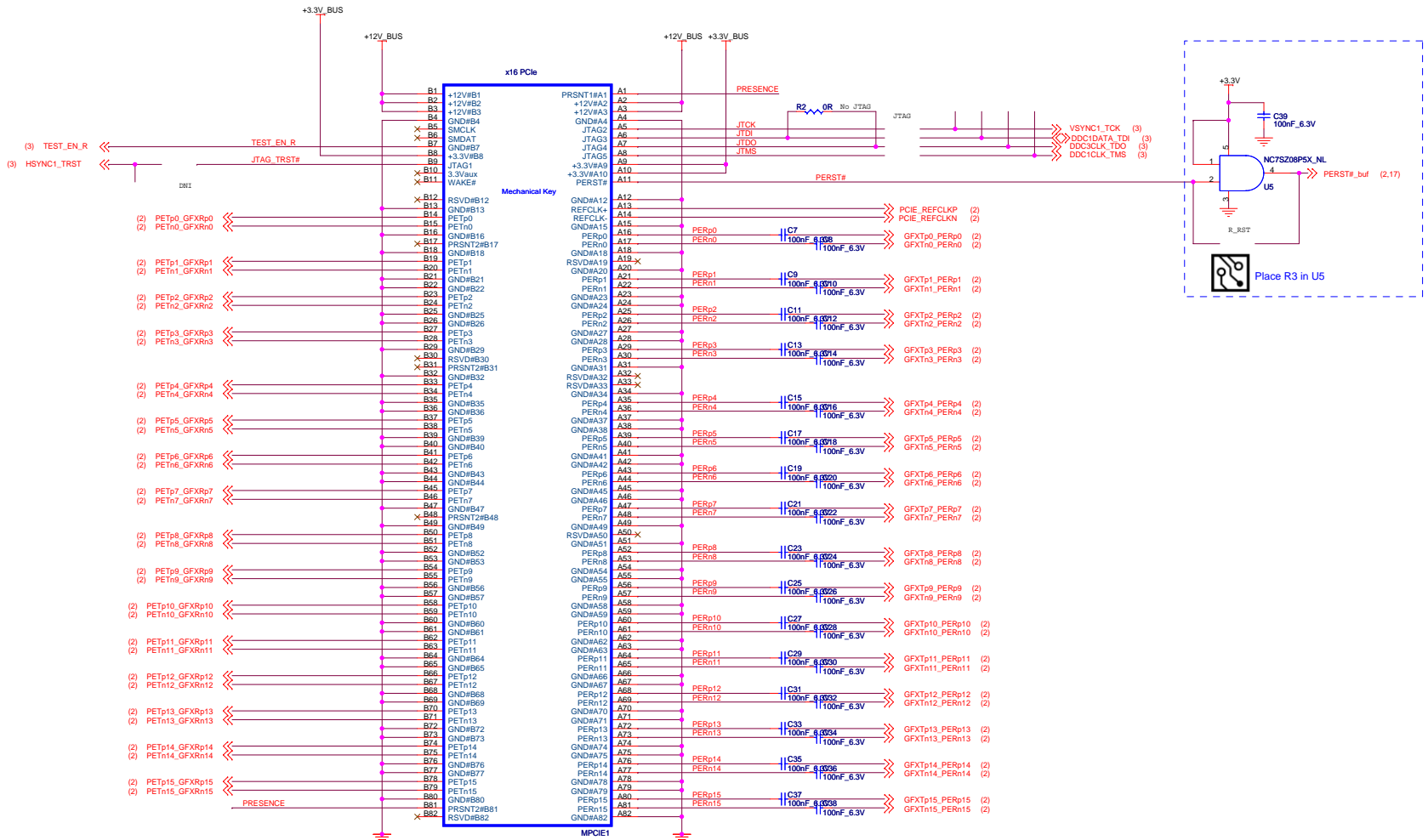
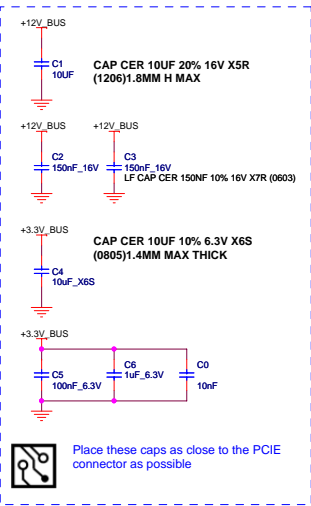
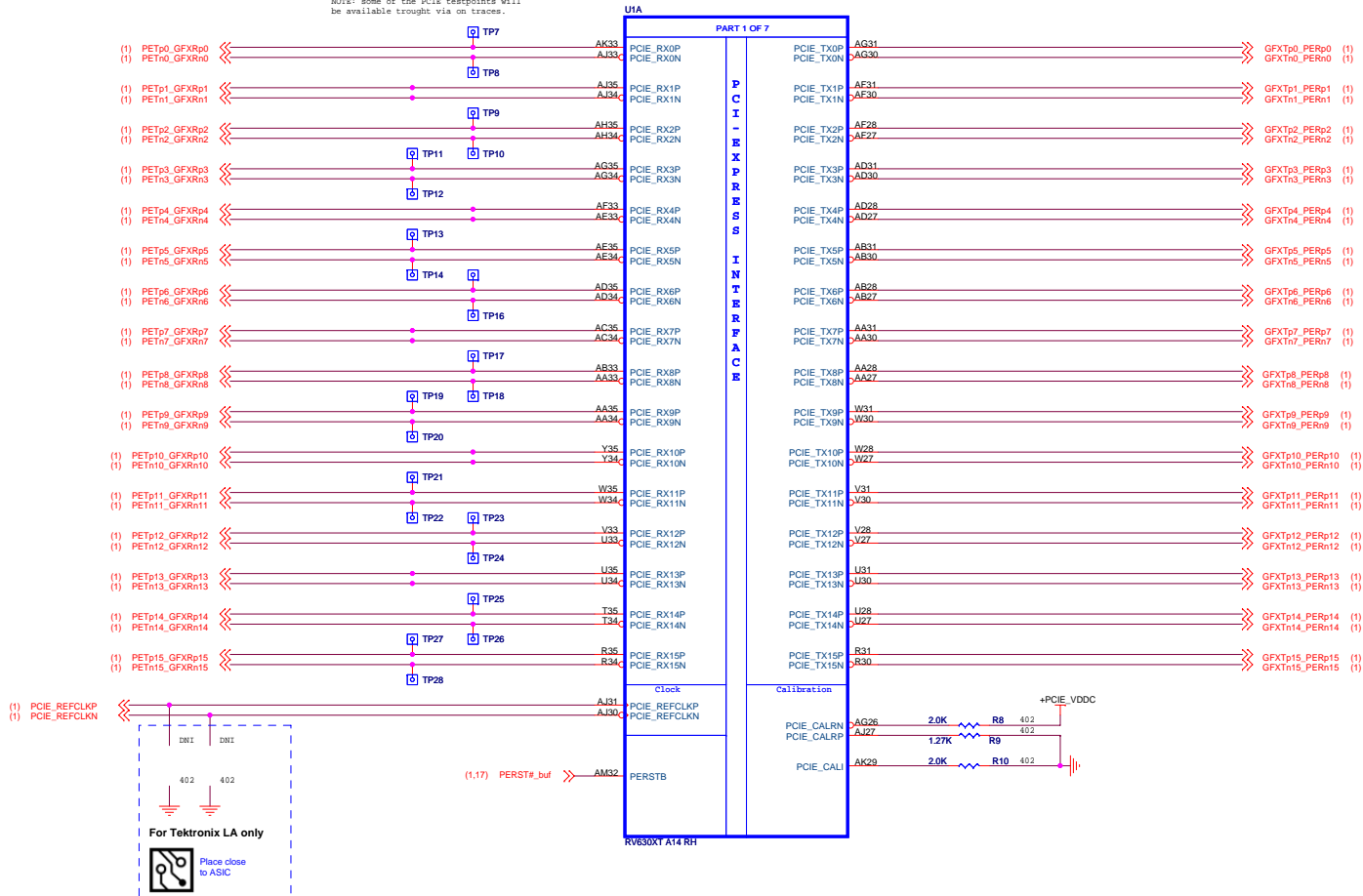


PCI-EXPRESS EDGE CONNECTOR



NOTE: some of the PCIe testpoints will
be available through via on traces.



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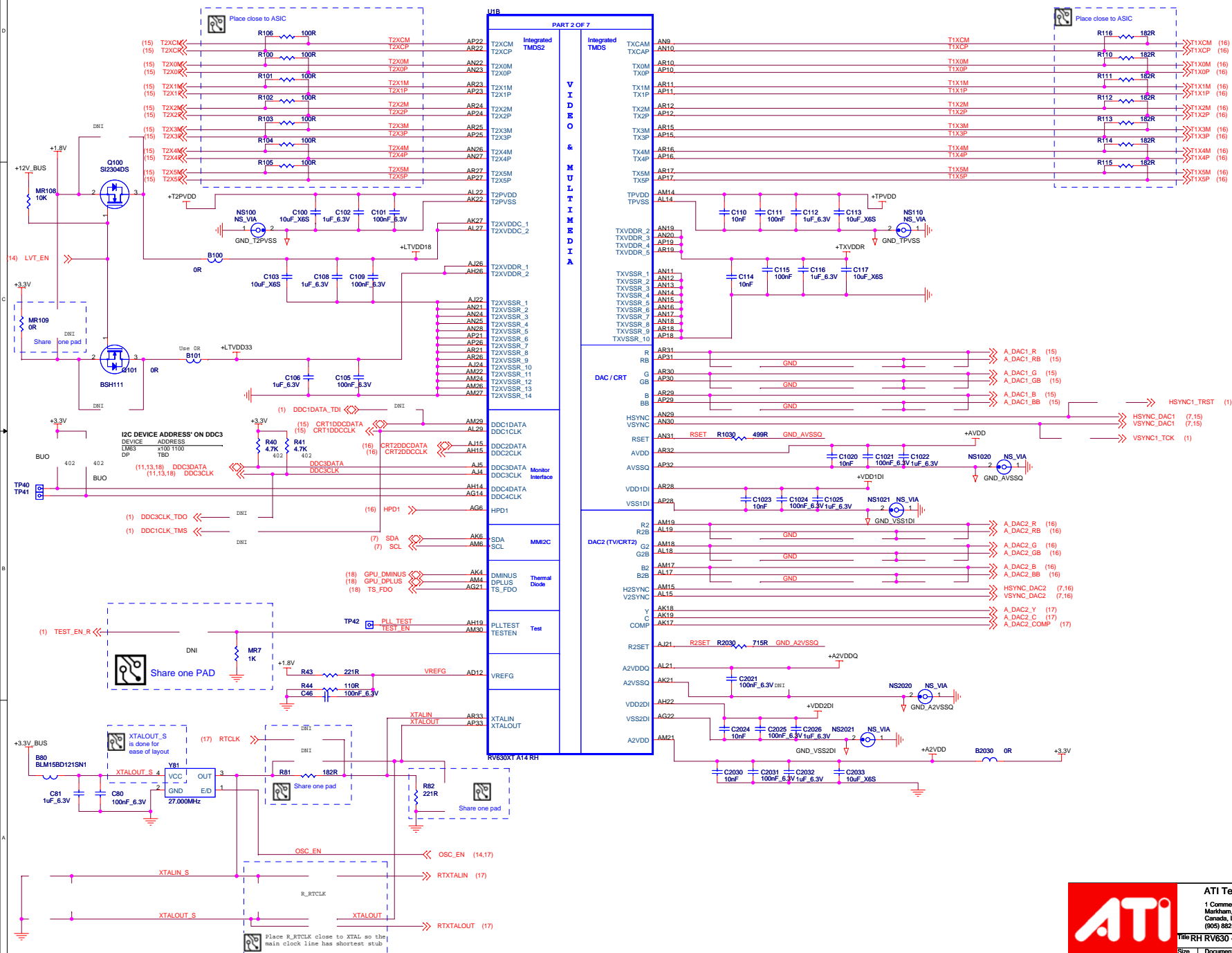
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Title: RH RV630 - ASIC PCIE_ Interface

