Raw Block Size	2	4	2	Serializ	er 2	4	2	4	2	4	2	Coal 4	lescer 2	4	2	4
Cache Size	1024	1024	2048	2048	1024	1024	2048	2048	1024	1024	2048	2048			2048	2048
Associativity	1	1	1	1	2	2	2	2	1	1	1	1	_	2	2	2
Test Name add_benchmark_e16.S	5390	5352	5198	Cycles 5160	5462	5424	5366	5328	5390	5352	5198	5160	rcles 5462	5424	5366	5328
add_benchmark_e32.S	7010	6882	6818	6690	7082	6954	6986	6858	7010	6882	6818	6690	7082	6954	6986	6858
add_benchmark_e8.S	4580 226192	4612 245906	4532 194800	4540 200216	4652 224944	4684 229698	4556 195382	4588 200566	4580 226192	4612 245906	4532 194800	4540 200216			4556 195382	4588 200566
firfilter_benchmark.S lininterp_benchmark.S	13854	15526	13314	14066	13276	13092	13180	12996	13854	15526	13314	14066			13180	12996
matmul_benchmark.S	221376	300166	195568	238462	169744	176716	166448	168940	221376	300166	195568	238462	169744	176716	166448	168940
maxpool_benchmark.S	41602	46720	41820	42402	41746	46730	41816	42630	41602	46720	41820	42402			41816	42630
redsum_benchmark.S relu_benchmark.S	3474 6656	3408 6672	3474 6464	3408 6480	3474 6656	3408 6672	3474 6464	3408 6480	3474 6656	3408 6672	3474 6464	3408 6480			3474 6464	3408 6480
vadd_benchmark_e16.S	2504	2514	2334	2294	2504	2514	2504	2514	2024	2014	1856	1798			2024	2014
vadd_benchmark_e32.S	4224	4270	4002	3874	4224	4270	4186	4194	3924	3856	3702	3466			3886	3782
vadd_benchmark_e8.S vfirfilter_benchmark.S	1646 139642	1652 146788	1646 117586	1652 121752	1646 142156	1652 147812	1646 118114	1652 122016	1112 131256	1130 135782	1112 108724	1130 112510			1112 109234	1130 112596
vlininterp_benchmark.S	9896	9858	9648	9562	9866	9706	9770	9610	9504	9340	9264	9052			9394	9108
vmatmul_benchmark.S	129286	133620	117062	122612	98574	99592	97678	97066	105446	103576	93342	92712			74238	67534
vmaxpool_benchmark.S vmmhand benchmark.S	25408 114480	29810 172626	25268 114480	25860 172626	25264 114440	29718 172610	25264 114436	26106 172582	24004 110802	28406 166834	23864 110802	24632 166834			23860 110758	24870 166790
vredsum_benchmark.S	1610	1556	1610		1610	1556	1610	1556	1480	1362	1480	1362			1480	1362
vrelu_benchmark.S	2488	2510	2296	2318	2488	2510	2296	2318	1770	1794	1578	1602	1770	1794	1578	1602
Normalized Cycles				Corioliz	or.			1				Conl	longer			
Normalized Cycles Block Size	2	4	2	Serializ	2	4	2	4	2	4	2	4	lescer 2	4	2	4
Cache Size	1024	1024	2048	2048	1024	1024	2048	2048	1024	1024	2048	2048	1024	1024	2048	2048
Associativity	1	1	1	1	. 2	2	2	2	_ 1	1	1	1	_		2	2
Test Name	Cycles SE(2,1K,1)	Cycles SE(4,1K,1)										Cycles CO(4,2K,1)	Cycles CO(2,1K,2)			Cycles CO(4,2K,2)
add_benchmark_e16.S	1.0000	0.9929	0.9644	0.9573	1.0134	1.0063	0.9955	0.9885	1.0000	0.9929	0.9644	0.9573		1.0063	0.9955	0.9885
add_benchmark_e32.S	1.0000	0.9817	0.9726	0.9544	1.0103	0.9920	0.9966	0.9783	1.0000	0.9817	0.9726	0.9544			0.9966	0.9783
