(27M)	R354,R357,R352 Crystal Circuit

U2C
PART 3 OF 6
VIDEO & MULTIMEDIA

Chaplin (R200)

U2D
PART 4 OF 6
AGP / PCI INTERFACE

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U2A — MEMORY CHANNEL A — Chaplin (R200)

U2B — MEMORY CHANNEL B — Chaplin (R200)

VDDR(MEMORY I/O)	MEMVMODE1	MEMVMODE
+3.3V	HIGH	HIGH
+2.5V	LOW	HIGH
+1.8V	HIGH	LOW

Note4 : The MPVDD regulator will be moved closer to the ASIC and its ground terminal will be bussed to the ASIC as MPVSS

DDR TYPE	INSTALL	DNI
+3.3V VDD	R106,R107,R108	+2.5V Regulator for Memory Core VDD
+2.5V VDD	+2.5V Regulator for Memory Core VDD	R106,R107,R108

R106 0R   R107 0R   R108 0R
+3.3V +3.3V +3.3V   VDD

R363 4.7K
R364 4.7K
R365 4.7K
R366 4.7K
R244 47R

C531 100nF
C533 100nF
C532 22uF 16V
C347 22uF 16V
C534 100nF
C535 1uF
C787 100nF
C788 1uF
C789 100nF
C790 1uF

VDDQ Vref VDDC18 MPVDD MPVSS

{Variant Name}

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U2E — PART 5 OF 6 — POWER — Chaplin (R200)

MEMORY I/O — CORE — AGP / PCI I/O — GENERAL PURPOSE I/O

U2F — PART 6 OF 6 — GROUND — Package Type "A" — Package Type "B" — Common — Chaplin (R200)

PLACE DIRECTLY UNDERNEATH ASIC AT THE OPPOSITE CORNER OF THE VDDC FEED.

PLACE DIRECTLY UNDERNEATH CHANNEL A SECTION OF ASIC.

PLACE DIRECTLY UNDERNEATH CHANNEL B SECTION OF ASIC.

C793 100nF, C794 100nF, C795 100nF, C796 100nF
C726 1uF, C467 22uF 16V
D14 2.4V, D13 2.4V
+3.3V, VDDC18, VDDC

CP2A 10nF, CP2B 10nF, CP2C 10nF, CP2D 10nF, C737 1uF, C738 1uF, C739 1uF
CP3A 10nF, CP3B 10nF, CP3C 10nF, CP3D 10nF
C746 1uF, C748 1uF, C749 1uF
C751 1uF, C750 22uF 16V

VDDP
C468 22uF 16V, C755 1uF, CP4A 10nF, CP4B 10nF, CP4C 10nF, CP4D 10nF

+3.3V
CP5C 10nF, CP5D 10nF, C765 1uF, C473 100uF 16V

VDDQ
C1 100nF, CP6A 10nF, CP6B 10nF
C768 22uF 16V, CP6C 10nF, CP6D 10nF, C774 1uF
C772 22uF 16V, CP7A 10nF, CP7B 10nF, CP7C 10nF, CP7D 10nF

VDDQ — VDDC18 — VDDC
+3.3V — VDDTVO — VDDDVO

VDDTVO, B18, 200R, +3.3V
C728 1uF, CP5A 10nF

VDDDVO, B40, 200R, +3.3V
C729 1uF, CP5B 10nF

{Variant Name}

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BIOS

SERIAL EEPROM(8PIN,TYPE1)　　SERIAL EEPROM(8PIN,TYPE2)

ROM_SO

+3.3V

U6
SI/A16   5 D   Q 2
SCK/WEb   6 C
CSb   1 S̄
            7 HOLD
            3 W̄
            8 VCC   VSS 4
AT25F1024N-10SC-2.7

C338
100nF

ALTERNATIVE PART : M25P10-VMN6T
or M25P05(512Kbit)

+3.3V

U5
8 SO   SI   1
             SCK 2
HOLD# R/B# 3
             CS# 4
             WP# 5
7 GND   VCC 6
NX25F011B-3S

ALTERNATIVE PART : AT45DB011

(4,8) ROMSO   RP133A 8   1 33R
(4,8) ROMSI   7   2
(4,8) ROMSCK   6   3
(4,8) ROMCS#   RP133D 5   4 33R

{Variant Name}

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STRAPS

AGPFBSKEW – VID(1:0)

SR355	SR352	SR354	SR353	
DNI	10K	DNI	10K	DEFAULT
X	X	X	X	TBD

X1CLK_SKEW – VID(3:2)

SR357	SR350	SR356	SR351	
DNI	10K	DNI	10K	DEFAULT
X	X	X	X	TBD

BUSCFG -- VID(6:4)

