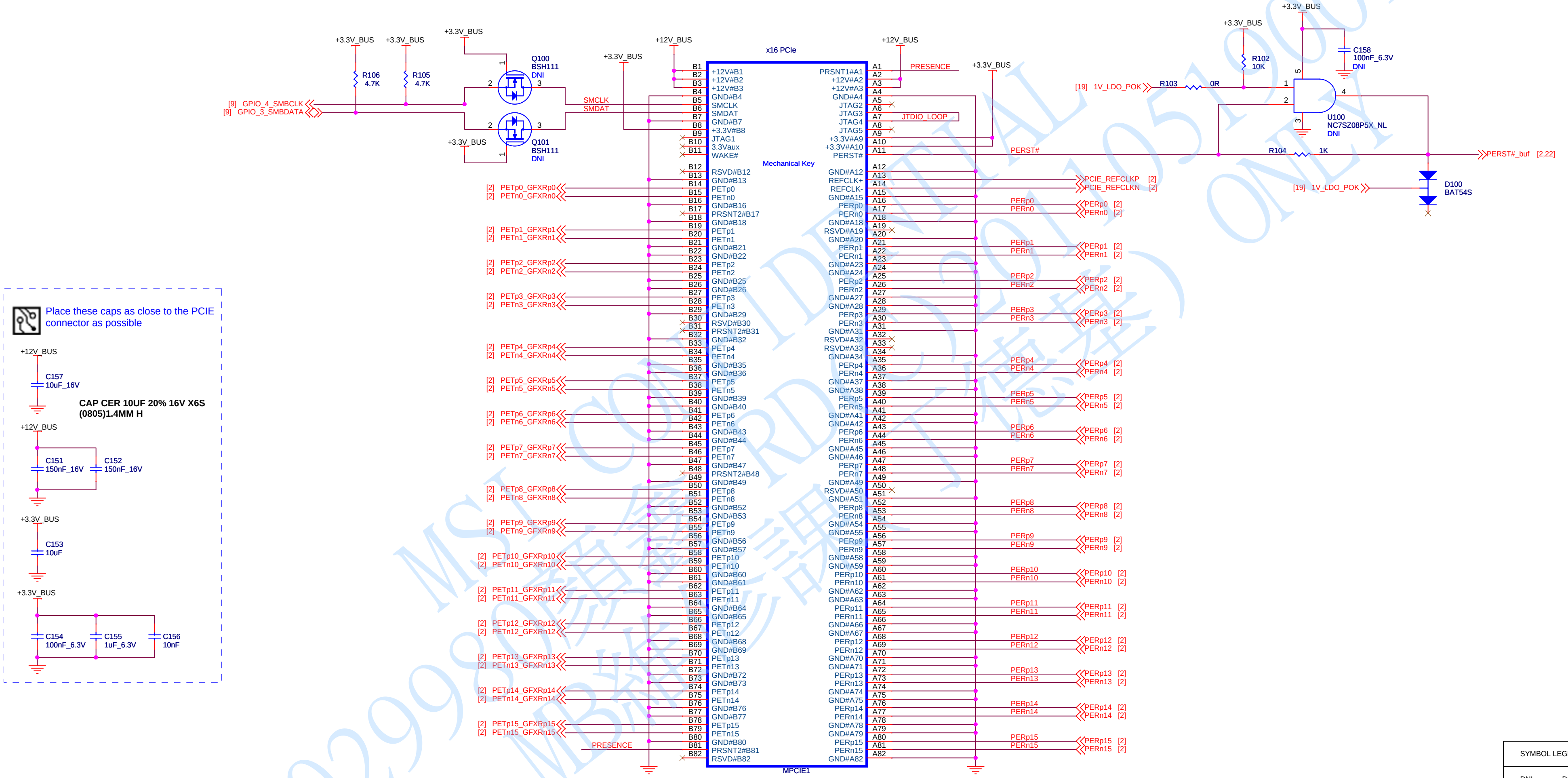
PCI-EXPRESS EDGE CONNECTOR

PCIe RESET Buffered



SYMBOL LEGEND

DNI	DO NOT INSTALL
#	ACTIVE LOW
⏚	DIGITAL GROUND
▽	ANALOG GROUND
BUO	BRING UP ONLY

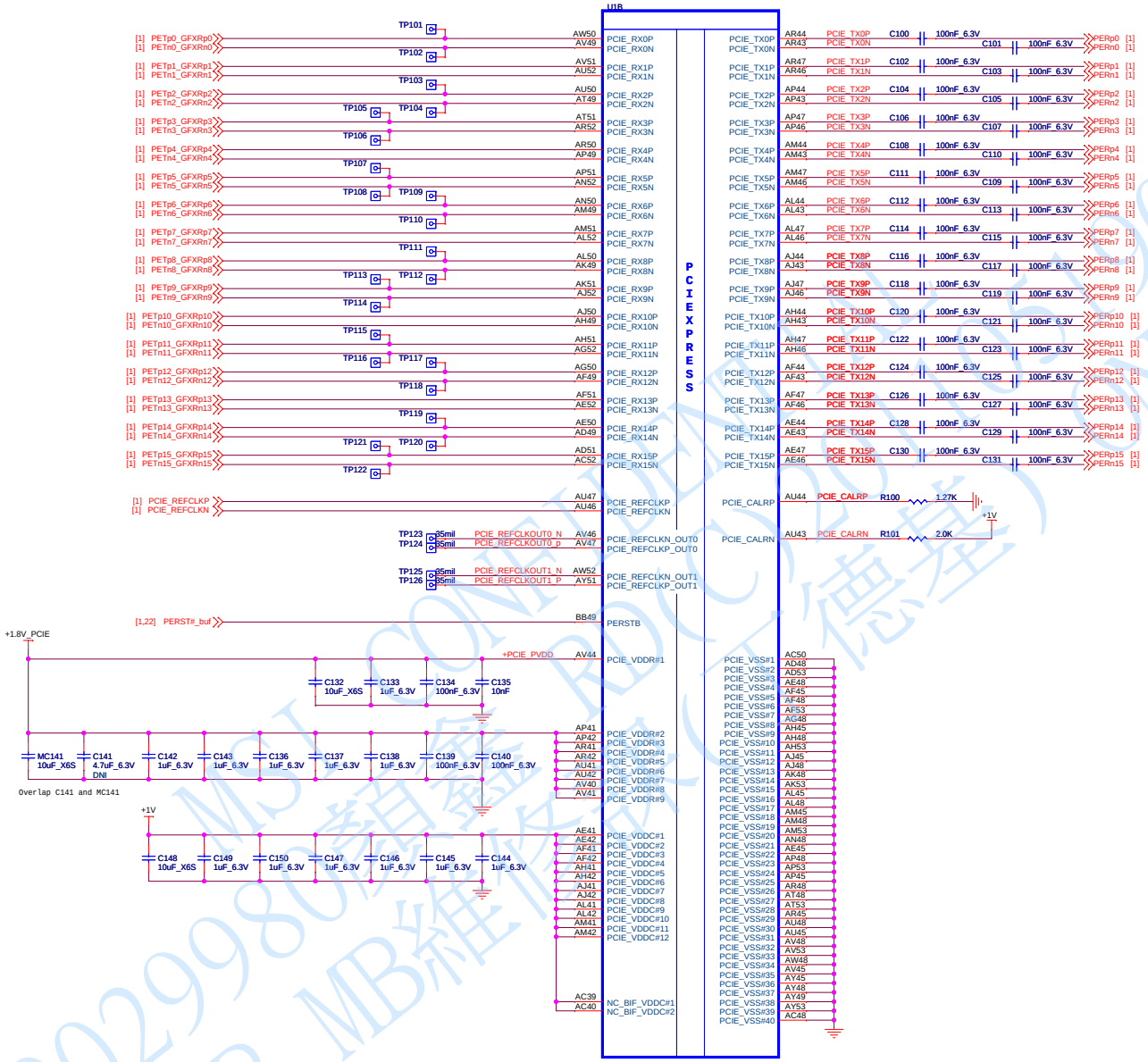
Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010 Rev 01

Sheet 1 of 25

Title PCIE EDGE CONNECTOR Doc No. 105-C205XX-00A

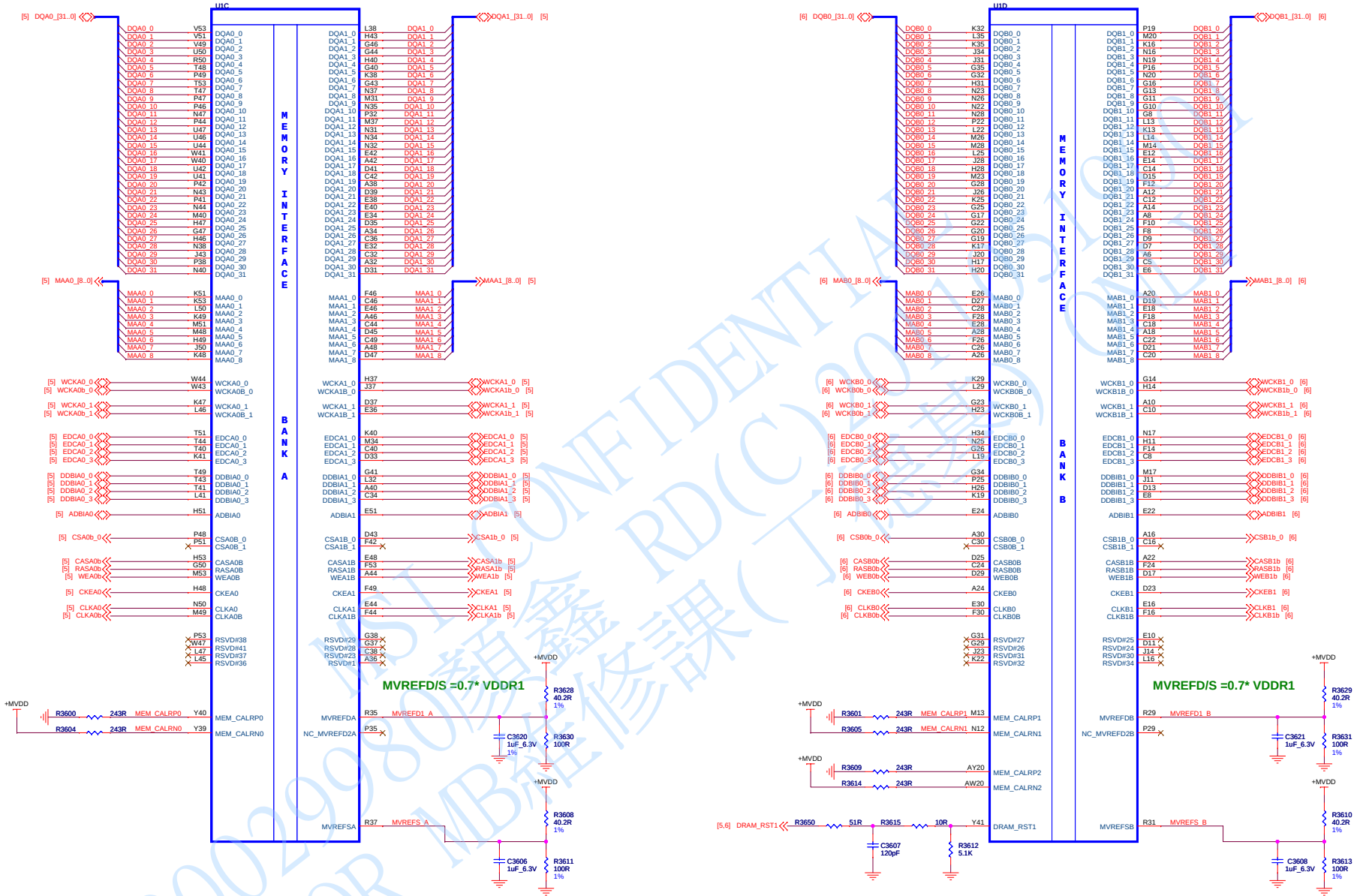
(2) CAMEN PCIE Interface



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date:	Friday, October 08, 2010
Rev	01
Sheet	2 of 25
Title	ASIC PCIE Interface
Doc No.	105-C205XX-00A