add_benchmark_e8.S firfilter_benchmark.S	1.0000	1.0070 1.0872	0.9895 0.8612	0.9913 0.8852	1.0157 0.9945	1.0227 1.0155	0.9948 0.8638	1.0017 0.8867	1.0000 1.0000	1.0070 1.0872	0.9895 0.8612	0.9913 0.8852			0.9948 0.8638	1.0017 0.8867
lininterp_benchmark.S	1.0000	1.1207	0.9610	1.0153	0.9583	0.9450	0.9513	0.9381	1.0000	1.1207	0.9610	1.0153			0.9513	
matmul_benchmark.S	1.0000	1.3559	0.8834	1.0772	0.7668	0.7983	0.7519	0.7631	1.0000	1.3559	0.8834	1.0772			0.7519	0.7631
maxpool_benchmark.S redsum benchmark.S	1.0000	1.1230 0.9810	1.0052 1.0000	1.0192 0.9810	1.0035	1.1233 0.9810	1.0051	1.0247 0.9810	1.0000 1.0000	1.1230 0.9810	1.0052 1.0000	1.0192 0.9810			1.0051 1.0000	1.0247 0.9810
relu_benchmark.S	1.0000	1.0024	0.9712		1.0000	1.0024	0.9712	0.9736	1.0000	1.0024	0.9712	0.9736			0.9712	0.9736
vadd_benchmark_e16.S	1.0000	1.0040	0.9321	0.9161	1.0000	1.0040	1.0000	1.0040	0.8083	0.8043	0.7412	0.7181		0.8043	0.8083	0.8043
vadd_benchmark_e32.S	1.0000	1.0109	0.9474	0.9171	1.0000	1.0109	0.9910	0.9929	0.9290	0.9129	0.8764	0.8205			0.9200	0.8954
vadd_benchmark_e8.S vfirfilter_benchmark.S	1.0000	1.0036 1.0512	1.0000 0.8421	1.0036 0.8719	1.0000 1.0180	1.0036 1.0585	1.0000 0.8458	1.0036 0.8738	0.6756 0.9399	0.6865 0.9724	0.6756 0.7786	0.6865 0.8057			0.6756 0.7822	0.6865 0.8063
vlininterp_benchmark.S	1.0000	0.9962	0.9749	0.9662	0.9970	0.9808	0.9873	0.9711	0.9604	0.9438	0.9361	0.9147			0.9493	0.9204
vmatmul_benchmark.S	1.0000	1.0335	0.9054	0.9484	0.7624	0.7703	0.7555	0.7508	0.8156	0.8011	0.7220	0.7171			0.5742	0.5224
vmaxpool_benchmark.S vmmhand_benchmark.S	1.0000	1.1733	0.9945 1.0000	1.0178 1.5079	0.9943	1.1696 1.5078	0.9943	1.0275 1.5075	0.9447 0.9679	1.1180 1.4573	0.9392	0.9695 1.4573		1.1144	0.9391 0.9675	0.9788 1.4569
vredsum_benchmark.S	1.0000	0.9665	1.0000	0.9665	1.0000	0.9665	1.0000	0.9665	0.9193	0.8460	0.9193	0.8460			0.9193	0.8460
vrelu_benchmark.S	1.0000	1.0088	0.9228	0.9317	1.0000	1.0088	0.9228	0.9317	0.7114	0.7211	0.6342	0.6439	0.7114	0.7211	0.6342	0.6439
Relative Performance				Serializ	or			i				Coal	lescer			
Block Size	2	4	2		2	4	2	4	2	4	2			4	2	4
Cache Size	1024		2048		1024	1024	2048	2048	1024	1024	2048				2048	2048
Associativity	1 Cycles	1 Cycles	1 Cycles	1 Cycles Cy	cles (2 Cycles	Cycles (2 Cycles	1 Cycles	1 Cycles	1 Cycles	1 Cycles	Cycles 2		2 Cycles	2 Cycles
Test Name	SE(2,1K,1)	SE(4,1K,1)										CO(4,2K,1)	CO(2,1K,2)			CO(4,2K,2)
add_benchmark_e16.S	1.0000	1.0071	1.0369	1.0446	0.9868	0.9937	1.0045	1.0116	1.0000	1.0071	1.0369	1.0446			1.0045	1.0116
add_benchmark_e32.S add_benchmark_e8.S	1.0000	1.0186 0.9931	1.0282	1.0478	0.9898 0.9845	1.0081 0.9778	1.0034 1.0053	1.0222 0.9983	1.0000	1.0186 0.9931	1.0282	1.0478 1.0088			1.0034 1.0053	1.0222 0.9983
firfilter_benchmark.S	1.0000	0.9198	1.1611	1.1297	1.0055	0.9847	1.1577	1.1278	1.0000	0.9198	1.1611	1.1297			1.1577	1.1278
lininterp_benchmark.S	1.0000	0.8923	1.0406	0.9849	1.0435	1.0582	1.0511	1.0660	1.0000	0.8923	1.0406	0.9849			1.0511	1.0660