BUSTYPE_2		BUSTYPE_1		BUSTYPE_0		
VID6		VID5		VID4		
SR360	SR364	SR359	SR363	SR358	SR362	DESCRIPTION
DNI	10K	DNI	10K	DNI	10K	AGP 4X, PLL CLK, IDSEL = AD16 (Default)
DNI	10K	DNI	10K	10K	DNI	AGP 4X, PLL CLK, IDSEL = AD17
DNI	10K	10K	DNI	DNI	10K	AGP 1X/2X, PLL CLK, IDSEL = AD16
DNI	10K	10K	DNI	10K	DNI	AGP 1X/2X, PLL CLK, IDSEL = AD17
10K	DNI	DNI	10K	DNI	10K	PCI 66MHz, PLL CLK
10K	DNI	DNI	10K	10K	DNI	PCI 33MHz, 3.3V, REF CLK
10K	DNI	10K	DNI	DNI	10K	AGP 1X, REF CLK, IDSEL = AD16
10K	DNI	10K	DNI	10K	DNI	AGP 1X, REF CLK, IDSEL = AD17
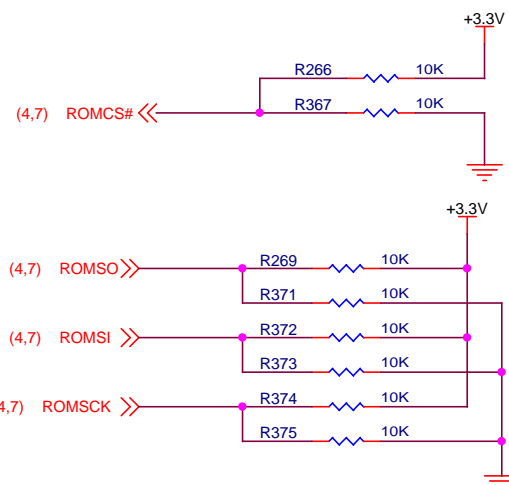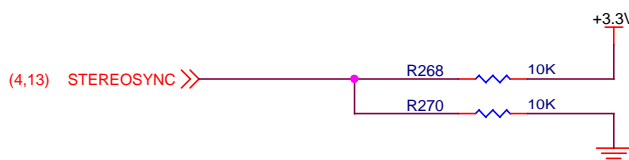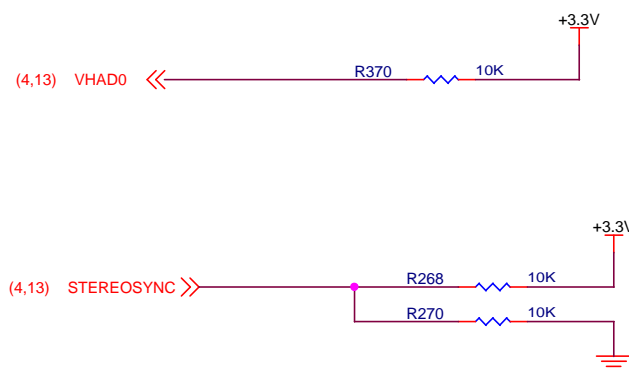
SR367	SR369	SR372	SR374	ROMIDCFG[3:0]
INSTALL	DNI	DNI	DNI	No ROM, CHG ID = 00
INSTALL	DNI	INSTALL	DNI	No ROM, CHG ID = 01
INSTALL	INSTALL	INSTALL	DNI	No ROM, CHG ID = 10
INSTALL	INSTALL	INSTALL	DNI	No ROM, CHG ID = 11
DNI	DNI	DNI	DNI	Parallel ROM on TVO (default)
DNI	DNI	DNI	INSTALL	Serial AT25F1024, ID's from ROM
DNI	DNI	INSTALL	DNI	Serial AT45DB011, ID's from ROM
DNI	DNI	INSTALL	INSTALL	Serial ST M25P05/ M25P10, ID's from ROM
DNI	INSTALL	DNI	DNI	RESERVED
DNI	INSTALL	INSTALL	DNI	Parallel ROM on DVO

* Install SR366,SR371,SR373 and SR375 when internal pull-up/down don't work properly.

Install SR350-SR353 and SR362-SR365
when internal pull-down doesn't work

INSTALL	DEVICE ID
R538	NORMAL ID (default) Install it all the time when it is normal device ID
R539	WORKSTATION ID

INSTALL	ID_DISABLE
R369	NORMAL OPERATION (default) Install it when internal pull-down doesn't work
R368	CHIP SHUTS DOWN

VIP – VHAD0

INSTALL	VIP DEVICE
R370	NO SLAVE VIP (DEFAULT) Install it when internal pull-up doesn't work
	SLAVE VIP VIP device will drive low when VIP is attached.

INSTALL	INTERRUPT
SR370	ENABLE (Default) Install it when internal pull-down doesn't work
SR368	DISABLE

VGA – VID7

SR361	SR365	VGA_DISABLE
DNI	10K	ENABLE (DEFAULT)
10K	DNI	DISABLE

R250 10K
R251 10K
R252 10K
R253 10K

+3.3V

R254 10K VID0
R255 10K VID1
R256 10K VID2
R257 10K VID3
R258 10K VID4
R359 10K VID5
R360 10K VID6
R361 10K VID7

VID[7..0]   VID[7..0]   (4)

R362 10K
R263 10K
R264 10K
R265 10K

(4) DVALID   R538 10K   R539 10K

(4) PSYNC   R368 10K   R369 10K

(4,13) VHAD0   R370 10K

(4,13) STEREOSYNC   R268 10K   R270 10K

+3.3V

R266 10K
(4,7) ROMCS#   R367 10K   ROMIDCFG3

+3.3V

(4,7) ROMSO   R269 10K   R371 10K   ROMIDCFG2
(4,7) ROMSI   R372 10K   R373 10K   ROMIDCFG1
(4,7) ROMSCK   R374 10K   R375 10K   ROMIDCFG0

+5V   +12V

Install for 5V Fan   R559 0R
R560 0R   Install for 12V Fan

ACTIVE HEATSINK

H1
HEATSINK

R551 100K
C804 10uF 16V DNI
JU1
1 2 3
Header 1X3

THERM

R552 100K

C800 10nF

R553 10K

R555 270R

DUAL FOOTPRINT
MJU1
1 2

U13
1 VT1   VDD 8
2 CF   OUT 7
3 VSLP   OTF 6
4 GND   VT2 5
MC502BM

Q13
MMBT2222ALT1
R558 0R

C803 10nF   R554 5.11K   C801 10nF   C802 0.1uF

ATI Technologies Inc.

