



TitleAGP R300 128MB BGA DVII VGA VO

Schematic No.105-942XX-30_11

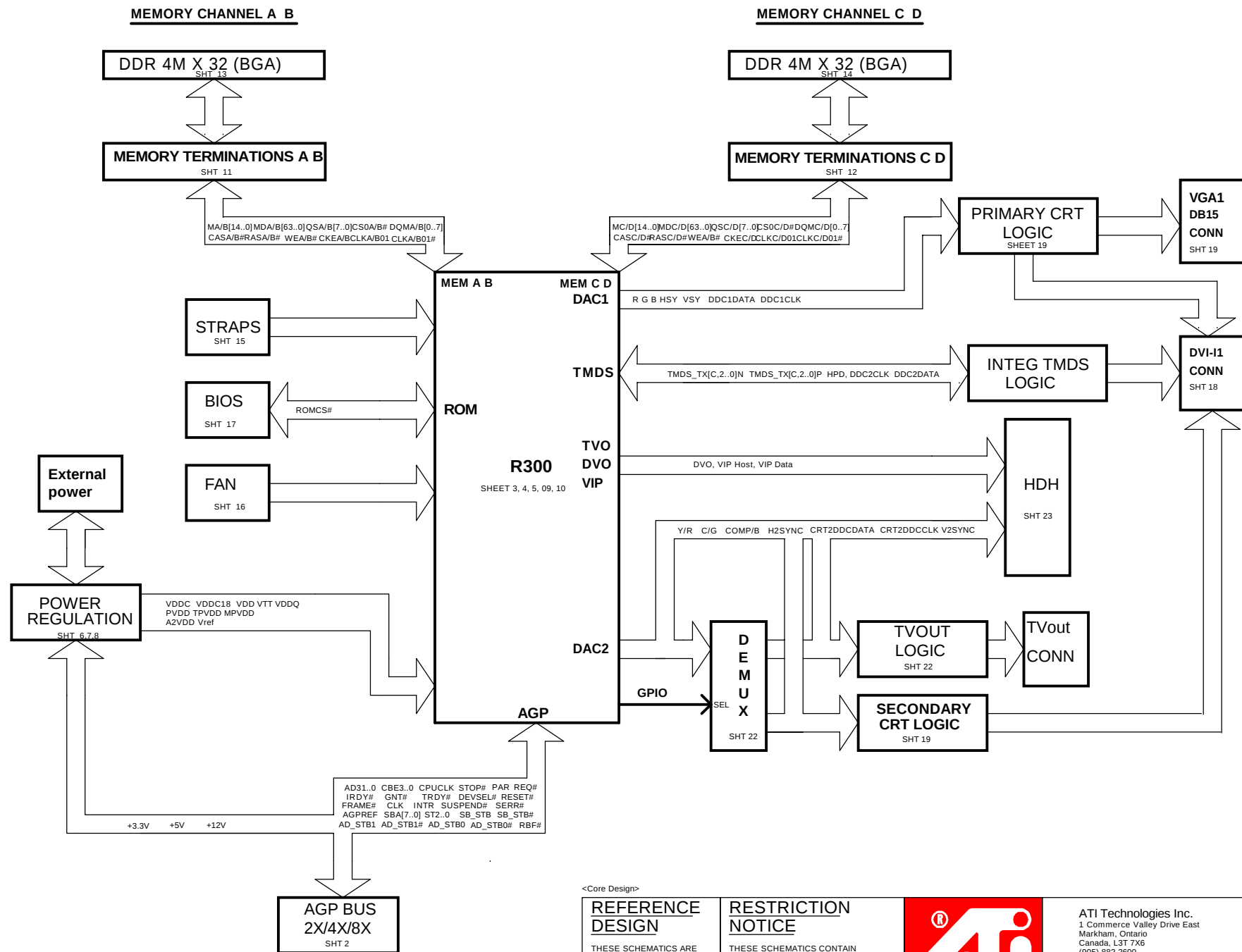
Date:Tuesday, October 01, 2002

REVISION HISTORY

Rev11

Sch Rev	PCB Rev	Date	REVISION DESCRIPTION
6	11	07/26/02	PRODUCTION RELEASE IIII PCB silkscreen update only. No schematic changes.
7	12	08/19/02	PRODUCTION RELEASE IV PCB silkscreen update only. No schematic changes. 1. Rev letter changed from 109-94200-11 to 109-94200-12 2. Remove CGND flood on L1 and L6 for MJ4.18
8	20	08/24/02	PRODUCTION RELEASE V Sheet 1: Added traces to hijack circuit (sheet 24), AGP_TRDY#_R, and AGP_STOP#_R. Removed R12. Sheet 6: Added R938 and R939 for selection of either 12V or 5V for Vtt regulator. Sheet 7: Added R936 and R937 for selection of either 12V or 5V for MVDDC regulator. Sheet 8: Added R934 and R935 for selection of either 12V or 5V for MVDDQ regulator. Sheet 24: Added Hijack Circuit to compensate for R300 cold boot issues.
9	30A	09/06/02	PROTOTYPE IV Sheet 1: Added C1127. Sheet 2: Added trace 8X_DET# to hijack circuit (sheet 24). Sheet 6: Added C762 to Vc pin of Vtt regulator. Sheet 7: Added C763 to 12V for MVDDC regulator. Added R954 and C764 to low gate of Q8B. Sheet 8: Added C765 to Vc pin of MVDDQ regulator. Sheet 24: Changed Hijack Circuit to compensate for R300 cold boot issues.
10	30B	09/18/02	PROTOTYPE V PCB silkscreen update. Changed some component location in order to shorten the AGP_CLK length after R946 resistor. No schematic changes.
11	30	09/26/02	PRODUCTION RELEASE VI Sheet 6: Added R1552 between pins 2 and 3 of VDDC regulator.

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Sch Rev	PCB Rev	Date	REVISION DESCRIPTION								
0	00A		PROTOTYPE I.i.								
1	00B		PROTOTYPE I.ii. BASED ON 109-94200-00A. Sheet 2: Added C731 to input 2 of U2 to provide RC circuit for RESET. Sheet 3: Added MOSFET Q19 to AGPREF pin of the ASIC to disconnect VREF from the motherboard during RESET time. Replaced values for R39 (180R) and R40 (68R) Sheet 4: Added C738 to TPVDD. Sheet 6: Added header JU2 , capacitor C101, C739,C737 for external +5V power source, B18 connected to external +5V, added C732 to the output of the core regulator. Added R910, R911. Replaced values for Q3, Q4, L1, L2, R76, R89, R77, R90, C86, C92. Removed diodes D4, D5. Sheet 7: Added C734, and C736. Replaced internal +12V with external 12V. Replaced C120 with the bigger value 470uF. Removed C123, C124. Removed resistor R112 from U48-6 to 12V, that is not used. Added option to short one diode in D6 with R112. Added diode D24 to provide +12v power to MVDDC regulator when external power is not connected. Sheet 8: Regulator circuit for VDDC_CT replaced with one regulator. Changed source voltage for PVDD, and TPVDD regulators from +5V to +3.3V. Sheet 9: Added resistors for selection between 4MX32 and 8MX32 memories. Sheet 10: Added resistors for selection between 4MX32 and 8MX32 memories. Sheet 11: Connected address lines MAA14 and MAB14 . Sheet 12: Connected address lines MAC14 and MAD14 . Sheet 13: Added MAA14, MAB14 as chip selects for Hynix 8MX32 memory. Sheet 14: Added MAC14, MAD14 as chip selects for Hynix 8MX32 memory. Sheet 15: Added circuit for detection of external power supply connection. Sheet 16: Added fail-safe circuit for fan control, and connected internal thermistor from ASIC, VTERM1 is connected through the 0R resistor, R912, to have an option to use A11. Removed 3-pin header. Sheet 21: Added pull down resistor R877 on VSYNC_DAC2 for TVout filter enable. Sheet 22: Added resistor R878 on connector J7. Removed MOSFET switch, and replaced with demultiplexer U96. Added also resistors to bridge the demultiplexer. Sheet 23: Change GPIO used for Si168 reset to DVALID.								
2	00C	06/28/2002	PROTOTYPE I.iii BASED ON 109-94200-00B. Sheet 3: Replaced Q2 and Q1 with different type 2N7002E. Sheet 6: Added capacitors C740, C742 to the drains of the Q3A and Q5A. Added diode D25 to the second phase of the core regulator. Changed resistors values R94, and R98. Sheet 7: Added capacitors C743, C744, C745, C746 and C747. Changed values for R114 and R117. Sheet 8: Added capacitors C748. Changed values for R124, R131, R130, R126, R143, R139 and C133. Sheet 9: Changed value for R138 to 75R. Sheet10: Changed value for R774 to 75R. Sheet19: Changed values for R800 and R803 to 0R. Replaced L11, L13, and L15 with R26, R27 and R28 respectively 0R. Added capacitors for HSYNC and VSYNC C749, and C750. Sheet20: Added capacitors at HSYNC and VSYNC, at C751, C752. Sheet21: Added R29, R30, R31 and R32. Sheet22: Added R925, R926, R927 to remove stubs when VO is used on HDH. Added R928, R929, and R930 to short DMUX (U96) when no VO is installed on the main board. Added R931, R932, and R933 to short DMUX (U96) when no second VGA is installed. Sheet23: Removed resistors R805 and R807.								
3	00	07/08/2002	PRODUCTION RELEASE Sheet 6: Replaced diode D25 with Scottkey diode. C91 replaced with 10MM footprint, better quality part.								
4	10	07/10/2002	PRODUCTION RELEASE II Sheet 2: Removed series resistors R7 on AGP_SBSTB#, R9 on AGP_ADSTB1#, and R16 on AGP_ADSTB0#. Added instead pull-up 10K resistors to +VDDQ_BUS with the same designators.								
5	01	07/19/2002	PRODUCTION RELEASE III Adjusted trace on AGP to give clearance for fingers. Remove N625 declaration. Changed soldermask requirement to red.								



<Core Design>

REFERENCE DESIGN

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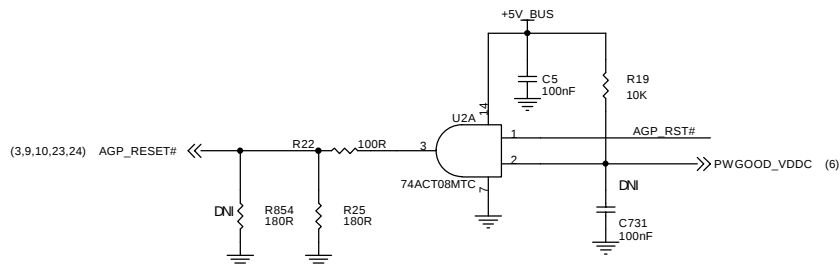
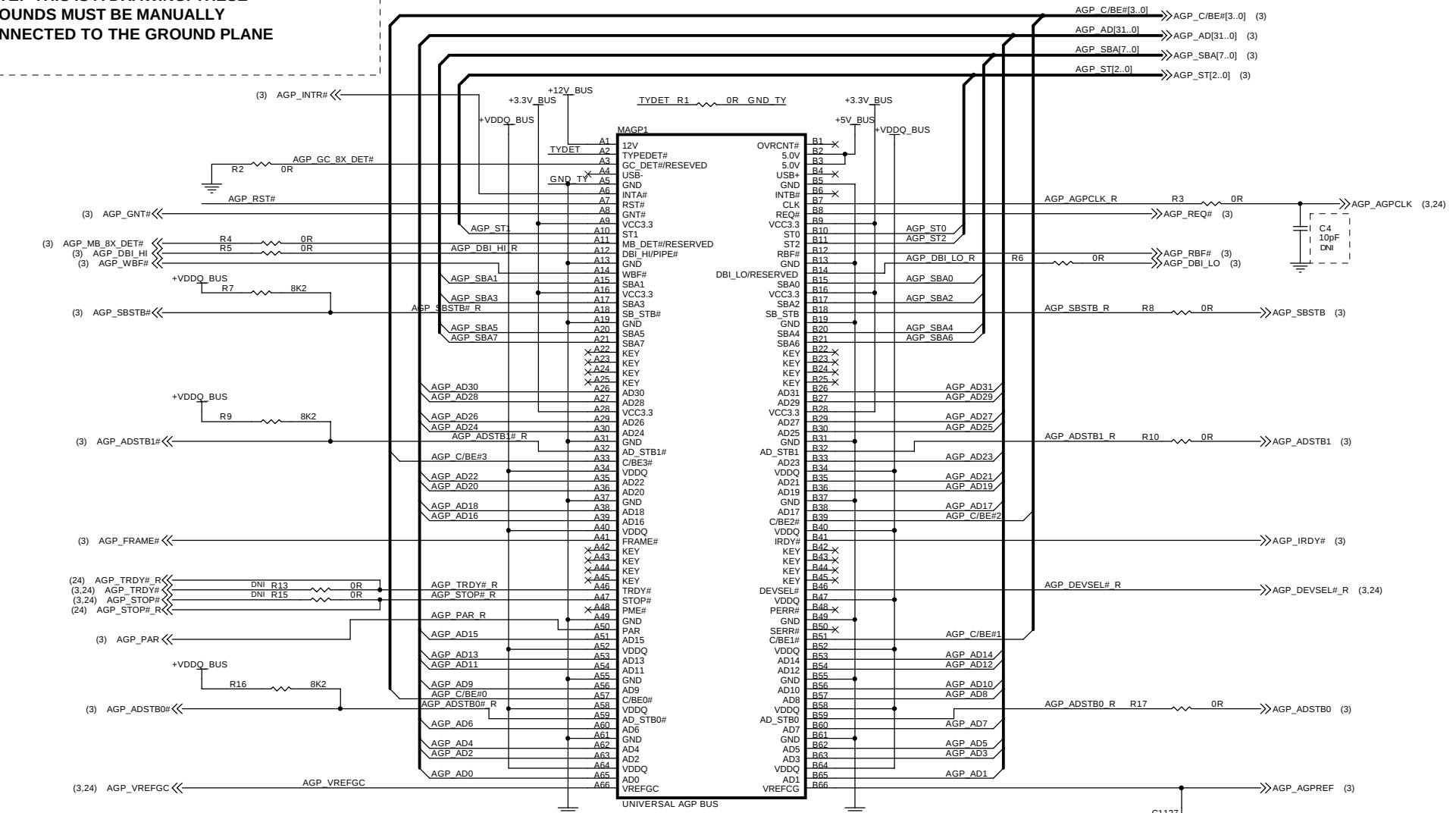
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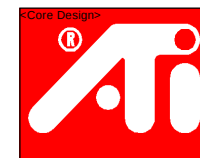
Three circuit diagrams are shown, each representing a different power supply rail:

- +12V BUS:** A capacitor labeled C1 (100uF 16V ALU) is connected between the +12V BUS and ground.
- +5V BUS:** A capacitor labeled C2 (100uF 16V) is connected between the +5V BUS and ground.
- +3.3V BUS:** A capacitor labeled C3 (100uF 16V) is connected between the +3.3V BUS and ground.