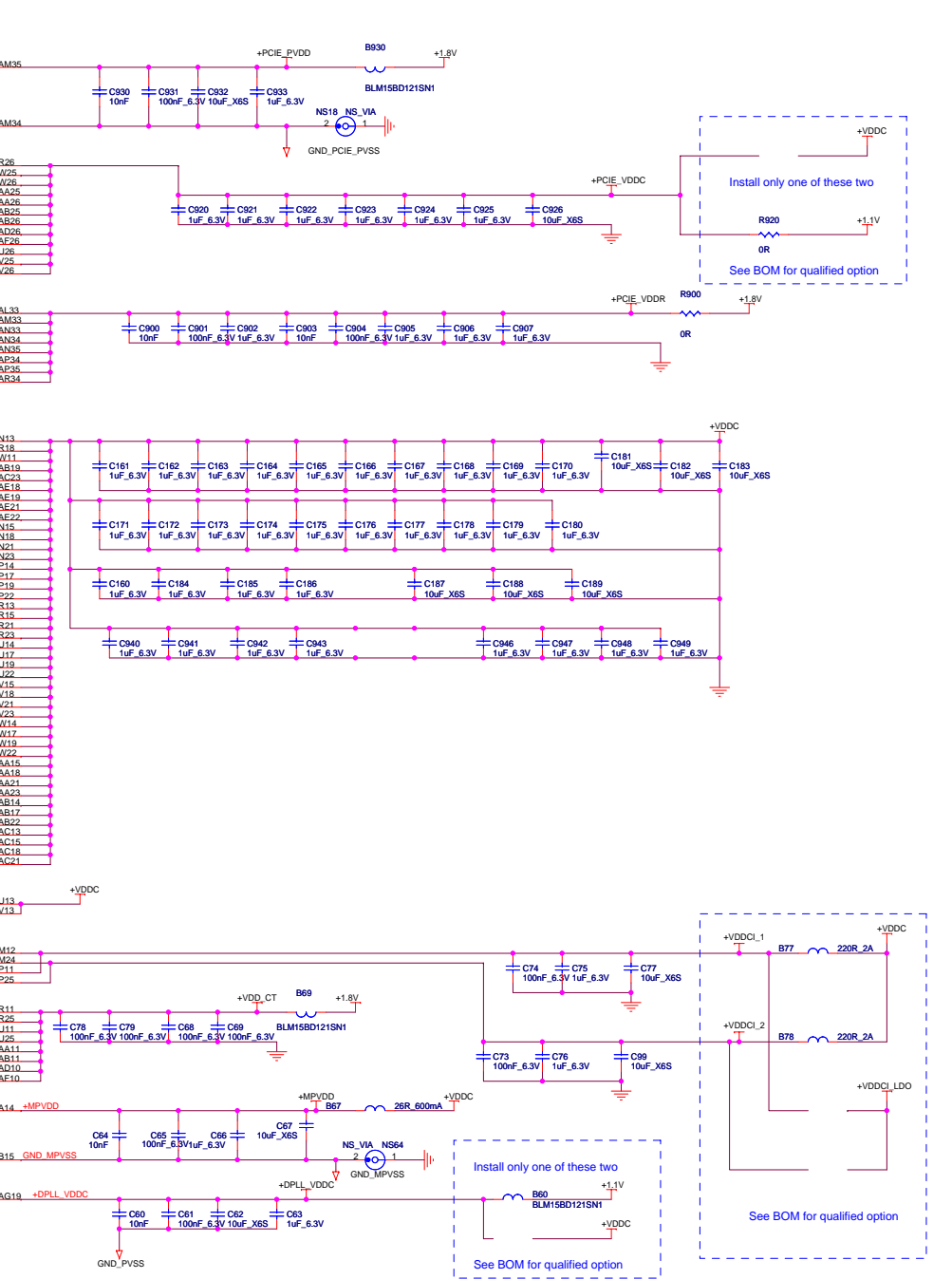
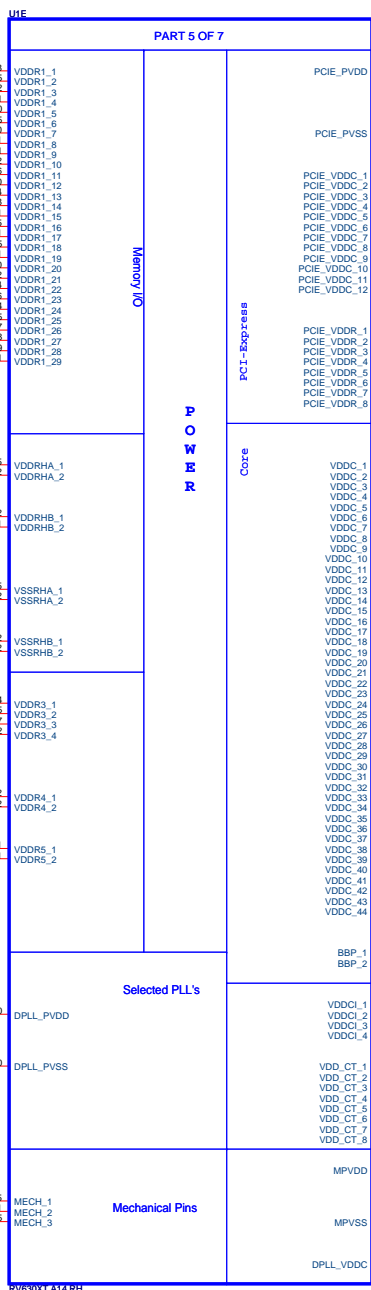
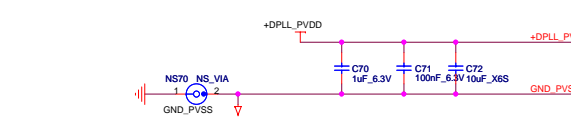
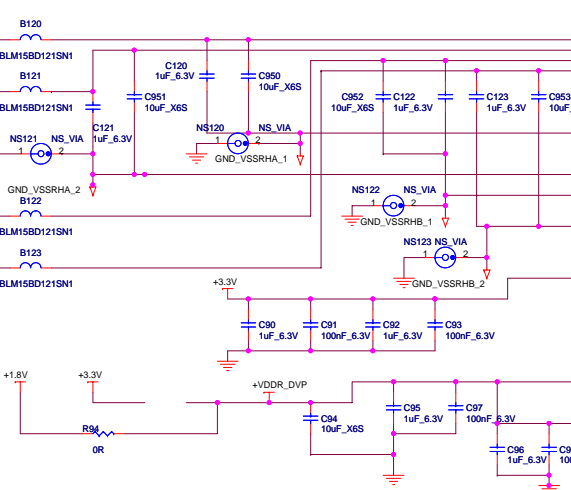
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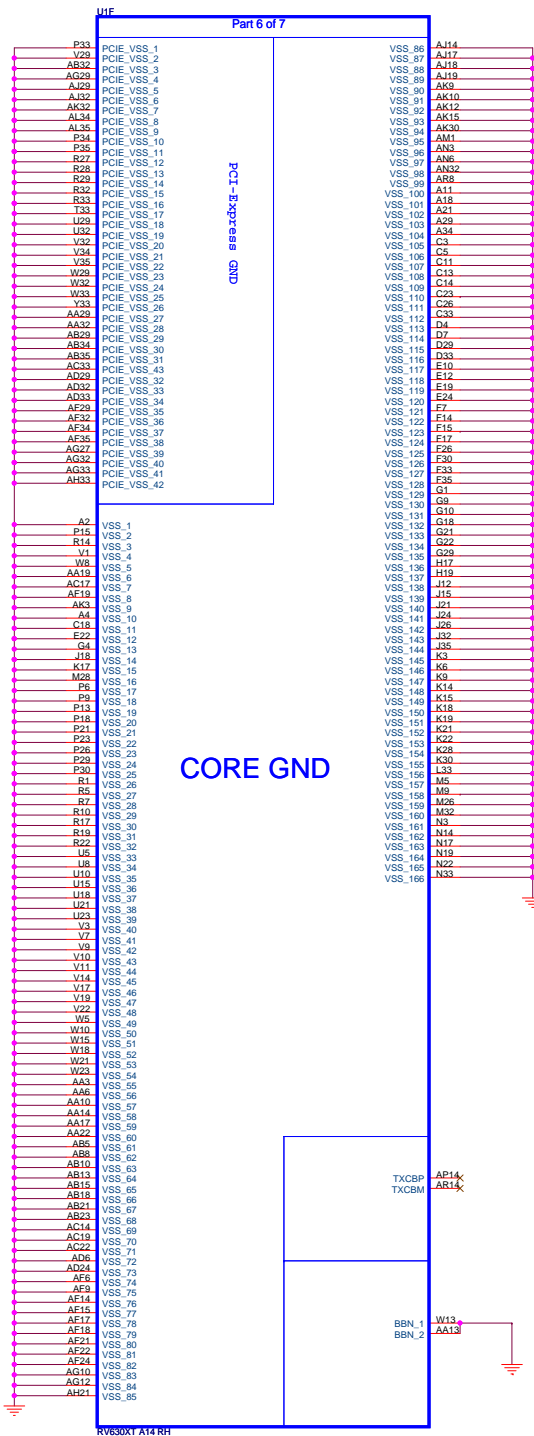
Date: Tuesday, April 10, 2007 Sheet 2 of 21 Rev 4

