

R400 Area Estimate (0.13) from Netlist 2

Block	Pre Route Logic Area	Utilization	Post Route Logic Unit Area	Macro Area	Total Unit Area	R400 Qty	R400 Total	RV400 Qty	RV400 Total	Synthesis Date	
BIF (Bus Interface)	1,481,627	0.70	2,116,609	0	2,116,609	1	2,116,609	1.00	2,116,609	9/24/2002	1% BIF (Bus Interface)
DC (Display Controller)	5,349,478	0.70	7,642,111	1,754,490	9,396,601	1	9,396,601	1.00	9,396,601	9/30/2002	5% DC (Display Controller)
VIP (Video In Port)		0.70				1	0	1.00	0	9/30/2002	0% VIP (Video In Port)
CG (Clock Gen)	123,883	0.70	176,976	0	176,976	1	176,976	1.00	176,976	9/21/2002	0% CG (Clock Gen)
ROM (ROM and debug contro	73,107	0.70	104,439	0	104,439	1	104,439	1.00	104,439	9/21/2002	0% ROM (ROM and debug controller)
TSTC (Test Controller)	9,600	0.70	13,714	0	13,714	1	13,714	1.00	13,714	7/31/2002	0% VIP (Video In Port)
CP (Control Processor)	2,795,951	0.70	3,994,215	1,553,082	5,547,297	1	5,547,297	1.00	5,547,297	9/30/2002	3% CP (Control Processor)
RBBM (Register Backbone M	103,059	0.70	147,228	91,452	238,680	1	238,680	1.00	238,680	9/30/2002	0% RBBM (Register Backbone Manag
MH (Memory Hub)	3,934,344	0.70	5,620,492	908,915	6,529,407	1	6,529,407	0.75	4,897,055	9/27/2002	3% MH (Memory Hub)
IDCT	1,200,396	0.70	1,714,852	0	1,714,852	1	1,714,852	1.00	1,714,852	9/23/2002	1% IDCT
VGT (Vertex Group and Tesse	756,847	0.70	1,081,210	348,919	1,430,128	1	1,430,128	1.00	1,430,128	10/1/2002	1% VGT (Vertex Group and Tessellate
PA(Viewport Xform,Clip and S	2,783,577	0.70	3,976,538	755,252	4,731,790	1	4,731,790	1.00	4,731,790	9/30/2002	3% PA(Viewport Xform,Clip and Setup
SC (Scan Converter)	7,203,312	0.70	10,290,446	634,693	10,925,139	1	10,925,139	0.60	6,555,083	10/1/2002	6% SC (Scan Converter)
SP (Shader Pipe)	6,054,940	0.70	8,649,915	2,413,711	11,063,625	4	44,254,501	2.00	22,127,251	10/3/2002	24% SP (Shader Pipe)
SQ (Sequencer)	1,648,958	0.70	2,355,654	2,333,798	4,689,452	1	4,689,452	1.00	4,689,452	9/27/2002	3% SQ (Sequencer)
TP (Texture Pipe)	2,305,274	0.70	3,293,249	596,989	3,890,238	4	15,560,950	2.00	7,780,475	9/25/2002	8% TP (Texture Pipe)
TC (Texture Cache)	11,382,899	0.70	16,261,285	3,755,397	20,016,682	1	20,016,682	0.60	12,010,009	9/25/2002	11% TC (Texture Cache)
RB (Render Backend)	6,971,479	0.70	9,959,256	1,167,019	11,126,275	4	44,505,101	2.00	22,252,551	10/4/2002	24% RB (Render Backend)
RC (Render Central)	151,388	0.70	216,268	0	216,268	1	216,268	1.00	216,268	10/4/2002	0% RC (Render Central)
SX (Shader Export)	702,959	0.70	1,004,228	2,048,405	3,052,633	2	6,105,266	1.00	3,052,633	10/3/2002	3% SX (Shader Export)
MC (Memory Controller)	351,689	0.70	502,413	445,311	947,725	4	3,790,898	2.00	1,895,449	10/24/2002	2% MC (Memory Controller)
Analog							5,456,740		7,518,580	9/24/2002	3% Analog
Total Core (um2)							187,521,491		118,465,893		
Current Pad separation (um)					50						
Current Pad height (um)					350						
Scribe					0.18						
Core mm/side							13.69	10.88			
Total mm/side							14.57	11.76			

AMD1044_0254303

R400 Area Estimate (0.13)