NOTE: THIS IS A DRAWING. THESE GROUNDS MUST BE MANUALLY CONNECTED TO THE GROUND PLANE



SYMBOL LEGEND	
DNI	DO NOT INSTALL
#	ACTIVE LOW
	DIGITAL GROUND
	ANALOG GROUND



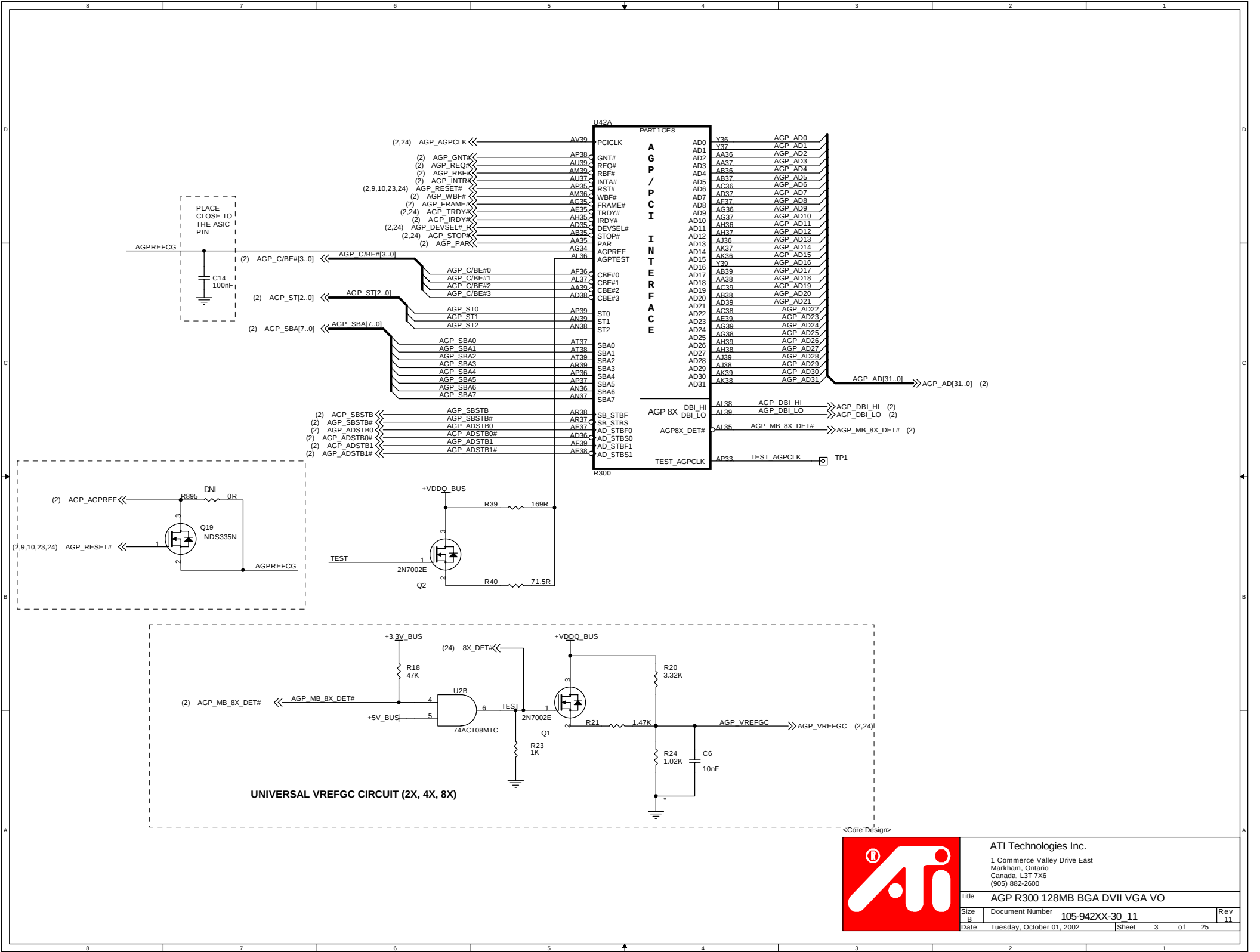
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Date:	Tuesday, October 01, 2002	Sheet

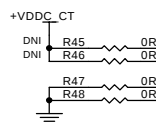
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APPLICATION	TVOMODE	DVOMODE
TVout w/ Rage Theatre	0V	X
ex: 24b DOR TMDs	VDDC18	VDDC18
ex: 12b DOR TMDs & TVout	0V	0V
24b SDR TMDs	0V	0V



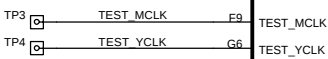
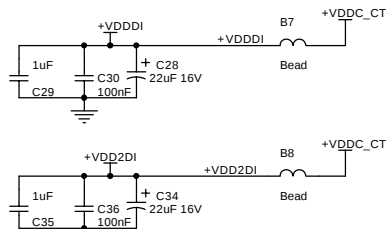
Note1 : PVSS, and MPVSS go to ground plane directly through their own dedicated via. No connection with other VSS..

Note2 : Separate vias for AVSSQ (A2VSSQ), and AVSSN (A2VSSN) to ground plane.

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

Note4 : Rset resistor ground point should link to AVSSQ trace, or have via at resistor directly to ground plane.

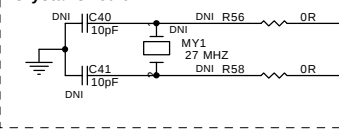
Note5 : Populate Ra9 and Ra10 only if they are not populated on page 24 or 25 or 31 or 32.



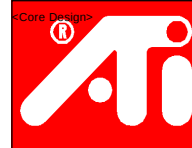
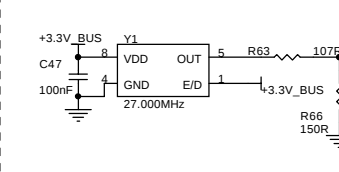
CLOCK SOURCE SELECTION

	XTAL/OSC.	INSTALL	NOT INSTALL
R300 alone	CRYSTAL	Ra1,Ra4 Crystal circuit(27M)	Ra8 Oscillator circuit
	OSC (OPTION 1)	Ra1 = 0R Oscillator circuit(27M)	Ra4,Ra8 Crystal Circuit
	OSC (OPTION 2)	Ra4,Ra8 Oscillator circuit(27M)	Ra1 Crystal Circuit
	DEFAULT		

Crystal Circuit

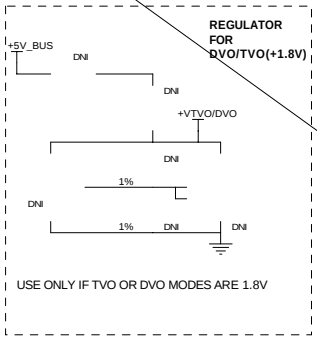


Oscillator Circuit



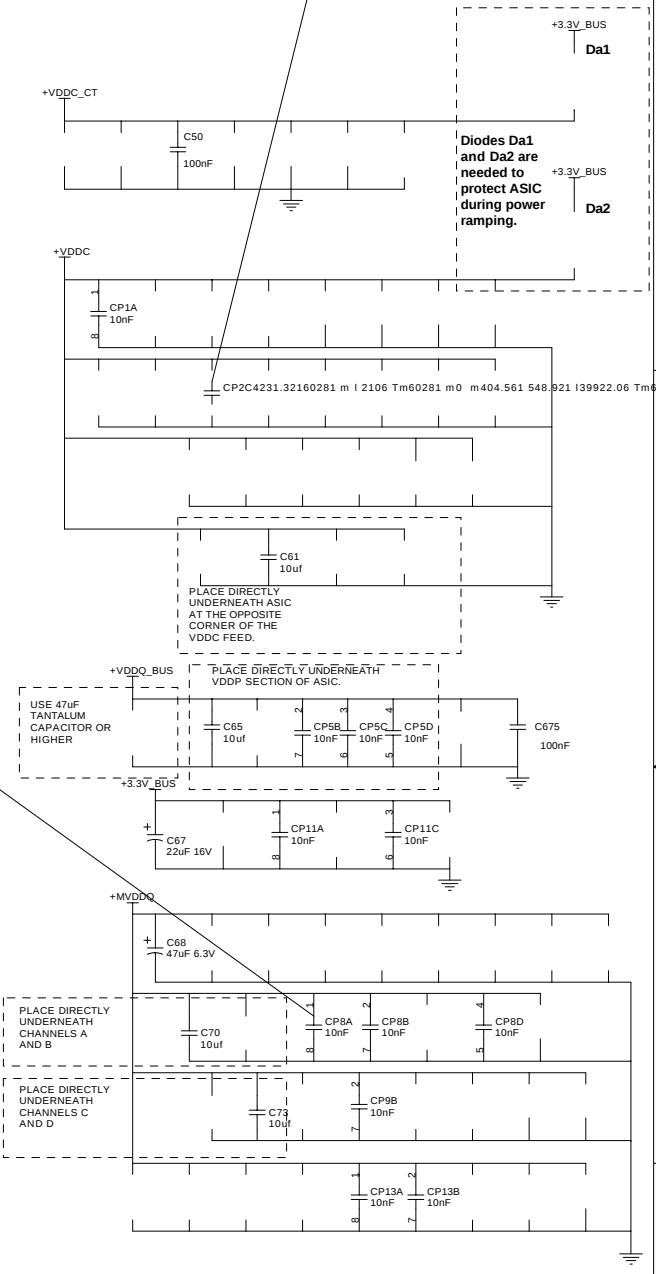
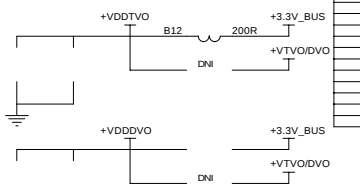
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(16) VTERM2 <<

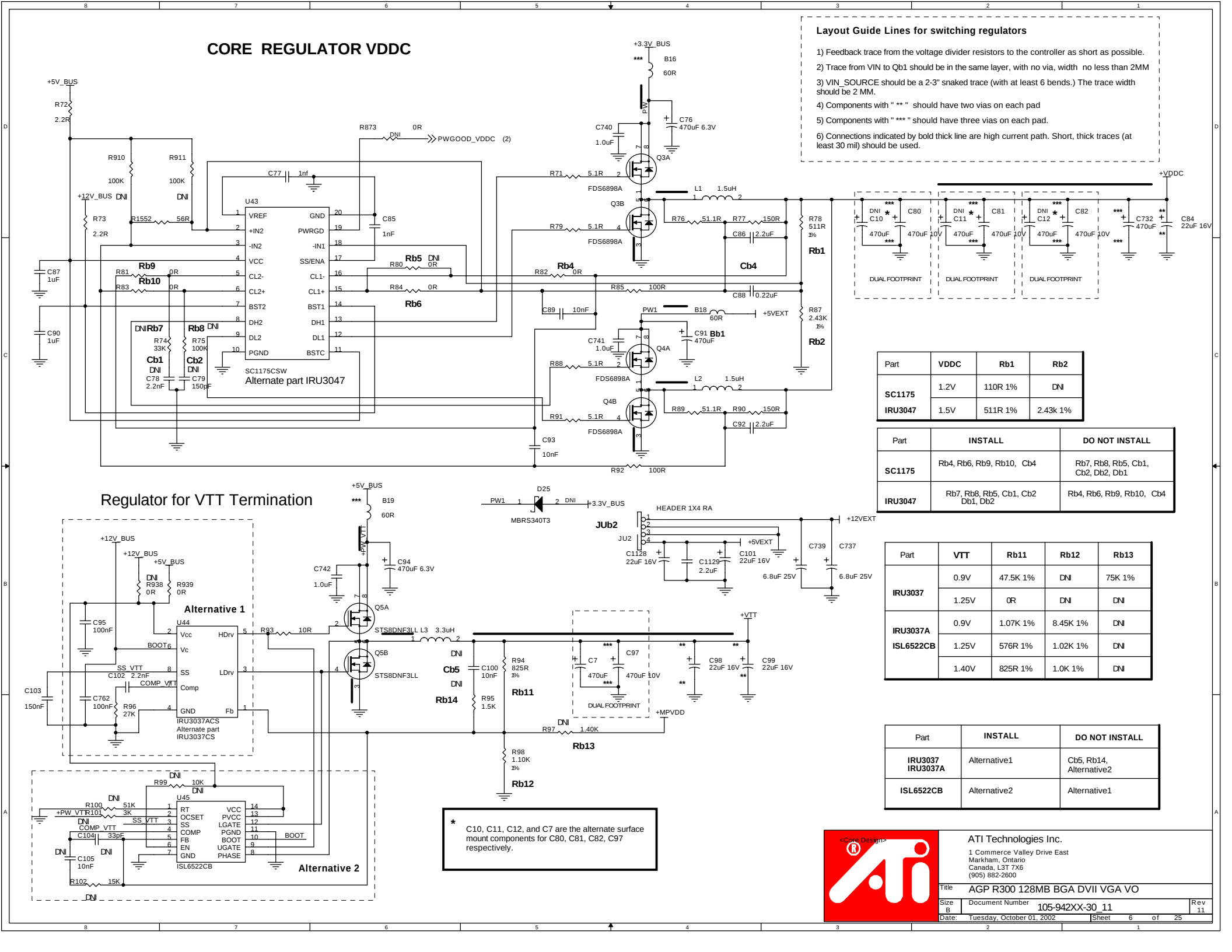
(16) VTERM1 <<



CORE REGULATOR VDDC

CORE REGULATOR VDDC

- ## CORE REGULATOR VDDC
-



CORE REGULATOR VDDC

Layout Guide Lines for switching regulators

- 1) Feedback trace from the voltage divider resistors to the controller as short as possible.
- 2) Trace from VIN to Qb1 should be in the same layer, with no via, width no less than 2MM
- 3) VIN_SOURCE should be a 2-3" snaked trace (with at least 6 bends.) The trace width should be 2 MM.
- 4) Components with " ** " should have two vias on each pad
- 5) Components with " *** " should have three vias on each pad.
- 6) Connections indicated by bold thick line are high current path. Short, thick traces (at least 30 mil) should be used.

Part	VDDC	Rb1	Rb2
SC1175	1.2V	110R 1%	DN
IRU3047	1.5V	511R 1%	2.43k 1%

Part	INSTALL	DO NOT INSTALL
SC1175	Rb4, Rb6, Rb9, Rb10, Cb4	Rb7, Rb8, Rb5, Cb1, Cb2, Db2, Db1
IRU3047	Rb7, Rb8, Rb5, Cb1, Cb2 Db1, Db2	Rb4, Rb6, Rb9, Rb10, Cb4

Part	VTT	Rb11	Rb12	Rb13
IRU3037	0.9V	47.5K 1%	DN	75K 1%
	1.25V	0R	DN	DN
IRU3037A ISL6522CB	0.9V	1.07K 1%	8.45K 1%	DN
	1.25V	576R 1%	1.02K 1%	DN
	1.40V	825R 1%	1.0K 1%	DN

Part	INSTALL	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Cb5, Rb14, Alternative2
ISL6522CB	Alternative2	Alternative1

Regulator for VTT Termination

CORE REGULATOR VDDC

Part	VDDC	Rb1	Rb2
SC1175	1.2V	110R 1%	DN
IRU3047	1.5V	511R 1%	2.43k 1%

Layout Guide Lines for switching regulators

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- 6) Connections indicated by bold thick line are high current path. Short, thick traces (at least 30 mil) should be used.

Regulator for VTT Termination

Part	VTT	Rb11	Rb12	Rb13
IRU3037	0.9V	47.5K 1%	DN	75K 1%
IRU3037A	1.25V	0R	DN	DN
ISL6522CB	0.9V	1.07K 1%	8.45K 1%	DN
	1.25V	576R 1%	1.02K 1%	DN
	1.40V	825R 1%	1.0K 1%	DN

* C10, C11, C12, and C7 are the alternate surface mount components for C80, C81, C82, C97 respectively.

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CORE REGULATOR VDDC

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Part	VDDC	Rb1	Rb2
SC1175	1.2V	110R 1%	DN
IRU3047	1.5V	511R 1%	2.43k 1%

Part	INSTALL	DO NOT INSTALL
SC1175	Rb4, Rb6, Rb9, Rb10, Cb4	Rb7, Rb8, Rb5, Cb1, Cb2, Db2, Db1
IRU3047	Rb7, Rb8, Rb5, Cb1, Cb2 Db1, Db2	Rb4, Rb6, Rb9, Rb10, Cb4

Part	VTT	Rb11	Rb12	Rb13
IRU3037	0.9V	47.5K 1%	DN	75K 1%
	1.25V	0R	DN	DN
IRU3037A ISL6522CB	0.9V	1.07K 1%	8.45K 1%	DN
	1.25V	576R 1%	1.02K 1%	DN
	1.40V	825R 1%	1.0K 1%	DN

Part	INSTALL	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Cb5, Rb14, Alternative2
ISL6522CB	Alternative2	Alternative1

Regulator for VTT Termination

CORE REGULATOR VDDC

Layout Guide Lines for switching regulators

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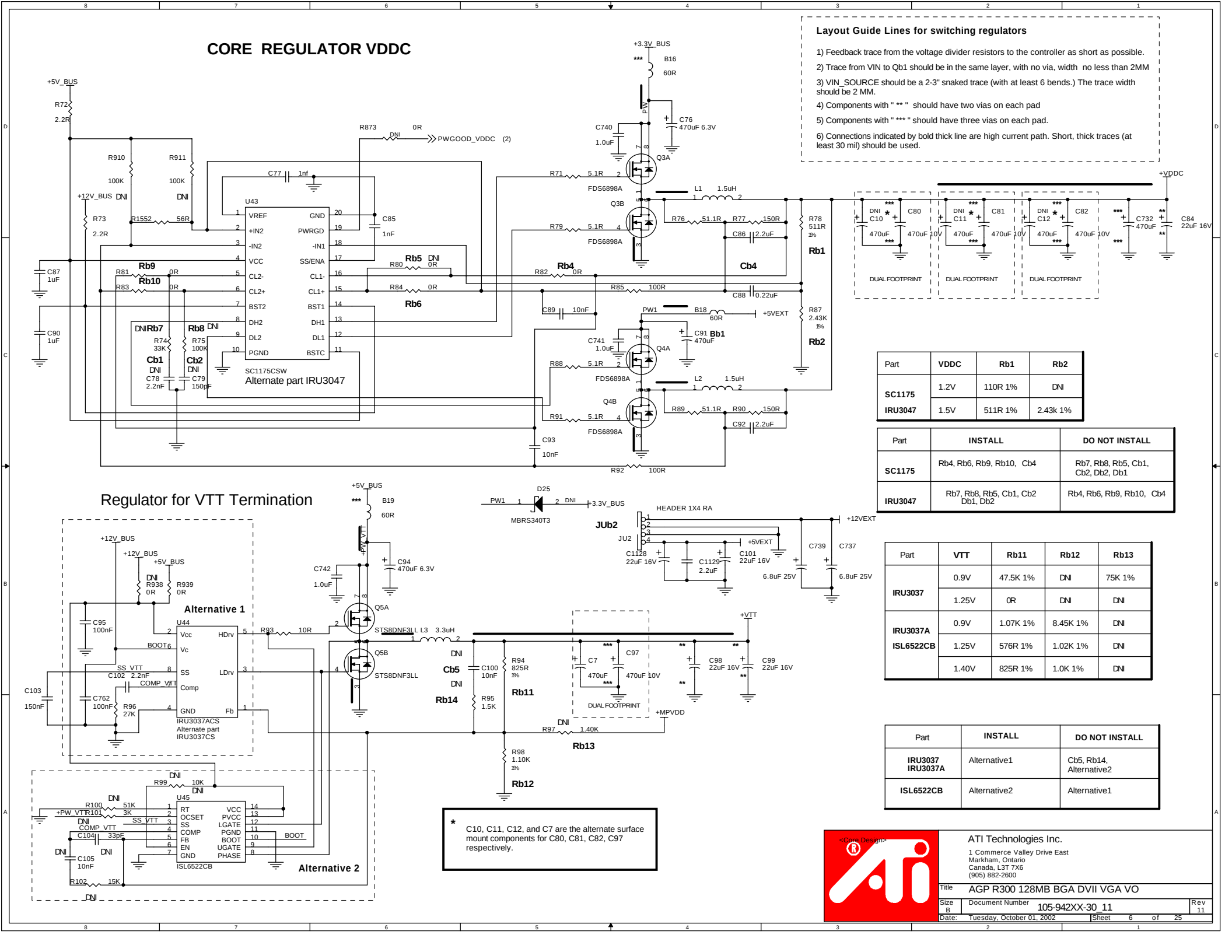
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IRU3047	1.5V	511R 1%	2.43k 1%

