



ATI Corporate Presentation

AMD1044 0188930

R400 Review Action Summary

- Program – Next review on January 15th
- R400 Software
 - Emulator release tied to software tests; Peter Pellerite will set up meeting to discuss
 - AIW schedule for 1 month after graphics will not work – 3 months – Ray T. to work
 - Board VIVO closure for debug
- R400 Hardware
 - DDR DVO at 480MHz needs to drop 3.3V Support, 2.5V maximum, 1.8V standard: Ray T. to call meeting
 - SP will need to add larger buffer – Add now ? Need to discuss asap and decide. Peter Pellerite to call meeting.
 - Need generic fix to scripts for timing fix ? Mark Sprague
- Chip Integration
 - Power issues with latest memories (4x higher) - need to figure out issue
 - Need operations involved on Virage fuses, harvesting fuse
 - Pad ring coordination meeting with Sam, Lili, Frank
- Physical Design
 - Feedback from Netlist 3 – Mark Lee
- Performance
 - RTL to IKOS ? Frank Hering



2
CONFIDENTIAL
6/14/2017

ATI Corporate Presentation

AMD1044 0188931

High Level Schedule

Task	Original	Last FC	Current FC
Emulator Test template Complete	01-18-02	01-18-02	Complete
GC Emulator integration - 1 triangle	02-22-02	02-21-02	Complete
Core Emulator pixel / shader tests run	03-15-02	03-19-02	Complete
Block Testing Begins	04-16-02	05-01-02	Complete
GC/Chip Integration Start	05-17-02	05-15-02	Complete
Simulate 1 Triangle / Emulator ready for SW	06-15-02	07-01-02	Complete
First Syntheses (n-1)	07-12-02	08-03-03	Complete
Verilog Feature Complete	09-16-02	10-31-02	Complete
Second Synthesis (n)	09-23-02	10-04-02	Complete
IKCS Emulation start	10-11-02	11-15-02	01-04-02
Third Synthesis	11-01-02	11-15-02	12-18-02
Early block delivery begins	11-08-02	11-18-02	12-16-02
IKCS Emulation (w/ Software) begins	11-11-02	12-16-02	01-16-02
RTL Freeze / Final Netlist (Gate level ECO only)	11-15-02	01-31-03	01-31-03
A11 Base Layers Tapeout	01-10-03	03-28-03	03-28-03
A11 Metal Layers Tapeout	01-24-03	04-11-03	04-11-03
First Samples for Engineering		06-25-03	06-25-03
A12 Tapeout		07-31-03	07-31-03
A12 Samples for Engineering		09-04-03	09-04-03
R400 Customer Samples		09-11-03	09-11-03
Product Delivery		10-04-03	10-04-03



3
CONFIDENTIAL
6/14/2017

ATI Corporate Presentation

AMD1044 0188932

Back-Up Slides



4
CONFIDENTIAL
6/14/2017

ATI Corporate Presentation

AMD1044 0188933

R400 Area Summary (Previous)

R400 Area Estimate (0.13)

Block	Pre Route Logic Area	Utilization	Post Route Logic Unit Area	Macro Area	Total Unit Area	R400 Qty	R400 Total	RV400 Qty	RV400 Total
BIF (Bus Interface)	1,461,617	0.70	2,116,600	0	2,116,600	1	2,116,600	1.00	2,116,600
DC (Display Controller)	5,349,478	0.70	7,642,111	1,754,498	9,396,601	1	9,396,601	1.00	9,396,601
VP (Video In Port)		0.70				1	0	1.00	0
CG (Clock Gen)	123,813	0.70	176,976	0	176,976	1	176,976	1.00	176,976
ROM (ROM and debug controller)	73,117	0.70	104,439	0	104,439	1	104,439	1.00	104,439
TSTC (Test Controller)	9,690	0.70	13,714	0	13,714	1	13,714	1.00	13,714
CP (Control Processor)	2,785,951	0.70	3,984,215	1,553,082	5,547,297	1	5,547,297	1.00	5,547,297
RBM (Register Backbone Manager)	103,019	0.70	147,229	91,452	238,680	1	238,680	1.00	238,680
MP (Memory Hub)	3,936,364	0.70	5,620,492	909,919	6,539,407	1	6,539,407	0.75	4,897,055
IDCT	1,200,916	0.70	1,714,662	0	1,714,662	1	1,714,662	1.00	1,714,662
VGT (Vertex Group and Tessellate)	756,817	0.70	1,081,210	348,919	1,430,128	1	1,430,128	1.00	1,430,128
PA (Viewport Xform, Clip and Setup)	2,783,577	0.70	3,876,538	756,252	4,731,790	1	4,731,790	1.00	4,731,790
SC (Scan Converter)	7,203,312	0.70	10,280,446	634,693	10,925,139	1	10,925,139	0.80	8,655,083
SP (Shader Pipe)	9,054,910	0.70	9,649,915	2,413,711	11,063,626	4	44,254,601	2.00	22,127,251
SD (Sequences)	1,648,958	0.70	2,355,654	2,333,798	4,689,452	1	4,689,452	1.00	4,689,452
TP (Texture Pipe)	2,305,214	0.70	3,263,249	558,989	3,890,238	4	15,590,950	2.00	7,780,175
TC (Texture Cache)	11,362,819	0.70	16,261,285	3,755,307	20,016,682	1	20,016,682	0.50	12,610,009
RB (Render Backend)	8,971,479	0.70	9,859,256	1,167,019	11,126,275	4	44,505,101	2.00	22,252,551
RC (Render Control)	151,318	0.70	216,268	0	216,268	1	216,268	1.00	216,268
SX (Shader Expo)	702,919	0.70	1,004,228	2,048,405	3,052,633	2	6,105,266	1.00	3,052,633
MC (Memory Controller)	351,619	0.70	502,413	445,311	947,725	4	3,790,898	2.00	1,895,449
Attn:GJ							5,406,140		7,518,980
Total Core (um2)							197,521,491		119,466,993

Current Pad separation (um)	50	17,087,057		
Current Pad height (um)	350			
Scribe	0.10			
Core mm/side			1369	16.88
Total mm/side			1457	11.76

5
CONFIDENTIAL
6/14/2017

ATI Corporate Presentation

AMD1044 0188934