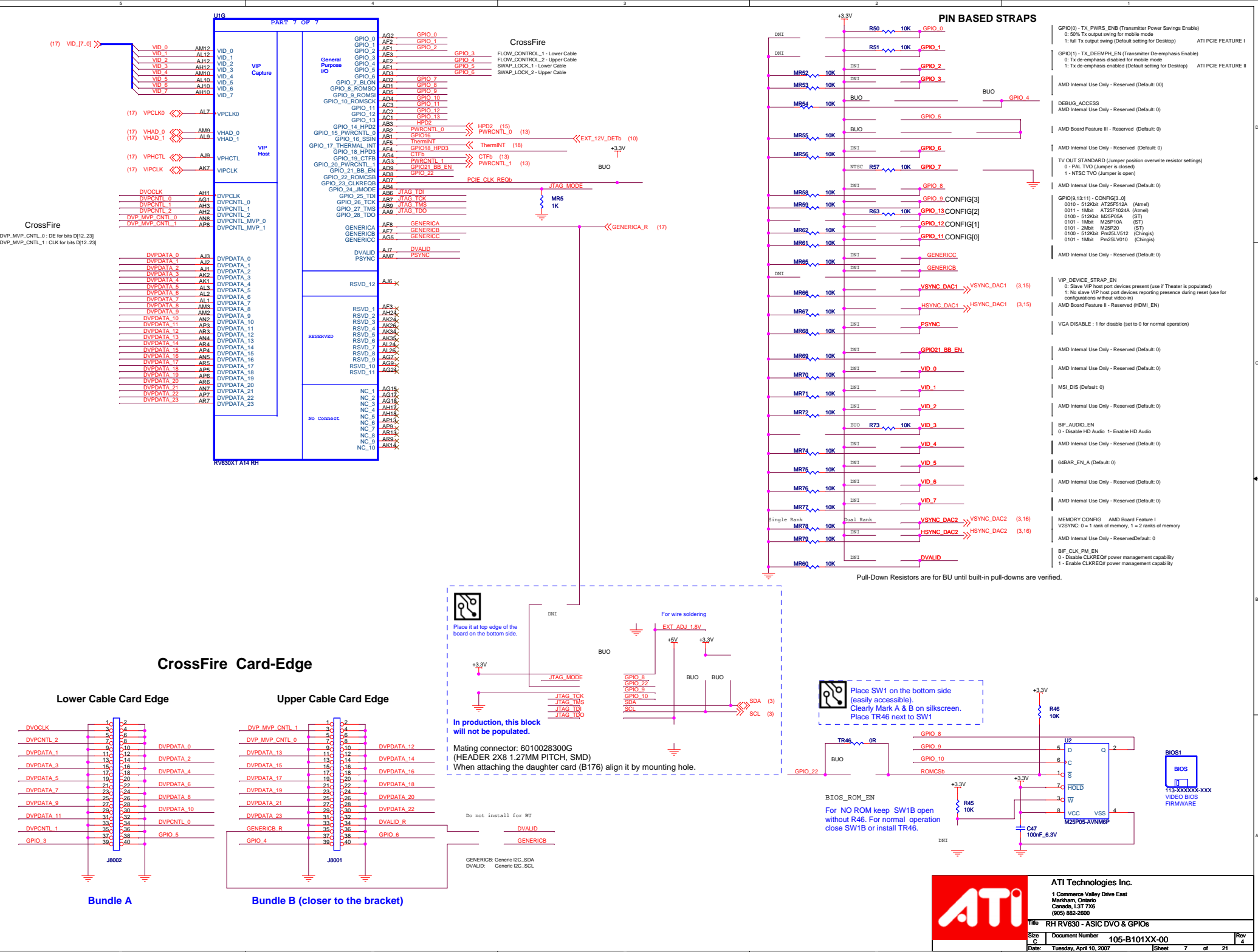
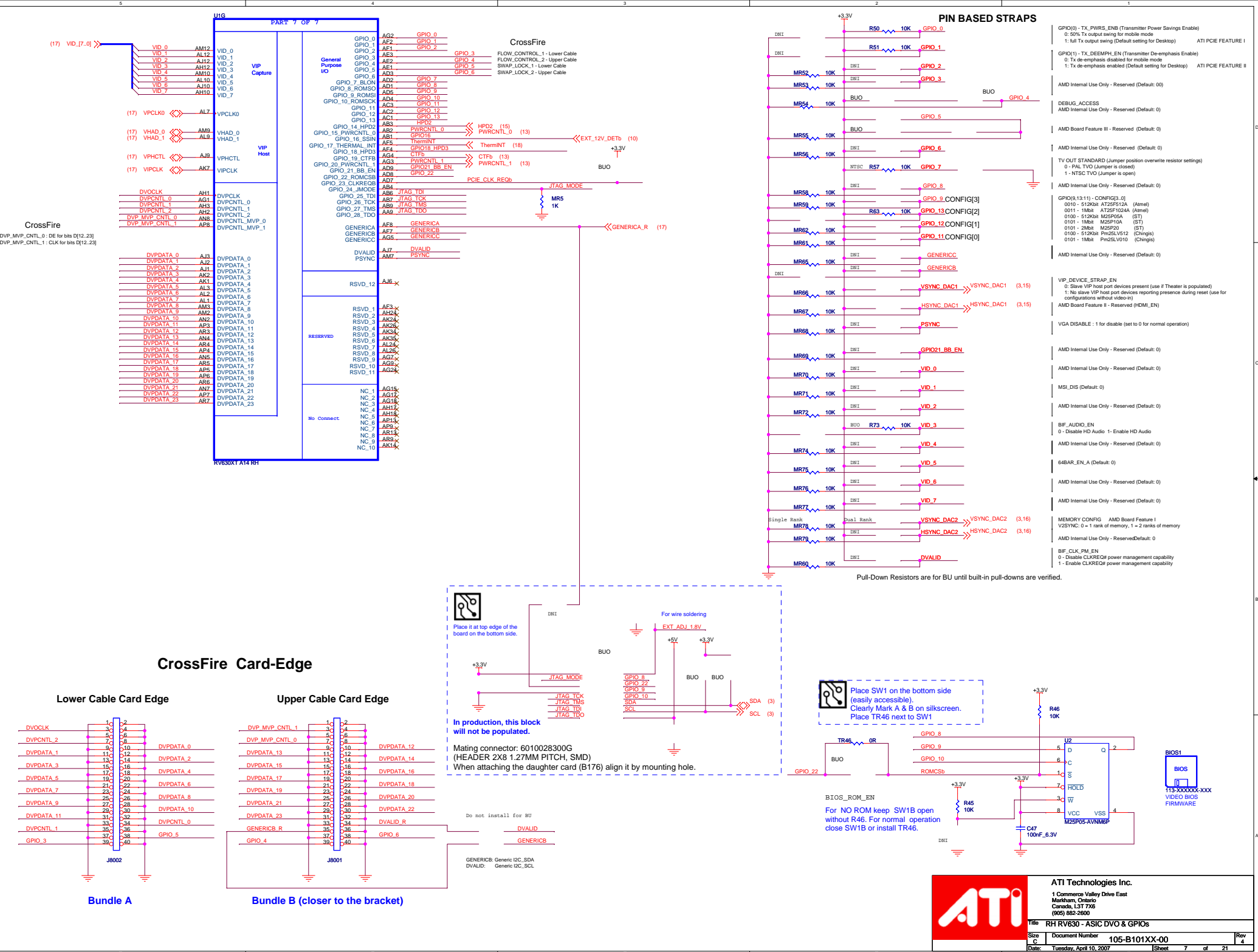
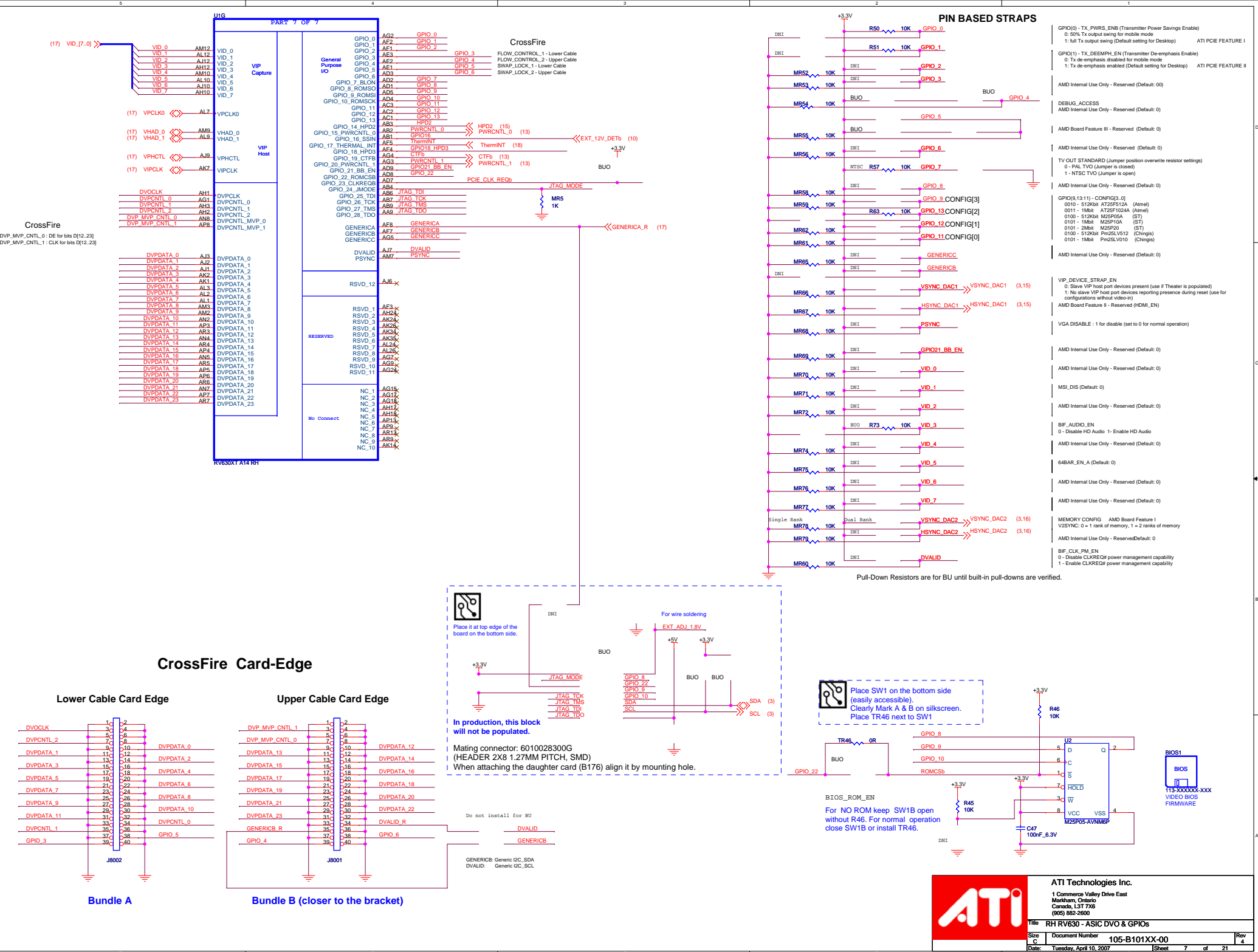
Recommended caps:
(see BOM for qualified values/vendors)
10uF , X6S, 0805, 6.3V, 1.4MM MAX THICK
1uF, X6S, 0402, 6.3V
100nF, X7R, 0402
10nF , X7R, 0402