Part	INSTALL	DO NOT INSTALL
SC1175	Rb4, Rb6, Rb9, Rb10, Cb4	Rb7, Rb8, Rb5, Cb1, Cb2, Db2, Db1
IRU3047	Rb7, Rb8, Rb5, Cb1, Cb2 Db1, Db2	Rb4, Rb6, Rb9, Rb10, Cb4

Part	VTT	Rb11	Rb12	Rb13
IRU3037	0.9V	47.5K 1%	DN	75K 1%
	1.25V	0R	DN	DN
IRU3037A ISL6522CB	0.9V	1.07K 1%	8.45K 1%	DN
	1.25V	576R 1%	1.02K 1%	DN
	1.40V	825R 1%	1.0K 1%	DN

Part	INSTALL	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Cb5, Rb14, Alternative2
ISL6522CB	Alternative2	Alternative1

Regulator for VTT Termination



CORE REGULATOR VDDC

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Layout Guide Lines for switching regulators

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Part	VDDC	Rb1	Rb2
SC1175	1.2V	110R 1%	DNI
IRU3047	1.5V	511R 1%	2.43k 1%

Part	INSTALL	DO NOT INSTALL
SC1175	Rb4, Rb6, Rb9, Rb10, Cb4	Rb7, Rb8, Rb5, Cb1, Cb2, Db2, Db1
IRU3047	Rb7, Rb8, Rb5, Cb1, Cb2 Db1, Db2	Rb4, Rb6, Rb9, Rb10, Cb4

Part	VTT	Rb11	Rb12	Rb13
IRU3037	0.9V	47.5K 1%	DNI	75K 1%
	1.25V	0R	DNI	DNI
IRU3037A ISL6522CB	0.9V	1.07K 1%	8.45K 1%	DNI
	1.25V	576R 1%	1.02K 1%	DNI
	1.40V	825R 1%	1.0K 1%	DNI

Part	INSTALL	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Cb5, Rb14, Alternative2
ISL6522CB	Alternative2	Alternative1

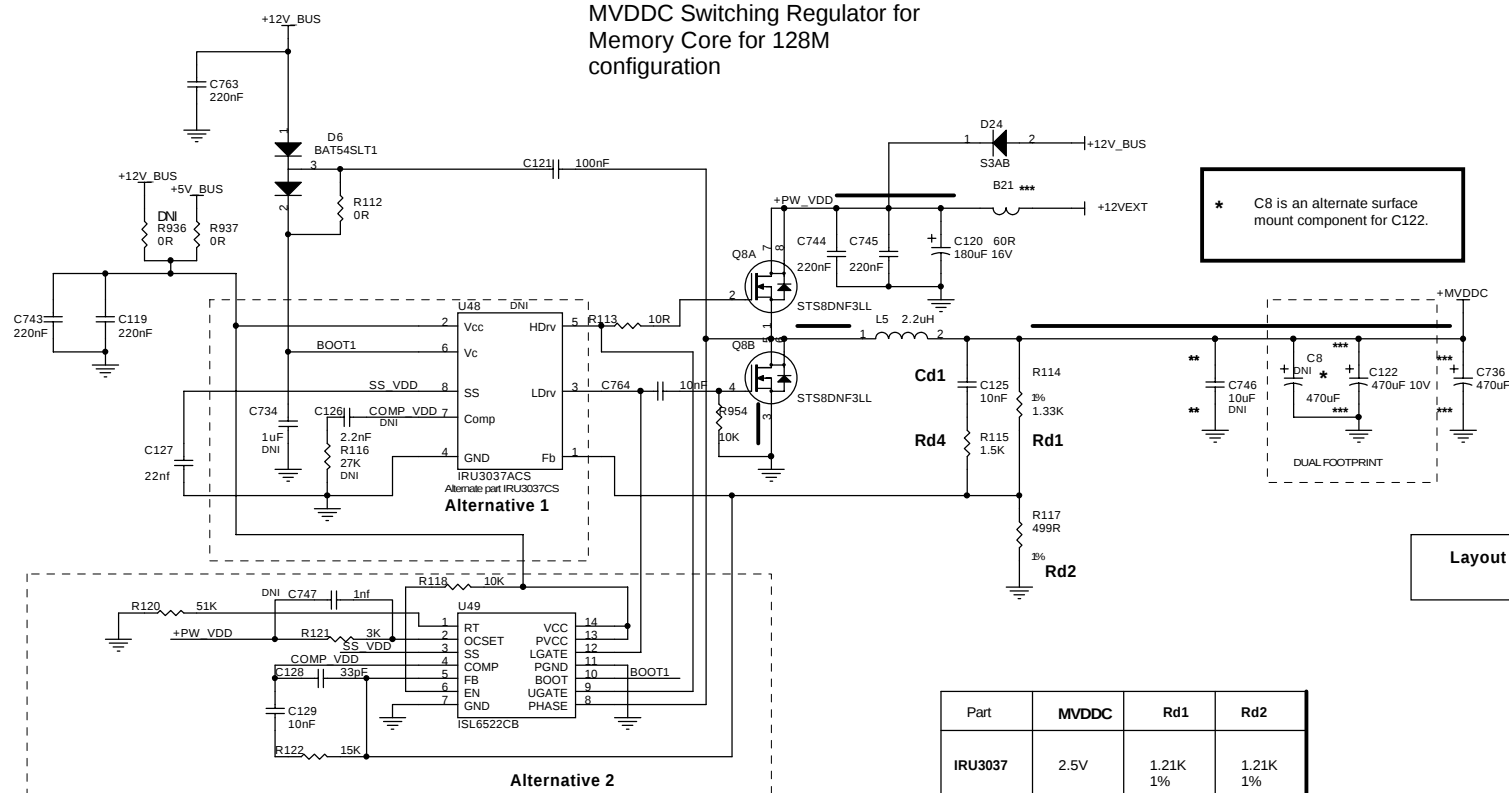
Regulator for VTT Termination

* C10, C11, C12, and C7 are the alternate surface mount components for C80, C81, C82, C97 respectively.

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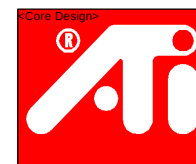
MVDDC Switching Regulator for Memory Core for 128M configuration



Layout Guide Lines for VDD switching regulator
The same rules apply as for VDDC regulator.

Part	MVDDC	Rd1	Rd2
IRU3037	2.5V	1.21K 1%	1.21K 1%
IRU3037A	2.5V	2.55K 1%	1.21K 1%
ISL6522CB	2.9V	1.33K 1%	499R 1%

Part	INSTALL	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Cd1, Rd4, Alternative2
ISL6522CB	Alternative2	Alternative1



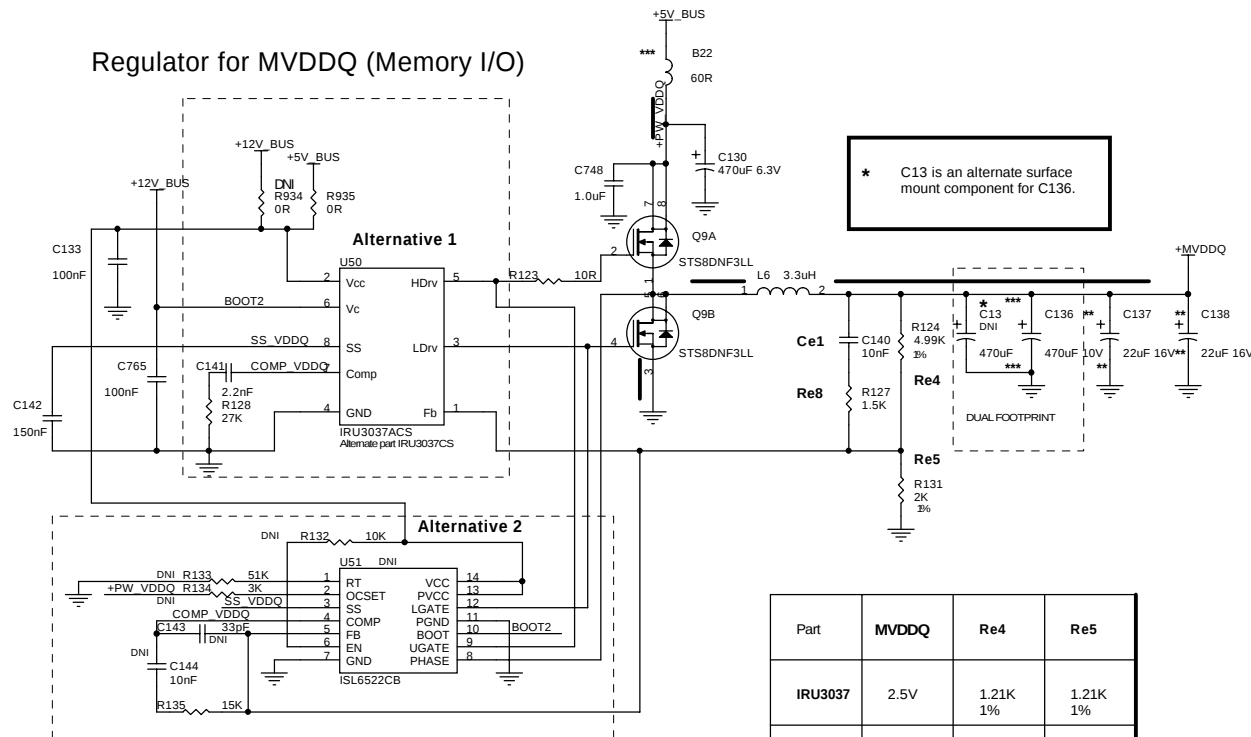
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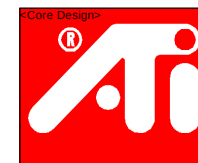
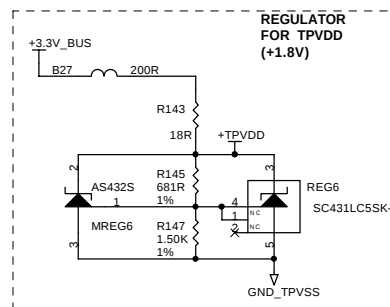
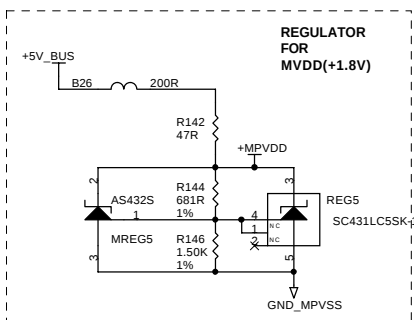
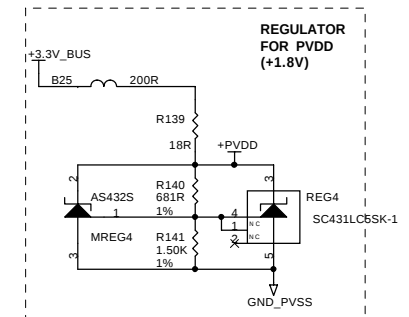
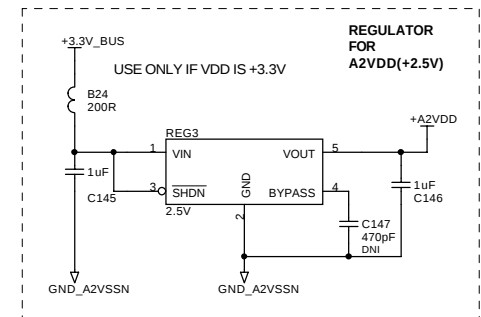
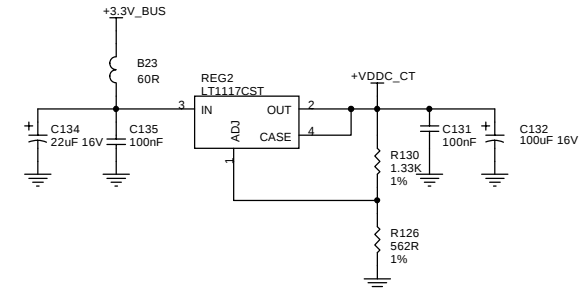
Regulator for MVDDQ (Memory I/O)



Part	INSTALL	DO NOT INSTALL
IRU3037 IRU3037A	Alternative1	Ce1, Re8, Alternative2
ISL6522CB	Alternative2	Alternative1

Part	MVDDQ	Re4	Re5
IRU3037	2.5V	1.21K 1%	1.21K 1%
IRU3037A ISL6522CB	2.5V	2.55K 1%	1.21K 1%
IRU3037A ISL6522CB	2.8V	4.99K 1%	2.0K 1%
IRU3037	1.8V	681R 1%	1.5K 1%
IRU3037A ISL6522CB	1.8V	1.87K 1%	1.5K 1%

+1.8V Regulator for VDDC_CT (Core Transform)



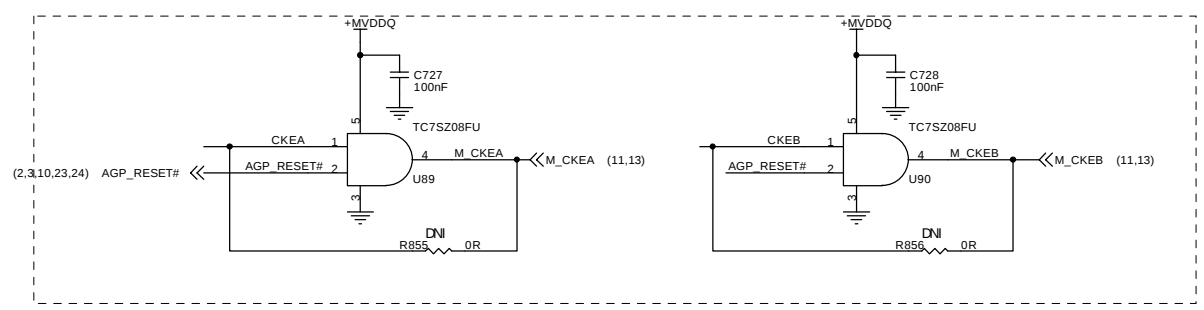
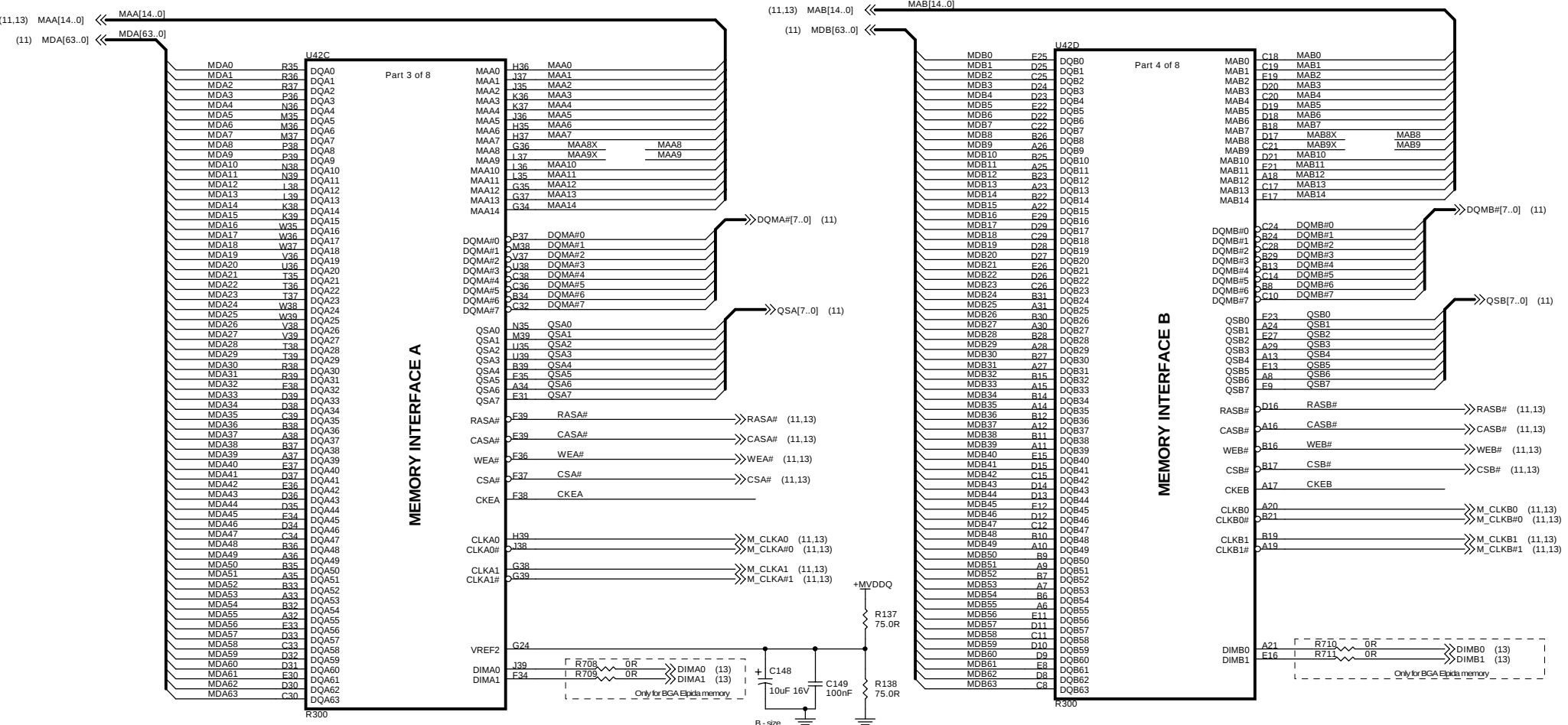
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Title	AGP R300 128MB BGA DVII VGA VO
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Size	Document Number	105-942XX-30	11
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B	100 0420X 00_11	11
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R-300
MEMORY CHANNELS A and B

