LentoidDec vs FFmpeg HEVC decoder vs HM 10.0 decoder | Environment: i7-2600, 8GB, Windows 7 System | 2013.11																						
Resolution (Test group)	**Sequence**					**Decoding Speed Comparison**																
	Name	**Frame rate**	**Frame number**	**QP**	**Bitrate (kbps)**	**HM 10.0**		**FFmpeg**			**FFmpeg 4 threads**			**Lentoid C**			**Lentoid SIMD**			**Lentoid SIMD 4 threads**		
						Time(ms)	**FPS**	**Time(ms)**	**FPS**	**Speedup**	**Time(ms)**	**FPS**	**Speedup**	**Time(ms)**	**FPS**	**Speedup**	**Time(ms)**	**FPS**	**Speedup**	**Time(ms)**	**FPS**	**Speedup**
2560x1600 (Class A)	*People OnStreet*	30	150	23	32957	47933	3.13	22380	6.70	2.14	13890	10.80	3.45	19325	7.76	**2.48**	10800	13.89	**4.44**	4815	31.15	**9.95**
				28	15898	37303	4.02	16750	8.96	2.23	11000	13.64	3.39	14830	10.11	**2.52**	7740	19.38	**4.82**	3493	42.94	**10.68**
				33	8495	31327	4.79	13980	10.73	2.24	8680	17.28	3.61	12538	11.96	**2.50**	6000	25.00	**5.22**	2780	53.96	**11.27**
				38	4857	28401	5.28	12870	11.66	2.21	7830	19.16	3.63	11493	13.05	**2.47**	4833	31.04	**5.88**	2112	71.02	**13.45**
	Traffic	30	300	23	12010	64247	4.67	30570	9.81	2.10	20800	14.42	3.09	27879	10.76	**2.30**	12299	24.39	**5.22**	6459	46.45	**9.95**
				28	4674	52295	5.74	24110	12.44	2.17	16050	18.69	3.26	22406	13.39	**2.33**	8411	35.67	**6.22**	4493	66.77	**11.64**
				33	2085	44759	6.70	20380	14.72	2.20	12170	24.65	3.68	19075	15.73	**2.35**	6419	46.74	**6.97**	3145	95.39	**14.23**
				38	1008	39276	7.64	17260	17.38	2.28	10230	29.33	3.84	16584	18.09	**2.37**	5451	55.04	**7.21**	2429	123.51	**16.17**
1920x1080 (Class B)	*Cactus*	50	500	23	18859	59187	8.45	29390	17.01	2.01	19930	25.09	2.97	25201	19.84	**2.35**	12726	39.29	**4.65**	7210	69.35	**8.21**
				28	5661	40514	12.34	18590	26.90	2.18	11710	42.70	3.46	17119	29.21	**2.37**	7013	71.30	**5.78**	3398	147.15	**11.92**
				33	2634	34881	14.33	15750	31.75	2.21	9710	51.49	3.59	14769	33.85	**2.36**	5388	92.80	**6.47**	2559	195.39	**13.63**
				38	1347	31642	15.80	14370	34.79	2.20	8190	61.05	3.86	13466	37.13	**2.35**	4514	110.77	**7.01**	2182	229.15	**14.50**
	BQ Terrace	60	600	23	38543	97456	6.16	49190	12.20	1.98	32140	18.67	3.03	41663	14.40	**2.34**	21787	27.54	**4.47**	11196	53.59	**8.70**
				28	8083	59444	10.09	28220	21.26	2.11	18130	33.09	3.28	26488	22.65	**2.24**	10345	58.00	**5.75**	5671	105.80	**10.48**
				33	2209	48746	12.31	21840	27.47	2.23	13060	45.94	3.73	21721	27.62	**2.24**	7007	85.63	**6.96**	3278	183.04	**14.87**
				38	856	49373	12.15	20420	29.38	2.42	10970	54.69	4.50	19974	30.04	**2.47**	5860	102.39	**8.43**	2433	246.61	**20.29**
	BasketBall Drive	50	500	23	18030	69810	7.16	34060	14.68	2.05	21070	23.73	3.31	30496	16.40	**2.29**	13667	36.58	**5.11**	6545	76.39	**10.67**
				28	6349	53595	9.33	24560	20.36	2.18	15060	33.20	3.56	23920	20.90	**2.24**	8821	56.68	**6.08**	4084	122.43	**13.12**
				33	3028	47279	10.58	21120	23.67	2.24	12190	41.02	3.88	20906	23.92	**2.26**	7146	69.97	**6.62**	3160	158.23	**14.96**
				38	1629	43198	11.57	18800	26.60	2.30	10230	48.88	4.22	18796	26.60	**2.30**	5971	83.74	**7.23**	2551	196.00	**16.93**