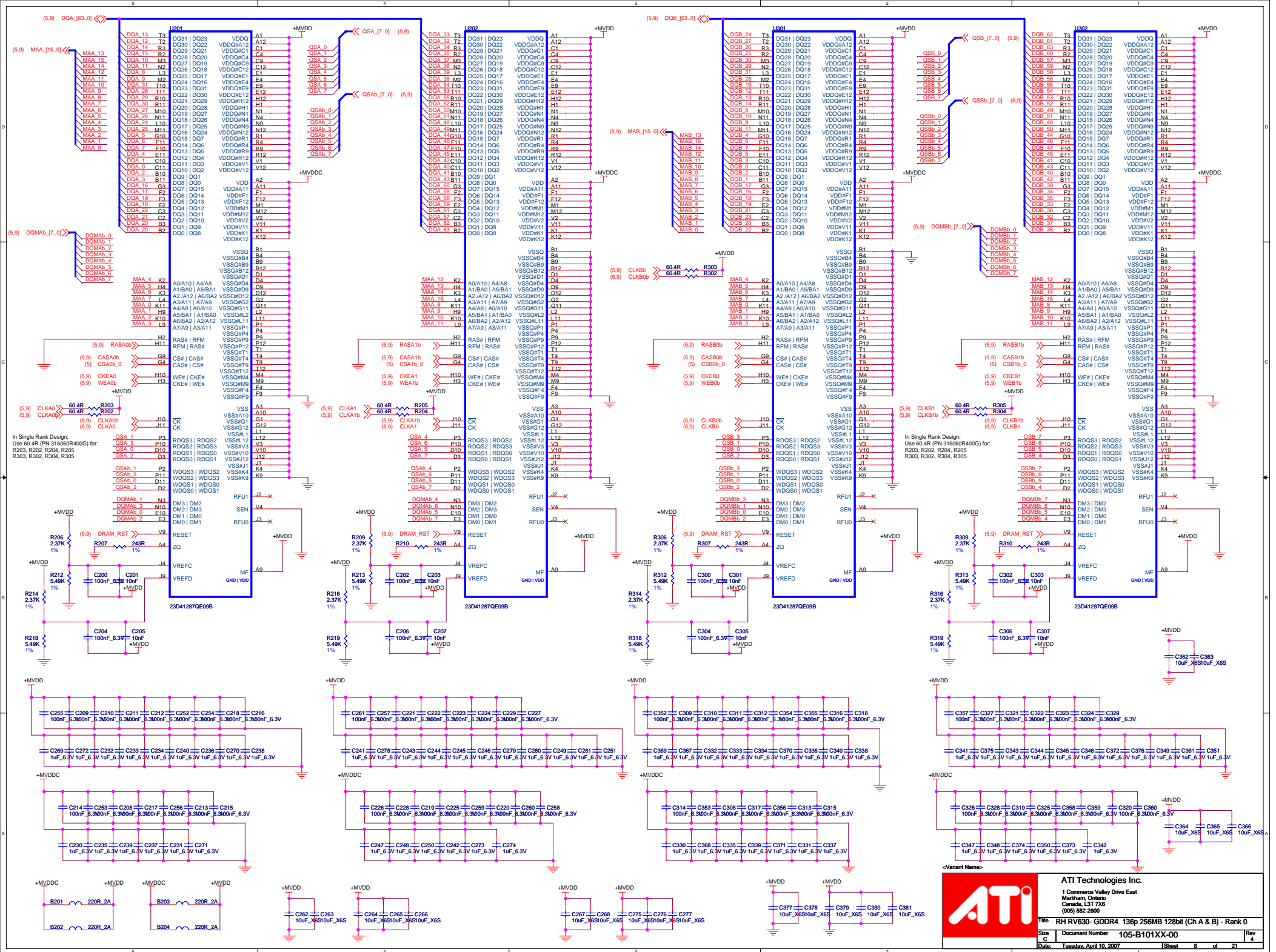


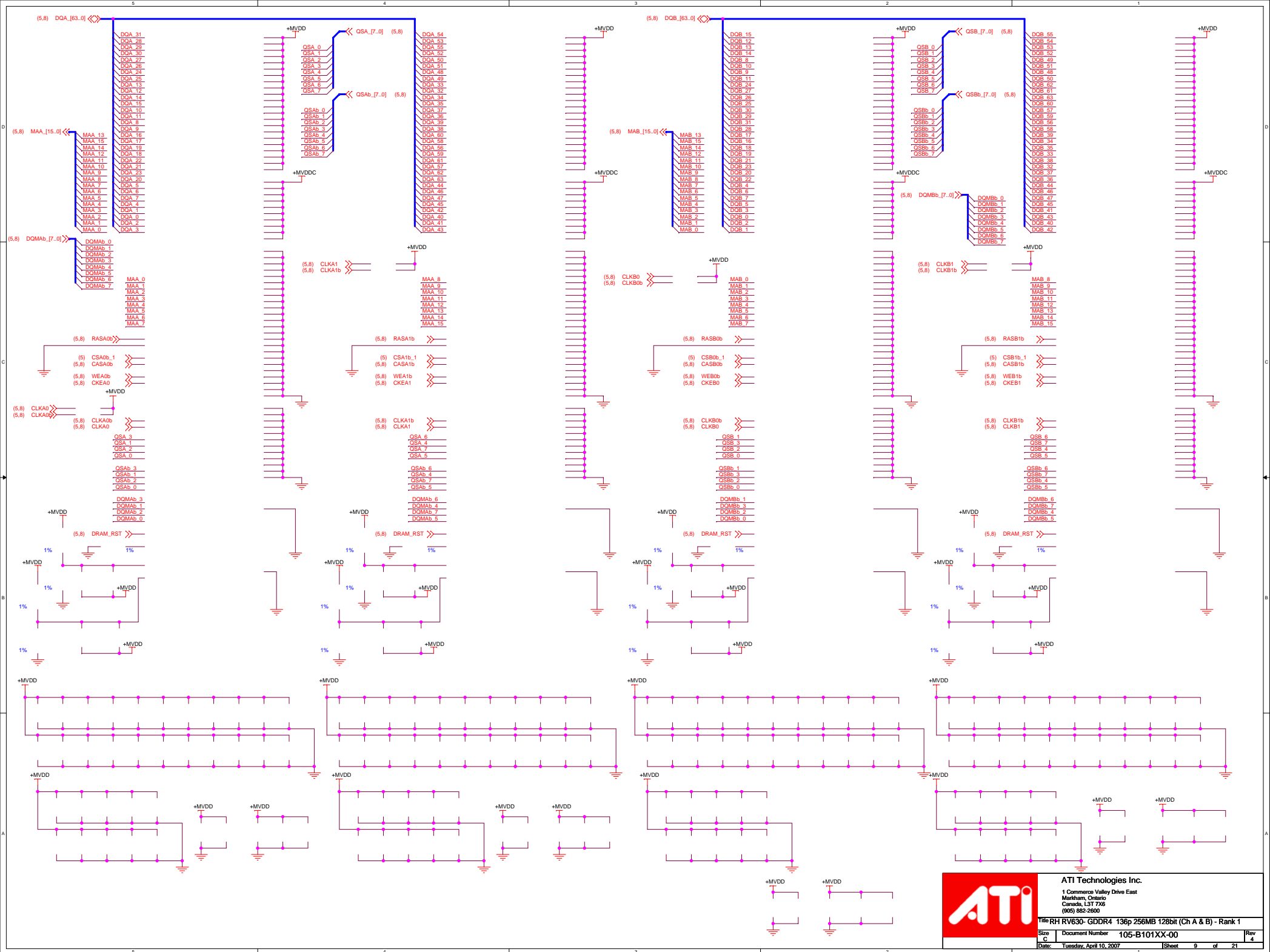
The schematic diagram shows a 2x10 grid of capacitors. The top row contains capacitors C130 through C139, all with a value of 1000F_6.3V. The bottom row contains capacitors C124 through C129, all with a value of 10uF_X6S. The capacitors are connected in a grid-like pattern with horizontal and vertical lines.











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File: RH RV630- GDDR4 136p 256MB 128bit (Ch A & B) - Rank 1

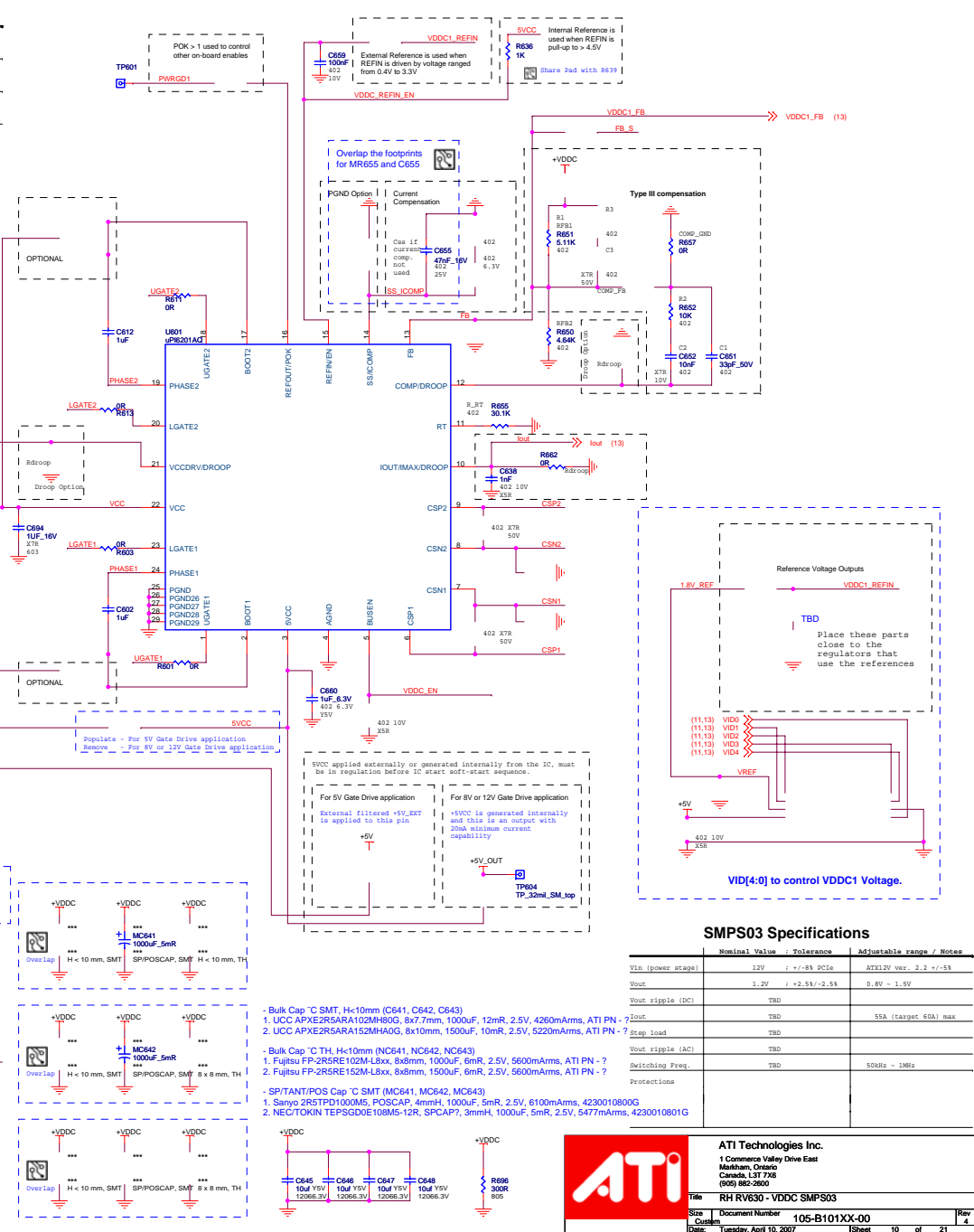
Size: Document Number 105-B101XX-00 Rev 4

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Information on Compatible Controller Parts		PARTS IC #2		PARTS IC #3		PARTS IC #4	
Gate drive voltage	5V, 8V, 12V	5V, 8V, 12V	5V only	12V only			
V _{ee} f	0.6V	0.6V	0.6V	0.6V			
Bootstrap diodes	Internal (DMP D601, D611)	Internal (DMP D602, D611)	External (Populate D603, D611)	Internal (DMP D602, D611)			
Phase current adjustable (unbalanced between phases)	Yes	Yes	Yes	Yes			
Option PIS Selection							
Pin 10 (IOUT/INAX/DRPOD)	IOUT/DRPOD (R662)	IOUT/INAX	IOUT	IOUT/INAX			
Pin 11 (RT)	R _{RT} → 10,000,000/P _{sw}	TSD	R _{RT} → 18,600,000/P _{sw}	TSD			
Pin 12 (COMP/DRPOD)	COMP	DRPOD (R663)	COMP	COMP			
Pin 14 (SS/ICOMP)	SS/EN	END (SS fixed internally)	ICOMP (SS dependent on P _{sw})	SS			
Pin 16 (REFOUT/POK)	POK (Open drain)	IRREFOUT/POK POK voltage = 1.2V	IRREFOUT/POK POK voltage = 1.25V	IRREFOUT/POK POK voltage = 0.4V			
Pin 21 (VCCSRV/DRPOD)	VCCSRV	VCCSRV	DRPOD (R664)	DRPOD (R664)			