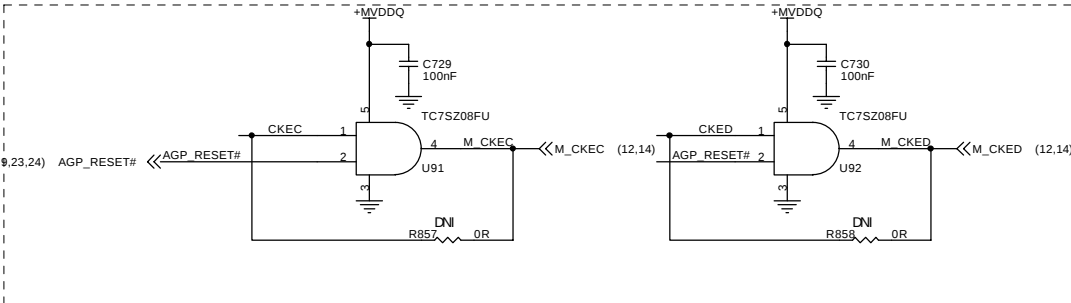
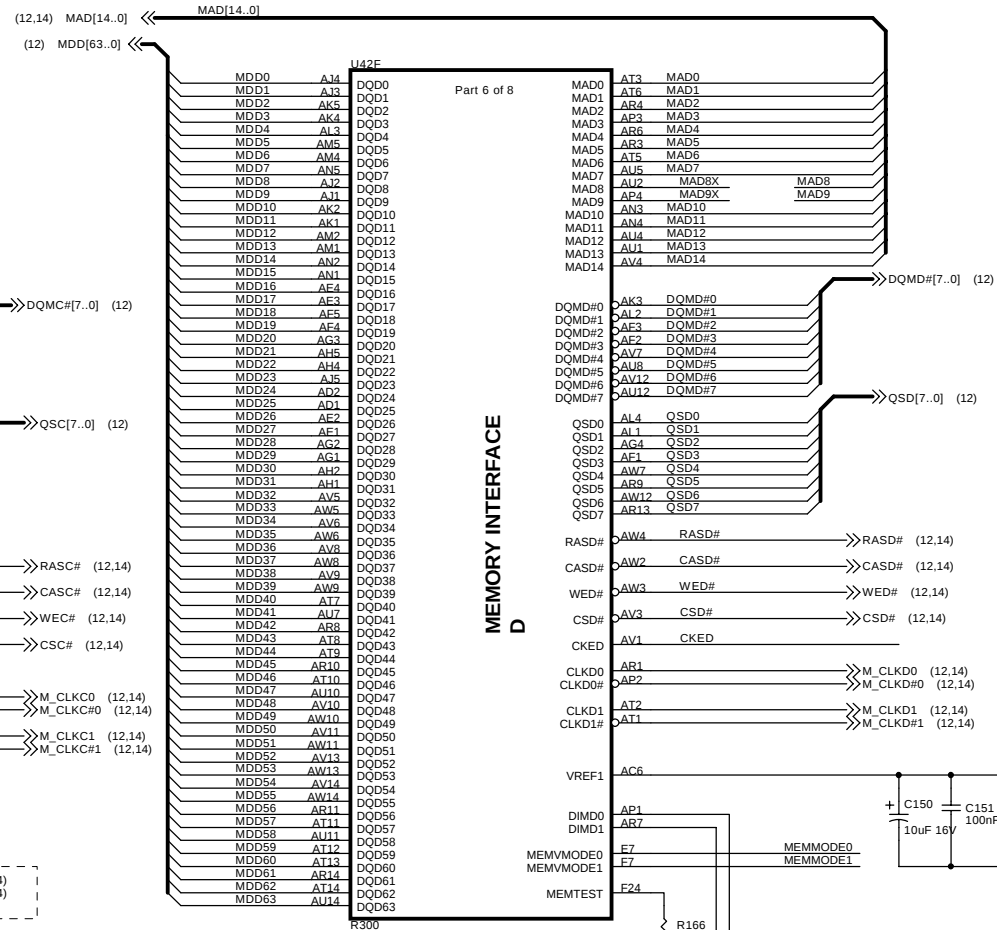
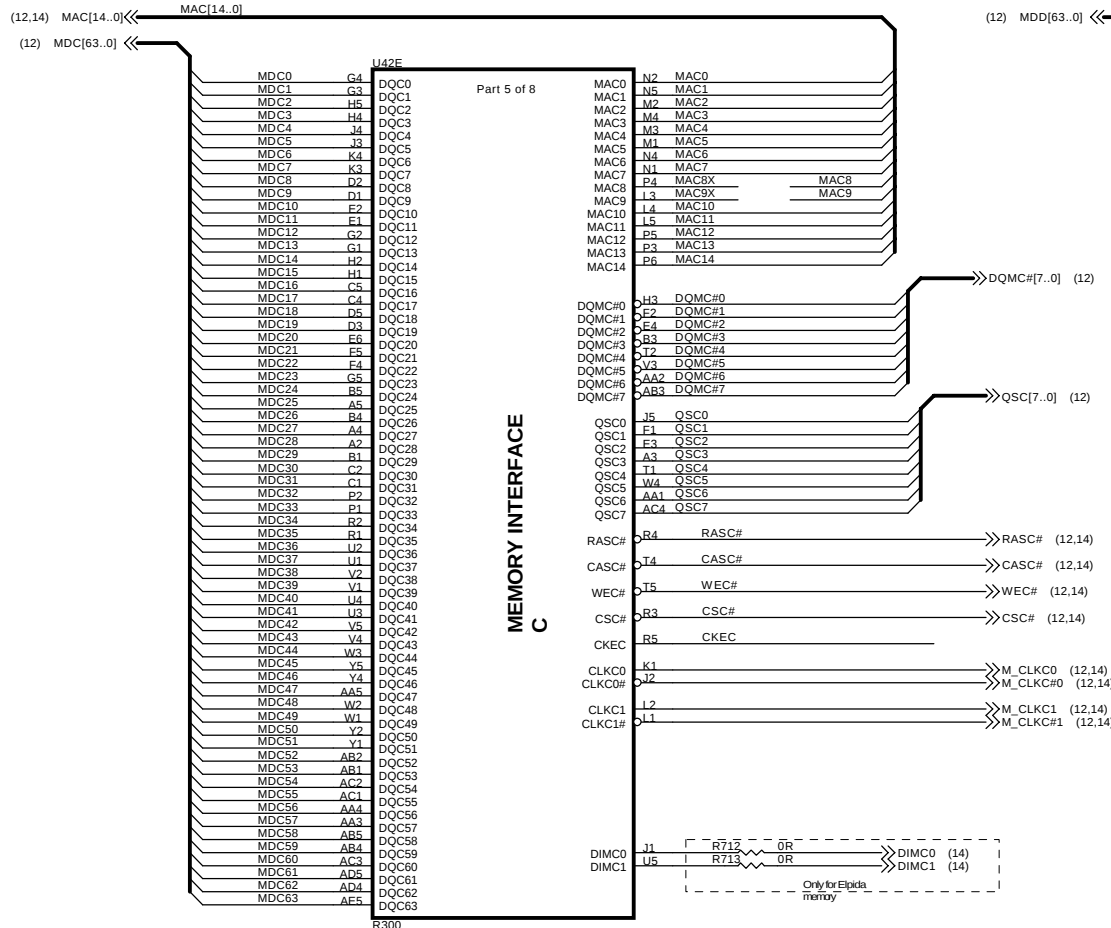
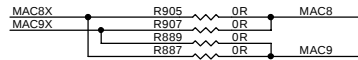


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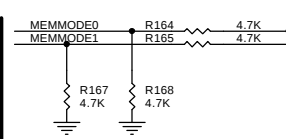
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Title: AGP R300 128MB BGA DVI VGA VO
Size B: Document Number 105-942XX-30 11
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R-300 MEMORY CHANNELS C and D



MEMMODE[1:0]	MEMORY IO VOLTAGE
01	2.5V (DDR)
10	1.8V (DDR)
11	3.3V (SDR)



M MDB2
M MDB3
M MDB4
M MDB5
M MDB6
M MDB7
M MDB8
M MDB9
M MDB10
M MDB11
M MDB12
M MDB13
M MDB14
M MDB15
M MDB16

MDB52
MDB53
MDB54
MDB55
MDB56
MDB57
MDB58
MDB59
MDB60
MDB61
MDB62
MDB63

MDB52
MDB53
MDB54
MDB55
MDB56
MDB57
MDB58
MDB59
MDB60
MDB61
MDB62
MDB63

M MDB52
M MDB53
M MDB54
M MDB55
M MDB56
M MDB57
M MDB58
M MDB59
M MDB60
M MDB61
M MDB62
M MDB63

DQMA#3
DQMA#4
DQMA#5
DQMA#6
DQMA#7

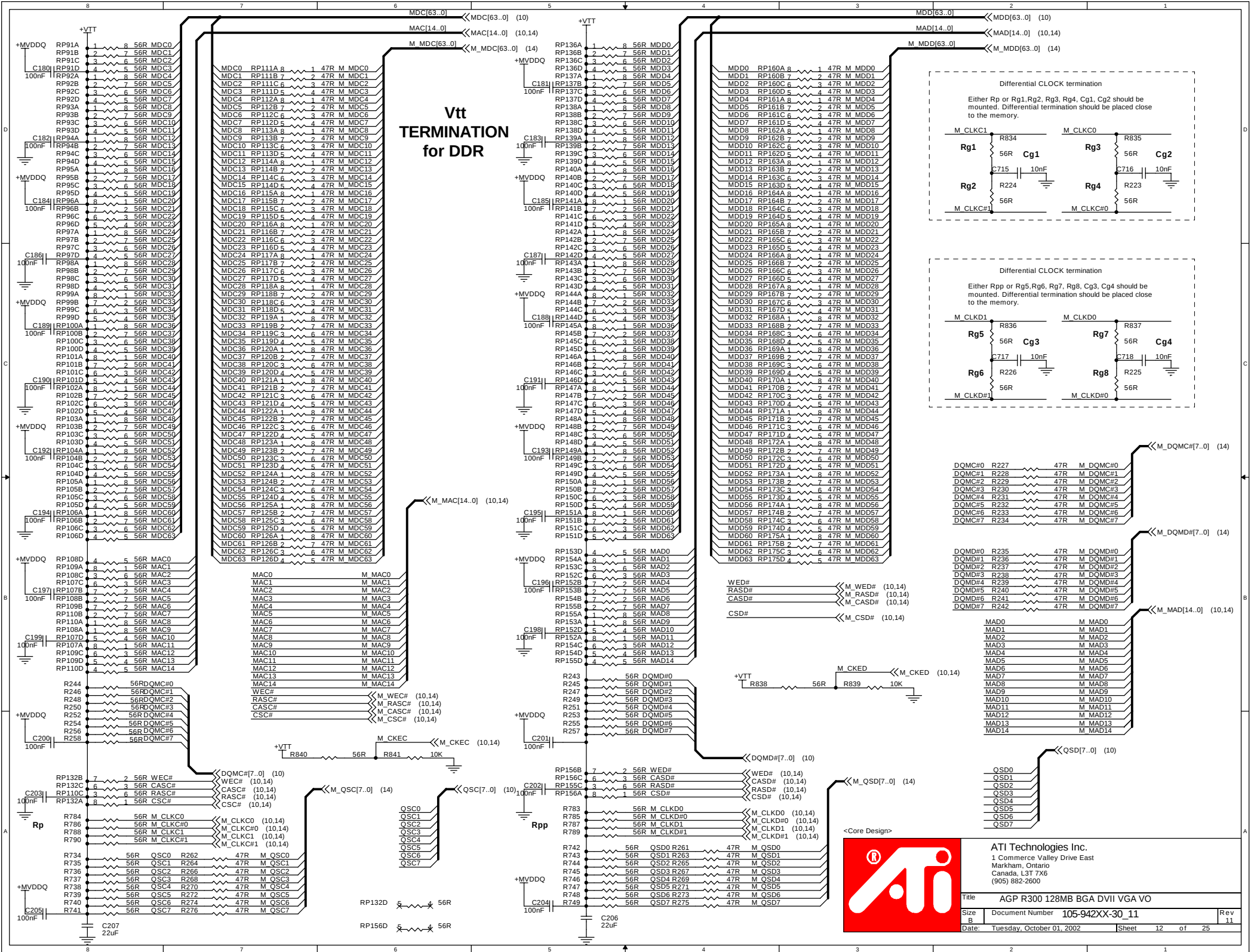
M DQMA#3
M DQMA#4
M DQMA#5
M DQMA#6
M DQMA#7