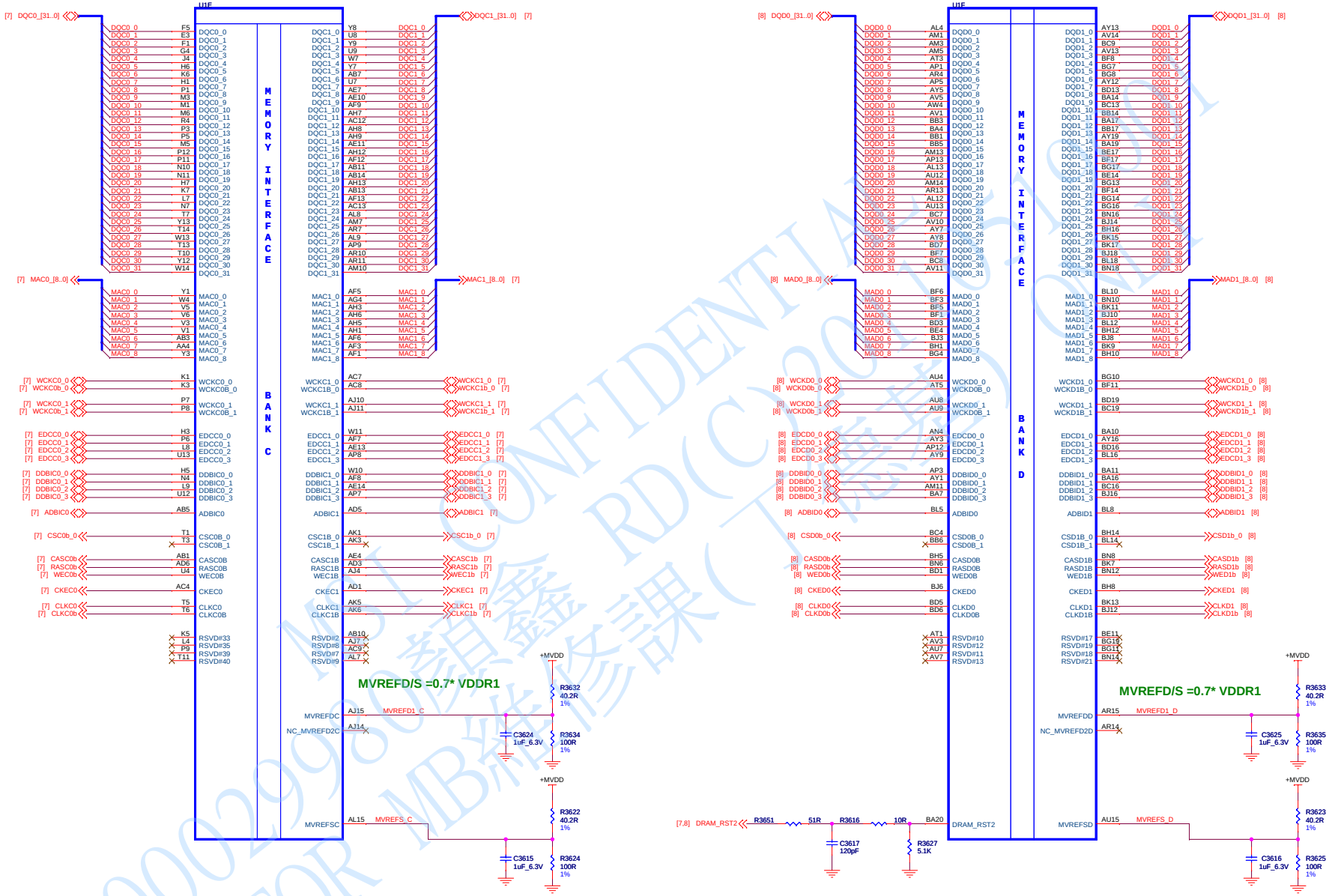
(3) CAYMEN MEM Interface Ch A&B



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date:	Friday, October 08, 2010
Rev	01
Sheet	3 of 25
Title	ASIC Memory Ch A & B
Doc No.	105-C205XX-00A

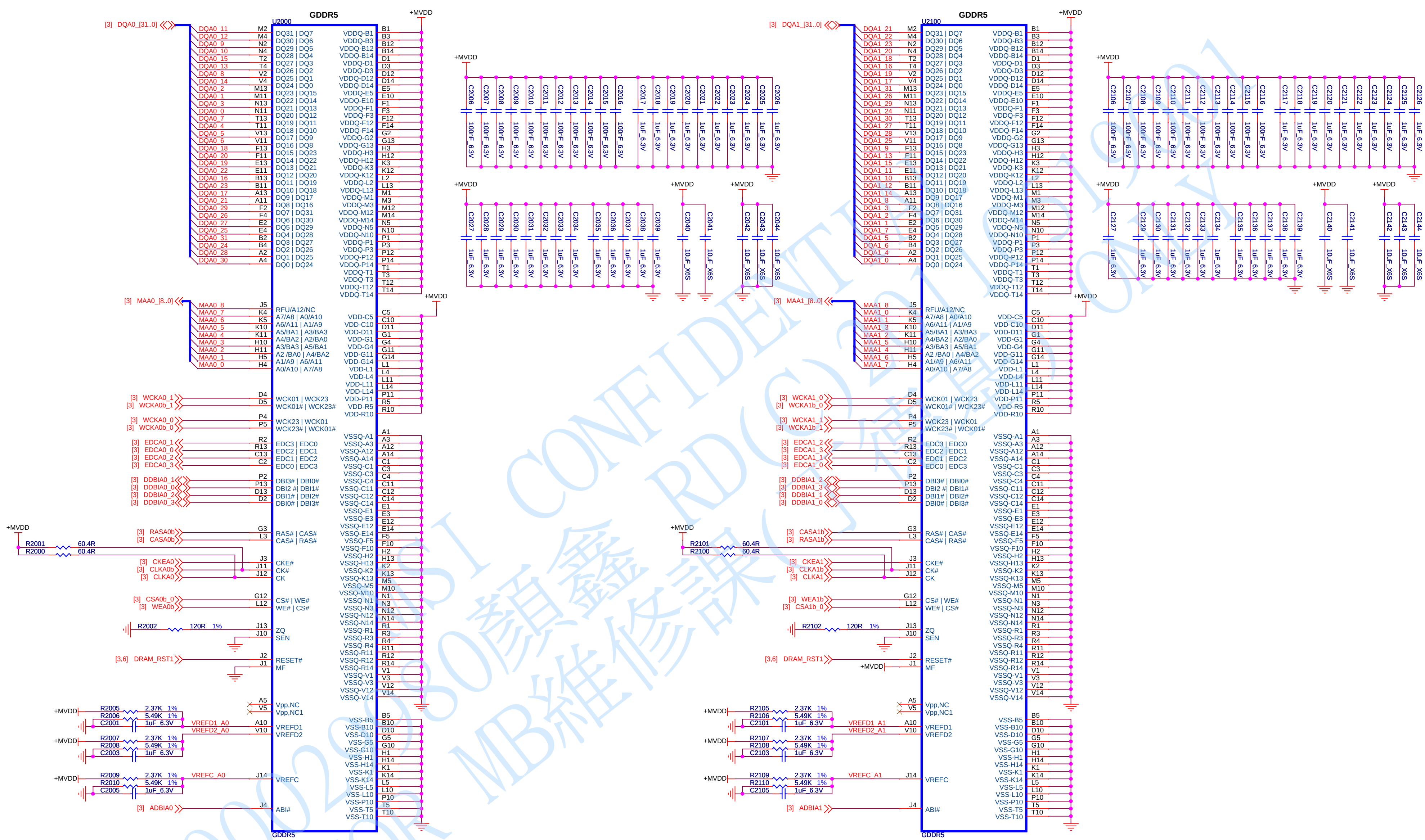
(4) CAYMEN MEM Interface Ch C&D



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date:	Friday, October 08, 2010
Rev	01
Sheet	4 of 25
Title	ASIC Memory Ch C & D
Doc No.	105-C205XX-00A

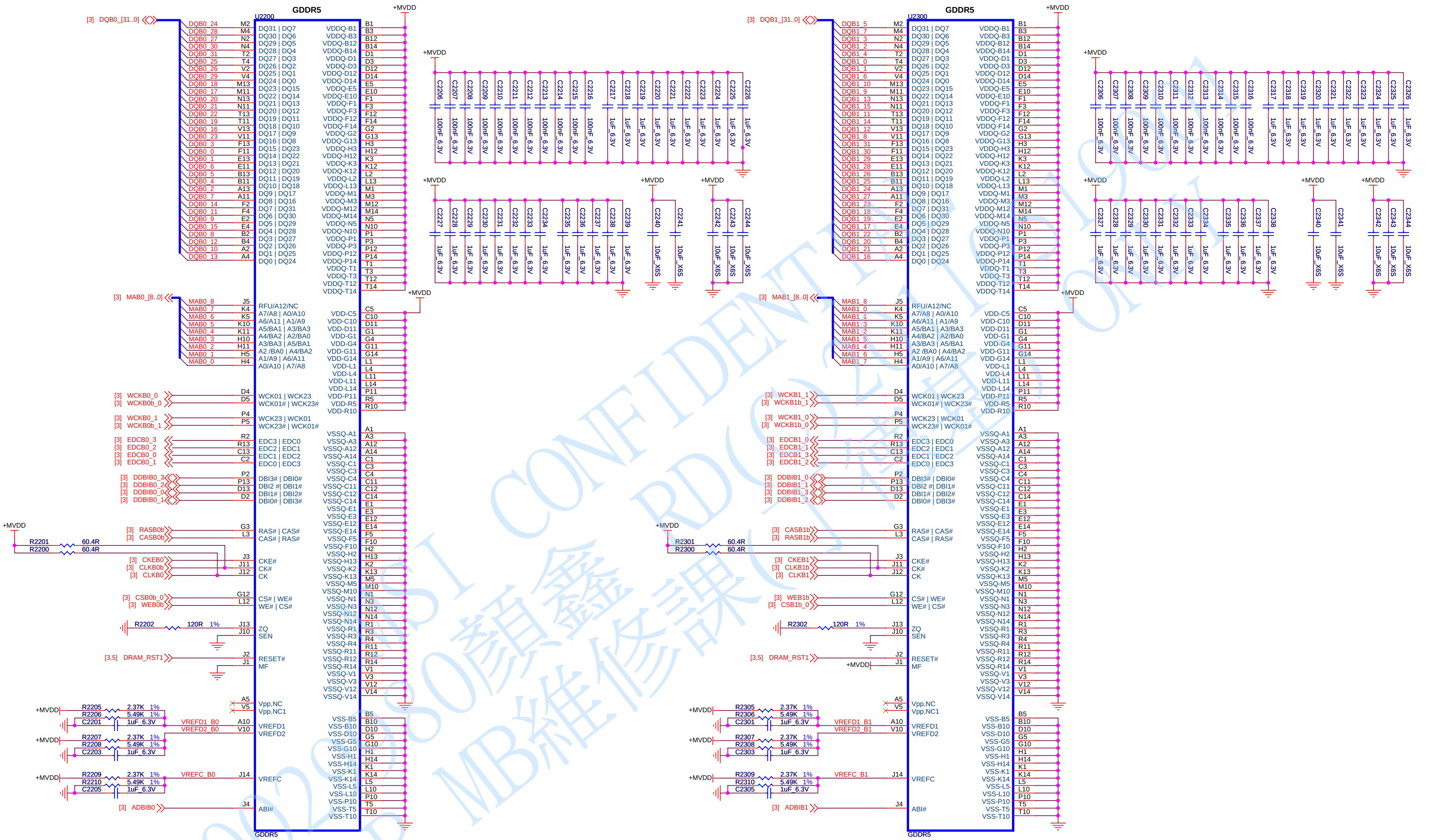
(5) GDDR5 Memory Channel A



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date:	Friday, October 08, 2010
Rev	01
Sheet	5 of 25
Title	GDDR5 Ch A
Doc No.	105-C205XX-00A