Block	Pre Route		Post Route		Total Unit Area	R400 Qty	R400 Total	RV400		Synthesis Date	
	Logic Area	Utilization	Logic Unit Area	Macro Area				Qty	Total		
BIF (Bus Interface)	1,642,421	0.70	2,346,316	0	2,346,316	1	2,346,316	1.00	2,346,316	12/25/2002	1% BIF (Bus Interface)
DC (Display Controller)	6,406,624	0.70	9,152,320	2,205,270	11,357,590	1	11,357,590	1.00	11,357,590	12/26/2002	5% DC (Display Controller)
VIP (Video In Port)		0.70				1	0	1.00	0	12/26/2002	0% VIP (Video In Port)
CG (Clock Gen)	104,813	0.70	149,732	0	149,732	1	149,732	1.00	149,732	12/19/2002	0% CG (Clock Gen)
ROM (ROM and debug contro	78,150	0.70	111,643	0	111,643	1	111,643	1.00	111,643	12/19/2002	0% ROM (ROM and debug controller)
TSTC (Test Controller)	22,309	0.70	31,870	0	31,870	1	31,870	1.00	31,870	12/19/2002	0% VIP (Video In Port)
CP (Control Processor)	2,751,049	0.70	3,930,070	1,854,997	5,785,066	1	5,785,066	1.00	5,785,066	12/12/2002	3% CP (Control Processor)
RBBM (Register Backbone Ma	146,387	0.70	209,125	124,635	333,759	1	333,759	1.00	333,759	12/10/2002	0% RBBM (Register Backbone Manager)
MH (Memory Hub)	5,151,621	0.70	7,359,459	1,094,384	8,453,842	1	8,453,842	0.75	6,340,382	12/16/2002	4% MH (Memory Hub)
IDCT	1,251,468	0.70	1,787,811	0	1,787,811	1	1,787,811	1.00	1,787,811	12/26/2002	1% IDCT
VGT (Vertex Group and Tesse	831,196	0.70	1,187,423	400,563	1,587,986	1	1,587,986	1.00	1,587,986	12/18/2002	1% VGT (Vertex Group and Tessellate)
PA(Viewport Xform,Clip and S	3,211,671	0.70	4,588,101	1,006,068	5,594,169	1	5,594,169	1.00	5,594,169	12/12/2002	3% PA(Viewport Xform,Clip and Setup)
SC (Scan Converter)	3,376,838	0.70	4,824,054	899,403	5,723,457	1	5,723,457	0.60	3,434,074	12/10/2002	3% SC (Scan Converter)
SC_B (Scan Converter)	3,569,404	0.70	5,099,149	0	5,099,149	1	5,099,149	0.60	3,059,489	12/11/2002	2% SC_B (Scan Converter)
SP (Shader Pipe)	6,681,354	0.70	9,544,792	2,360,743	11,905,535	4	47,622,140	2.00	23,811,070	12/18/2002	21% SP (Shader Pipe)
SQ (Sequencer)	1,784,713	0.70	2,549,590	3,541,060	6,090,650	1	6,090,650	1.00	6,090,650	12/11/2002	3% SQ (Sequencer)
TP (Texture Pipe)	3,105,284	0.70	4,436,120	688,336	5,124,456	4	20,497,824	2.00	10,248,912	12/16/2002	9% TP (Texture Pipe)
TC (Texture Cache)	11,327,188	0.70	16,181,697	4,182,868	20,364,565	1	20,364,565	0.60	12,218,739	12/17/2002	9% TC (Texture Cache)
RB (Render Backend)	7,960,177	0.70	11,371,681	1,482,000	12,853,681	4	51,414,724	2.00	25,707,362	12/21/2002	23% RB (Render Backend)
AB (Alpha Blend)	1,857,633	0.70	2,653,761	0	2,653,761	4	10,615,045	2.00	5,307,522	12/21/2002	5% AB (Alpha Blend)
RC (Render Central)	187,333	0.70	267,619	0	267,619	1	267,619	1.00	267,619	12/18/2002	0% RC (Render Central)
SX (Shader Export)	775,672	0.70	1,108,104	1,996,055	3,104,159	2	6,208,318	1.00	3,104,159	12/16/2002	3% SX (Shader Export)
MC (Memory Controller)	401,340	0.70	573,343	445,816	1,019,158	4	4,076,634	2.00	2,038,317	12/16/2002	2% MC (Memory Controller)
Analog + DFT							6,534,500		7,932,191	12/31/2002	3% Analog + DFT
Total Core (um2)							222,054,408		138,646,429		

Current Pad separation (um) 50
Current Pad height (um) 350
Scribe 0.18
Core mm/side
Total mm/side