DQMB#0
DQMB#1
DQMB#2
DQMB#3
DQMB#4
DQMB#5
DQMB#6
DQMB#7

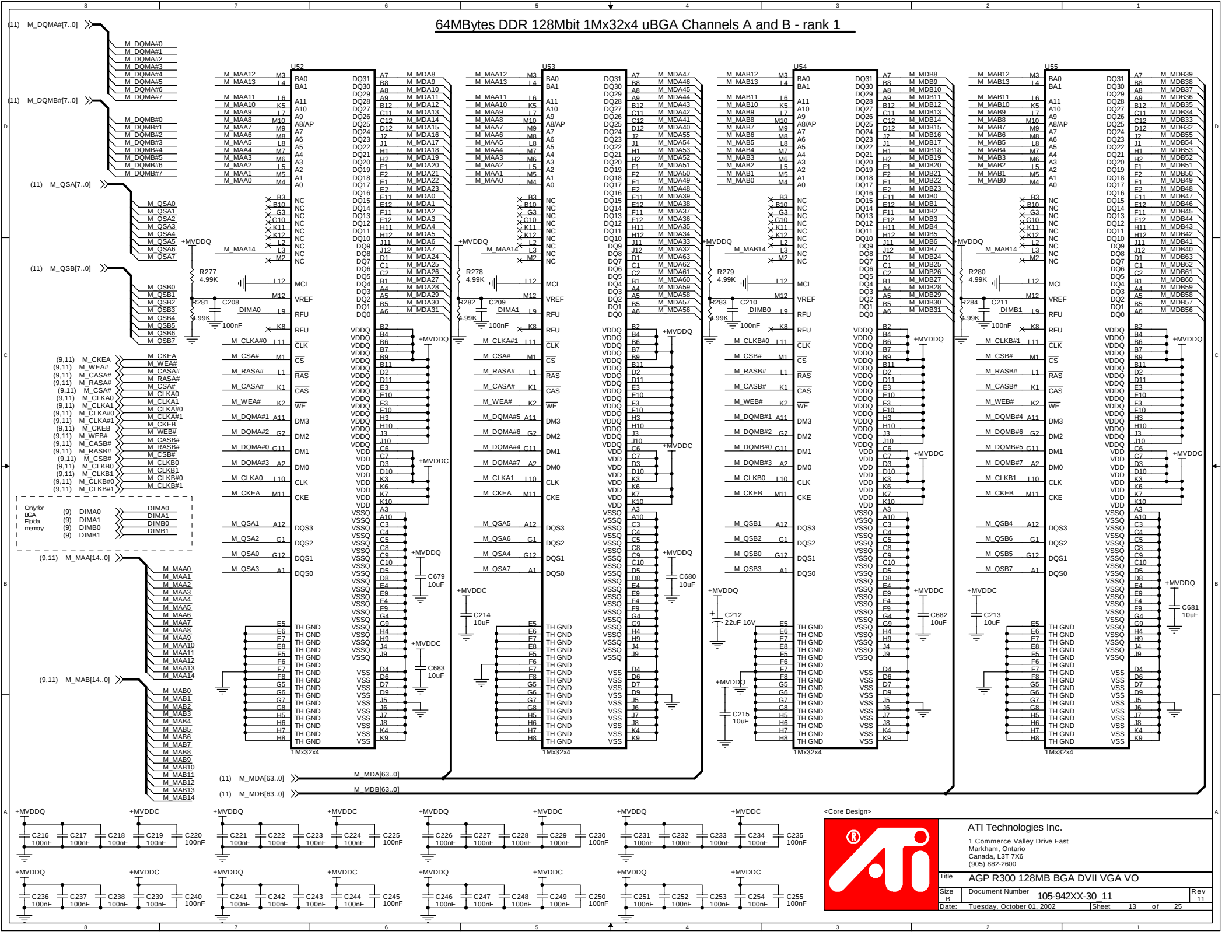
WEB#
RASB#
CASB#
CSB#

#0
#1
#2
#3
#4
#5
#6
#7

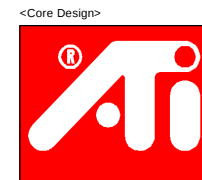
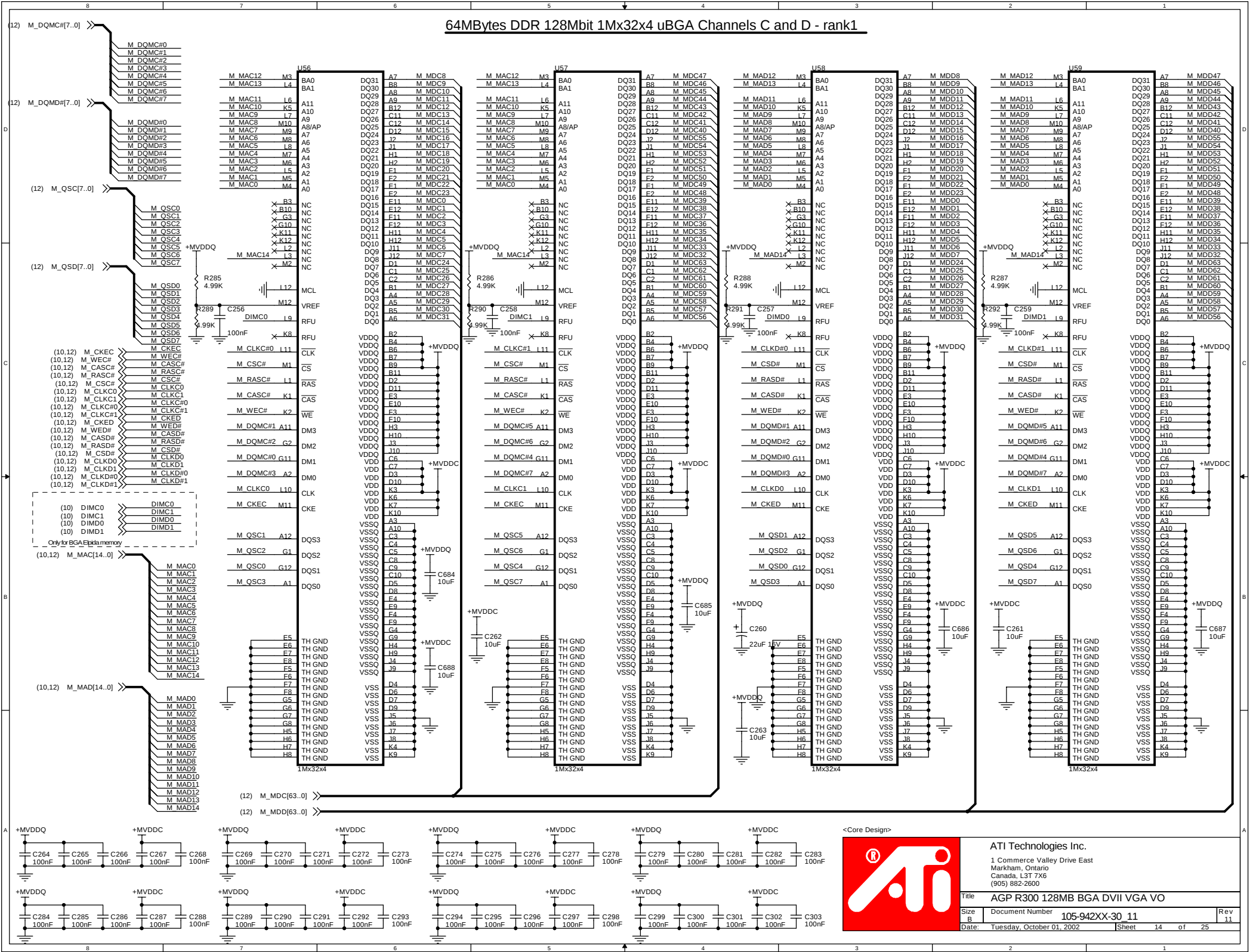
MA



64MBytes DDR 128Mbit 1Mx32x4 uBGA Channels A and B - rank 1



64MBytes DDR 128Mbit 1Mx32x4 uBGA Channels C and D - rank1

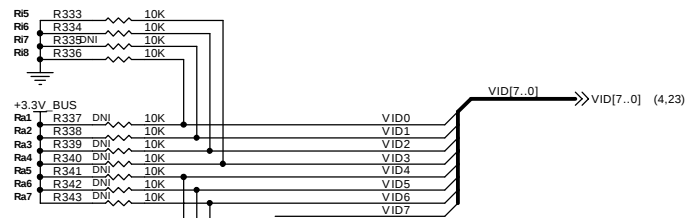


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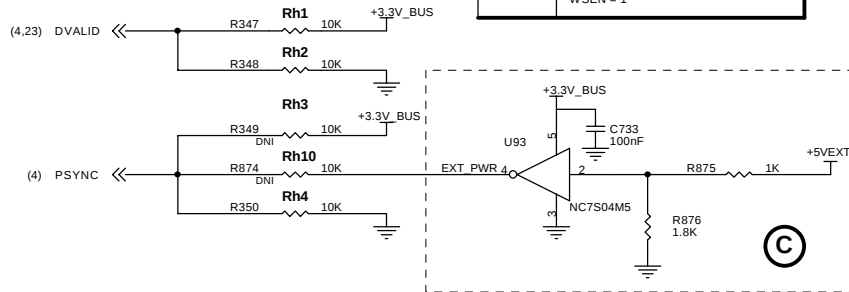
AGP R300 128MB BGA DVII VGA VO

File: 105-942XX-30_11
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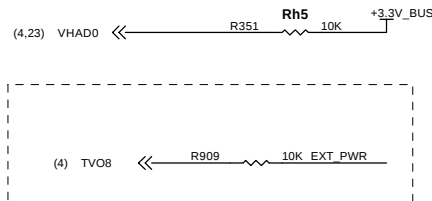
STRAPS



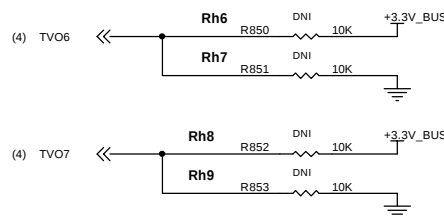
INSTALL	DEVICE ID
Rh1	NORMAL ID (default) Install it all the time when it is normal device ID
Rh2	Use workstation DEVICE_ID when WSEN = 1



INSTALL	VIP DEVICE
Rh5	NO SLAVE VIP (DEFAULT) Install it when internal pull-up doesn't work SLAVE VIP - VIP device will drive low when VIP is attached.



MEMORY TYPE STRAPS



MEMORY TYPE STRAPS

MEMORY TYPE	Rh6	Rh7	Rh8	Rh9
TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD

AGPFBSKEW - VID(1,0)

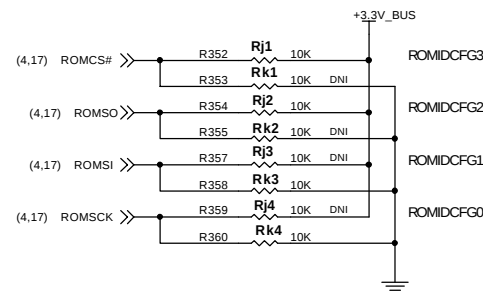
Ri2	Ri1	Ri7	Ri8	
DNI	DNI	10K	10K	retclk slightly earlier than feedback (00)
DNI	10K	10K	DNI	retclk 1 tap earlier than feedback (01)
10K	DNI	DNI	10K	retclk 1 tap later than feedback (10)
10K	10K	DNI	DNI	retclk 2 taps earlier than feedback (11)

XOCLK_SKEW - VID(3,2)

Ri4	Ri3	Ri5	Ri6	
DNI	DNI	10K	10K	xclk to agpclk 0 tap delay (DEFAULT)
DNI	10K	10K	DNI	xclk to agpclk 1 tap delay
10K	DNI	DNI	10K	xclk to agpclk 2 taps delay
10K	10K	DNI	DNI	xclk to agpclk 3 taps delay

BUSCFG - VID(6,4)

BUSTYPE_2 VID6		BUSTYPE_1 VID5		BUSTYPE_0 VID4		
Ri7	Ri3	Ri6	Ri2	Ri5	Ri1	AGP8X_DET = 0 (both GC and MB 8x capable)
						DESCRIPTION
DNI	10K	DNI	10K	DNI	10K	AGP 8X, 0.8V signaling PLL CLK, IDSEL = AD16
DNI	10K	DNI	10K	10K	DNI	AGP 8X, 0.8V signaling PLL CLK, IDSEL = AD17
DNI	10K	10K	DNI	DNI	10K	AGP 4X, 0.8V signaling PLL CLK, IDSEL = AD16
DNI	10K	10K	DNI	10K	DNI	AGP 4X, 0.8V signaling PLL CLK, IDSEL = AD17
						AGP8X_DET = 1 (either GC or MB not 8x capable)
DNI	10K	DNI	10K	DNI	10K	AGP 4X, PLL CLK, IDSEL = AD16
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	DNI	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



Rj1	Rk1	Rj2	Rk2	Rj3	Rk3	Rj4	Rk4	ROMIDCFG[3:0]
DNI	10K	DNI	10K	DNI	10K	DNI	10K	No ROM, CHG ID = 00
DNI	10K	DNI	10K	DNI	10K	DNI	10K	No ROM, CHG ID = 01
DNI	10K	10K	DNI	DNI	10K	DNI	10K	No ROM, CHG ID = 10
DNI	10K	10K	DNI	10K	DNI	DNI	10K	No ROM, CHG ID = 11
10K	DNI	DNI	10K	DNI	10K	DNI	10K	Parallel ROM on TVO (default)
10K	DNI	DNI	10K	DNI	10K	10K	DNI	Serial AT25F1024, ID's from ROM
10K	DNI	DNI	10K	10K	DNI	10K	10K	Serial AT45DB011, ID's from ROM
10K	DNI	DNI	10K	DNI	10K	DNI	10K	Serial ST M25P10, ID's from ROM
10K	DNI	DNI	10K	DNI	10K	DNI	10K	Serial ST M25P05, ID's from ROM
10K	DNI	10K	DNI	DNI	10K	DNI	10K	Serial SST45LF010, ID's from ROM
10K	DNI	10K	DNI	10K	DNI	DNI	10K	Parallel ROM on DVO
10K	DNI	10K	DNI	10K	DNI	10K	DNI	Serial ISSI NX25F011B, ID's from ROM

<Core Design>



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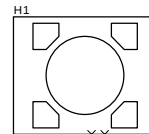
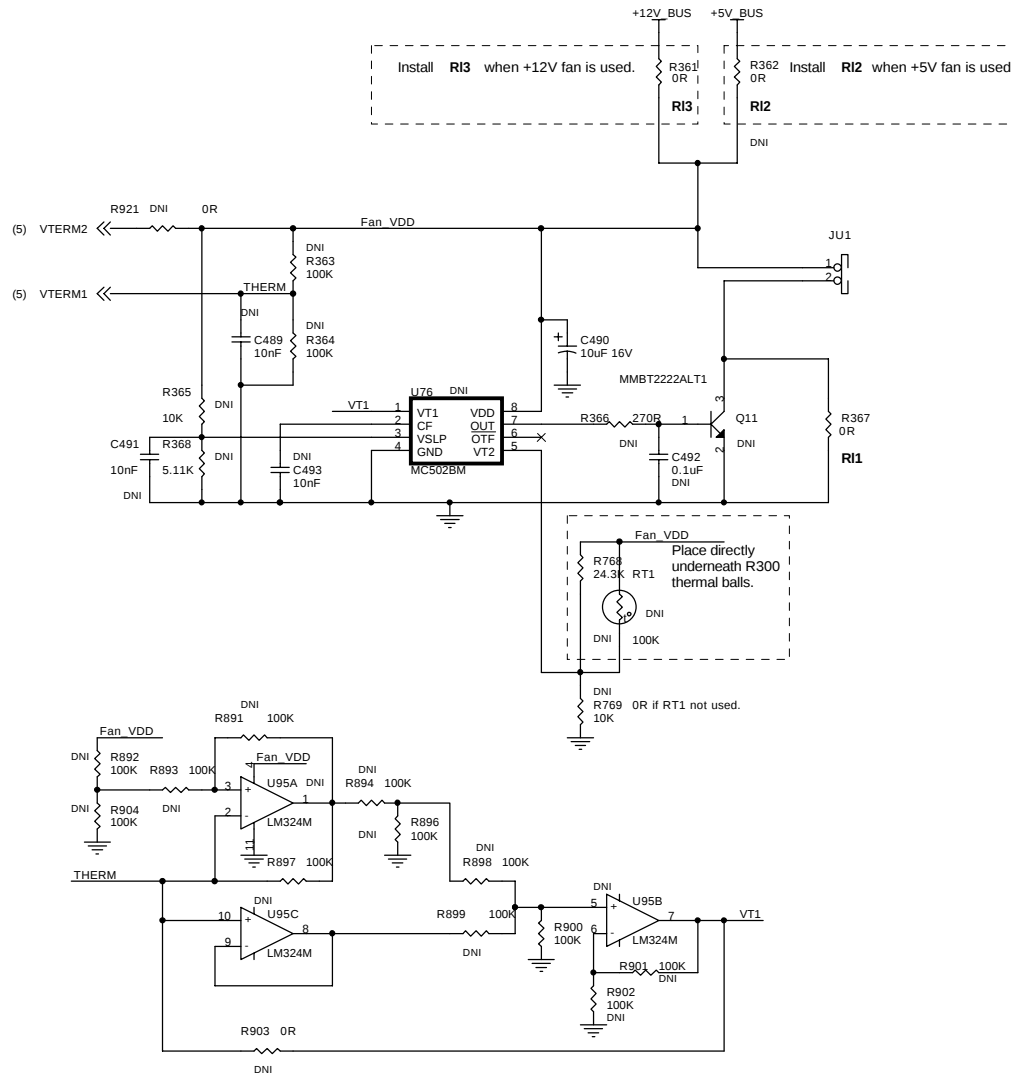
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Size B Document Number 105-942XX-30_11

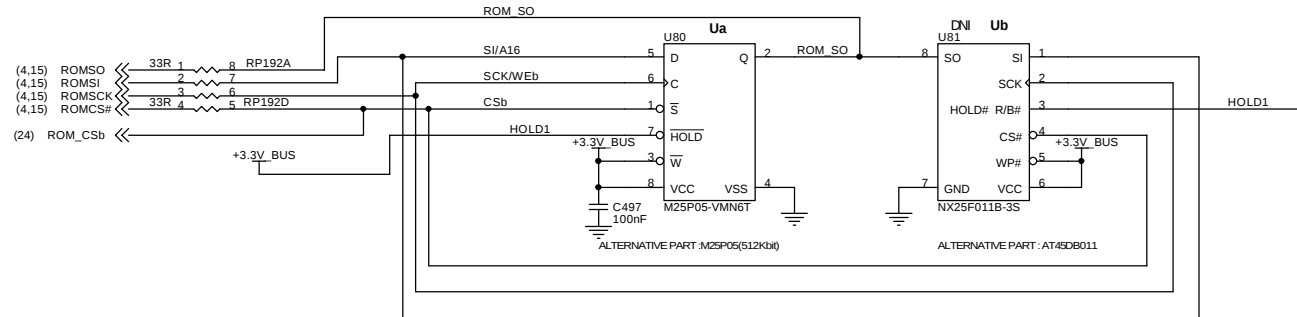
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Rev 11