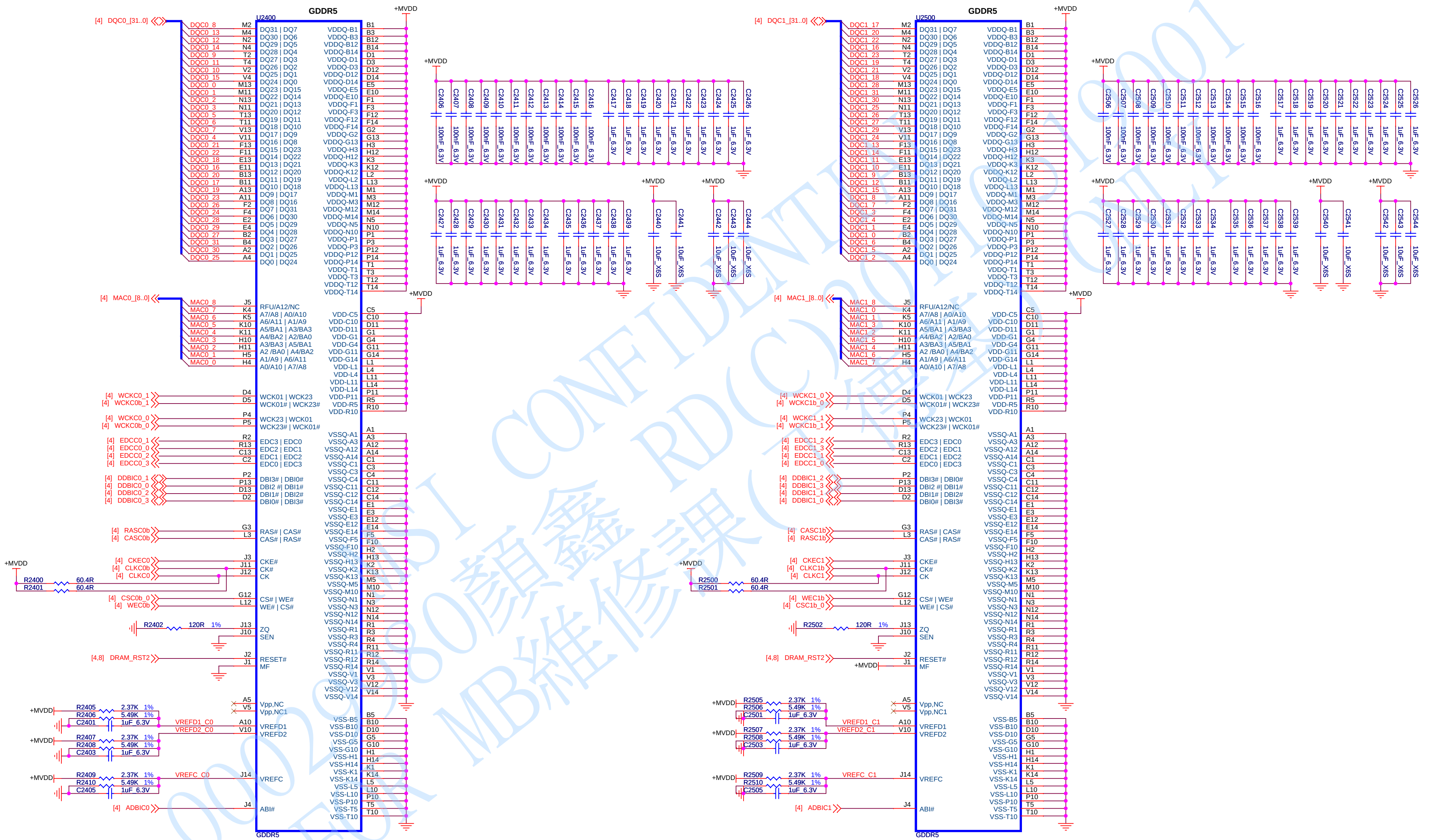
(6) GDDR5 Memory Channel B



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010	Rev 01
Sheet 6 of 25	
Title GDDR5 Ch B	Doc No. 105-C205XX-00A

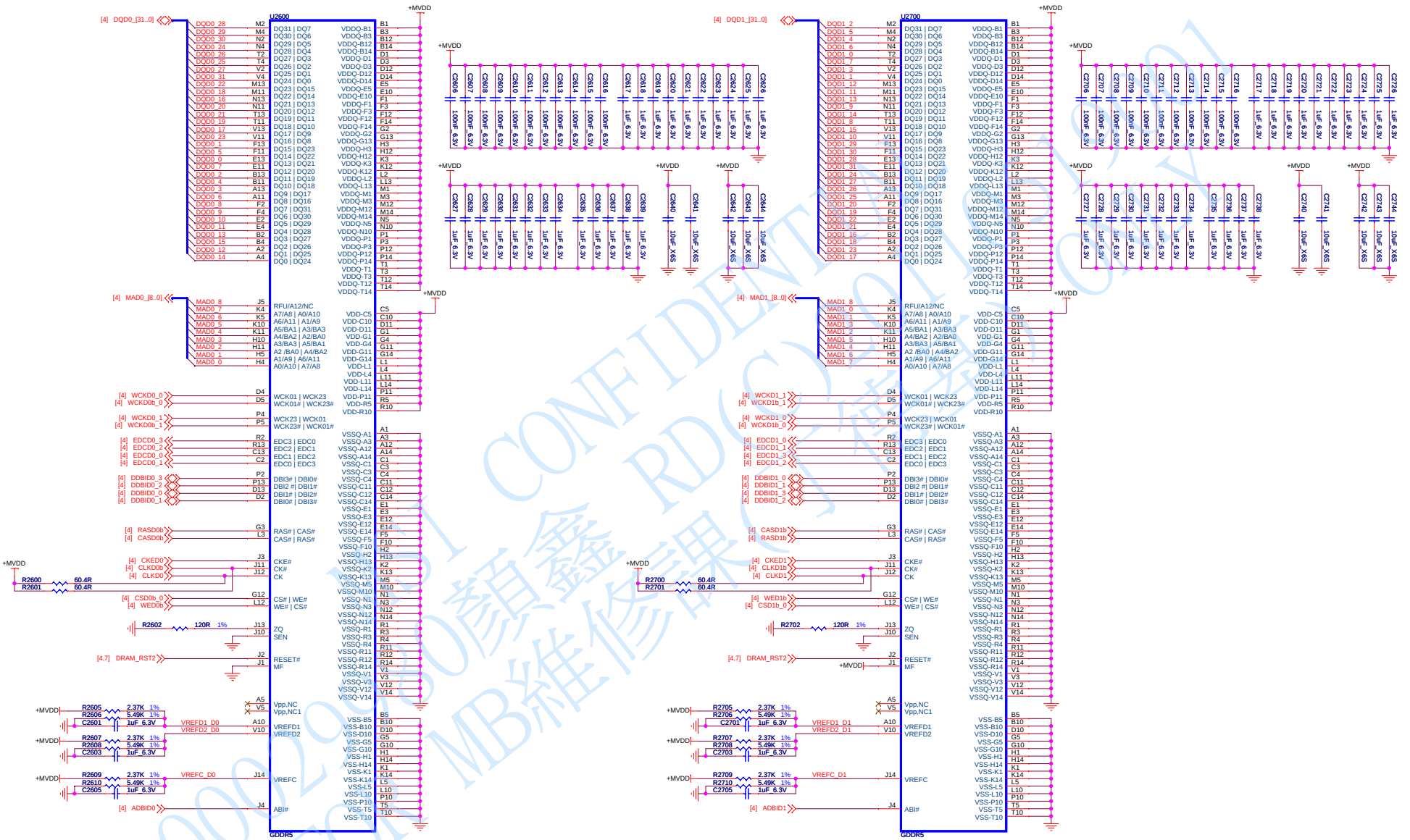
(7) GDDR5 Memory Channel C



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010 | Rev 01
Sheet 7 of 25
Title GDDR5 Ch C
Doc No. 105-C205XX-00A