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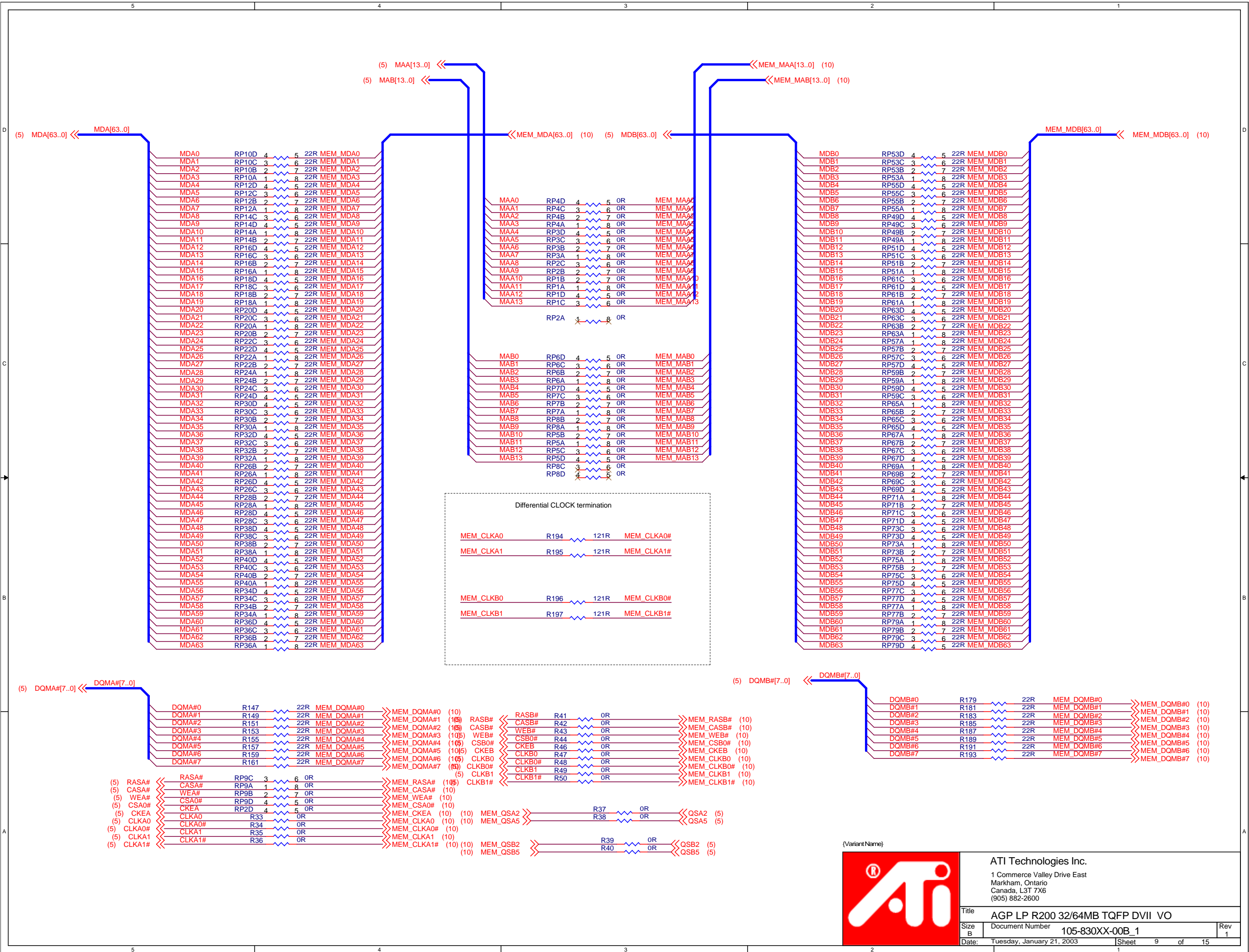Canada, L3T 7X6
(905) 882-2600