SPEED CONTROLLED FAN



SERIAL EEPROM 512K/1M



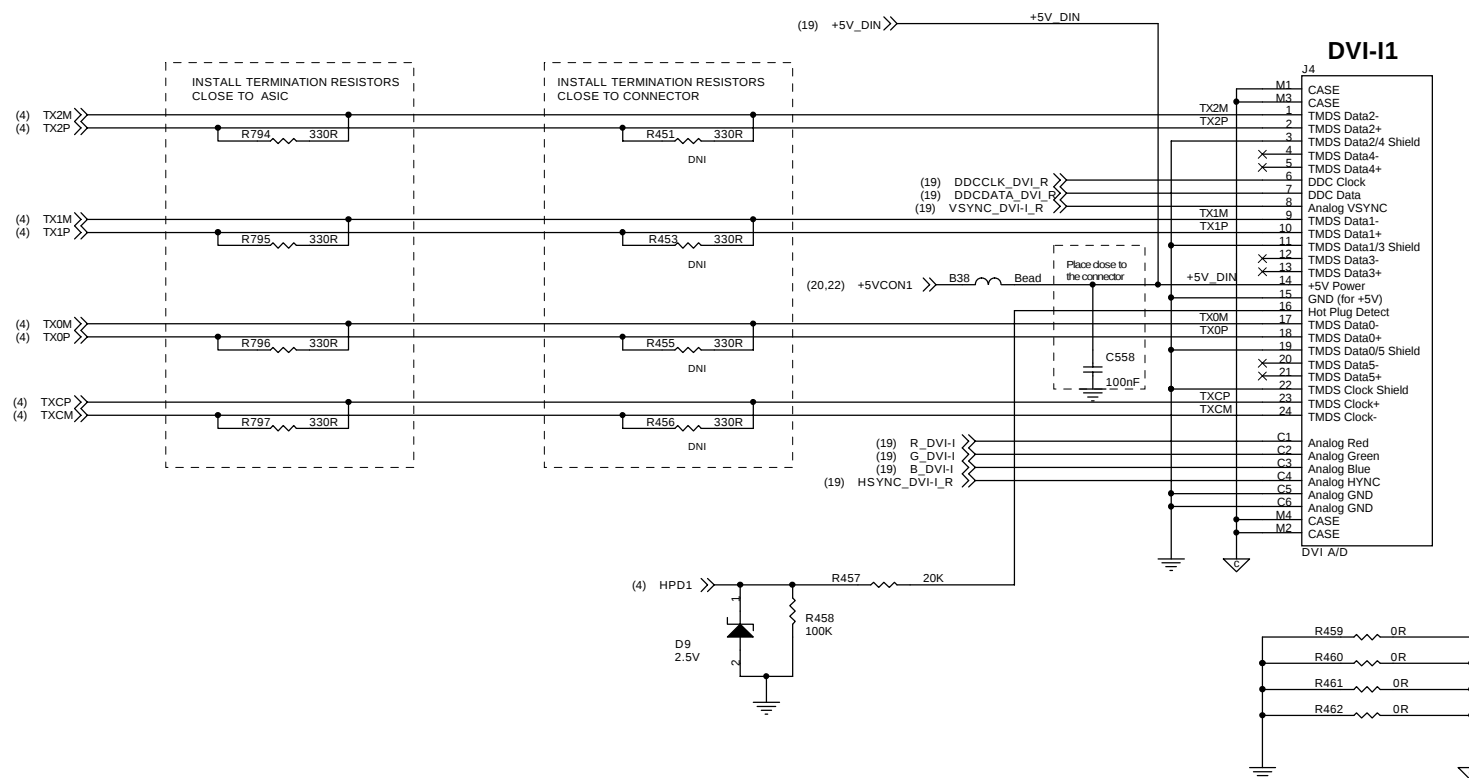
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PRIMARY DVI-I CONNECTOR (DVI-I1)

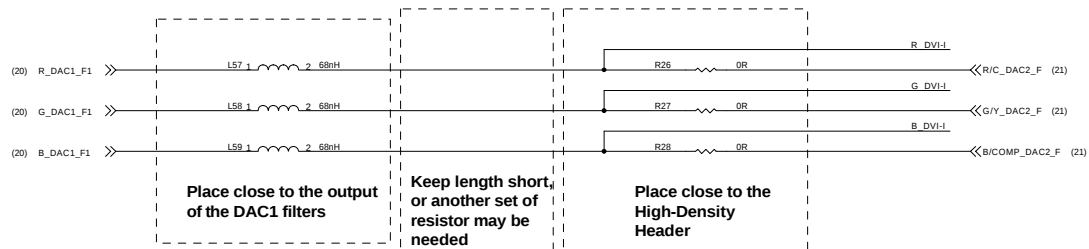
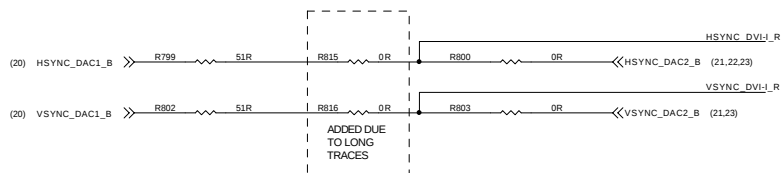
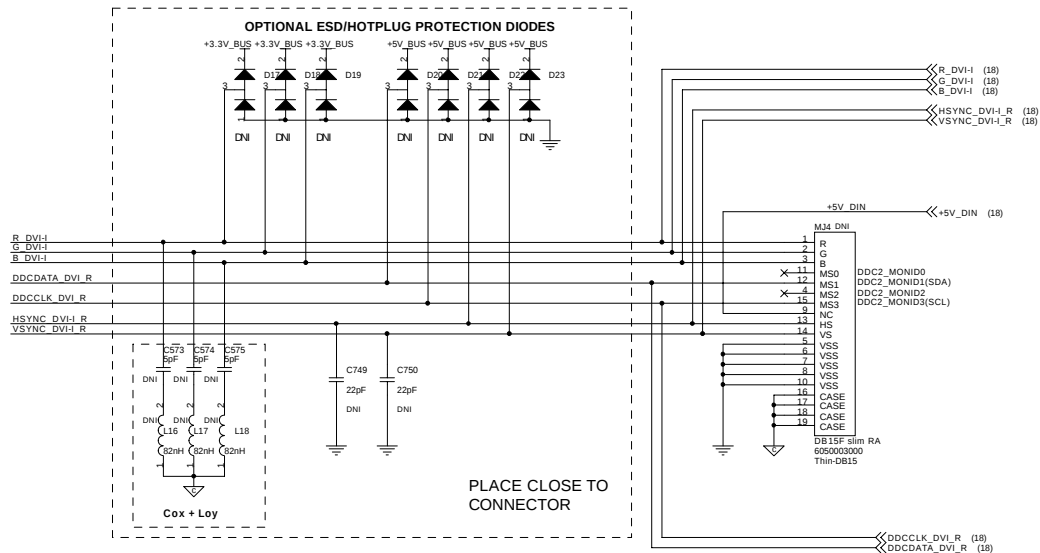
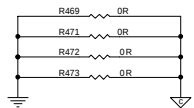


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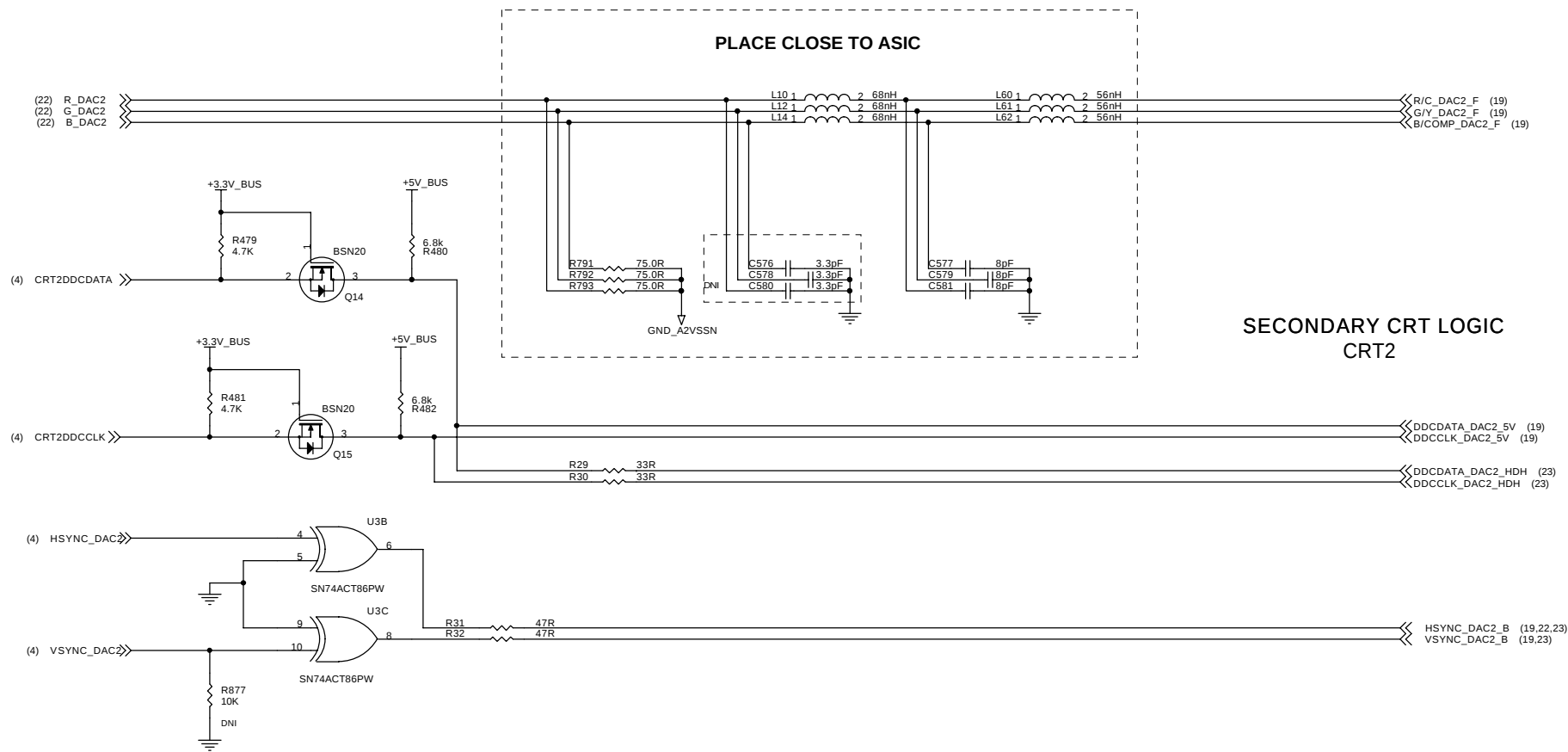
PLACE CLOSE TO ASIC



**PRIMARY VGA
CONNECTOR**



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SECONDARY CRT LOGIC CRT2

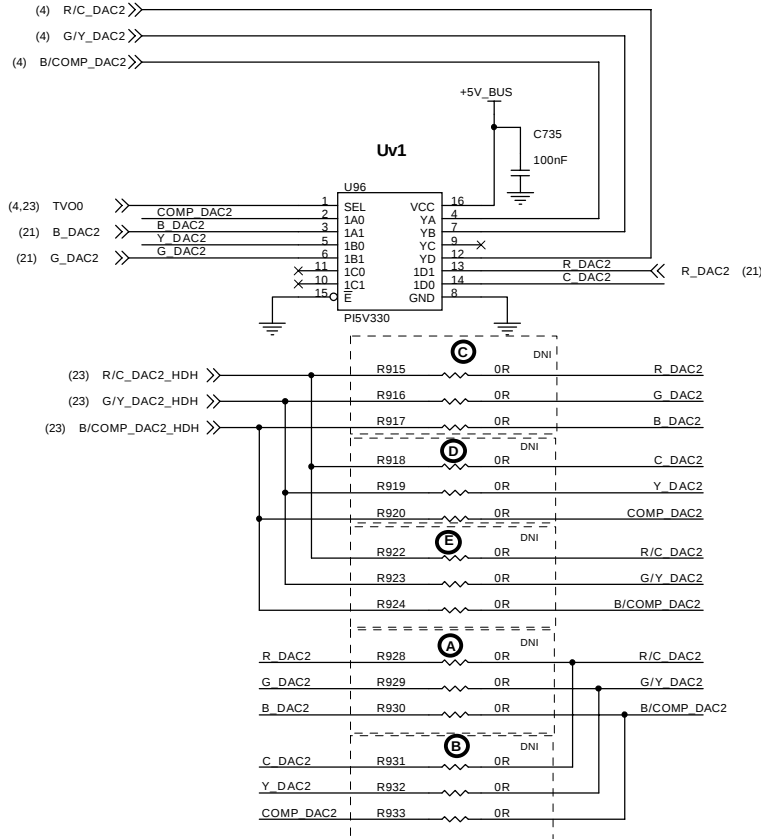
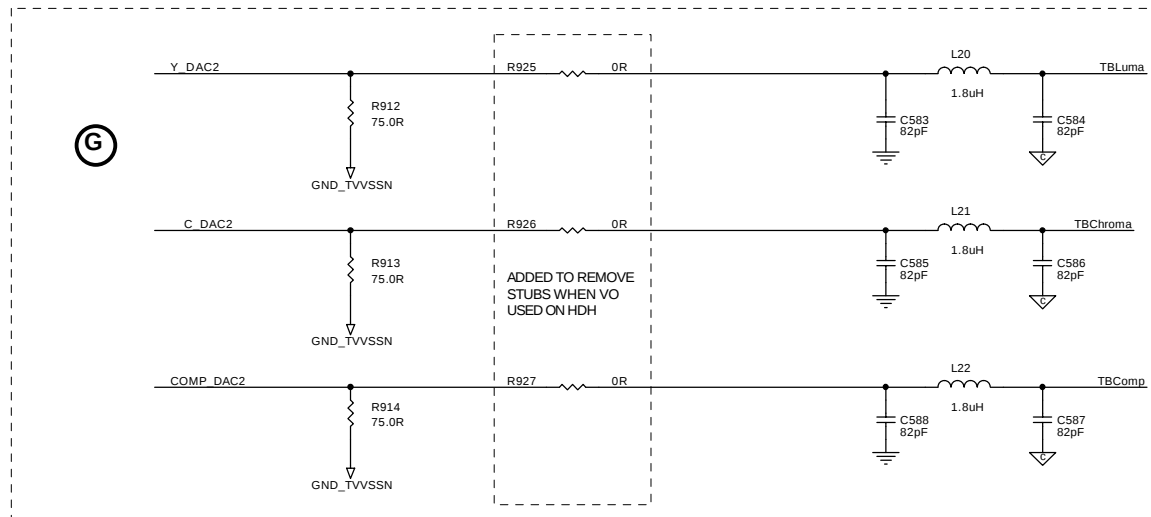
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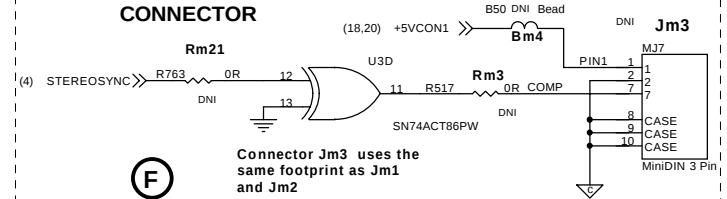
TV-OUT



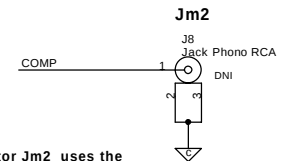
	Install	DNI
TV-OUT only (main board)	(B) (G)	(A) (C) (D) (E) Uv1 CRT2 logic (page21)
VGA2 only (main board)	(A) CRT2 logic (page21)	(B) (C) (D) (E) (G) Uv1
VGA2 & TV-OUT (main board)	(G) Uv1 CRT2 logic (page21)	(A) (B) (C) (D) (E)
VGA2 (main board) & TV-OUT (daughter card)	(D) Uv1	(A) (B) (C) (E) (G)
TV-OUT (main board) & VGA2 (daughter card)	(C) (G) Uv1	(A) (B) (D) (E)
VGA2 (daughter card) & TV-OUT (daughter card)	(E)	(A) (B) (C) (D) (E) Uv1 CRT2 logic (page21)

TVU0	VGA2	TV out
"1"	enable	disable
"0"	disable	enable

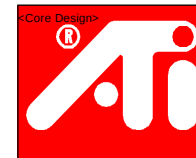
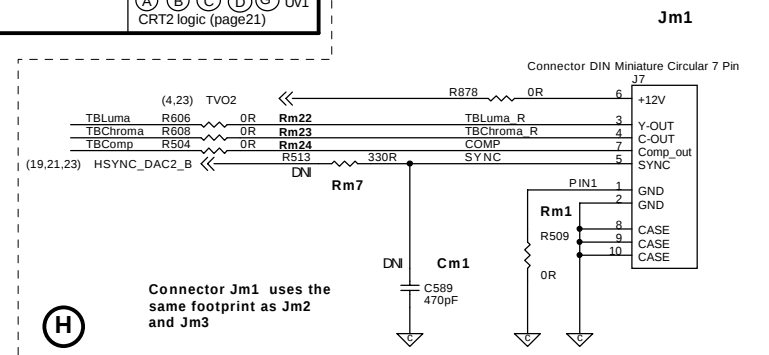
STEREOSCOPIC DISPLAY CONNECTOR



TV Out (Comp)