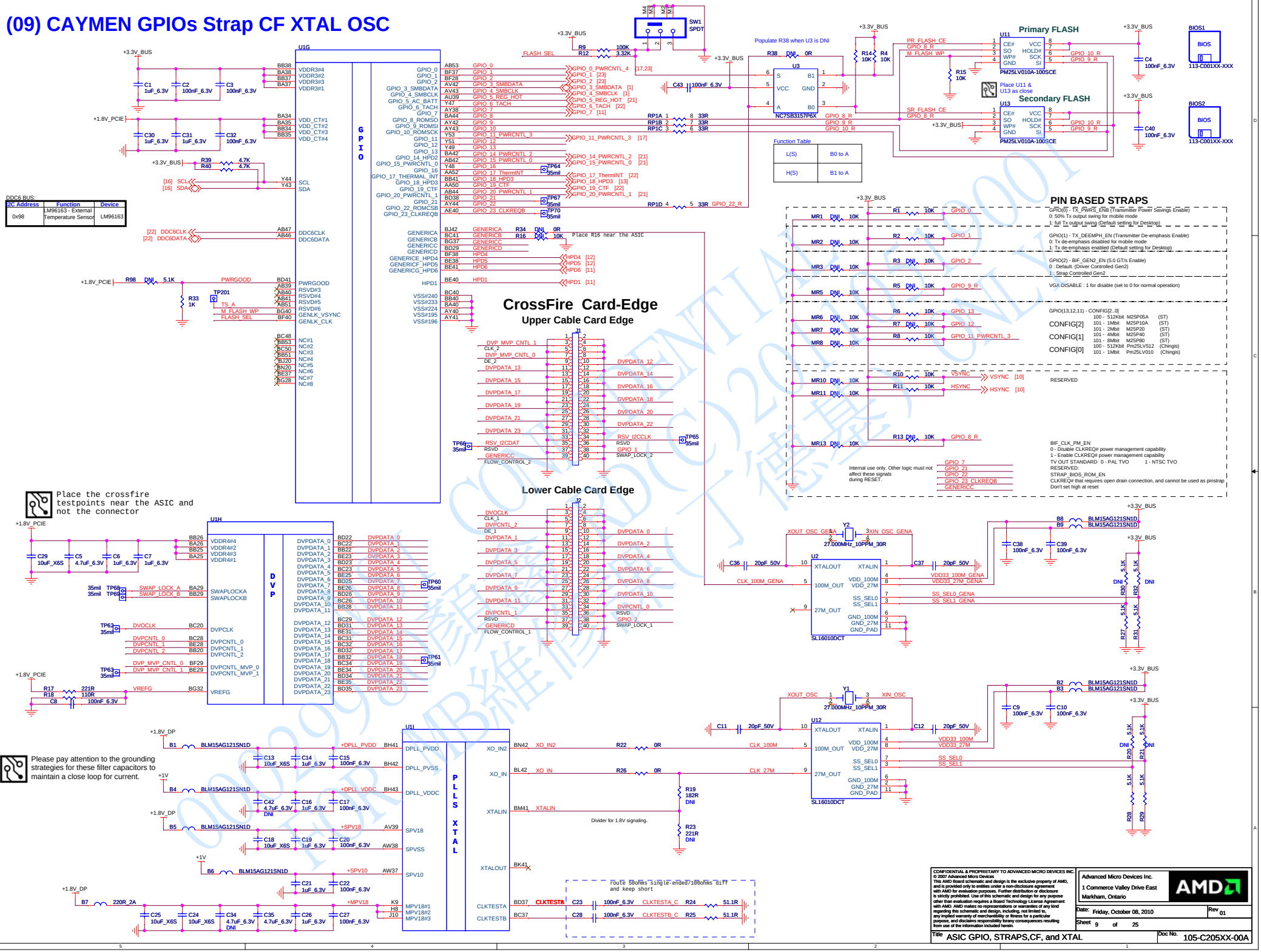
(8) GDDR5 Memory Channel D



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

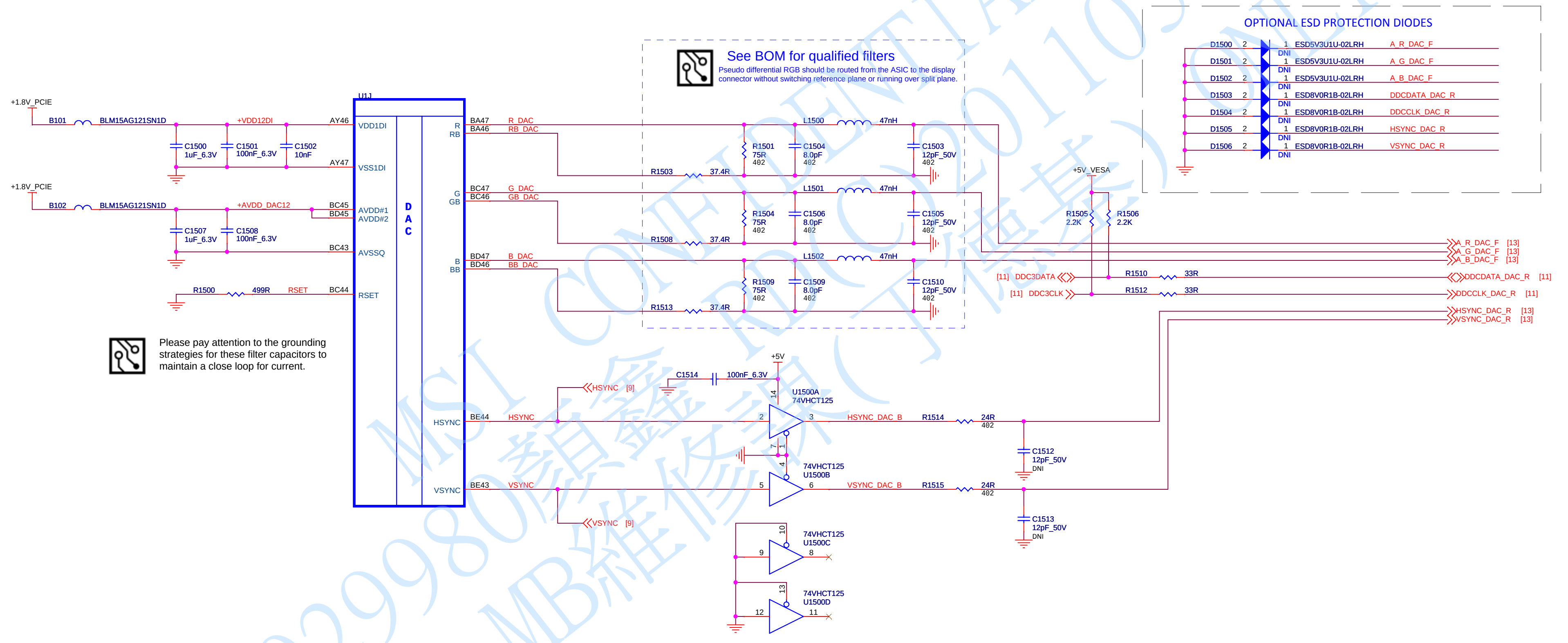
Date:	Friday, October 08, 2010
Rev	01
Sheet	8 of 25
Title	GDDR5 Ch D
Doc No.	105-C205XX-00A

(09) CAYMEN GPIOs Strap CF XTAL OSC



Advanced Micro Devices Inc.	
1 Commerce Valley Drive East	
Markham, Ontario	
Date: Friday, October 08, 2010	Rev 01
Sheet 9 of 25	
Title ASIC GPIO, STRAPS,CF, and XTAL	Doc No. 105-C205XX-00A

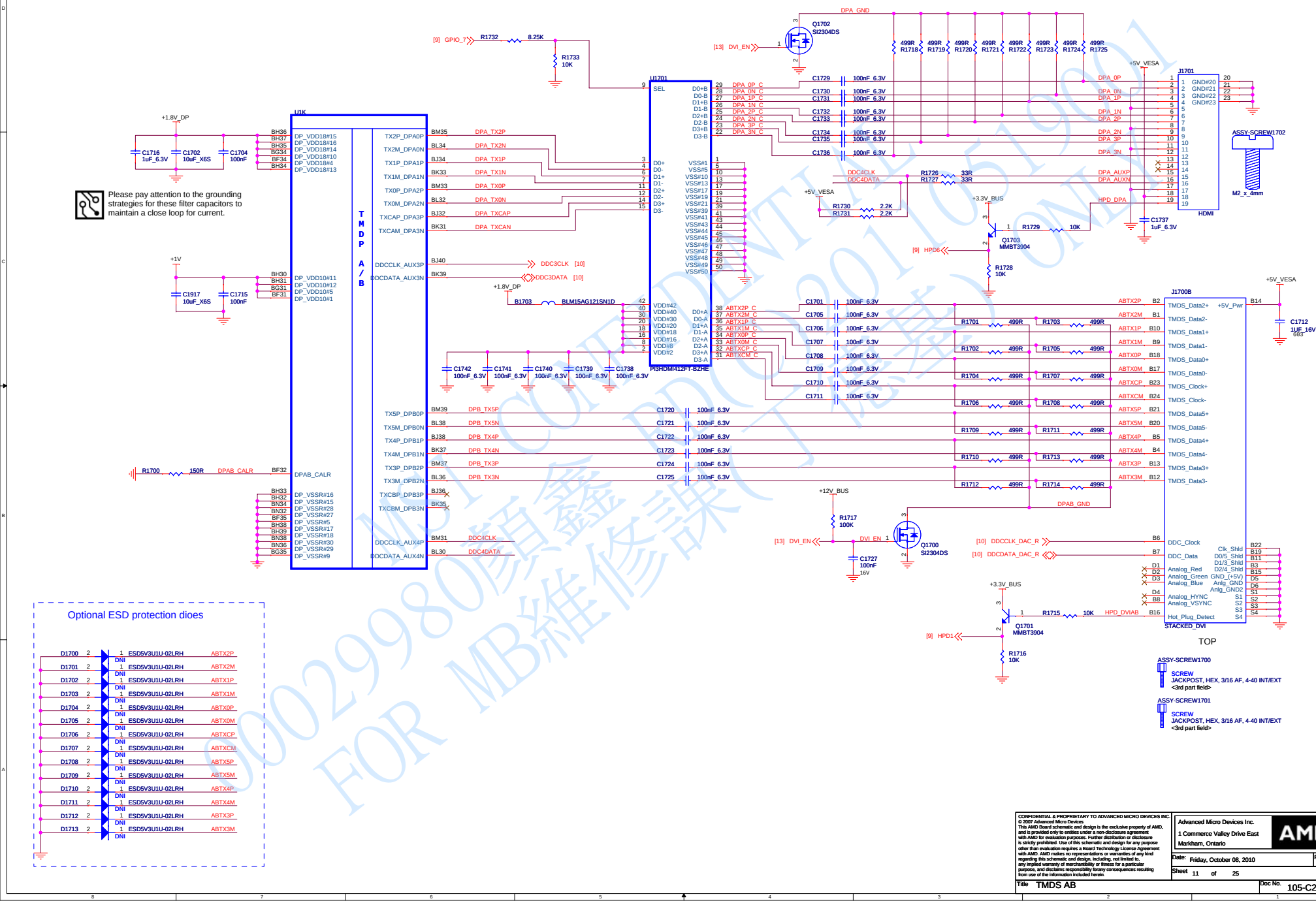
(10) CAYMEN DAC



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date:	Friday, October 08, 2010
Rev	01
Sheet	10 of 25
Title	ASIC DAC1 & DAC2
Doc No.	105-C205XX-00A