Title: AGP LP R200 32/64MB TQFP DVII VO
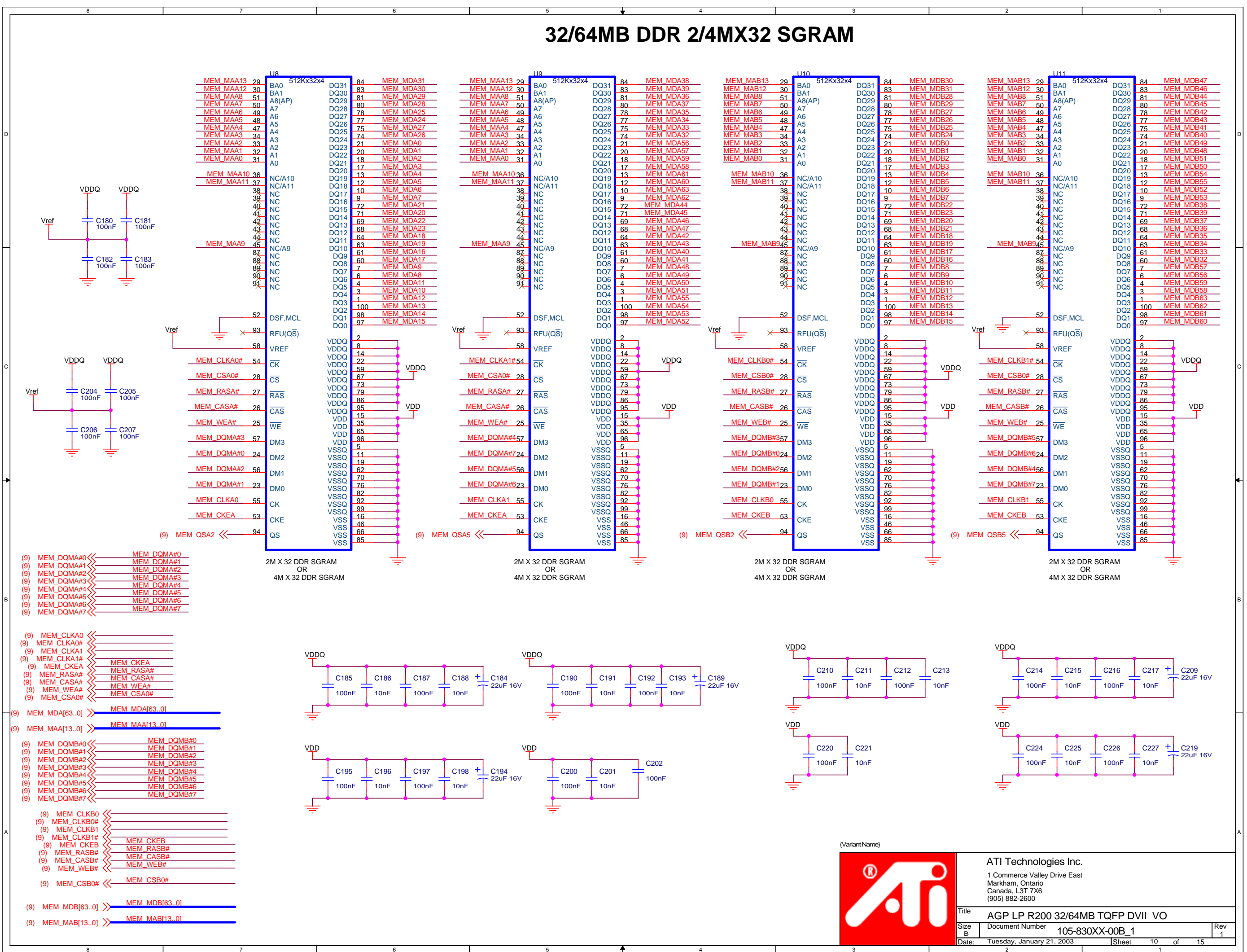
Size: B
Document Number: 105-830XX-00B_1
Rev: 1