14.90 11.77
15.78 12.65

AMD1044_0254304

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	Perforce Label	
BIF (Bus Interface)	1,319,143	0.70	1,884,490	0	1,884,490	1	1,884,490	1.00	1,884,490	Rel. 4.0.1	1% BIF (Bus Interface)
DC (Display Controller)	6,068,475	0.70	8,669,249	2,335,936	11,005,186	1	11,005,186	1.00	11,005,186	Rel. 4.0.1	5% DC (Display Controller)
VIP (Video In Port)		0.70				1	0	1.00	0	Rel. 4.0.1	0% VIP (Video In Port)
SI (CG, ROM, TSTC, DBG)	222,069	0.70	317,242	0	317,242	1	317,242	1.00	317,242	Rel. 4.0.1	0% CG (Clock Gen)
CP (Control Processor)	2,466,372	0.70	3,523,388	1,586,958	5,110,346	1	5,110,346	1.00	5,110,346	Rel. 4.0.1	2% CP (Control Processor)
RBBM (Register Backbone Manager)	146,387	0.70	209,125	124,635	333,759	1	333,759	1.00	333,759	Rel. 4.0.1	0% RBBM (Register Backbone Manager)
MH (Memory Hub)	5,375,817	0.70	7,679,738	1,270,941	8,950,679	1	8,950,679	0.75	6,713,009	Rel. 4.0.1	4% MH (Memory Hub)
IDCT	1,210,900	0.70	1,729,857	0	1,729,857	1	1,729,857	1.00	1,729,857	Rel. 4.0.1	1% IDCT
VGT (Vertex Group and Tessellate)	831,196	0.70	1,187,423	400,563	1,587,986	1	1,587,986	1.00	1,587,986	Rel. 4.0.1	1% VGT (Vertex Group and Tessellate)
PA(Viewport Xform,Clip and Setup)	3,155,429	0.70	4,507,756	1,349,122	5,856,878	1	5,856,878	1.00	5,856,878	Rel. 4.0.1	3% PA(Viewport Xform,Clip and Setup)
SC (Scan Converter)	3,281,784	0.70	4,688,263	1,098,714	5,786,977	1	5,786,977	0.60	3,472,186	Rel. 4.0.1	3% SC (Scan Converter)
SC_B (Scan Converter)	3,483,305	0.70	4,976,150	0	4,976,150	1	4,976,150	0.60	2,985,690	Rel. 4.0.1	2% SC_B (Scan Converter)
SP (Shader Pipe)	7,321,592	0.70	10,459,417	2,724,647	13,184,064	4	52,736,257	2.00	26,368,128	Rel. 4.0.1	24% SP (Shader Pipe)
SQ (Sequencer)	1,839,038	0.70	2,627,198	3,666,854	6,294,052	1	6,294,052	1.00	6,294,052	Rel. 4.0.1	3% SQ (Sequencer)
TP (Texture Pipe)	2,833,203	0.70	4,047,433	688,336	4,735,769	4	18,943,074	2.00	9,471,537	Rel. 4.0.1	8% TP (Texture Pipe)
TC - TCF (Texture Fetch)	4,540,971	0.70	6,487,102	688,760	7,175,862	1	7,175,862	0.60	4,305,517	Rel. 4.0.1	3% TC - TCF (Texture Fetch)
TC - TCM (Texture Memory)	3,325,195	0.70	4,750,278	2,496,368	7,246,646	1	7,246,646	0.60	4,347,988	Rel. 4.0.1	3% TC - TCM (Texture Memory)
TC - TCR (Texture Return)	3,487,042	0.70	4,981,488	1,748,600	6,730,088	1	6,730,088	0.60	4,038,053	Rel. 4.0.1	3% TC - TCR (Texture Return)
RB (Render Backend)	7,157,973	0.70	10,225,675	1,610,824	11,836,499	4	47,345,995	2.00	23,672,998	Rel. 4.0.1	21% RB (Render Backend)
AB (Alpha Blend)	1,790,687	0.70	2,558,124	0	2,558,124	4	10,232,497	2.00	5,116,249	Rel. 4.0.1	5% AB (Alpha Blend)
RC (Render Central)	185,001	0.70	264,287	0	264,287	1	264,287	1.00	264,287	Rel. 4.0.1	0% RC (Render Central)
SX (Shader Export)	1,234,086	0.70	1,762,980	2,307,229	4,070,209	2	8,140,419	1.00	4,070,209	Rel. 4.0.1	4% SX (Shader Export)
MC (Memory Controller)	412,438	0.70	589,197	538,583	1,127,779	4	4,511,117	2.00	2,255,559	Rel. 4.0.1	2% MC (Memory Controller)
Analog + DFT							6,534,500		7,932,191		3% Analog + DFT
Total Core (um2)							223,694,343		139,133,396		100%

Current Pad separation (um)	50		
Current Pad height (um)	350		
Scribe	0.18		
Core mm/side		14.96	11.80
Total mm/side		15.84	12.68