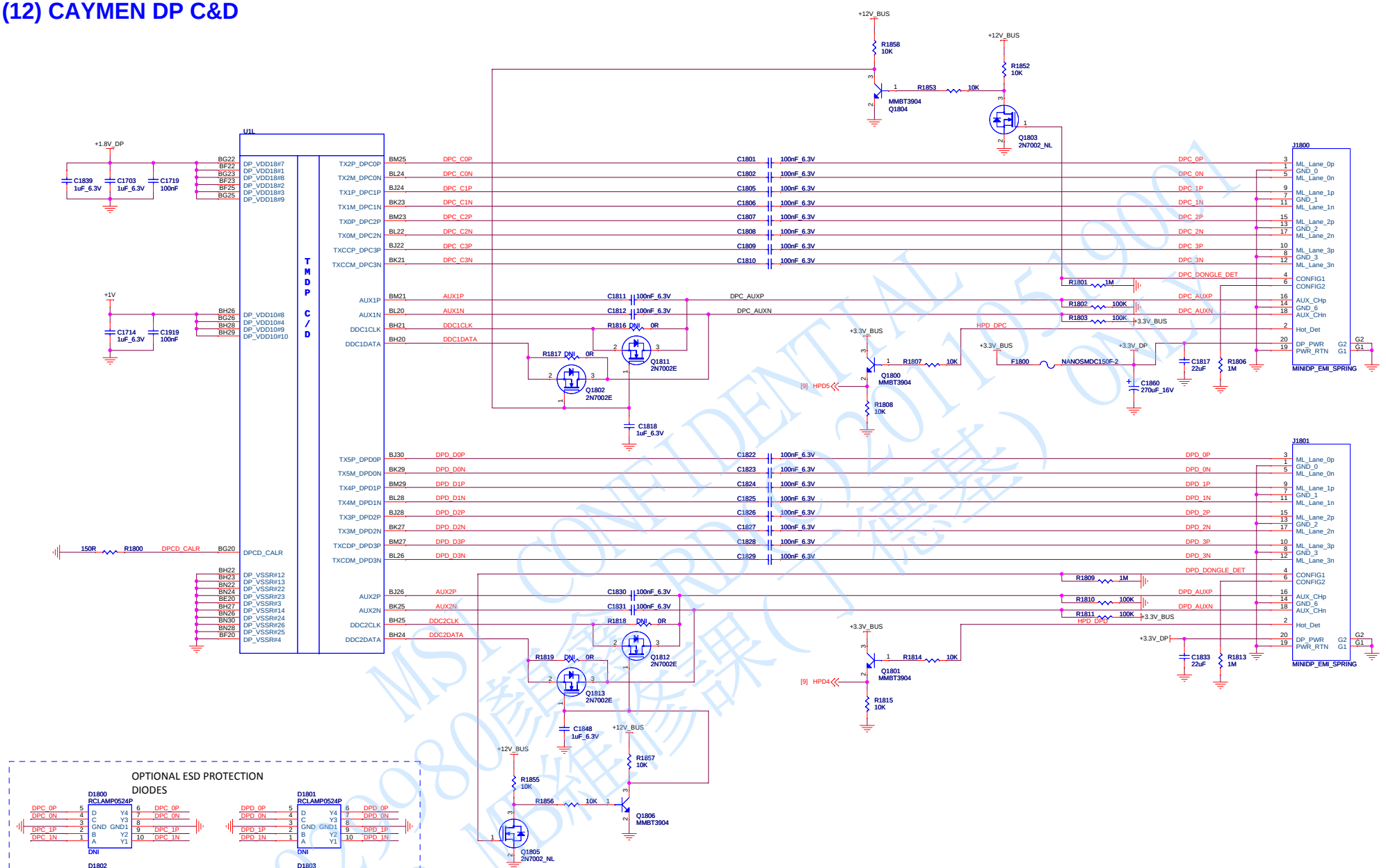
(11) CAYMEN TMDS A&B



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

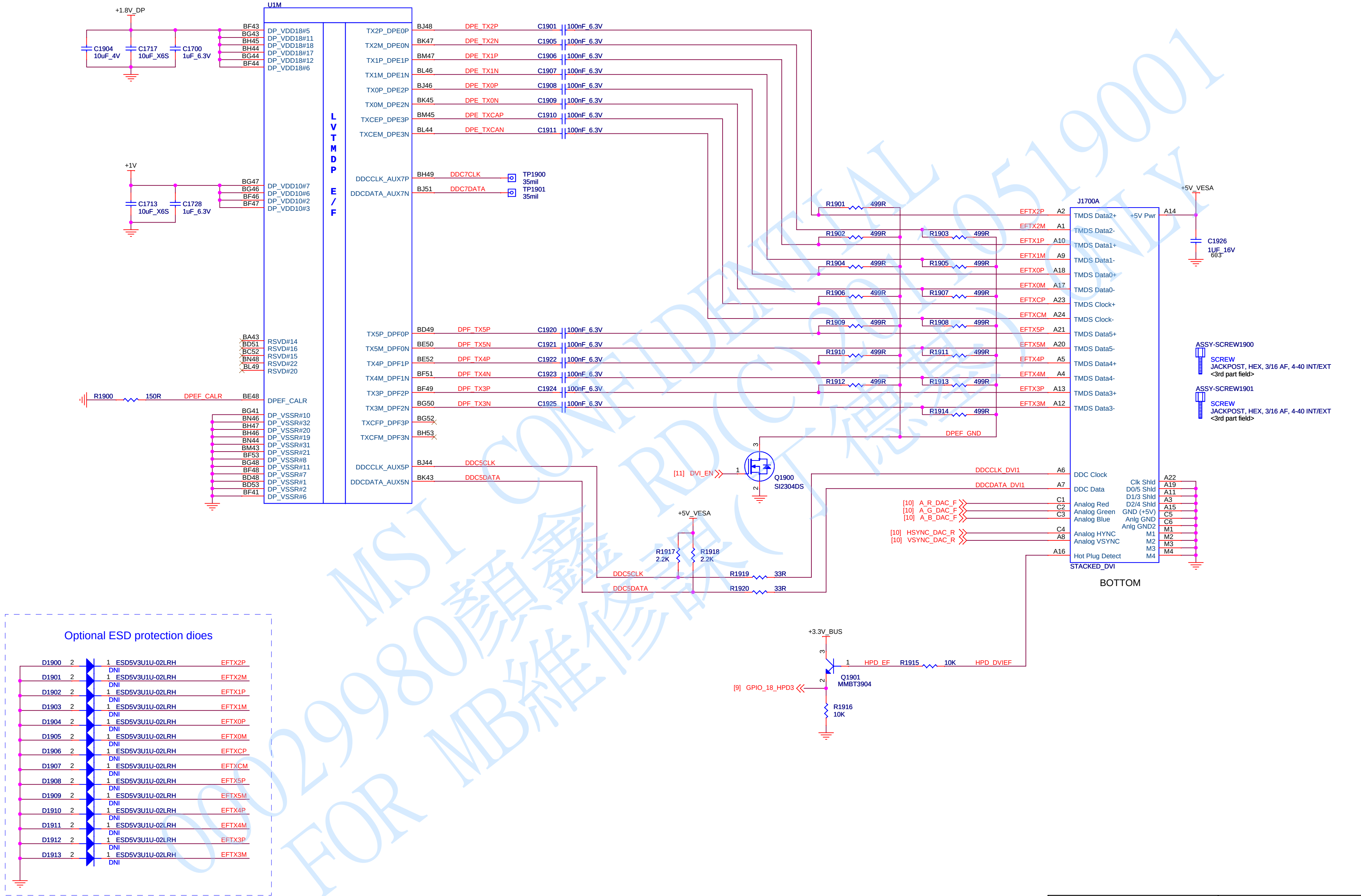
Date:	Friday, October 08, 2010
Rev	01
Sheet	11 of 25
Title	TMDS AB
Doc No.	105-C205XX-00A

(12) CAYMEN DP C&D



Advanced Micro Devices Inc.	
1 Commerce Valley Drive East	
Markham, Ontario	
Date: Friday, October 08, 2010	Rev 01
Sheet 12 of 25	
Title mini DP C / D	Doc No. 105-C205XX-00A

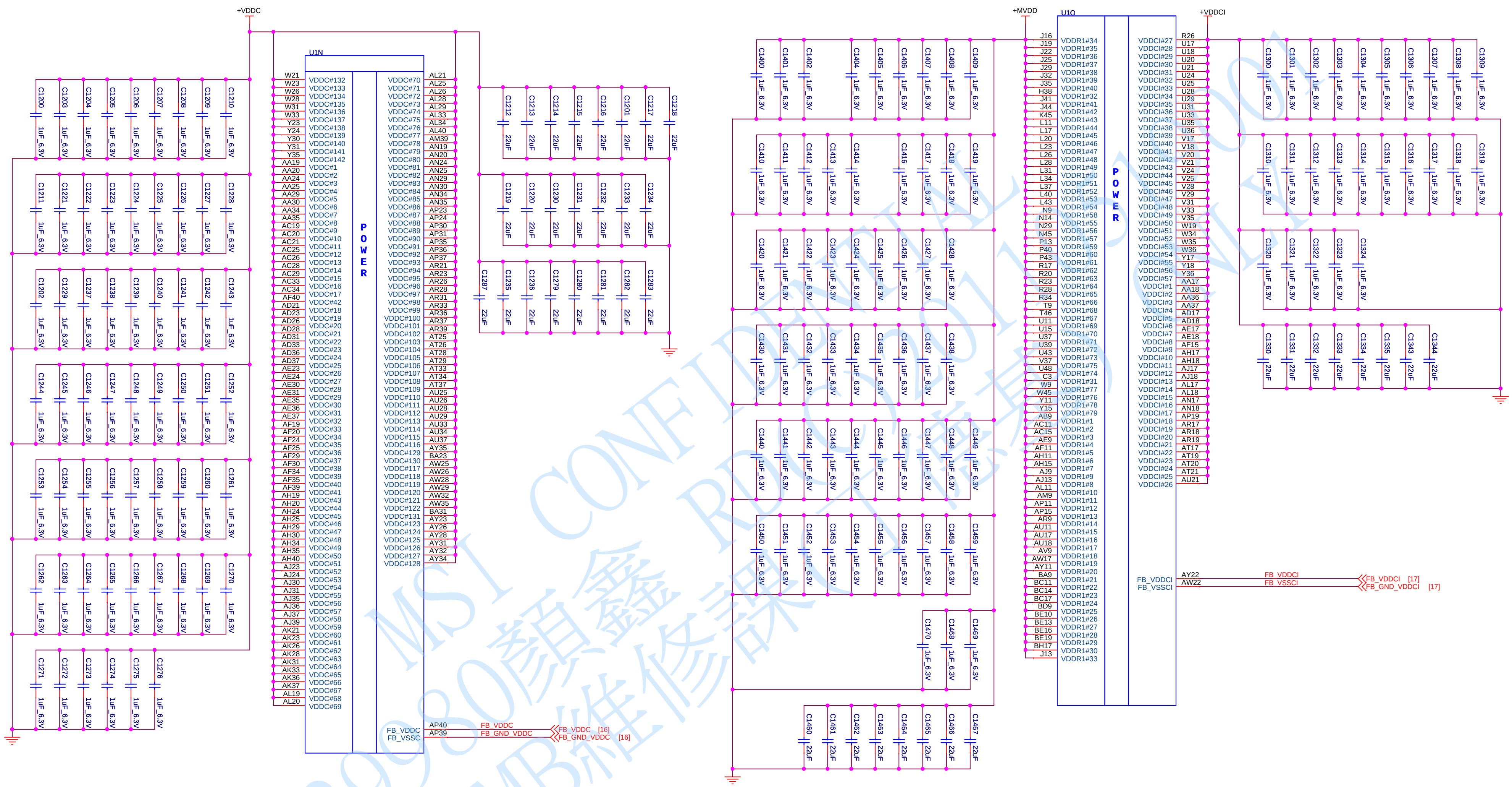
(13) CAYMEN LVTMDP E&F



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Title	TMDS EF
Date:	Friday, October 08, 2010
Rev	01
Sheet	13 of 25
Doc No.	105-C205XX-00A

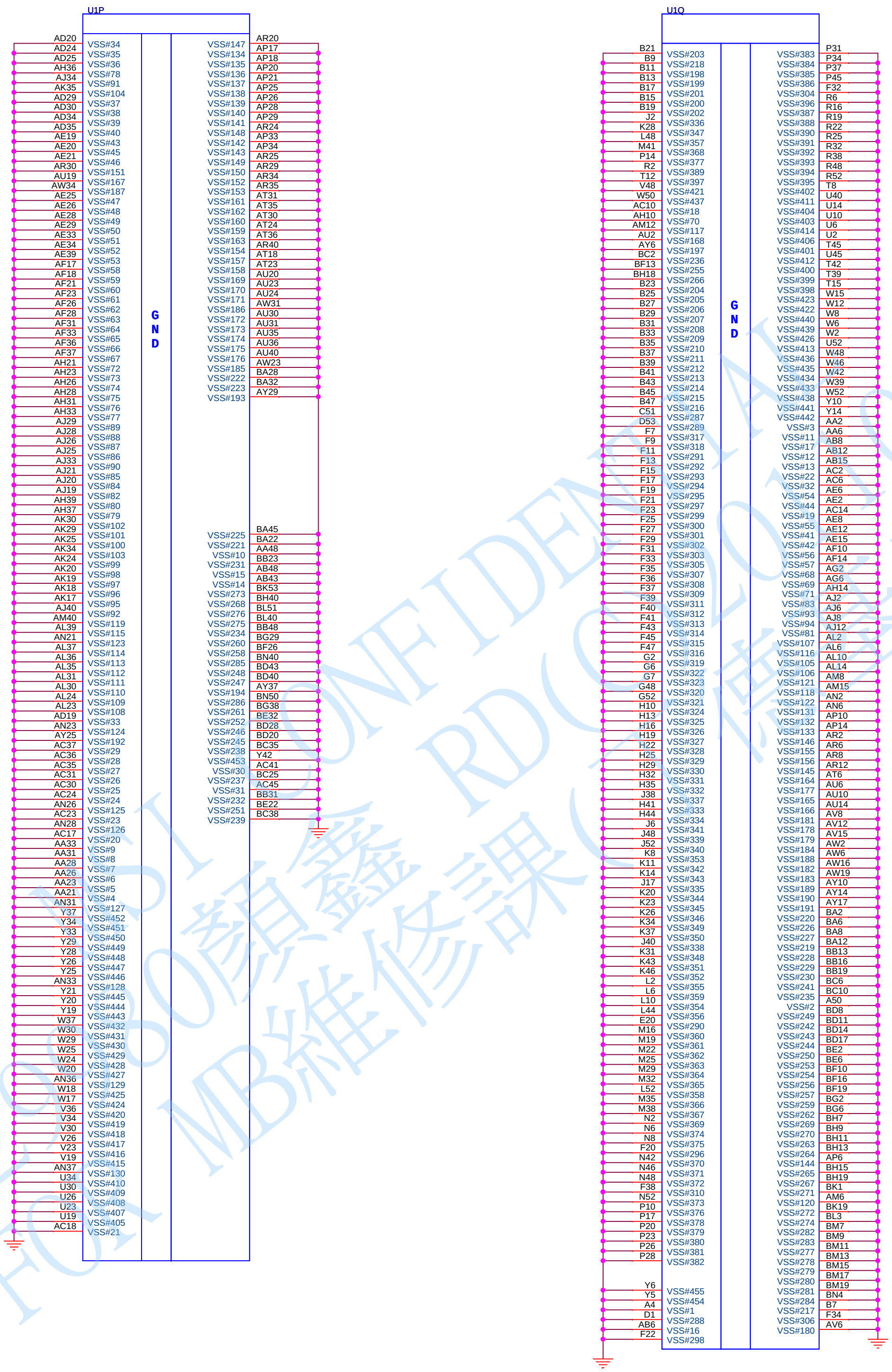
(14) CAYMEN Power



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010	Rev 01
Sheet 14 of 25	
Title ASIC POWER	Doc No. 105-C205XX-00A