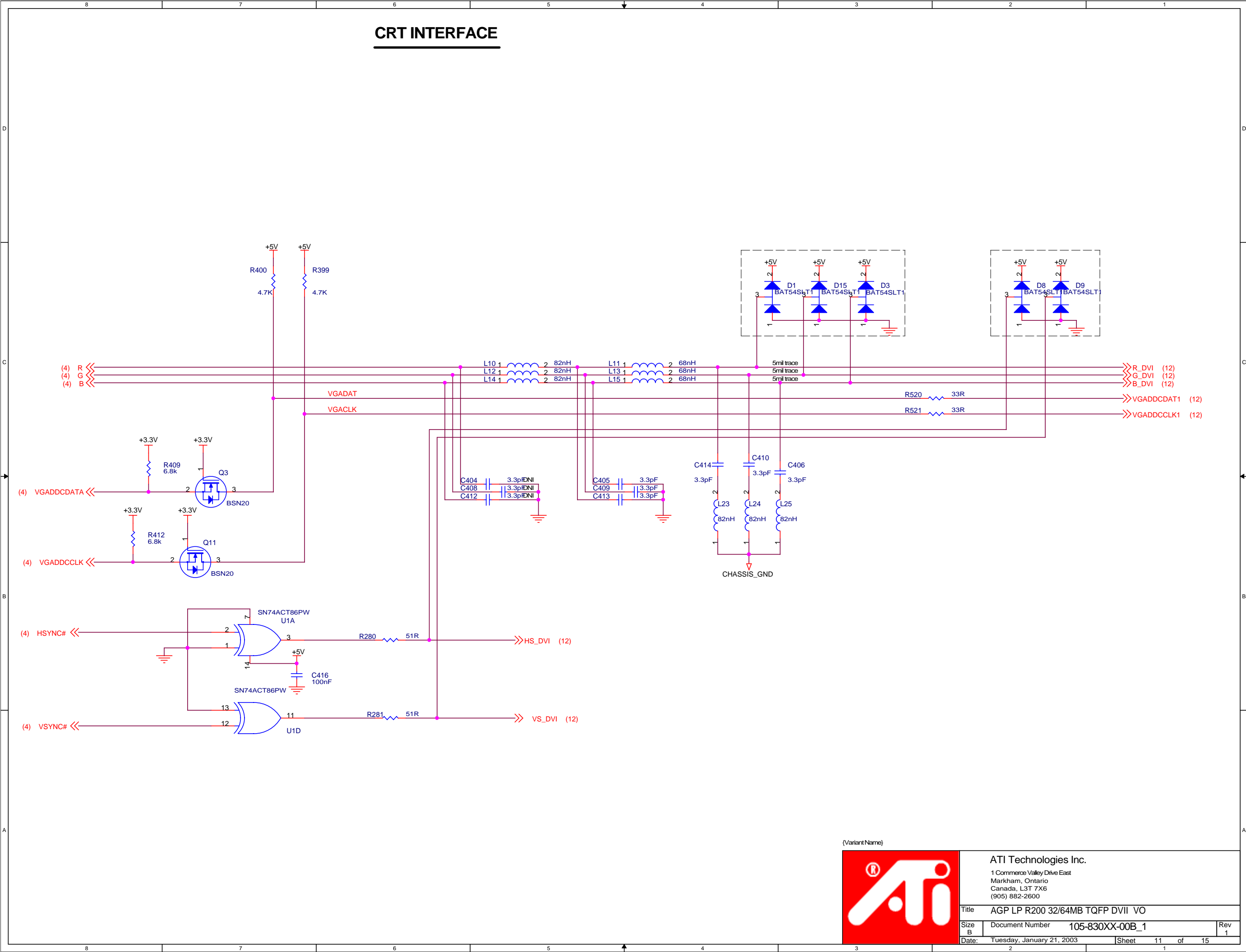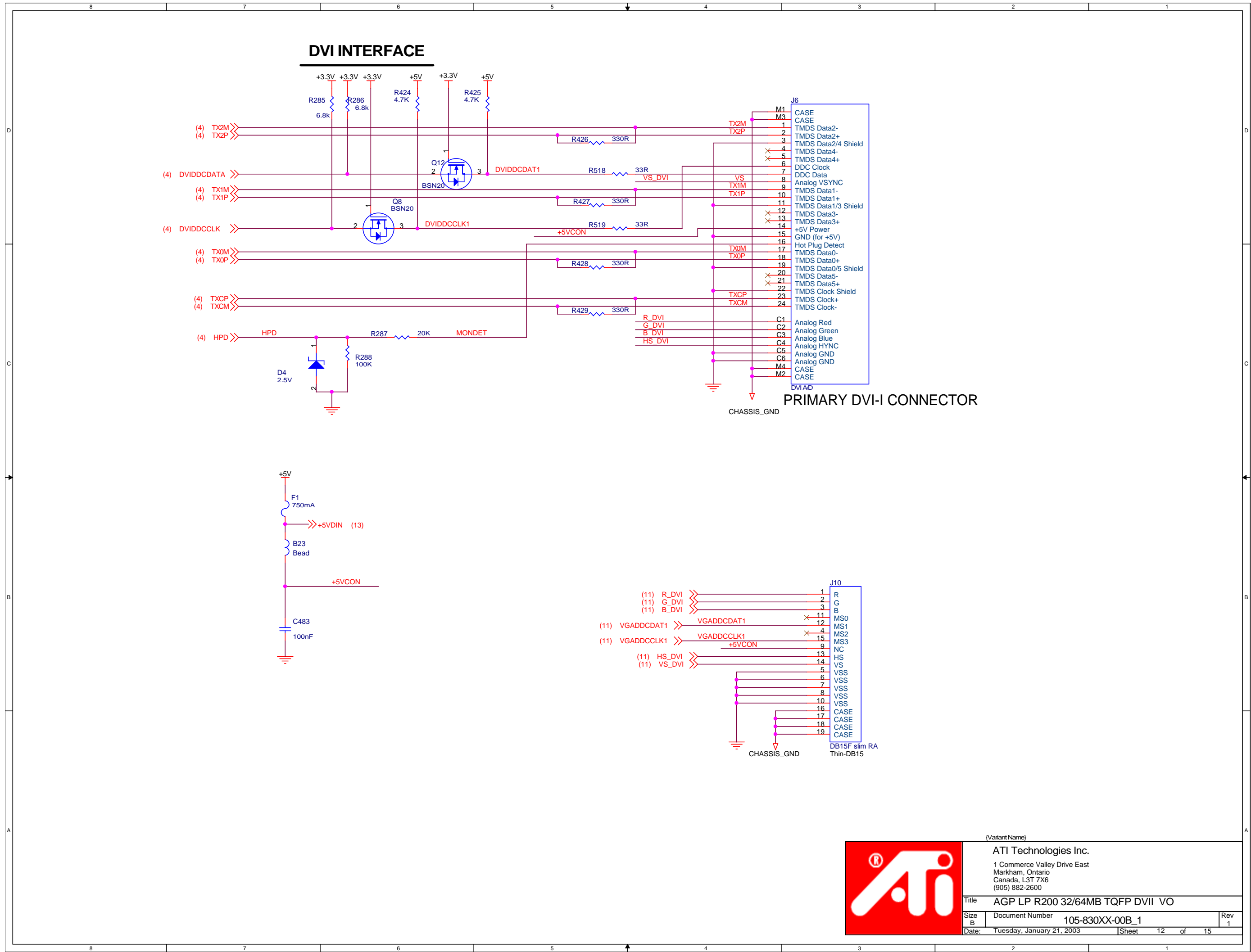Date: Tuesday, January 21, 2003
Sheet 9 of 15