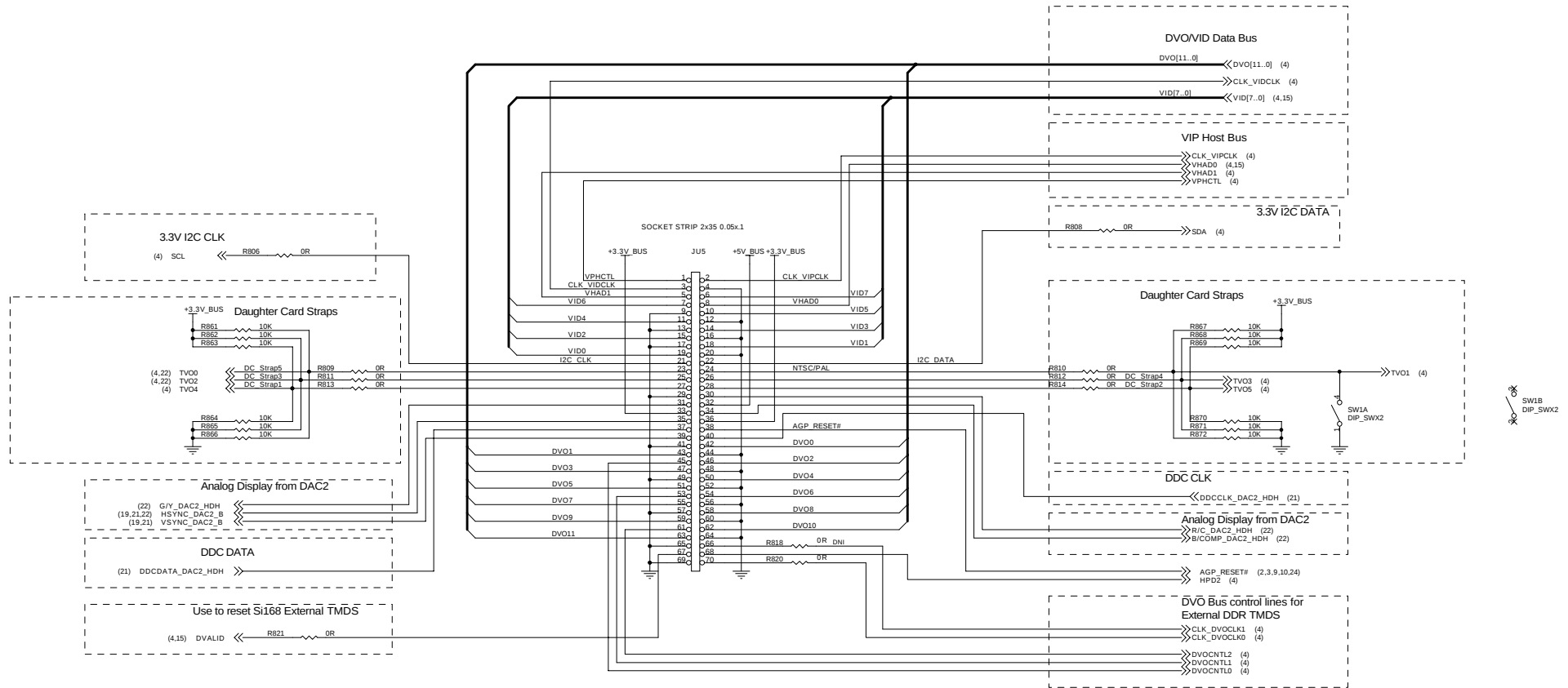
TV Out (SVHS)



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HIGH-DENSITY HEADER



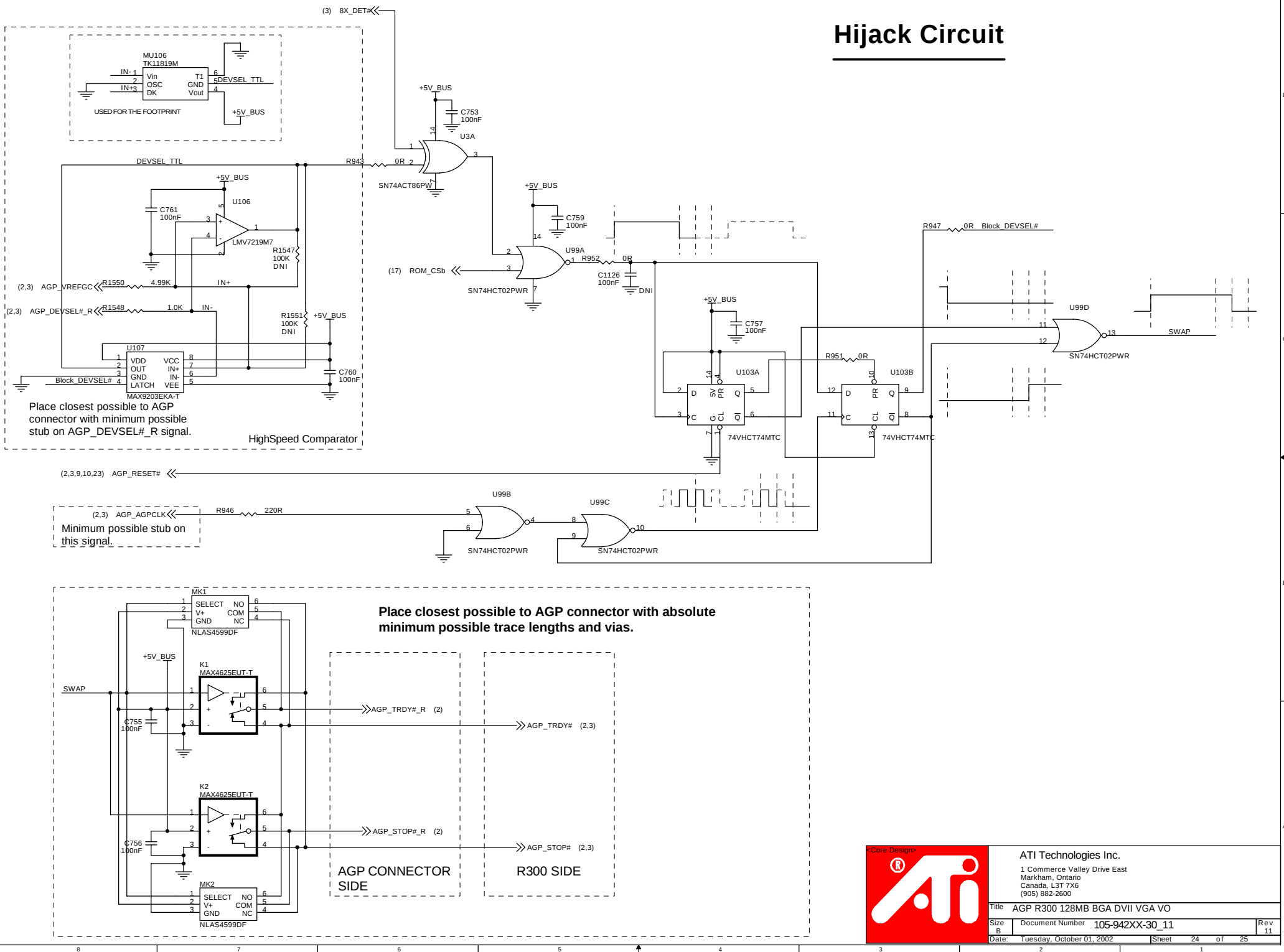
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Title AGP R300 128MB BGA DVII VGA VO			
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CRT SCREWS

ASSY1
SCREW
JACKSCREW
ASSY
7020000800

ASSY4
SCREW
JACKSCREW
ASSY
7020000800

ASSY6
SCREW
PAN HEAD

DVI SCREWS

ASSY2
SCREW
JACKSCREW
ASSY
7020000800

ASSY5
SCREW
JACKSCREW
ASSY
7020000800

MISC. BOARD PARTS

ASSY3
BLANK
LABEL
1.50W X 0.50H
ASSY

ASSY7
ANTISTATIC
BAG
6 X 11
ASSY

REF1
SCHEMATIC
105-942XX-30
ASSY

REF3
ATI LOGO
LABEL
ATI LOGO LABEL

REF2
PCB
109-942XX-30
ASSY

ASSY8
BRACKET
VGA, VID OUT, DVI, 301
ASSY

ASSY11
BRACKET
VGA, DVI, 308
ALT

ASSY10
BRACKET
DVI, 251
ALT

<Core Design>



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Bill Of Materials October 1,2002 14:09:36 Page1

Item	Quantity	Reference	Part
1	4	ASSY1,ASSY2,ASSY4,ASSY5	7020000800 1 Jackscrew for DB15 Connector, 4-40, Steel w/ Zinc plate & clear chromate
2	1	ASSY3	9050005100 1 Label, blank 1.50 X 0.50
3	1	ASSY6	7020001700 1 Screw, Phillips Pan Hd., 4-40 X 3/16"
4	1	ASSY7	9040000900 1 Antistatic bag, W/O Ziplock, 6in x 11in
5	1	ASSY8	8020030100 1 BRACKET, VGA, VID OUT, DVI, 301
6	1	ASSY10	8020025100 BRACKET, DVI, 251
7	1	ASSY11	8020030800 9 BRACKET, VGA, DVI, 308
8	9	B3,B4,B5,B7,B8,B9,B38,B39,B50	5050001900 1 Bead ferrite 26 ohm 600mA SM
9	6	B6,B10,B12,B13,B14,B15	5260001900 1 Ferrite Bead, 200mA 200R@100MHZ
10	5	B11,B24,B25,B26,B27	5260001900 1 Ferrite Bead, 200mA 200R@100MHZ
11	2	B18,B16	5050003200 1 Ferrite bead, 60R @100MHZ, 6000mA
12	4	B19,B21,B22,B23	5050003200 1 Ferrite bead, 60R @100MHZ, 6000mA
13	12	CP1,CP2,CP3,CP4,CP5,CP6,CP7,CP8,CP9,CP11,CP12,CP13	4290000200 1 Capacitor Array, 4x10nF, 20%, 50V, X7R
14	4	C1,C2,C3,C132	4260110700 1 100uF 20% 16V ALUMINUM SM 5.4mm High
15	1	C4	4250010000 1 10pF +/- .5pF 50V NPO CERAMIC SM
16	7	C5,C735,C753,C757,C759,C760,C1126	4250010400 1 100nF 10% 16V X7R CERAMIC SM
17	3	C6,C89,C93	4250010300 1 10nF 10% 25V X7R CERAMIC SM
18	6	C7,C8,C10,C11,C12,C13	4265047700 4 470uF 20% 6.3V Polymer / Aluminum Low ESR 22mOhm 10mm High
19	160	C14,C48,C49,C50,C51,C149,C151,C152,C153,C154,C155,C156,C157,C158,C159,C160,C161,C162,C163,C164,C165,C166,C167,C168,C169,C170,C171,C172,C173,C174,C175,C176,C177,C180,C181,C182,C183,C184,C185,C186,C187,C188,C189,C190,C191,C192,C193,C194,C195,C196,C197,C198,C199,C200,C201,C202,C203,C204,C205,C208,C209,C210,C211,C216,C217,C218,C219,C220,C221,C222,C223,C224,C225,C226,C227,C228,C229,C230,C231,C232,C233,C234,C235,C236,C237,C238,C239,C240,C241,C242,C243,C244,C245,C246,C247,C248,C249,C250,C251,C252,C253,C254,C255,C256,C257,C258,C259,C264,C265,C266,C267,C268,C269,C270,C271,C272,C273,C274,C275,C276,C277,C278,C279,C280,C281,C282,C283,C284,C285,C286,C287,C288,C289,C290,C291,C292,C293,C294,C295,C296,C297,C298,C299,C300,C301,C302,C303,C674,C675,C676,C707,C708,C709,C710,C727,C728,C729,C730,C731,C733	4170010400 1 100nF 10% 10V X7R Ceramic SM
20	20	C15,C22,C25,C29,C31,C35,C37,C42,C43,C44,C52,C55,C56,C57,C66,C69,C74,C75,C673,C738	4210010500 1 1uF +80/-20% 16V Y5V CERAMIC SM (0805)
21	13	C16,C19,C23,C27,C32,C39,C46,C53,C67,C84,C134,C212,C260	4235022600 1 22uF 20% 16V TANTALUM SM
22	2	C17,C20	4250010100 1 100pF 10% 50V NPO CERAMIC SM
23	19	C18,C21,C24,C26,C30,C33,C36,C38,C45,C47,C95,C131,C133,C135,C497,C558,C562,C762,C765	4250010400 1 100nF 10% 16V X7R CERAMIC SM
24	8	C28,C34,C98,C99,C101,C137,C138,C1128	4235022600 1 22uF 20% 16V TANTALUM SM
25	2	C40,C41	4250010000 1 10pF +/- .5pF 50V NPO CERAMIC SM
26	12	C54,C58,C59,C60,C61,C62,C63,C65,C70,C71,C72,C73	4220010600 1 10uF +80/-20% 6.3V Y5V CERAMIC SM
27	1	C64	4230047600 1 47uF 20% 16V Tantalum SM
28	1	C68	4262047600 1 47uF 20% 6.3V Aluminum Low ESR 760mOhm
29	1	C76	4262047700 1 470uF 20% 6.3V Aluminum Low ESR 160mOhm 10.5mm High
30	2	C747,C77	4250010200 1 1nF 10% 50V X7R CERAMIC SM
31	1	C78	4250022200 1 2.2nF 10% 50V X7R CERAMIC SM
32	1	C79	4250015100 1 150pF 10% 50V X7R CERAMIC SM
33	4	C80,C81,C82,C97	4051047700 1 470uF, 10V, 20% 10X12.5mm 0.030R@100kHz, Radial
34	1	C85	4210010200 1 1nF 10% 100V NPO CERAMIC SM
35	3	C86,C92,C1129	4210022500 1 2.2uF 10% 6.3V X5R Ceramic SM
36	5	C87,C90,C145,C146,C734	4210010500 1 1uF +80/-20% 16V Y5V CERAMIC SM (0805)
37	1	C88	4210022400 1 220nF 10% 16V X7R CERAMIC SM
38	3	C91,C732,C736	4264047700 1 470uF 20% 6.3V Polymer / Aluminum Low ESR 22mOhm 8mm High
39	2	C130,C94	4262047700 1 470uF 20% 6.3V Aluminum Low ESR 160mOhm 10.5mm High
40	6	C100,C105,C125,C129,C140,C144	4250010300 1 10nF 10% 25V X7R CERAMIC SM
41	3	C102,C126,C141	4250022200 1 2.2nF 10% 50V X7R CERAMIC SM
42	2	C142,C103	4250015400 9 150nF 10% 16V X7R CERAMIC SM
43	3	C104,C128,C143	4250033000 1 33pF 10% 50V NPO CERAMIC SM
44	4	C119,C743,C744,C745	4250022400 1 220nF +80/-20% 16V Y5V CERAMIC SM
45	1	C120	4260018700 1 180uF 20% 16V Polymer / Aluminum Low ESR 33mOhm 8mm High
46	1	C121	4250010400 1 100nF 10% 16V X7R CERAMIC SM
47	2	C136,C122	4051047700 1 470uF, 10V, 20% 10X12.5mm 0.030R@100kHz, Radial
48	1	C127	4250022300 1 22nF 10% 25V X7R CERAMIC SM
49	1	C147	4250047100 1 470pF 10% 50V X7R CERAMIC SM
50	2	C150,C148	4233010600 1 10uF 20% 16V TANTALUM SM
51	4	C178,C179,C206,C207	4271022600 1 22uF +80/-20% 10V Y5V Ceramic SM
52	17	C213,C214,C215,C261,C262,C263,C679,C680,C681,C682,	4270010600 1 10uF 20% 10V X5R CERAMIC SM