External Detection Circuit and Indication		
Case	Behavior	Notifications
External cable not plugged in +12V_S05 not in regulation	12V_EXT_S05 = "0" EN1 → 0V (By R1) EN2A → 3.3V EN2B → 0V	VDC0 disabled
External cable not plugged in +12V_S05 in regulation	12V_EXT_S05 = "1" EN1 → 3V (By R1 and R12) EN2A = 0V EN2B = "1"	VDC0 enabled External Power Missing
External cable plugged in +12V_XXX not in regulation	12V_EXT_XXX = "0" EN1 → 3V (due to low 12V) EN2A → 3.3V EN2B → 0V	VDC0 disabled
External cable plugged in +12V_XXX in regulation	12V_EXT_XXX = "0" EN1 → 3V EN2A = 0V EN2B = "1"	VDC0 enabled Normal Operation

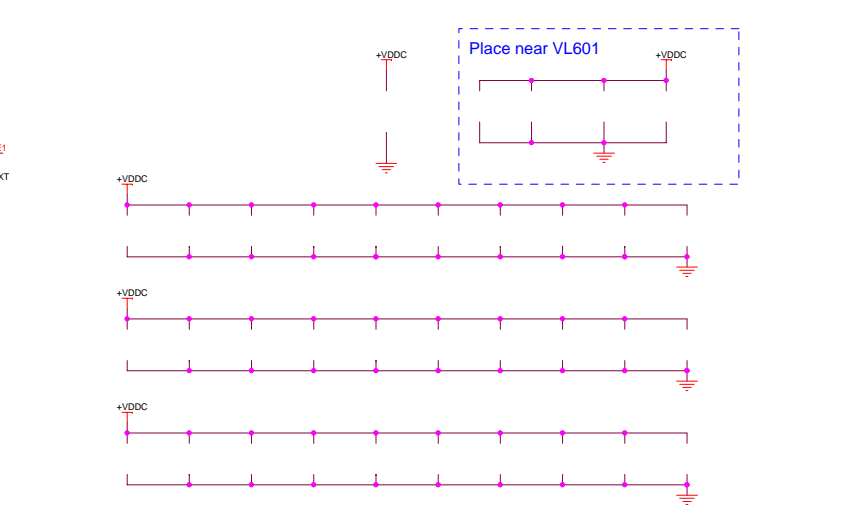
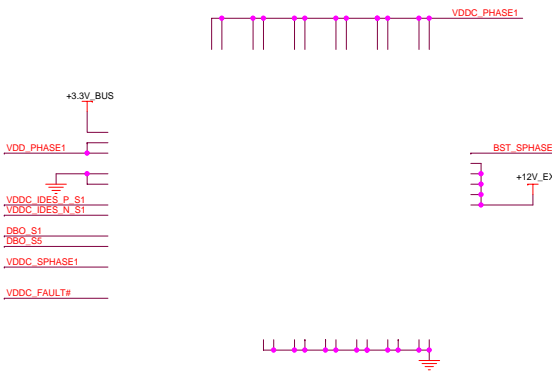
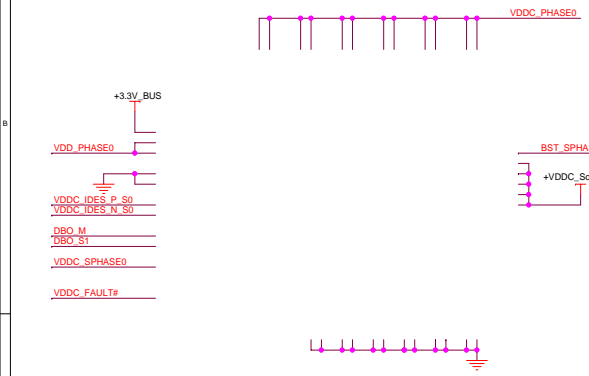
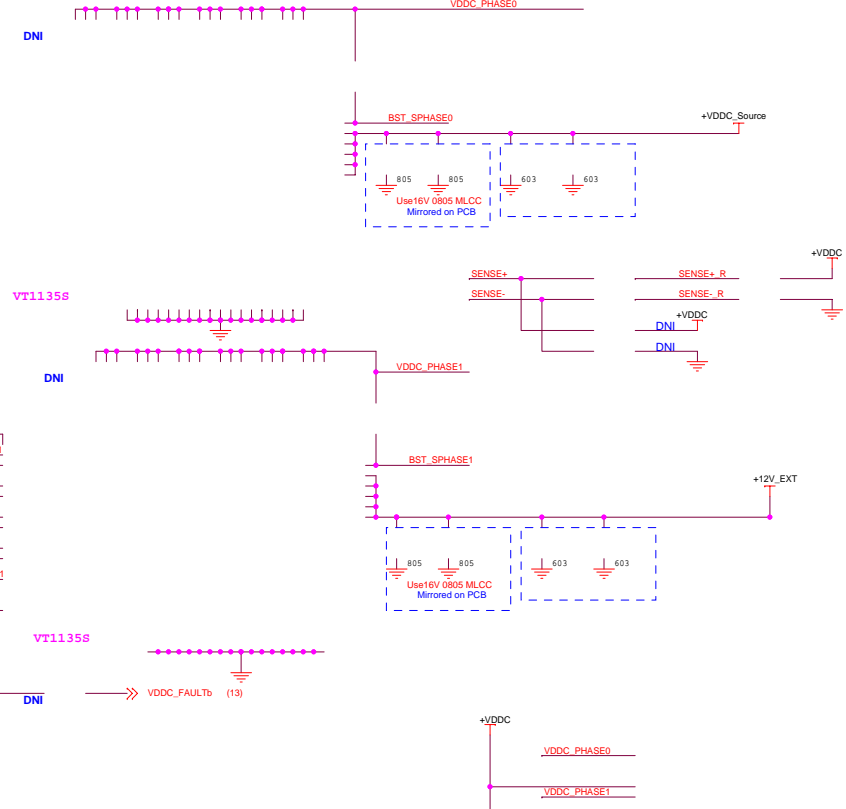
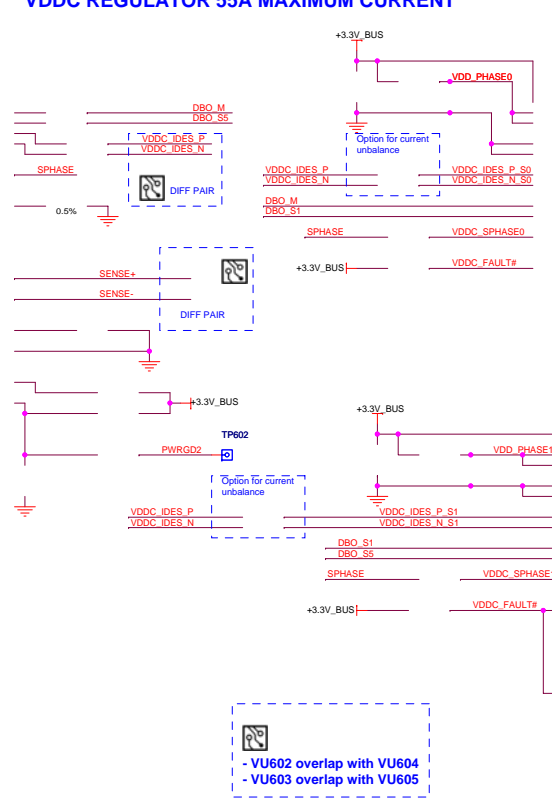
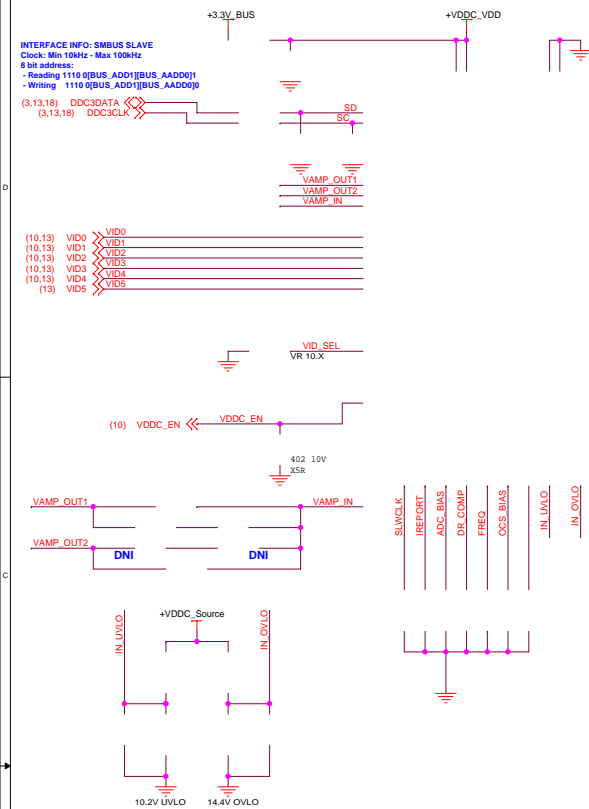
Gate Drive	Populate	Do Not Populate
5V Gate Drive	R631, R632	R630, R670, C660, R661, Q661
8V Gate Drive	R630, C660, R661, Q661	R631, R632, R670
12V Gate Drive	R630, C660, R670	R631, R632, R661, Q661

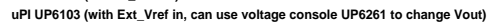


	Nominal Value	Tolerance	Adjustable range / Notes
Vin (power stage)	12V	+/-5% PCIe	ATX12V ver. 2.2 +/-5%
Vout	1.2V	+2.5%/-2.5%	0.8V - 1.5V
Vout ripple (DC)	780		
Vout	780		55A (target 65A) max
780	780		
Switching Freq.	780		60kHz - 180kHz
Protections			
00G			
48, 4200010801G			

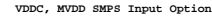


VDDC REGULATOR 55A MAXIMUM CURRENT



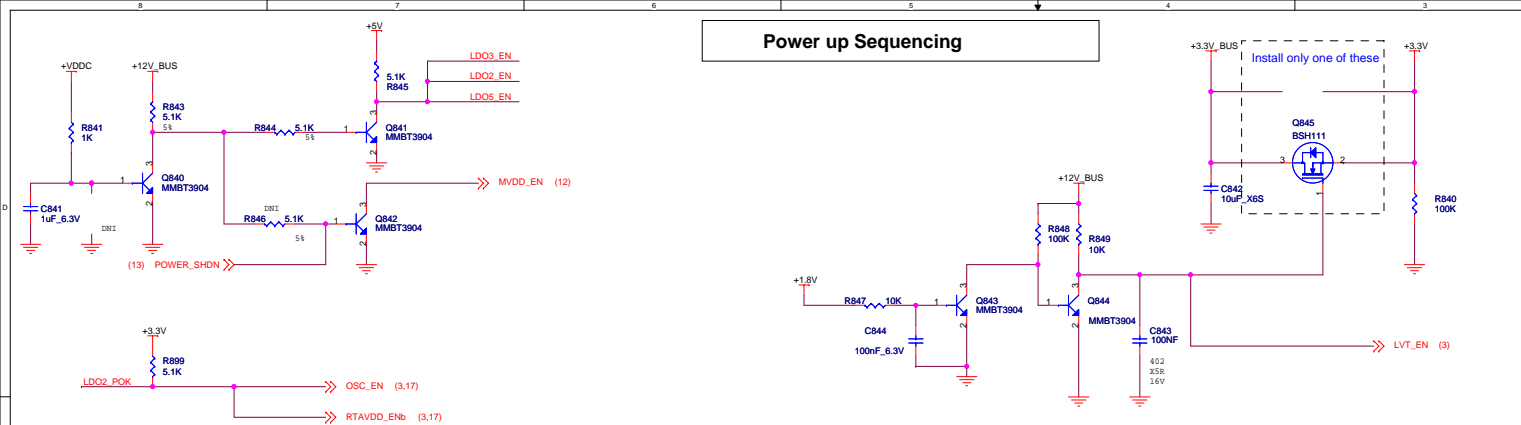


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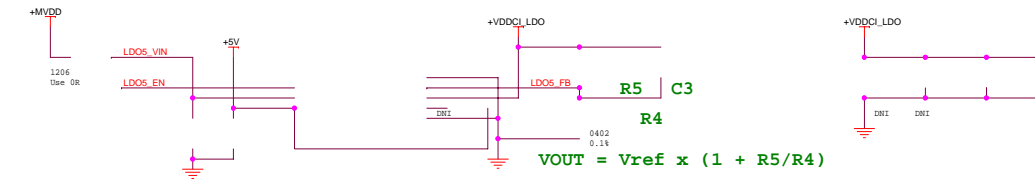