32/64MB DDR 2/4MX32 SGRAM

2M X 32 DDR SGRAM OR 4M X 32 DDR SGRAM

CRT INTERFACE

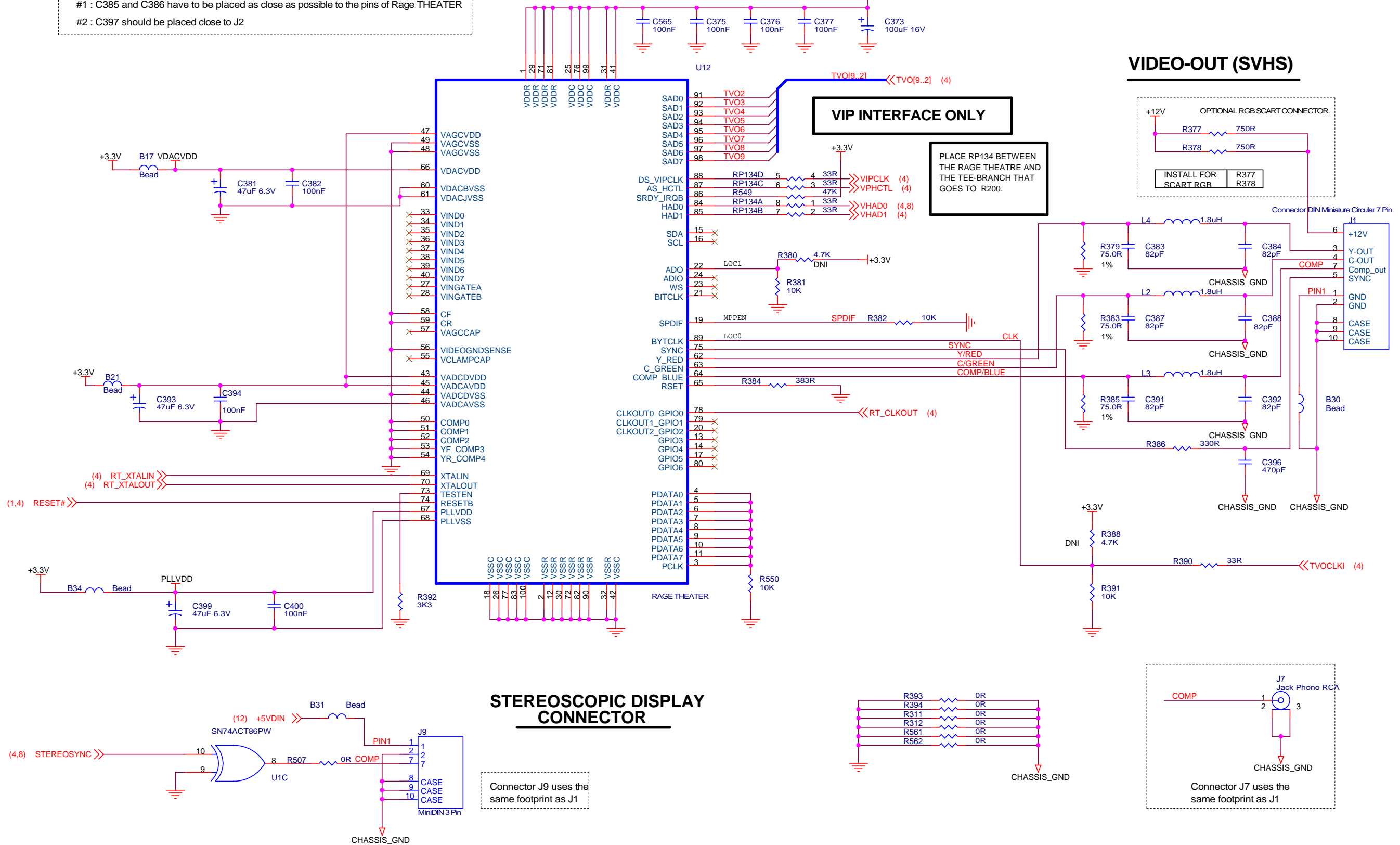|	
{Variant Name}	
	ATI Technologies Inc.
	1 Commerce Valley Drive East
	Markham, Ontario
	Canada, L3T 7X6
	(905) 882-2600
Title	AGP LP R200 32/64MB TQFP DVII VO
Size B	Document Number 105-830XX-00B_1	Rev 1
Date: Tuesday, January 21, 2003	Sheet 11 of 15

DVI INTERFACE

PRIMARY DVI-I CONNECTOR

+3.3V +3.3V +3.3V +5V +3.3V +5V

R285 6.8k
R286 6.8k
R424 4.7K
R425 4.7K

J6

Pin	Signal
M1	CASE
M3	CASE
1	TMDS Data2-
2	TMDS Data2+
3	TMDS Data2/4 Shield
4	TMDS Data4-
5	TMDS Data4+
6	DDC Clock
7	DDC Data
8	Analog VSYNC
9	TMDS Data1-
10	TMDS Data1+
11	TMDS Data1/3 Shield
12	TMDS Data3-
13	TMDS Data3+
14	+5V Power
15	GND (for +5V)
16	Hot Plug Detect
17	TMDS Data0-
18	TMDS Data0+
19	TMDS Data0/5 Shield
20	TMDS Data5-
21	TMDS Data5+
22	TMDS Clock Shield
23	TMDS Clock+
24	TMDS Clock-
C1	Analog Red
C2	Analog Green
C3	Analog Blue
C4	Analog HYNC
C5	Analog GND
C6	Analog GND
M4	CASE
M2	CASE

DVI-AD

(4) TX2M
(4) TX2P
R426 330R TX2M / TX2P

(4) DVIDDCDATA
Q12 BSN20 DVIDDCDAT1 R518 33R VS_DVI / VS

(4) TX1M
(4) TX1P
Q8 BSN20
R427 330R TX1M / TX1P

(4) DVIDDCCLK
DVIDDCCLK1 R519 33R
+5VCON

(4) TX0M
(4) TX0P
R428 330R TX0M / TX0P

(4) TXCP
(4) TXCM
R429 330R TXCP / TXCM

R_DVI
G_DVI
B_DVI
HS_DVI

(4) HPD HPD R287 20K MONDET

D4 2.5V
R288 100K

CHASSIS_GND

+5V
F1 750mA
>> +5VDIN (13)
B23 Bead
+5VCON
C483 100nF

J10

Pin	Signal
1	R
2	G
3	B
11	MS0
12	MS1
4	MS2
15	MS3
9	NC
13	HS
14	VS
5	VSS
6	VSS
7	VSS
8	VSS
10	VSS
16	CASE
17	CASE
18	CASE
19	CASE