(15) CAYMEN GND

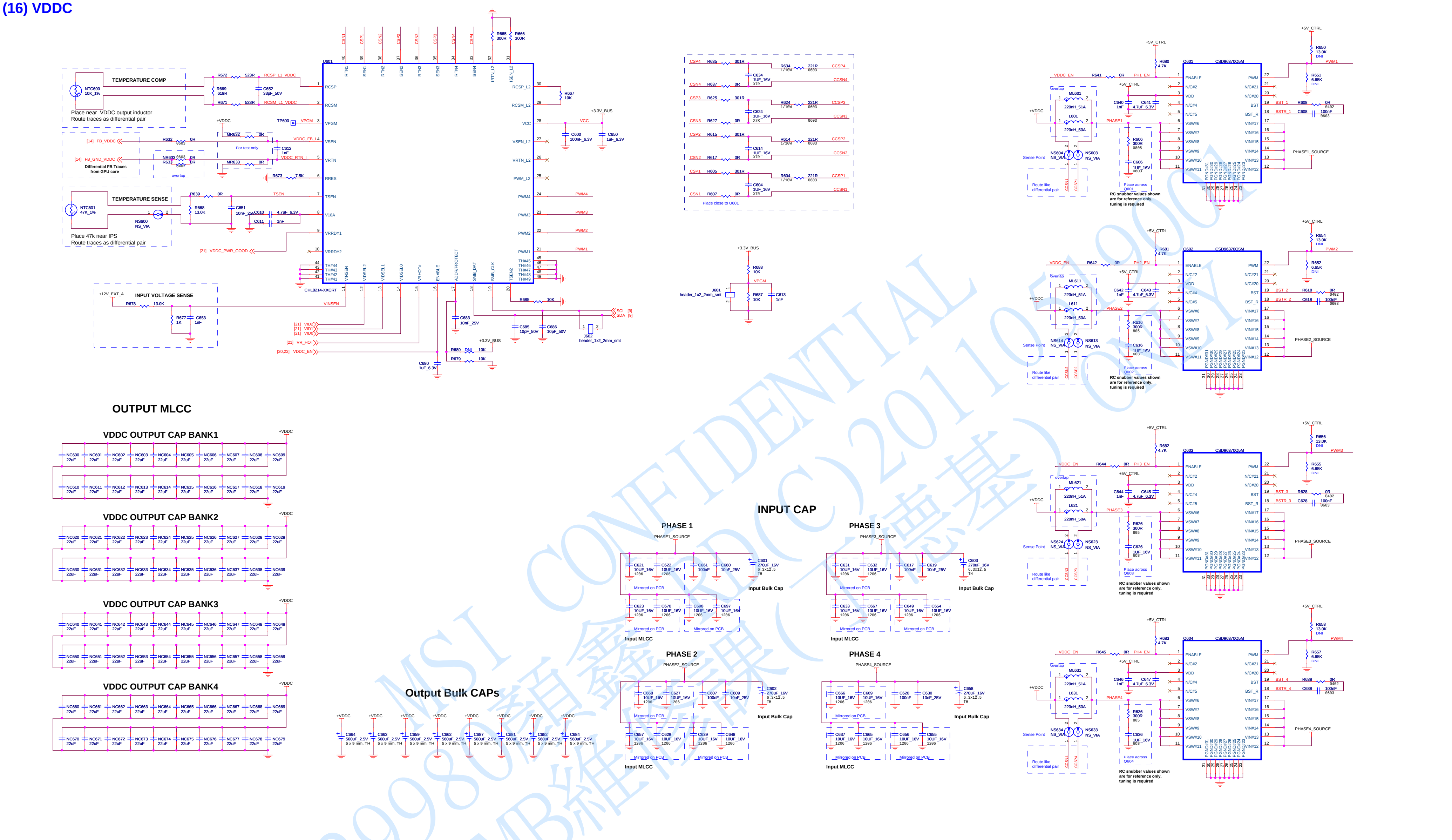


Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010
Rev 01

Title ASIC GND
Doc No. 105-C205XX-00A

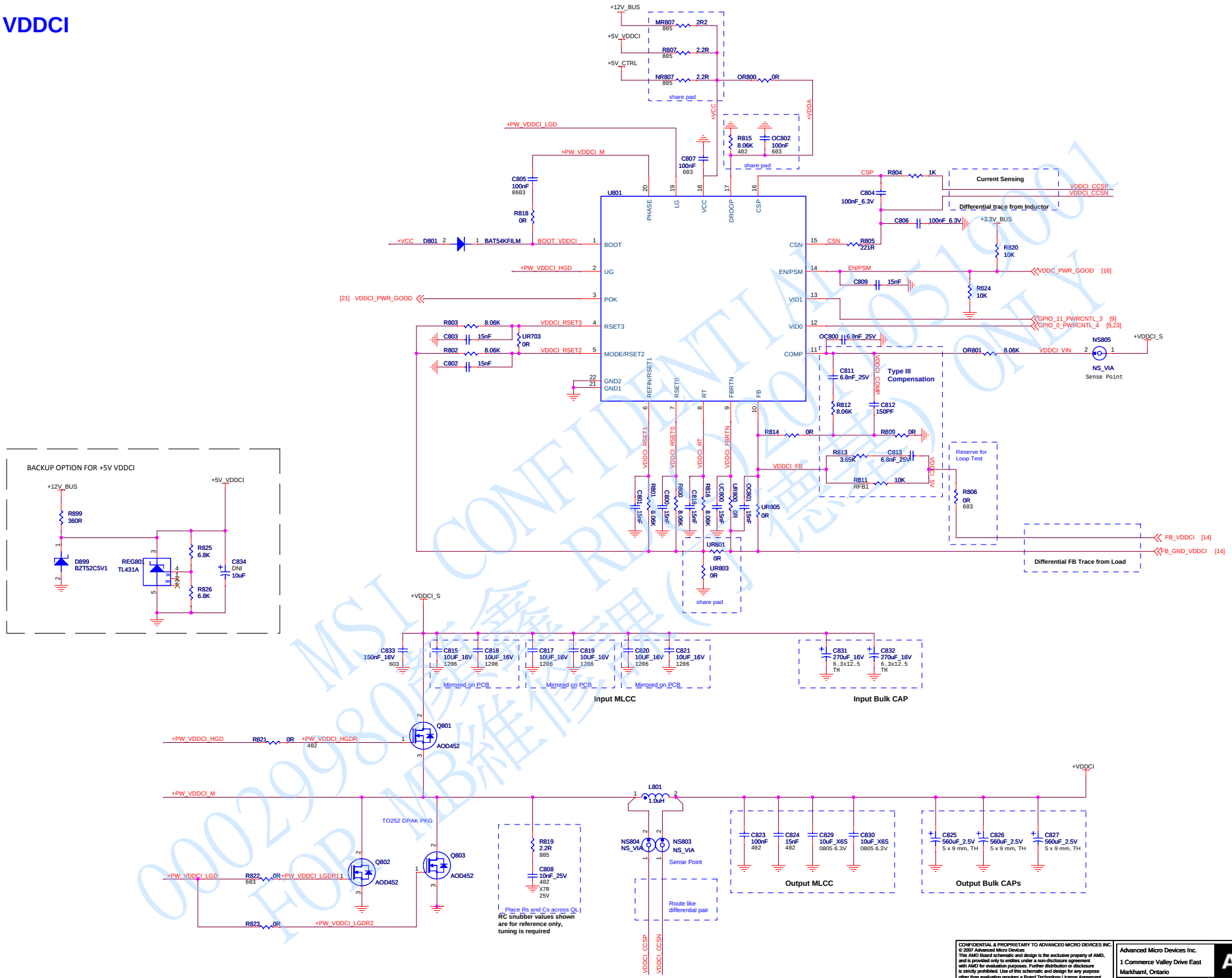
(16) VDDC



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

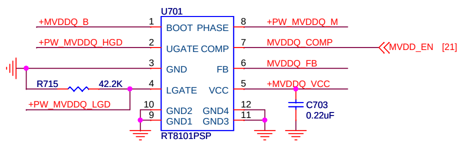
Date: Friday, October 08, 2010
Sheet 16 of 25
Title VDDC
Doc No. 105-C205XX-00A
Rev 01

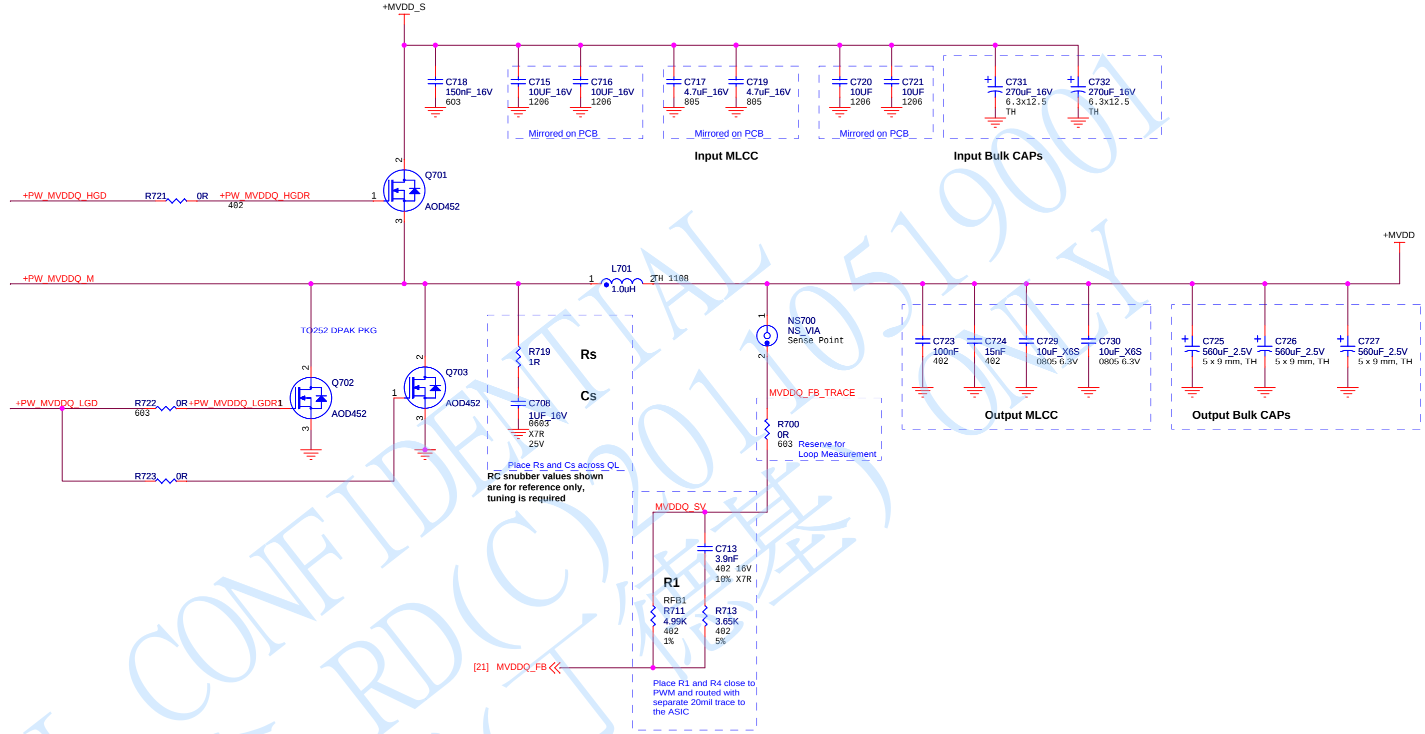
(17) VDDCI



Advanced Micro Devices Inc.	
1 Commerce Valley Drive East	
Markham, Ontario	
Date: Friday, October 08, 2010	Rev 01
Sheet 17 of 25	
Title VDDCI	Doc No. 105-C205XX-00A

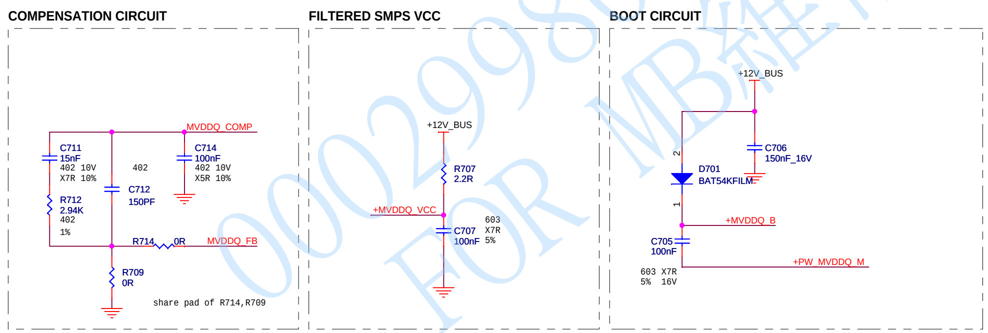
(18) MVDD





Layout guideline

1-Position the controller (U703) such that LGate(pin4) is the closet to gate of the MOSFETs. You can place the gate resistors R721 and R722 next to the gate of the MOSFETs. Make the gate drive traces(PW MVDDC LGD and PW MVDDC HGD) as short and as wide as possible to reduce the trace inductance.
2-Place the bypass capacitors for Vcc as well as Boost caps as close to the controller as possible. They are as follows;
Vcc bypass cap is C703, and Boost cap is C705.
3-Voltage amplifier compensation network. Place C714 close to the pin 7. Place the rest of the compensation network close to the pins 7 and 6. These are R710, R711, R713, C713 and R712, C711 and C712.