matmul_benchmark.S maxpool_benchmark.S	1.0000	0.7375 0.8905	1.1320 0.9948	0.9283 0.9811	1.3042 0.9966	1.2527 0.8903	1.3300 0.9949	1.3104 0.9759	1.0000 1.0000	0.7375 0.8905	1.1320 0.9948	0.9283 0.9811			1.3300 0.9949	1.3104 0.9759
redsum_benchmark.S	1.0000	1.0194	1.0000	1.0194	1.0000	1.0194	1.0000	1.0194	1.0000	1.0194	1.0000	1.0194			1.0000	1.0194
relu_benchmark.S	1.0000	0.9976	1.0297	1.0272	1.0000	0.9976	1.0297	1.0272	1.0000	0.9976	1.0297	1.0272			1.0297	1.0272
vadd_benchmark_e16.S	1.0000	0.9960	1.0728	1.0915	1.0000	0.9960	1.0000	0.9960	1.2372	1.2433	1.3491	1.3927			1.2372	1.2433
vadd_benchmark_e32.S vadd_benchmark_e8.S	1.0000	0.9892 0.9964	1.0555	1.0903 0.9964	1.0000	0.9892	1.0091	1.0072 0.9964	1.0765 1.4802	1.0954 1.4566	1.1410 1.4802	1.2187 1.4566			1.0870	1.1169 1.4566
vfirfilter_benchmark.S	1.0000	0.9513	1.1876	1.1469	0.9823	0.9447	1.1823	1.1445	1.0639	1.0284	1.2844	1.2412			1.2784	1.2402
vlininterp_benchmark.S	1.0000	1.0039	1.0257	1.0349	1.0030	1.0196	1.0129	1.0298	1.0412	1.0595	1.0682	1.0932			1.0534	1.0865
vmatmul_benchmark.S vmaxpool_benchmark.S	1.0000	0.9676 0.8523	1.1044 1.0055	1.0544 0.9825	1.3116 1.0057	1.2982 0.8550	1.3236 1.0057	1.3319 0.9733	1.2261 1.0585	1.2482 0.8945	1.3851 1.0647	1.3945 1.0315			1.7415 1.0649	1.9144 1.0216
vmmhand_benchmark.S	1.0000		1.0000	0.6632	1.0003	0.6632	1.0004	0.6633	1.0332	0.6862	1.0332	0.6862			1.0336	0.6864
vredsum_benchmark.S	1.0000	1.0347	1.0000	1.0347	1.0000	1.0347	1.0000	1.0347	1.0878	1.1821	1.0878	1.1821			1.0878	1.1821
vrelu_benchmark.S	1.0000	0.9912	1.0836	1.0733	1.0000	0.9912	1.0836	1.0733	1.4056	1.3868	1.5767	1.5531	1.4056	1.3868	1.5767	1.5531
Scalar to Vector				Serializ	er			1				Coal	lescer			
Block Size	2		2		2	4	2	4	2	4	2	4	2	4	2	4
Cache Size	1024		2048	2048	1024	1024	2048	2048	1024	1024	2048				2048	2048
Associativity	1 Cycles	1 Cycles	1 Cycles	Cycles Cy	cles (2 Cycles	Cycles (2 Cycles	1 Cycles	1 Cycles	1 Cycles	1 Cycles	Cycles 2		2 Cycles	2 Cycles
Test Name	SE(2,1K,1)	SE(4,1K,1)										CO(4,2K,1)	CO(2,1K,2)			CO(4,2K,2)
add_benchmark_e16.S	2.15		2.23	2.25	2.18	2.16	2.14	2.12	2.66	2.66	2.80	2.87		2.69	2.65	2.65
add_benchmark_e32.S add_benchmark_e8.S	1.66	1.61 2.79	1.70 2.75	1.73 2.75	1.68 2.83	1.63 2.84	1.67 2.77	1.64 2.78	1.79 4.12	1.78 4.08	1.84 4.08	1.93 4.02			1.80 4.10	1.81 4.06
firfilter benchmark.S	1.62		1.66	1.64	1.58	1.55	1.65	1.64	1.72	1.81	1.79	1.78			1.79	1.78
	1.02						1.35	1.35	1.46	1.66	1.44	1.55			1.40	1.43
lininterp_benchmark.S	1.40		1.38	1.47	1.35	1.35										
lininterp_benchmark.S matmul_benchmark.S	1.40 1.71	2.25	1.67	1.94	1.72	1.77	1.70	1.74	2.10	2.90	2.10	2.57	2.26	2.53	2.24	2.50
lininterp_benchmark.S	1.40	2.25 1.57		1.94 1.64								2.57	2.26	2.53 1.65		2.50 1.71 2.50
lininterp_benchmark.S matmul_benchmark.S maxpool_benchmark.S	1.40 1.71 1.64	2.25 1.57 2.19 2.66	1.67 1.66	1.94 1.64 2.19 2.80	1.72 1.65	1.77 1.57	1.70 1.66	1.74 1.63	2.10 1.73	2.90 1.64	2.10 1.75	2.57 1.72	2.26 1.75 2.35 3.76	2.53 1.65 2.50 3.72	2.24 1.75	1.71