(11) R_DVI
(11) G_DVI
(11) B_DVI
(11) VGADDCDAT1 VGADDCDAT1
(11) VGADDCCLK1 VGADDCCLK1
+5VCON
(11) HS_DVI
(11) VS_DVI

DB15F slim RA
Thin-DB15

CHASSIS_GND

Layout Guide line of THEATER

#1 : C385 and C386 have to be placed as close as possible to the pins of Rage THEATER

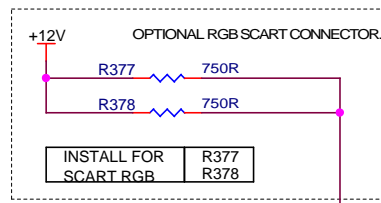#2 : C397 should be placed close to J2

+3.3V
B33 Bead

C565 100nF   C375 100nF   C376 100nF   C377 100nF   C373 100uF 16V

U12

VDDR VDDR VDDR VDDR VDDC VDDC VDDC VDDR VDDR
1 29 71 81 25 76 99 31 41

VIDEO-OUT (SVHS)

TVO[9..2]   TVO[9..2]   (4)

VIP INTERFACE ONLY

SAD0 91 TVO2
SAD1 92 TVO3
SAD2 93 TVO4
SAD3 94 TVO5
SAD4 95 TVO6
SAD5 96 TVO7
SAD6 97 TVO8
SAD7 98 TVO9

OPTIONAL RGB SCART CONNECTOR.
+12V
R377 750R
R378 750R

INSTALL FOR SCART RGB   R377 R378

+3.3V
B17 VDACVDD Bead
C381 47uF 6.3V   C382 100nF

47 VAGCVDD
49 VAGCVSS
48 VAGCVSS
66 VDACVDD
60 VDACBVSS
61 VDACJVSS

DS_VIPCLK 88 RP134D 5   4 33R VIPCLK (4)
AS_HCTL   87 RP134C 6   3 33R VPHCTL (4)
SRDY_IRQB 86 R549   47K
HAD0   84 RP134A 8   1 33R VHAD0 (4,8)
HAD1   85 RP134B 7   2 33R VHAD1 (4)

+3.3V

PLACE RP134 BETWEEN THE RAGE THEATRE AND THE TEE-BRANCH THAT GOES TO R200.

Connector DIN Miniature Circular 7 Pin

33 VIND0
34 VIND1
35 VIND2
36 VIND3
37 VIND4
38 VIND5
39 VIND6
40 VIND7
27 VINGATEA
28 VINGATEB

SDA 15
SCL 16

ADO   22   LOC1   R380 4.7K   DNI   +3.3V
ADIO 24   R381 10K
WS   23
BITCLK 21

L4 1.8uH
R379 75.0R 1%   C383 82pF   C384 82pF   COMP
CHASSIS_GND

J1
6 +12V
3 Y-OUT
4 C-OUT
7 Comp_out
5 SYNC
1 GND
2 GND
8 CASE
9 CASE
10 CASE

58 CF
59 CR
57 VAGCCAP
56 VIDEOGNDSENSE
55 VCLAMPCAP

SPDIF 19   MPPEN   SPDIF R382 10K

PIN1

+3.3V
B21 Bead
C393 47uF 6.3V   C394 100nF

43 VADCDVDD
45 VADCAVDD
44 VADCDVSS
46 VADCAVSS

BYTCLK 89   LOC0
SYNC   75   SYNC   CLK
Y_RED   62   Y/RED
C_GREEN 63   C/GREEN
COMP_BLUE 64   COMP/BLUE
RSET   65   R384 383R

L2 1.8uH
R383 75.0R 1%   C387 82pF   C388 82pF
CHASSIS_GND

50 COMP0
51 COMP1
52 COMP2
53 YF_COMP3
54 YR_COMP4

CLKOUT0_GPIO0 78
CLKOUT1_GPIO1 79
CLKOUT2_GPIO2 20
GPIO3 13
GPIO4 14
GPIO5 17
GPIO6 80

RT_CLKOUT (4)

L3 1.8uH
R385 75.0R 1%   C391 82pF   C392 82pF
R386 330R
CHASSIS_GND

B30 Bead

(4) RT_XTALIN
(4) RT_XTALOUT

69 XTALIN
70 XTALOUT
73 TESTEN
74 RESETB
67 PLLVDD
68 PLLVSS

(1,4) RESET#

PDATA0 4
PDATA1 5
PDATA2 6
PDATA3 7
PDATA4 8
PDATA5 9
PDATA6 10
PDATA7 11
PCLK   3

C396 470pF
CHASSIS_GND   CHASSIS_GND

+3.3V

+3.3V
B34 Bead   PLLVDD
C399 47uF 6.3V   C400 100nF

R392 3K3

VSSC VSSC VSSC VSSC VSSC   VSSR VSSR VSSR VSSR VSSR   VSSR VSSC
18 26 77 83 100   2 12 30 72 82   90 32 42

RAGE THEATER

R550 10K

DNI
R388 4.7K

R390 33R   TVOCLKI (4)