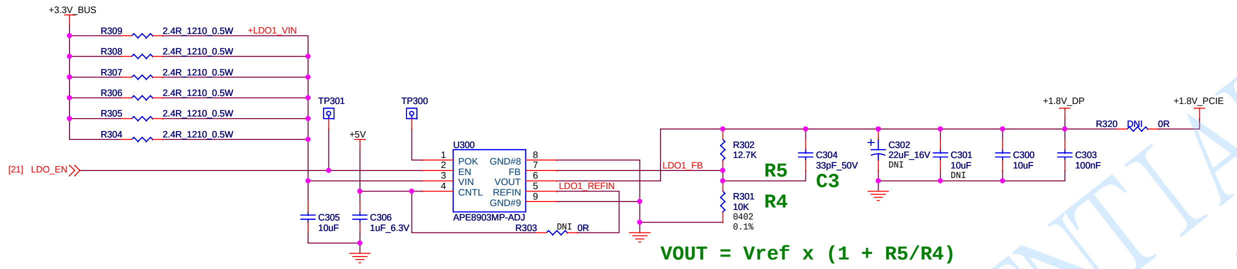


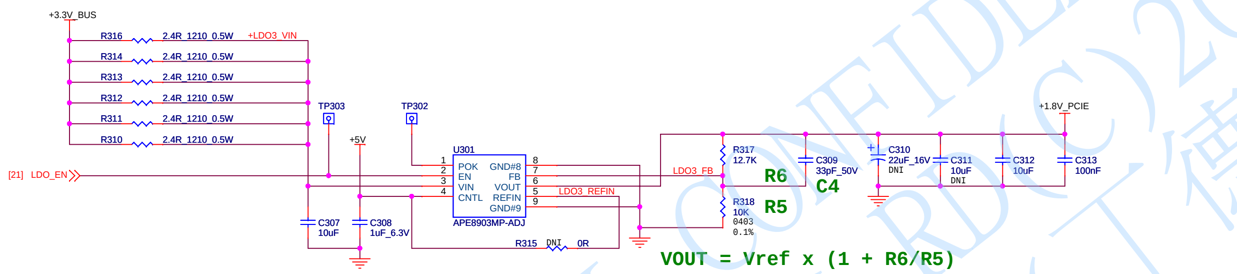
Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010 | Rev 01
Sheet 18 of 25
Title MVDD | Doc No. 105-C205XX-00A

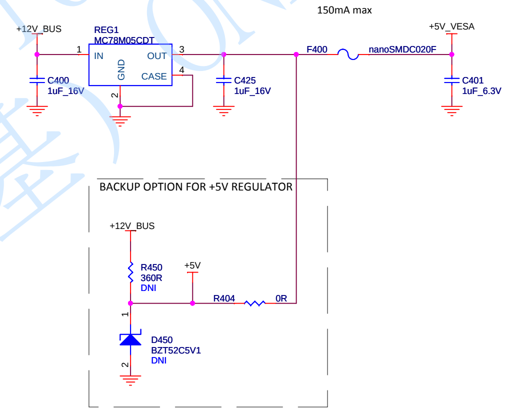
(19) CAYMEN Small Rail Regulators

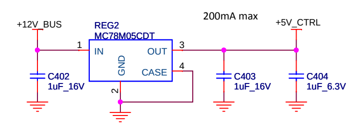
LDO #1: Vin = 2.3V to 3.6V MAX Vout = +1.8V +/- 2% Iout = 2.0A (TBV) RMS MAX
PCB: 50 to 70mm sq. copper area for cooling



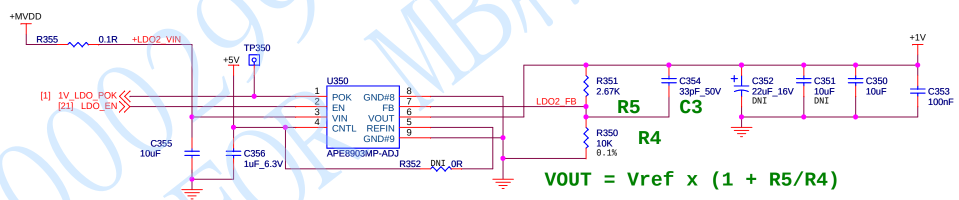


Regulators for +5V, +5V_VESA and +5V_HDMI
Iout max = 150mA (DVI+HDMI)





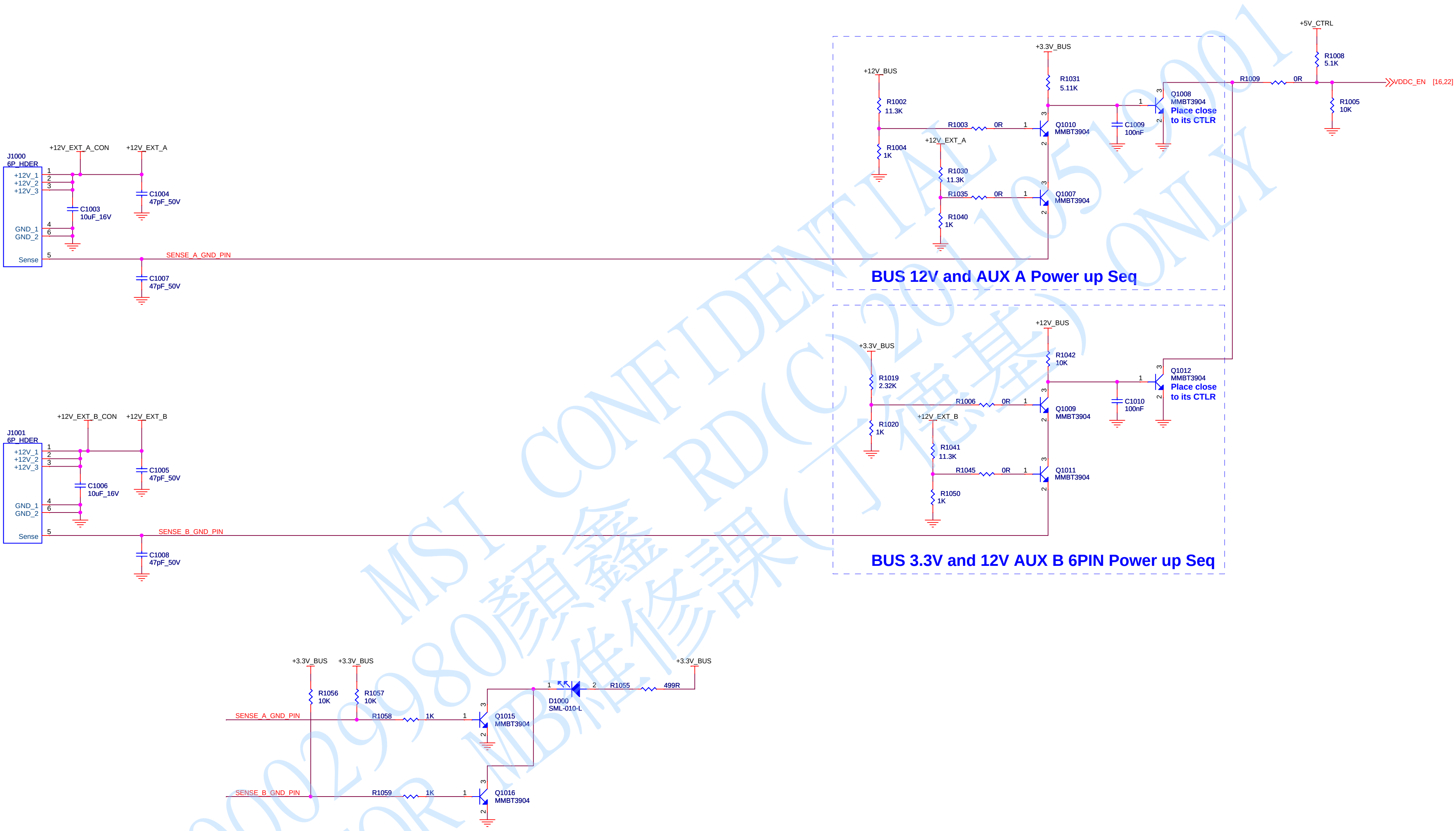
LDO #2: Vin = +1.40V to 1.8VMAX Vout = +1V +/- 2% Iout = 1.5A (TBV) RMS MAX
PCB: 50 to 70mm sq. copper area for cooling



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010	Rev 01
Sheet 19 of 25	
Title Small Rail Regulators	Doc No. 105-C205XX-00A

(20) CAYMEN POWER MGMNT

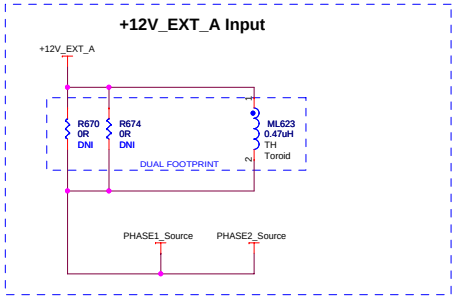


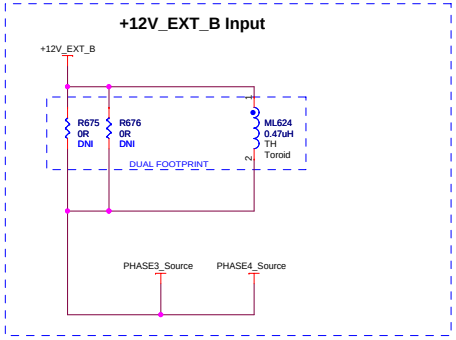
Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

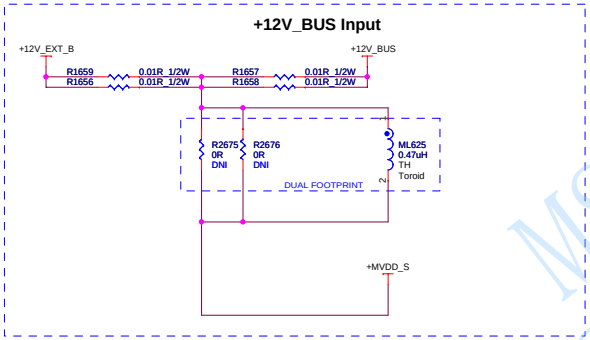
AMD

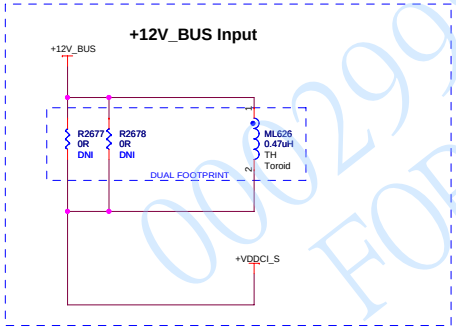
Date: Friday, October 08, 2010	Rev 01
Sheet 20 of 25	
Title Power Management1	Doc No. 105-C205XX-00A