Option	Cases	VDDC Input	VDDIO Input	Status
Option #1 B701 B702 B703	Normal Operation	Phase 1 powered from +12V_SNS	Powered from +12V_VST	Board works properly
	External cable plugged in	Phase 1 powered from +12V_VST		
Option #2 B712	Power On When External cable not plugged in	Phase 1 powered from +12V_SNS Phase 2 powered from +12V_VST	Powered from +12V_SNS	Boot up to Dos warn Message Screen
Option #2 B712	Normal Operation	Phase 1 powered from +12V_SNS Phase 2 powered from +12V_VST	Powered from +12V_SNS	Board works properly
	External cable plugged in			
	Power On When External cable not plugged in	Phase 1 powered from +12V_SNS Phase 2 powered from +12V_VST	Powered from +12V_SNS	Boot up to Dos warn Message Screen

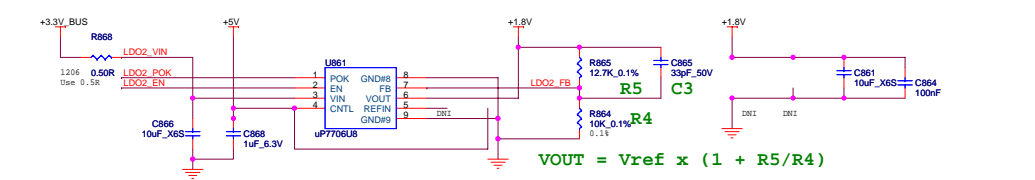




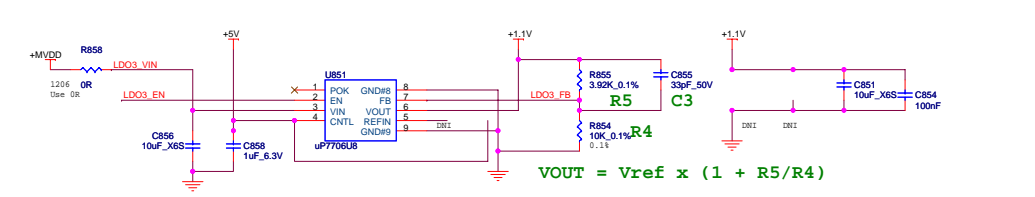
LDO #6: Vin = 1.6V to 2.1V MAX Vout = +1.25V +/- 2% Iout = 1.5A (TBV) RMS MAX
PCB: 50 to 70mm sq. copper area for cooling



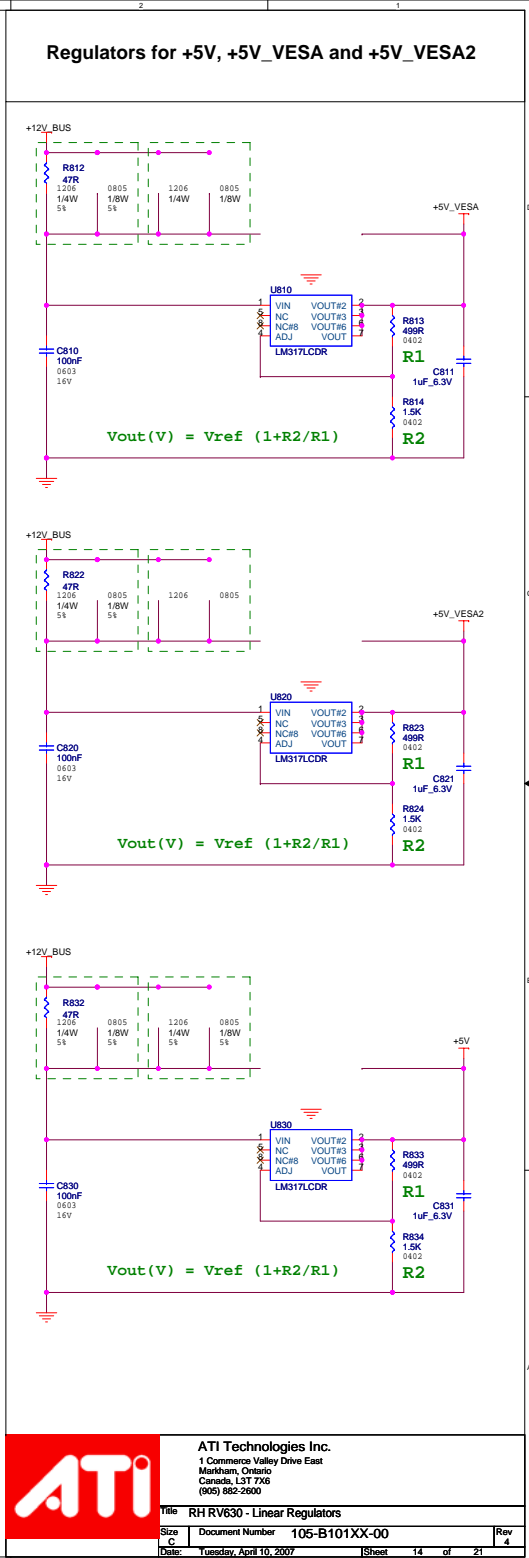
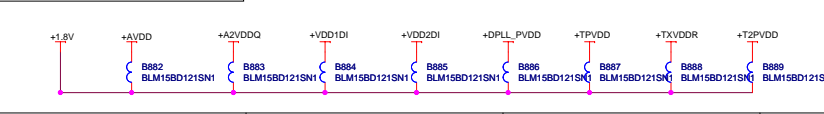
LDO #2: Vin = 2.1V to 3.6V MAX Vout = +1.8V +/- 2% Iout = 0.8A (TBV) RMS MAX
PCB: 50 to 70mm sq. copper area for cooling

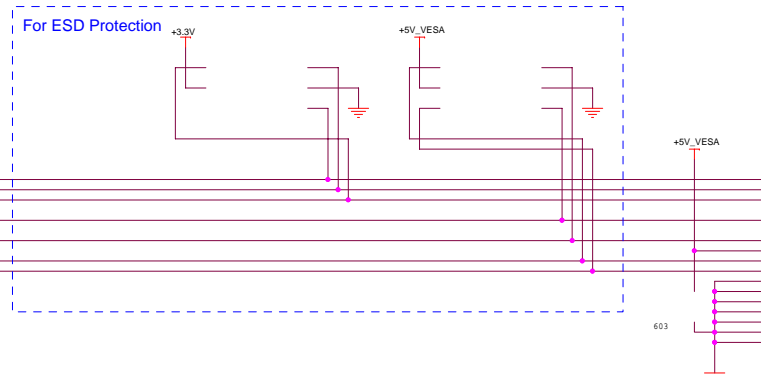
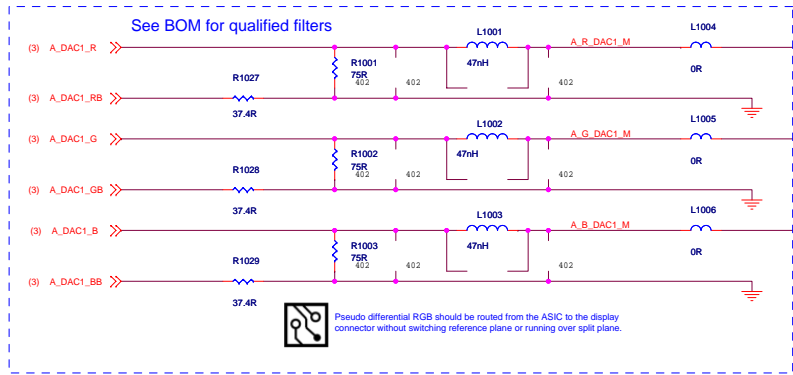


LDO #3: Vin = +1.45V to 2.1V MAX Vout = +1.1V +/- 2% Iout = 1.1A (TBV) RMS MAX
PCB: 50 to 70mm sq. copper area for cooling