R391 10K

STEREOSCOPIC DISPLAY CONNECTOR

(12) +5VDIN
B31 Bead
SN74ACT86PW
J9
PIN1 1
1
2
2
7
7

(4,8) STEREOSYNC
10
9
8 R507 0R COMP
U1C

8 CASE
9 CASE
10 CASE
MiniDIN 3 Pin

Connector J9 uses the same footprint as J1

CHASSIS_GND

R393 0R
R394 0R
R311 0R
R312 0R
R561 0R
R562 0R

CHASSIS_GND

J7
Jack Phono RCA
COMP
1
2
3

Connector J7 uses the same footprint as J1

CHASSIS_GND

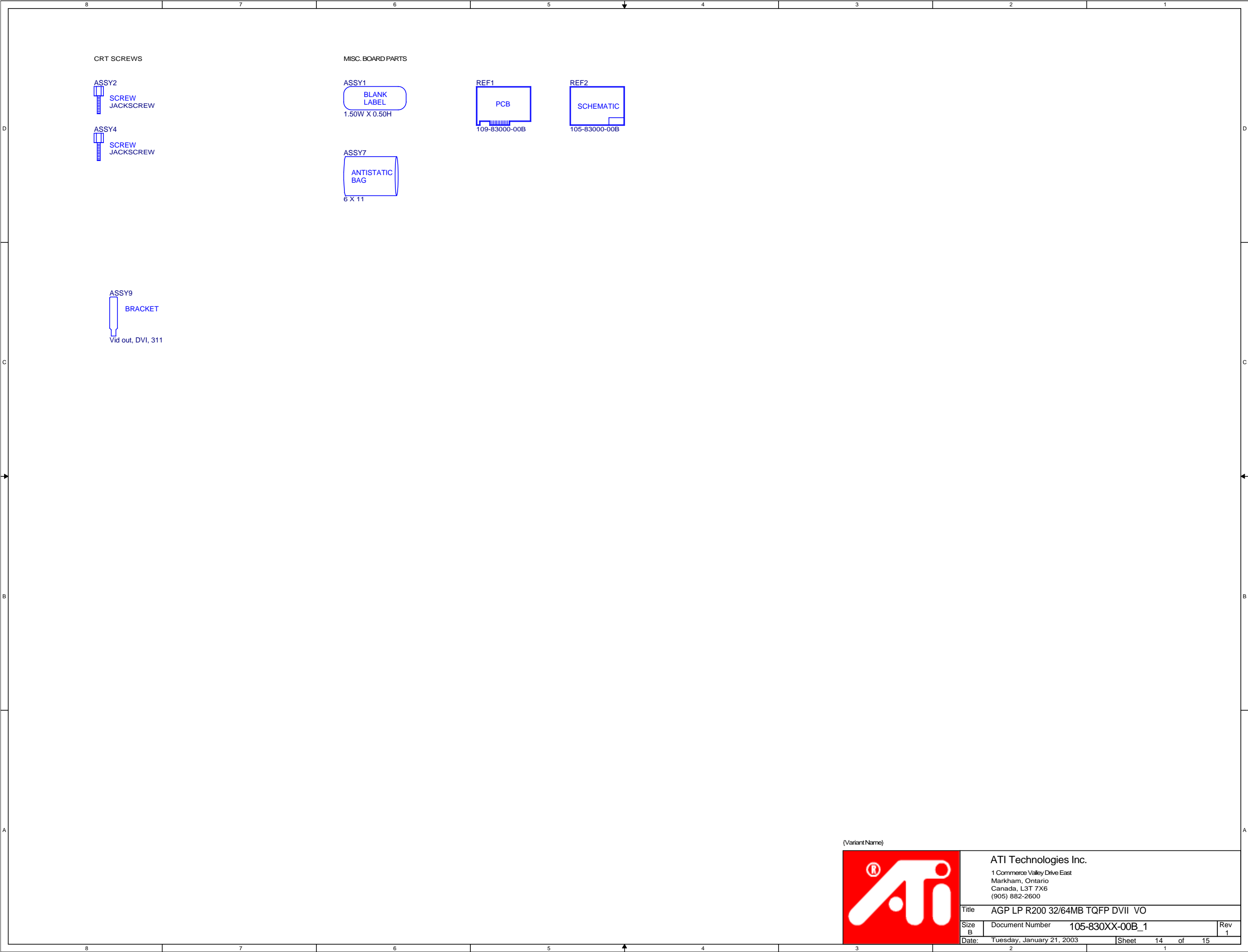|	Install	DNI
VIDEO-OUT(SVHS)	J1, B30, R508	J9, B31, R507
STEREOSCOPIC IMAGE	J9, B31, R507	J1, B30, R508

{Variant Name}

ATI Technologies Inc.
1 Commerce Valley Drive East
Markham, Ontario
Canada, L3T 7X6
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Title AGP LP R200 32/64MB TQFP DVII VO

Size B
Document Number 105-830XX-00B_1
Rev 1

Date: Tuesday, January 21, 2003   Sheet 13 of 15

CRT SCREWS

MISC. BOARD PARTS

ASSY2
SCREW
JACKSCREW

ASSY4
SCREW
JACKSCREW

ASSY1
BLANK
LABEL
1.50W X 0.50H

ASSY7
ANTISTATIC
BAG
6 X 11

REF1
PCB
109-83000-00B

REF2
SCHEMATIC
105-83000-00B

ASSY9
BRACKET
Vid out, DVI, 311

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Title		Schematic No.	Date:
AGP LP R200 32/64MB TQFP DVII VO		**105-830XX-00B_1**	**Tuesday, January 21, 2003**

REVISION HISTORY

Rev **1**

Sch Rev	PCB Rev	Date	REVISION DESCRIPTION
0	A	06/25/01	PROTOTYPE I.i.
1	B	05/10/02	1. Changes for MPVDD and PVDD regulator to decrease load on +5V rail. 2.Changed the circuitry for speed controlled fan to allow +12V fan option. 3.Added brackets. 4. Changed VDDC and VDDC1.8 regulators