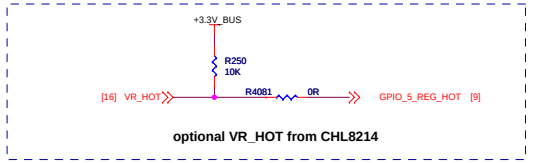
(21) CAYMEN POWER MANAGEMENT 2



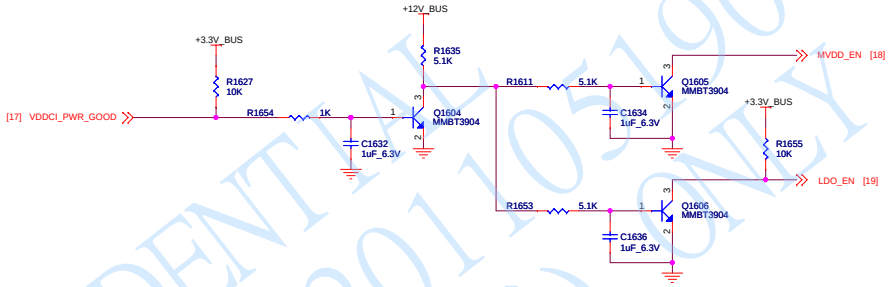


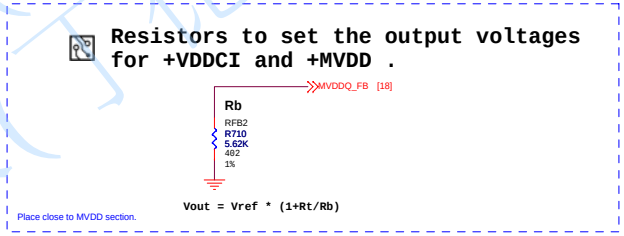


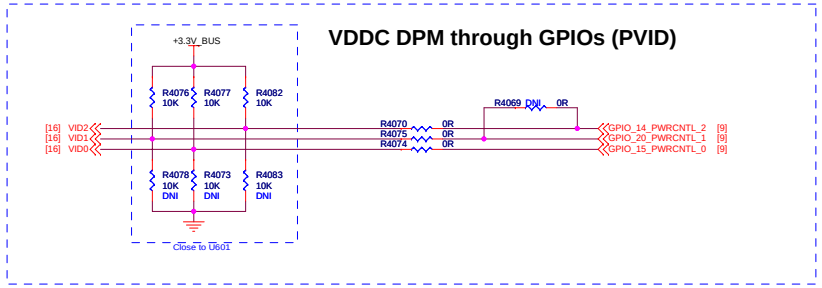




Power up Sequencing



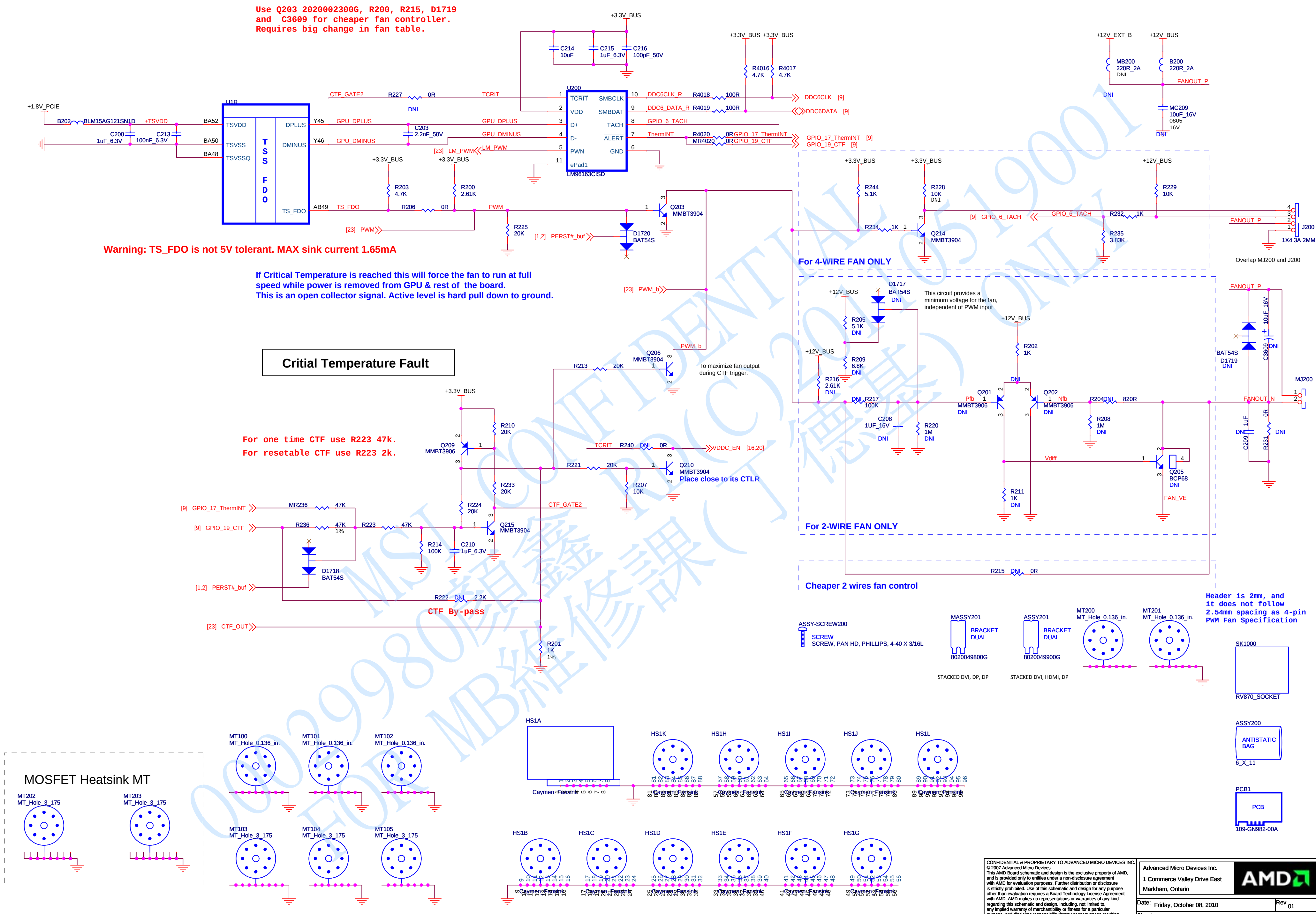




Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010	Rev 17
Sheet 21 of 25	
Title Power Management 2	Doc No. 105-C205XX-00A

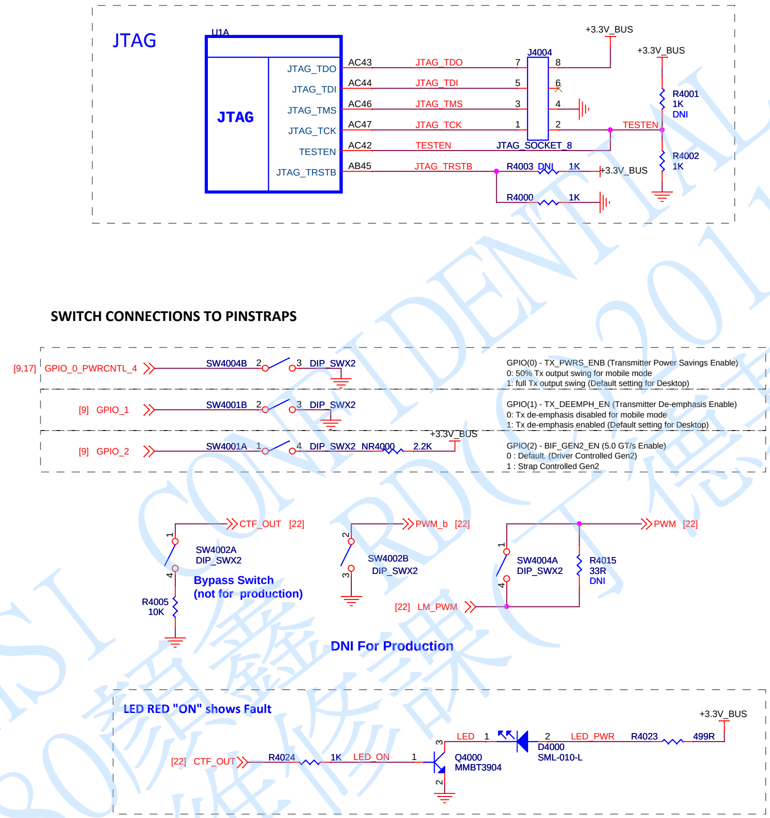
(22) CAYMEN Mechanical and Thermal Management



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

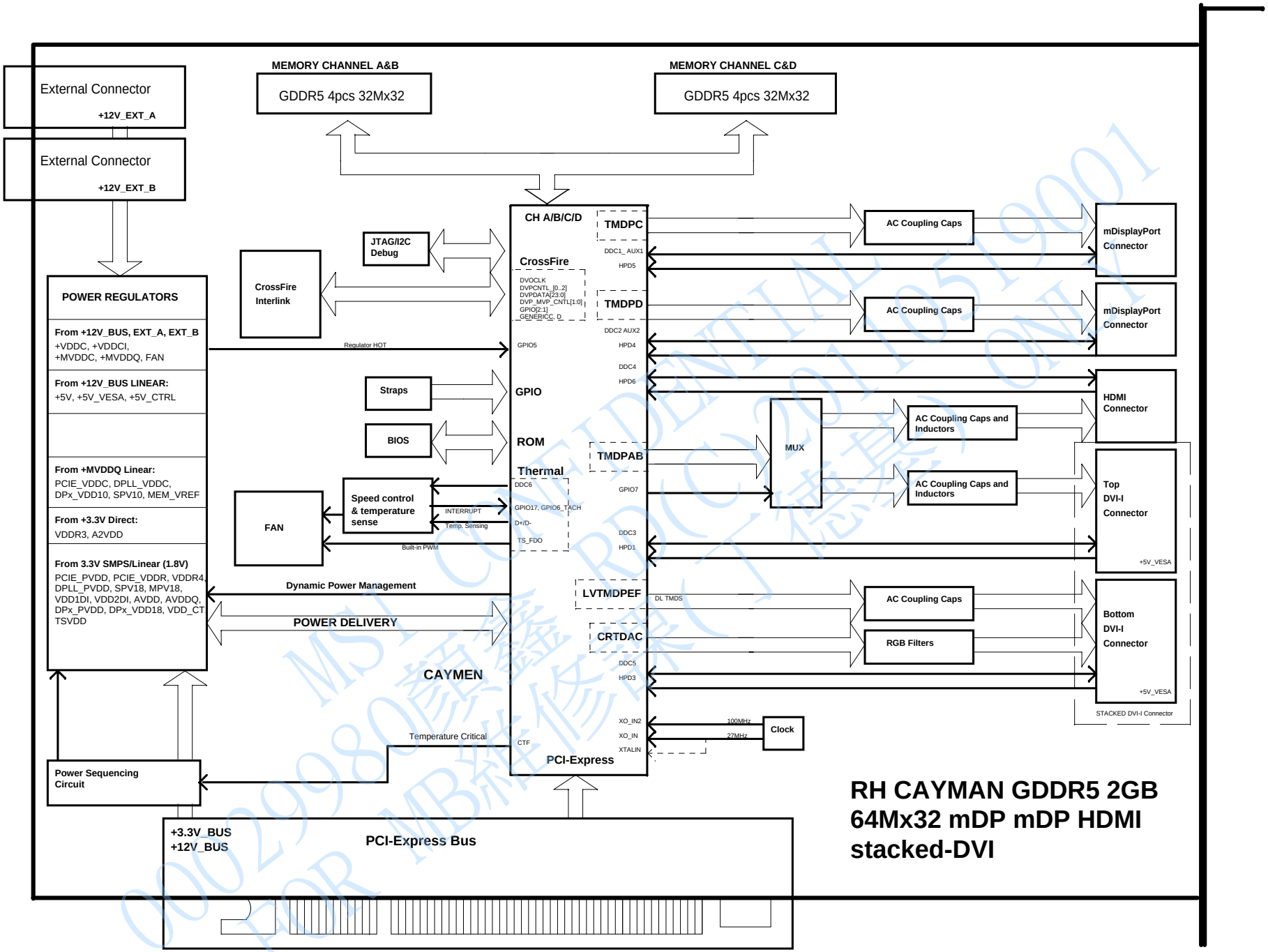
Date:	Friday, October 08, 2010
Rev	01
Sheet	22 of 25
Title	Mechanical & Thermal Management
Doc No.	105-C205XX-00A

(23) CAYMEN Debug Circuits



Advanced Micro Devices Inc.
1 Commerce Valley Drive East
Markham, Ontario

Date: Friday, October 08, 2010	Rev 01
Sheet 23 of 25	
Title Debug Circuits	Doc No. 105-C205XX-00A



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

Date:	Friday, October 08, 2010
Rev	01
Sheet	24 of 25
Title	Block Diagram
Doc No.	105-C205XX-00A

Title	Schematic No.	Date:
RH CAYMAN GDDR5 2GB 64Mx32 mDP mDP HDMI stacked-DVI	105-C205XX-00A	Friday, October 08, 2010

REVISION HISTORY

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

Rev 01

Sch Rev	PCB Rev	Date	REVISION DESCRIPTION