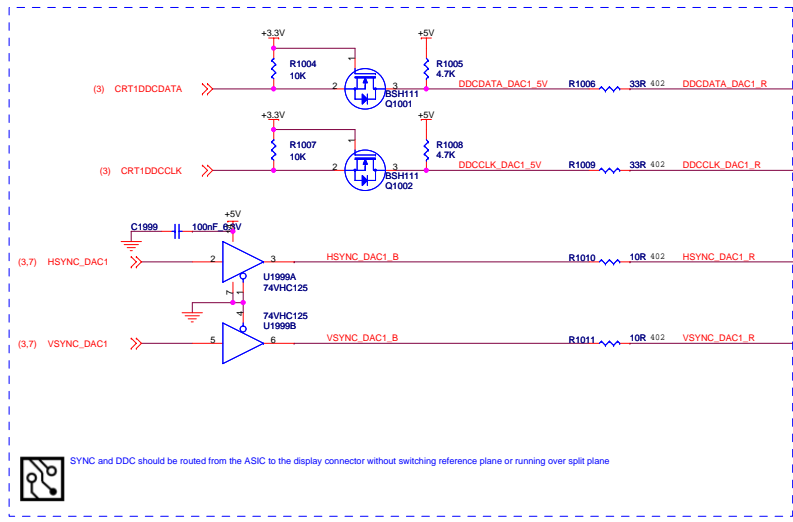


Shared Power Rails



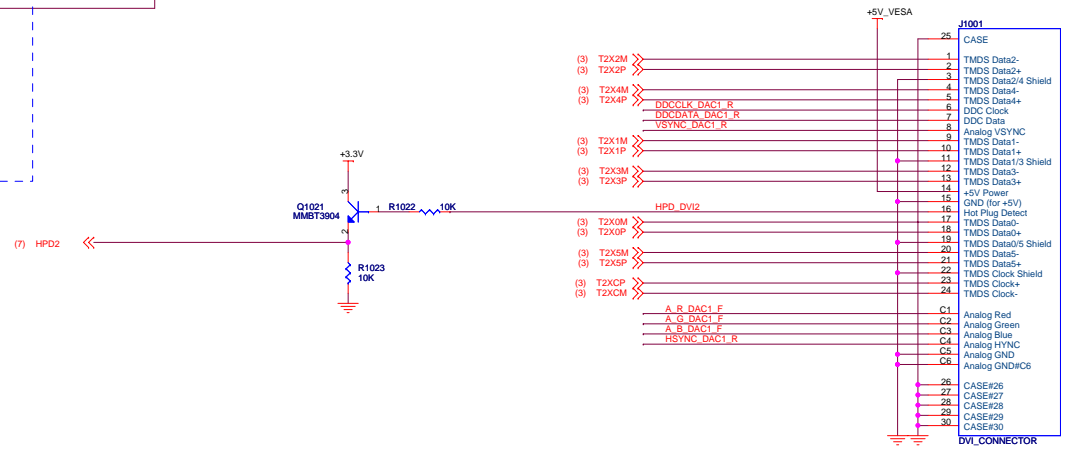


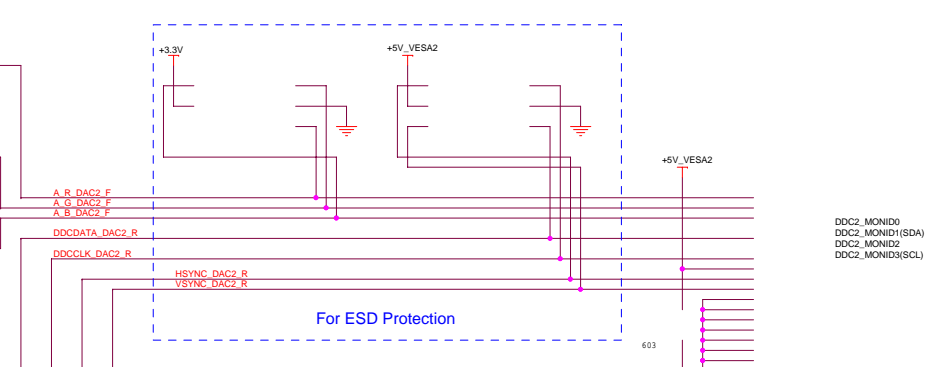
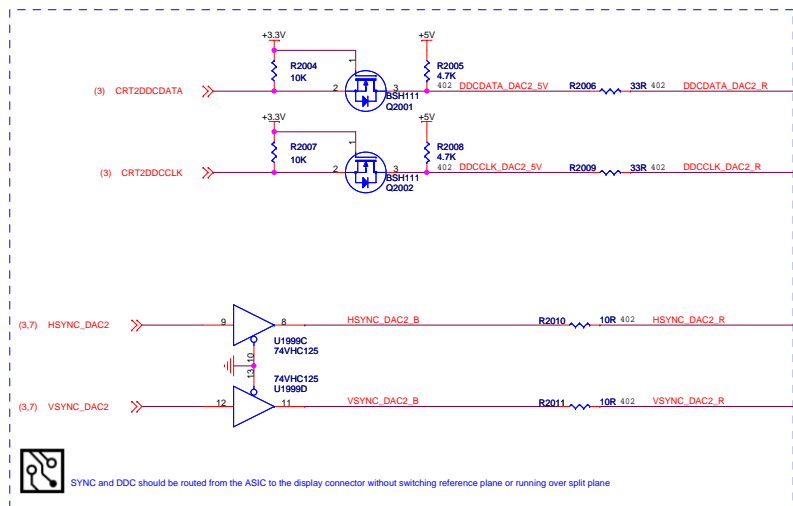
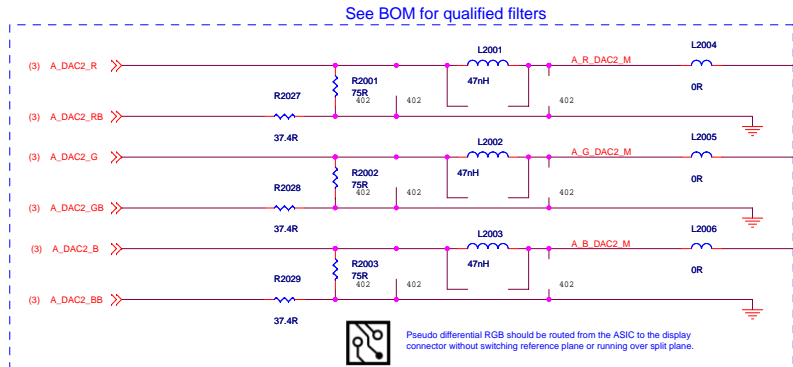
DDC2_MONID0
DDC2_MONID1(SDA)
DDC2_MONID2
DDC2_MONID3(SCL)



DB15 pin	Standard VGA	DDC1 Host	DDC2B or DDC2B+ Host	DDC2AB Host	DDC1/2 Display
11	Monitor ID bit 0	Monitor ID bit 0	Monitor ID bit 0	Monitor ID bit 0	Optional
12	Monitor ID bit 1	Monitor ID bit 1	Monitor ID bit 1	Monitor ID bit 1	Optional
4	Monitor ID bit 2	Monitor ID bit 2	Monitor ID bit 2	Monitor ID bit 2	Optional
15	Monitor ID bit 3	Open	Open	Open	Optional
9	N/C	+5V	+5V	+5V	Optional
Hardware Support	No	Yes	Yes	No	Yes

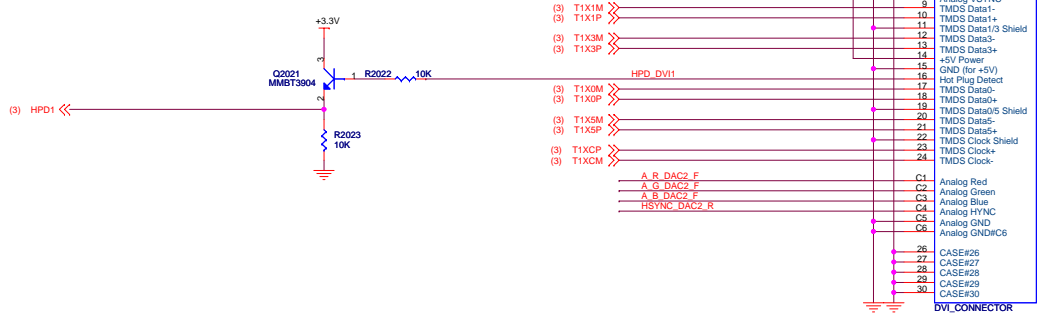
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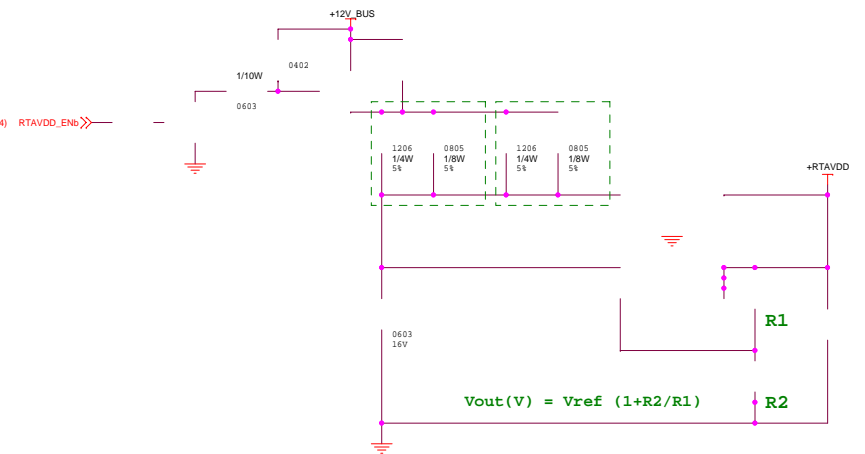


DB15 pin	Standard VGA	DDC1 Host	DDC2B or DDC2B+ Host	DDC2AB Host	DDC1/2 Display
11	Monitor ID bit 0	Monitor ID bit 0	Monitor ID bit 0	Monitor ID bit 0	Optional
12	Monitor ID bit 1	Data from display SDI	SDI	SDA	SDI
4	Monitor ID bit 2	Monitor ID bit 2	Monitor ID bit 2	Monitor ID bit 2	Optional
15	Monitor ID bit 3	Open	SCL	SCL	SCL
9	N/C	+5V	+5V	+5V	Optional
Hardware Support	No	Yes	Yes	No	Yes

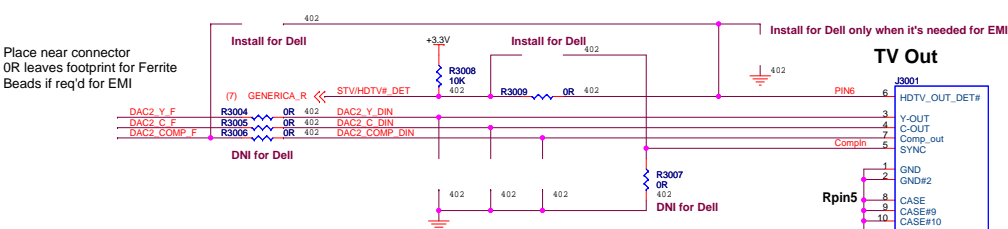
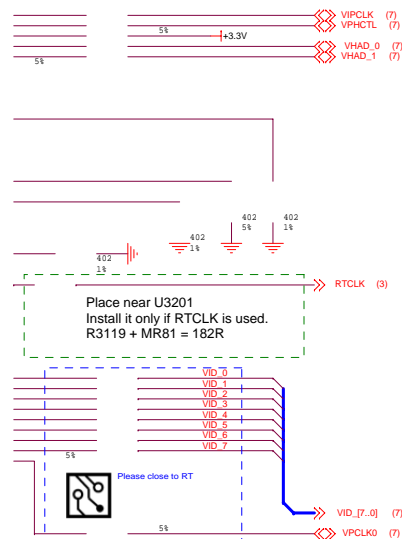
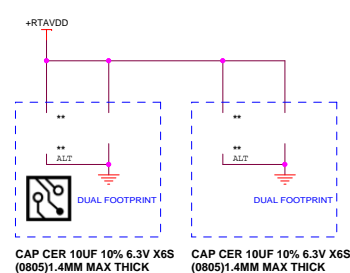
Based on VESA Display Data Channel (DDC) Standard Ver. 3 Dec. 15, 1997