		C683, C684, C685, C686, C687, C688, C746							
53	3	C489, C491, C493	4240010300	1	10nF	+80-20%	50V	Y5V CERAMIC SM	
54	1	C490	4260010600	1	10uF	20%	16V	ALUMINUM SM 5.4mm High	
55	1	C492	4240010400	1	100nF	5%	16V	X7R CERAMIC SM	
56	6	C559, C560, C561, C564, C567, C570	4240000300	1	3pF	+/- .1pF	50V	NPO CERAMIC SM	
57	3	C565, C568, C571	4250010A00	1	1pF	+/- .1pF	50V	NPO CERAMIC SM	
58	3	C573, C574, C575	4240005000	1	5pF	+/- .5pF	50V	NPO CERAMIC SM	
59	3	C576, C578, C580	425003R300	1	3.3pF	+/- .25%	50V	NPO CERAMIC SM	
60	3	C577, C579, C581	4240000800	1	8pF	+/- .1pF	50V	NPO CERAMIC SM	
61	6	C583, C584, C585, C586, C587, C588	4240082000	1	82pF	5%	50V	NPO CERAMIC SM	
62	1	C589	4250047100	1	470pF	10%	50V	X7R CERAMIC SM	
63	8	C711, C712, C713, C714, C715, C716, C717, C718	4170010300	9	10nF	10%	10V	X7R Ceramic SM	
64	2	C737, C739	4231068500	1	6.8uF	20%	25V	Tantalum SM	
65	5	C740, C741, C742, C748, C1127	4240010500	1	1uF	+80/-20%	10V	Y5V CERAMIC SM	
66	4	C749, C750, C751, C752	4250022000	1	22pF	10%	50V	NPO CERAMIC SM	
67	3	C755, C756, C761	4170010400	1	100nF	10%	10V	X7R Ceramic SM	
68	1	C763	4250022400	1	220nF	+80/-20%	16V	Y5V CERAMIC SM	
69	1	C764	4250010300	1	10nF	10%	25V	X7R CERAMIC SM	
70	1	D2	5160467800	1	Diode, Zener 1.8V +/-5%, 500mW, SM				
71	1	D3	5160468100	1	Diode, Zener 2.4V +/-5%, 500mW, SM				
72	15	D6, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23	5170005400	1	Diode, Schottky, 30V 200mA, SM			SOT-23	
73	1	D9	5161038500	1	Diode, Voltage reference 2.5V +/- 75mV, SM				
74	1	D24	5150000800	1	Diode, rectifier 50V 3A				
75	1	D25	5170000700	1	Diode, Schottky, 40V 3A, SM				
76	1	F1	5120000800	1	Fuse resettable 750mA, 13.2V				
77	1	H1	7120003000	1	Heatsink, Active, 61.6mm x 81.3mm x 13mm, 12V, Hypro bearing, Black				
78	1	JU1	6010007800	1	Header, 2x1, 2mm ctrs., Shrouded, Vertical				
79	1	JU2	6140011300	1	Header, 1X4, 2.5mm, Right angle (Floppy Power)				
80	1	JU5	6020005500	1	Socket strip 2x35 0.05x.1 .18 High TH				
81	1	J4	6140005300	1	Connector, DVI, A/D, R/angle Receptacle, Low Profile, White				
82	1	J5	6050001400	1	Connector DB15 Female VGA Blue PIN 9 Recessed				
83	1	J7	6070001500	1	DIN Connector Y/C S video w/Full Shielding				
84	1	J8	6030001400	1	Jack Phono RCA Rt. Angle Thru-Hole Yellow				
85	2	K1, K2	2600001800	4	SPDT Analog Switch, 1 ohm				
86	2	L1, L2	5260013200	1	Inductor, Fixed, 1.5uH 20% 9.0A				
87	2	L6, L3	5260005700	1	Inductor Fixed SM 3316 3.3uH 20% 5.4A				
88	1	L5	5260009800	1	Inductor Fixed 2.2uH 20% 6.1A Wound				
89	12	L7, L8, L9, L16, L17, L18, L43, L44, L45, L46, L47, L48	5260004900	1	Inductor, Fixed 82nH 20% 300mA, Chip				
90	3	L10, L12, L14	5260008700	1	Inductor Fixed 68nH 20% 300mA, Chip				
91	3	L20, L21, L22	5260002100	1	Inductor, Fixed 1.8uH 10% 50mA, Chip				
92	3	L57, L58, L59	5260004800	1	Inductor, Fixed 68nH 20% 300mA, Chip				
93	3	L60, L61, L62	5260006700	1	Inductor Fixed 56nH 5% 300mA Tape & Reel				
94	1	MAGP1	614N0PW064	1	CONNECTOR CARD EDGE UNIVERSAL AGP BUS				
95	1	MJ4	6050003000	9	DB15 Female slim right angle connector with pin 9 recess				
96	1	MJ7	6070001900	1	Connector, MiniDIN, 3 Pin, Shielded, Right Angle				
97	2	MK1, MK2	2600002800	9	SPDT Analog Switch, Low Voltage				
98	4	MREG1, MREG4, MREG5, MREG6	2480009800	1	Precision Adj. Shunt Regulator, 1.24V, 1% 100mA (SOT-23)				
99	1	MU106	2480011000	9	DC-DC Converter, 1.1 to 18Vin, 34Vout, 1.8mA				
100	1	MY1	5023270000	1	Crystal 27.000 MHz, Fundamental, 18pF, 30ppm				
101	2	Q1, Q2	2020002300	1	Transistor, MOSFET, N. Ch., 60V 250mA				
102	2	Q3, Q4	2020007600	1	Transistor, MOSFET, Dual N Ch., 20V 9.4A, .018R, Logic level, Vgs = 12V				
103	3	Q5, Q8, Q9	2020008100	1	Transistor, MOSFET, Dual N Ch., 30V 8A, .020R, Logic level, Vgs = 16V				
104	1	Q11	2021222200	1	Transistor, NPN, 40V 600mA				
105	4	Q12, Q13, Q14, Q15	2020000600	1	Transistor, MOSFET, N Ch., 50V 100mA				
106	1	Q19	2020004300	1	Transistor, MOSFET, N Ch., 20V 1.7A, Low RDS On				
107	1	REF1	105-942XX-12	1	SCHEMATIC AGP R300 128MB BGA DVII VGA VO VIP				
108	1	REF2	109-942XX-12	1	PCB AGP R300 128MB BGA DVII VGA VO VIP				
109	1	REF3	9110054500	1	ATI LOGO LABEL FOR THE PCB				
110	4	REG1, REG4, REG5, REG6	2480010500	5	Precision Adj. Shunt Regulator, 1.24V, 1% 100mA (SOT-23-5)				
111	1	REG2	2480012200	1	Voltage Regulator Adjustable LDO 800mA				
112	1	REG3	2480004000	1	Voltage Regulator, 150mA, 2.5V, LDO				
113	84	RP1, RP2, RP3, RP4, RP5, RP6, RP7, RP8, RP9, RP10, RP11, RP12, RP13, RP14, RP15, RP16, RP17, RP18, RP19, RP20, RP23, RP46, RP47, RP48, RP49, RP50, RP51, RP52, RP53, RP54, RP55, RP56, RP57, RP58, RP59, RP60, RP61, RP62, RP63, RP64, RP65, RP66, RP91, RP92, RP93, RP94, RP95, RP96, RP97, RP98, RP99, RP100, RP101, RP102, RP103, RP104, RP105, RP106, RP107, RP108, RP109, RP110, RP132, RP136, RP137, RP138, RP139, RP140, RP141, RP142, RP143, RP144, RP145, RP146, RP147, RP148, RP149, RP150, RP151, RP152, RP153, RP154, RP155, RP156	3270004700	1	56R 4-Element Resistor Network Individual SM T&R				
114	64	RP25, RP26, RP27, RP28, RP29, RP30, RP31, RP32, RP33, RP34, RP35, RP36, RP37, RP38, RP39, RP40, RP75, RP76, RP77, RP78, RP79, RP80, RP81, RP82, RP83, RP84, RP85, RP86, RP87, RP88, RP89, RP90, RP111, RP112, RP113, RP114, RP115, RP116, RP117, RP118, RP119, RP120, RP121, RP122, RP123, RP124, RP125, RP126, RP160, RP161, RP162, RP163, RP164, RP165, RP166, RP167, RP168, RP169, RP170, RP171, RP172, RP173, RP174, RP175	3270008100	1	47R 4-Element Resistor Network Individual SM T&R				
115	1	RP192	3270004000	1	33R 4-Element Resistor Network Individual SM T&R 0805				
116	1	RT1	5110000900	9	NTC Thermistor, 100K, 5%, .10mA				
117	17	R1, R2, R3, R4, R5, R6, R8, R10, R17, R820, R895, R934, R935, R936, R937, R938, R939	3230000000	1	0R 1/16W 5% SM T&R				
118	3	R7, R9, R16	3230082200	1	8.2K 1/16W 5% SM T&R				
119	23	R13, R15, R708, R709, R710, R711, R712, R713, R714, R715, R806, R808, R809, R810, R811,	3150000000	1	0 Ohm Jumper				

		R812, R813, R814, R821, R855, R856, R857, R858					
120	1	R18	3230047300	1	47K	1/16W	5% SM T&R
121	43	R19, R333, R334, R335, R336, R337, R338, R339, R340, R341, R342, R343, R344, R345, R346, R352, R353, R354, R355, R357, R358, R359, R360, R831, R833, R839, R841, R850, R851, R852, R853, R861, R862, R863, R864, R865, R866, R867, R868, R869, R870, R871, R872	3150010300	1	10K	1/16W	5% SM T&R
122	1	R20	3240332100	1	3.32K	1/16W	1% SM T&R
123	1	R21	3240147100	1	1.47K	1/16W	1% SM T&R
124	1	R22	3230010100	1	100R	1/16W	5% SM T&R
125	2	R43, R23	3230010200	1	1K	1/16W	5% SM T&R
126	1	R24	3240102100	1	1.02K	1/16W	1% SM T&R
127	2	R25, R854	3230018100	1	180R	1/16W	5% SM T&R
128	6	R26, R27, R28, R44, R361, R362	3210000000	1	0R	1/10W	5% SM T&R (JUMPER)
129	8	R29, R30, R465, R466, R822, R823, R824, R825	3230033000	1	33R	1/16W	5% SM T&R
130	2	R32, R31	3230047000	1	47R	1/16W	5% SM T&R
131	1	R39	3240169000	1	169R	1/16W	1% SM T&R
132	1	R40	324071R500	1	71.5R	1/16W	1% SM T&R
133	24	R45, R46, R47, R48, R56, R58, R59, R65, R80, R81, R82, R83, R84, R112, R470, R474, R509, R800, R803, R921, R943, R947, R951, R952	3230000000	1	0R	1/16W	5% SM T&R
134	3	R49, R50, R51	3240075000	1	75.0R	1/16W	1% SM T&R
135	2	R117, R52	3240499000	1	499R	1/16W	1% SM T&R
136	2	R54, R53	3230047200	1	4.7K	1/16W	5% SM T&R
137	1	R55	3240715000	1	715R	1/16W	1% SM T&R
138	1	R57	3230010500	1	1M	1/16W	5% SM T&R
139	1	R63	3240107000	1	107R	1/16W	1% SM T&R
140	3	R66, R77, R90	3240150000	1	150R	1/16W	1% SM T&R
141	2	R142, R68	3220047000	1	47R	1/4W	5% SM T&R
142	4	R69, R140, R144, R145	3240681000	1	681R	1/16W	1% SM T&R
143	4	R70, R141, R146, R147	3240150100	1	1.50K	1/16W	1% SM T&R
144	4	R71, R79, R88, R91	323005R100	1	5.1R	1/16W	5% SM T&R
145	2	R72, R73	3210022A00	1	2.2R	1/10W	5% SM T&R
146	1	R74	3230033300	1	33K	1/16W	5% SM T&R
147	3	R75, R910, R911	3230010400	1	100K	1/16W	5% SM T&R
148	2	R76, R89	324051R100	1	51.1R	1/16W	1% SM T&R
149	1	R78	3240511000	1	511R	1/16W	1% SM T&R
150	2	R92, R85	3230010100	1	100R	1/16W	5% SM T&R
151	1	R87	3250243100	1	2.43K	1/10W	1% SM T&R
152	3	R93, R113, R123	3230010000	1	10R	1/16W	5% SM T&R
153	1	R94	3240825000	1	825R	1/16W	1% SM T&R
154	3	R95, R115, R127	3230015200	1	1.5K	1/16W	5% SM T&R
155	3	R96, R116, R128	3230027300	1	27K	1/16W	5% SM T&R
156	1	R97	3240140100	1	1.40K	1/16W	1% SM T&R
157	1	R98	3240110100	1	1.10K	1/16W	1% SM T&R
158	3	R99, R118, R132	3230010300	1	10K	1/16W	5% SM T&R
159	3	R100, R120, R133	3230051300	1	51K	1/16W	5% SM T&R

160	3	R101, R121, R134	3230030200	1	3K	1/16W	5% SM T&R
161	3	R102, R122, R135	3230015300	1	15K	1/16W	5% SM T&R
162	1	R114	3240133100	1	1.33K	1/16W	1% SM T&R
163	1	R124	3240499100	1	4.99K	1/16W	1% SM T&R
164	1	R126	3240562000	1	562R	1/16W	1% SM T&R
165	1	R130	3240133100	1	1.33K	1/16W	1% SM T&R
166	1	R131	3240200100	1	2K	1/16W	1% SM T&R
167	4	R137, R138, R773, R774	316075R000	1	75.0R	1/16W	1% SM T&R
168	2	R143, R139	3220018000	1	18R	1/4W	5% SM T&R
169	4	R164, R165, R167, R168	3150047200	1	4.7K	1/16W	5% SM T&R
170	33	R166, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R227, R228, R229, R230, R231, R232, R233, R234, R235, R236, R237, R238, R239, R240, R241, R242	3150047000	1	47R	1/16W	5% SM T&R
171	102	R169, R170, R171, R172, R189, R190, R191, R192, R193, R194, R195, R196, R197, R198, R199, R200, R201, R202, R203, R204, R223, R224, R225, R226, R243, R244, R245, R246, R247, R248, R249, R250, R251, R252, R253, R254, R255, R256, R257, R258, R718, R719, R720, R721, R722, R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738, R739, R740, R741, R742, R743, R744, R745, R746, R747, R748, R749, R775, R776, R777, R778, R779, R780, R781, R782, R783, R784, R785, R786, R787, R788, R789, R790, R826, R827, R828, R829, R830, R832, R834, R835, R836, R837, R838, R840, R859, R860	3150056000	1	56R	1/16W	5% SM T&R
172	32	R207, R208, R209, R210, R211, R212, R213, R214, R215, R216, R217, R218, R219, R220, R221, R222, R261, R262, R263, R264, R265, R266, R267, R268, R269, R270, R271, R272, R273, R274, R275, R276	3150047000	1	47R	1/16W	5% SM T&R
173	16	R277, R278, R279, R280, R281, R282, R283, R284, R285, R286, R287, R288, R289, R290, R291, R292	3160499100	1	4.99K	1/16W	1% SM T&R
174	8	R347, R348, R349, R350, R351, R874, R877, R909	3230010300	1	10K	1/16W	5% SM T&R
175	12	R363, R891, R892, R893, R894, R896, R897, R898, R899, R900, R901, R902	3240100300	1	100K	1/16W	1% SM T&R
176	2	R904, R364	3240100300	1	100K	1/16W	1% SM T&R
177	1	R365	3230010300	1	10K	1/16W	5% SM T&R

178	1	R366	3230027100	1	270R	1/16W	5% SM T&R
179	1	R367	3210000000	1	0R	1/10W	5% SM T&R (JUMPER)
180	1	R368	3240511100	1	5.11K	1/16W	1% SM T&R
181	8	R451, R453, R455, R456, R794, R795, R796, R797	3230033100	1	330R	1/16W	5% SM T&R
182	1	R457	3230020300	1	20K	1/16W	5% SM T&R
183	1	R458	3230010400	1	100K	1/16W	5% SM T&R
184	8	R459, R460, R461, R462, R469, R471, R472, R473	3210000000	1	0R	1/10W	5% SM T&R (JUMPER)
185	4	R463, R464, R480, R482	3230068200	1	6.8K	1/16W	5% SM T&R
186	4	R467, R468, R479, R481	3230047200	1	4.7K	1/16W	5% SM T&R
187	4	R504, R606, R608, R878	3210000000	1	0R	1/10W	5% SM T&R (JUMPER)
188	1	R513	3230033100	1	330R	1/16W	5% SM T&R
189	2	R517, R763	3230000000	1	0R	1/16W	5% SM T&R
190	1	R768	3240243200	1	24.3K	1/16W	1% SM T&R
191	1	R769	3240100200	1	10K	1/16W	1% SM T&R
192	6	R791, R792, R793, R912, R913, R914	3240075000	1	75.0R	1/16W	1% SM T&R
193	2	R799, R802	3230051000	1	51R	1/16W	5% SM T&R
194	37	R815, R816, R873, R879, R880, R881, R882, R883, R884, R885, R886, R887, R888, R889, R890, R905, R906, R907, R908, R915, R916, R917, R918, R919, R920, R922, R923, R924, R925, R926, R927, R928, R929, R930, R931, R932, R933	3150000000	1	0 Ohm	Jumper	
195	1	R818	3230000000	1	0R	1/16W	5% SM T&R
196	1	R875	3230010200	1	1K	1/16W	5% SM T&R
197	1	R876	3230018200	1	1.8K	1/16W	5% SM T&R
198	1	R903	3230000000	1	0R	1/16W	5% SM T&R
199	1	R946	3230022100	1	220R	1/16W	5% SM T&R
200	1	R954	3230010300	1	10K	1/16W	5% SM T&R
201	1	R1547	3160100300	1	100K	1/16W	1% SM T&R
202	1	R1548	3160100100	1	1.0K	1/16W	1% SM T&R
203	1	R1550	3160499100	1	4.99K	1/16W	1% SM T&R
204	1	R1551	3230010400	1	100K	1/16W	5% SM T&R
205	1	R1552	3230056000	1	56R	1/16W	5% SM T&R
206	1	SW1	5030003000	1	Slide Switch, SPST, 2 position		
207	10	TP1, TP2, TP3, TP4, TP7, TP27, TP28, TP33, TP34, TP35	620NOPN000	1	TEST POINT PCB HOLE 0.035 in.		
208	1	U2	2430002100	1	Quad 2 Input And Gate		
209	1	U3	2430000300	1	Quad Exclusive-OR CMOS Gate, 2 Input, TTL compatible		
210	1	U3	2430000300	1	Quad Exclusive-OR CMOS Gate, 2 Input, TTL compatible		
211	1	U42	215R8AAGA11	1	1117 ball 40x40mm, 1mm pitch BGA, 39x39 rows, 7 rows deep and with 15x15 center		
212	1	U43	2480019600	1	Dual Synchronous PWM Controller, Programmable		
213	3	U44, U48, U50	2480018900	1	Synchronous PWM Controller, 400KHz Reference Voltage 0.8V		
214	3	U45, U49, U51	2480020900	1	Buck & Synchronous-Rectifier PWM Controller		
215	8	U52, U53, U54, U55, U56, U57, U58, U59	235C284433	1	SGRAM DDR 128Mbit 1MX32X4 Bank 300MHz w/DLL 2.5V VDD/VDDQ		
216	1	U76	2480017000	1	Fan Controller		
217	1	U80	2280001900	1	Serial Flash 512Kbit 64Kx8, SPI interface, 20MHz, 2.7V-3.6V.		
218	1	U81	2280000200	6	SERIAL FLASH 1Mbit 4 PIN SPI INTERFACE 3V 8-PIN SOIC		
219	4	U89, U90, U91, U92	2430002900	1	Single Gate 2 Input AND		
220	1	U93	2430001200	1	Single Gate Inverter, High Speed (Tiny Logic)		
221	1	U95	2480000200	9	Operational Amplifier Low Power Single Power Supply Quad		
222	1	U96	2710000800	1	Wideband Quad 2-Channel Video Mux/Demux		
223	1	U99	2430003900	9	Quad 2 I/P NOR Gate		
224	1	U103	2431007400	1	Dual Flip-flop, D-Type with Preset&Clear		
225	1	U106	2480023600	9	Comparator, 7ns, Rail-to-rail Output, Low voltage		
226	1	U107	200NOPN052	1	IC- Comparator MAXIM MAX9203EKA-T		
227	1	Y1	5016270000	1	Crystal Oscillator 27.00MHz, 50ppm, 3.3V, HCMOS/TTL		