Regulator for +RTAVDD
Vout = 3.3V



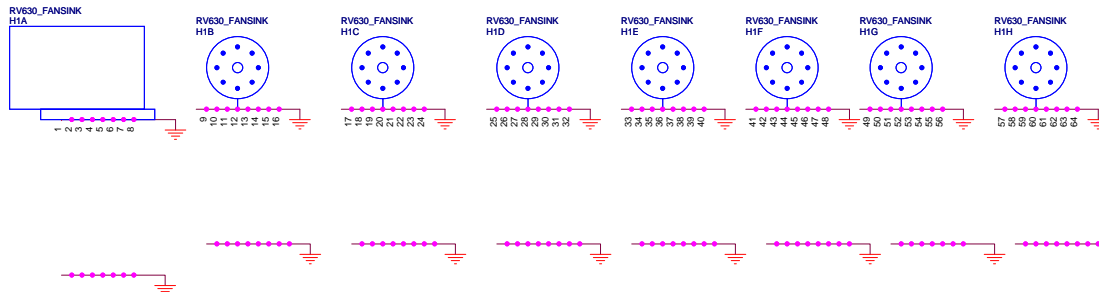
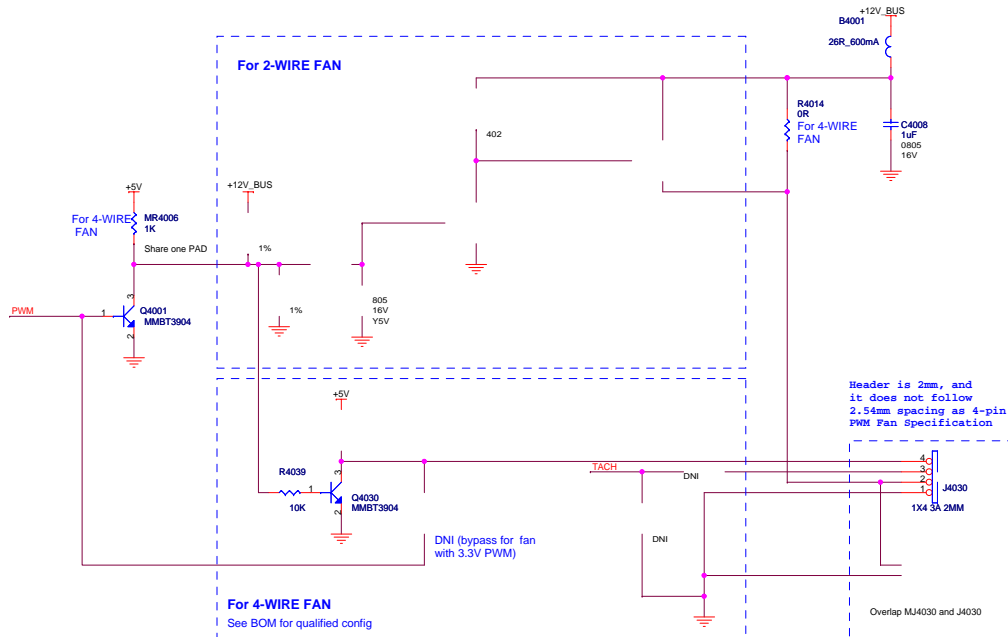
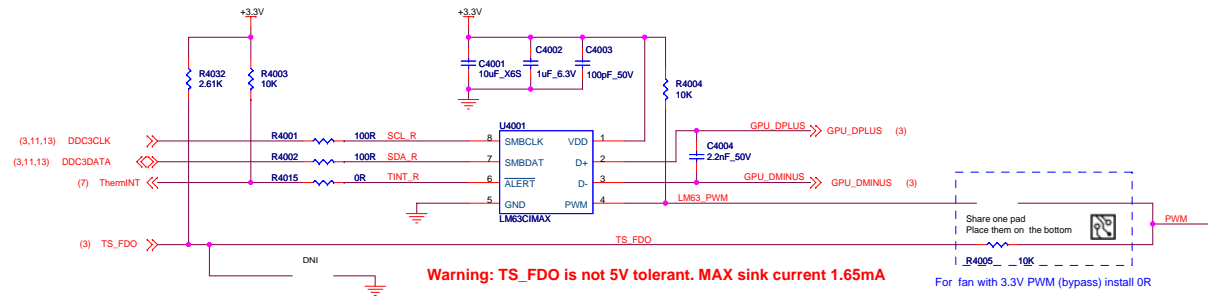
Place near connector
OR leaves footprint for Ferrite
Beads if req'd for EMI



The 7-pin MiniDIN footprint allows one of the two MiniDINs:
- 7-pin Svideo/Composite MiniDIN P/N 6071001500G
- 4-pin Svideo MiniDIN P/N 6070001000G



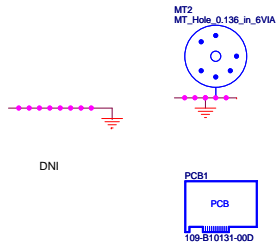
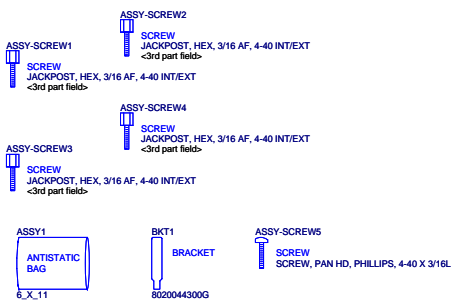
External thermal sensor is for testing, and will not be populated in production.



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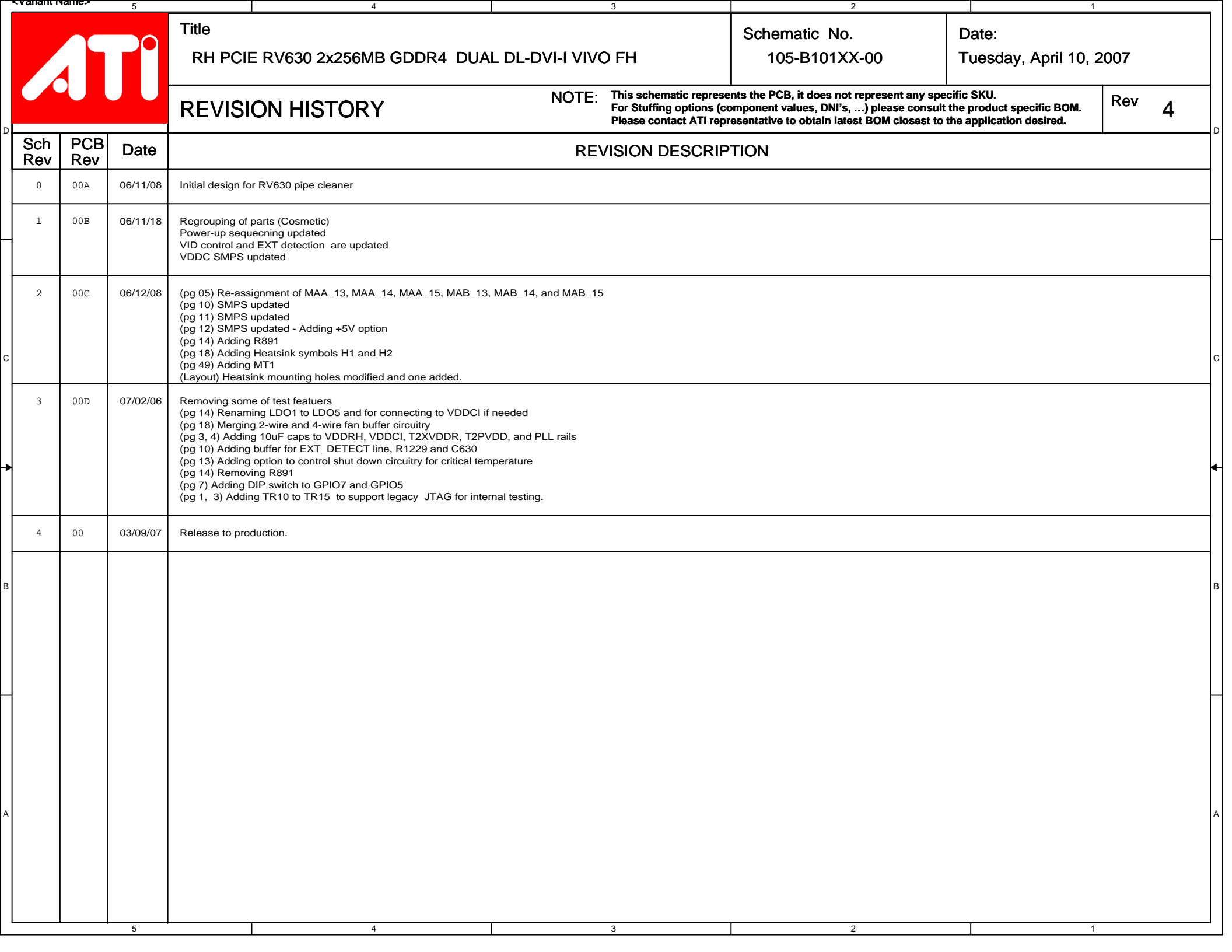
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Size	Document Number	105-B101XX-00	Rev 4
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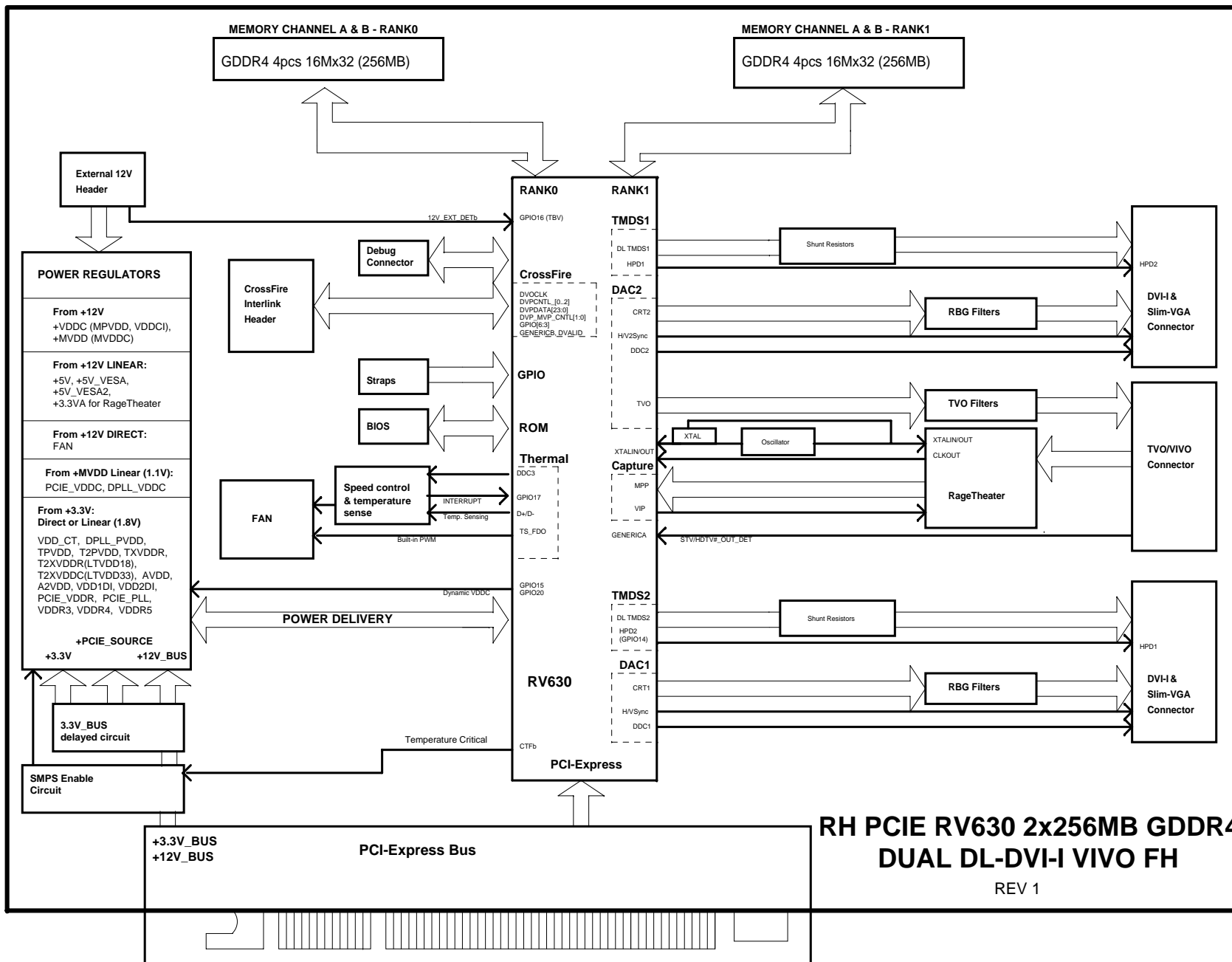
DVI/DVI SCREWS with top tab



<Variant Name>

	ATI Technologies Inc.			
	1 Commerce Valley Drive East Markham, Ontario Canada, L3T 7X6 (905) 952-2600			
	Title RH RV630 - Mechanical			
	Size C	Document Number	105-B101XX-00	
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RH PCIE RV630 2x256MB GDDR4 DUAL DL-DVI-I VIVO FH

REV 1



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Title: RH PCIE-2 RV630 2x256MB GDDR4 DUAL DL-DVI-I VIVO FH

Size: C	Document Number: 105-B101XX-00	Rev: 4
Date: Tuesday, April 10, 2007	Sheet: 21	of: 21