	ParkScene	24	240	23	7147	30344	7.91	14290	16.79	2.12	9420	25.48	3.22	13328	18.01	**2.28**	6095	39.38	**4.98**	3350	71.64	**9.06**
				28	3061	24904	9.64	11530	20.82	2.16	7200	33.33	3.46	10910	22.00	**2.28**	4349	55.19	**5.73**	2143	111.99	**11.62**
				33	1380	21543	11.14	10010	23.98	2.15	5880	40.82	3.66	9554	25.12	**2.25**	3299	72.75	**6.53**	1626	147.60	**13.25**
				38	628	19066	12.59	8550	28.07	2.23	4970	48.29	3.84	8470	28.34	**2.25**	2647	90.67	**7.20**	1099	218.38	**17.35**
	Kimono	24	240	23	4771	29871	8.03	14110	17.01	2.12	8770	27.37	3.41	13540	17.73	**2.21**	5129	46.79	**5.82**	2204	108.89	**13.55**
				28	2188	25160	9.54	11400	21.05	2.21	6860	34.99	3.67	11288	21.26	**2.23**	3882	61.82	**6.48**	1589	151.04	**15.83**
				33	1082	21866	10.98	10040	23.90	2.18	5780	41.52	3.78	9930	24.17	**2.20**	3158	76.00	**6.92**	1356	176.99	**16.13**
				38	564	19735	12.16	8850	27.12	2.23	4890	49.08	4.04	8836	27.16	**2.23**	2674	89.75	**7.38**	1127	212.95	**17.51**
832x480 (Class C)	*BQMall*	60	600	23	3784	13554	44.27	6050	99.17	2.24	4050	148.15	3.35	5606	107.03	**2.42**	2711	221.32	**5.00**	1477	406.23	**9.18**
				28	1789	11070	54.20	4920	121.95	2.25	3180	188.68	3.48	4606	130.26	**2.40**	1945	308.48	**5.69**	1064	563.91	**10.40**
				33	906	9629	62.31	4230	141.84	2.28	2630	228.14	3.66	4047	148.26	**2.38**	1507	398.14	**6.39**	766	783.29	**12.57**
				38	478	8619	69.61	3700	162.16	2.33	2190	273.97	3.94	3599	166.71	**2.39**	1263	475.06	**6.82**	625	960.00	**13.79**
	Race Horses	30	300	23	4755	10664	28.13	5010	59.88	2.13	3040	98.68	3.51	4459	67.28	**2.39**	2376	126.26	**4.49**	1080	277.78	**9.87**
				28	2085	8066	37.19	3470	86.46	2.32	2340	128.21	3.45	3339	89.85	**2.42**	1642	182.70	**4.91**	820	365.85	**9.84**
				33	1002	6585	45.56	2890	103.81	2.28	1810	165.75	3.64	2719	110.33	**2.42**	1158	259.07	**5.69**	567	529.10	**11.61**
				38	494	5673	52.88	2470	121.46	2.30	1470	204.08	3.86	2353	127.50	**2.41**	901	332.96	**6.30**	437	686.50	**12.98**
	BasketBall Drill	50	500	23	3380	12042	41.52	5260	95.06	2.29	3400	147.06	3.54	4942	101.17	**2.44**	2346	213.13	**5.13**	1094	457.04	**11.01**
				28	1642	9647	51.83	4320	115.74	2.23	2780	179.86	3.47	3982	125.57	**2.42**	1699	294.29	**5.68**	645	775.19	**14.96**
				33	820	8074	61.93	3610	138.50	2.24	2260	221.24	3.57	3323	150.47	**2.43**	1276	391.85	**6.33**	705	709.22	**11.45**
				38	449	7079	70.63	3030	165.02	2.34	1800	277.78	3.93	2950	169.49	**2.40**	1062	470.81	**6.67**	537	931.10	**13.18**
	PartyScene	50	500	23	6779	15408	32.45	6790	73.64	2.27	4530	110.38	3.40	6499	76.93	**2.37**	3535	141.44	**4.36**	1933	258.67	**7.97**
				28	3154	12017	41.61	5440	91.91	2.21	3640	137.36	3.30	5017	99.66	**2.40**	2481	201.53	**4.84**	1301	384.32	**9.24**
				33	1476	10099	49.51	4440	112.61	2.27	2890	173.01	3.49	4214	118.65	**2.40**	1814	275.63	**5.57**	938	533.05	**10.77**
				38	675	8537	58.57	3770	132.63	2.26	2340	213.68	3.65	3685	135.69	**2.32**	1305	383.14	**6.54**	763	655.31	**11.19**

1280x720 (Class E)	*FourPeople*	60	600	23	2234	18257	32.86	8160	73.53	2.24	5180	115.83	3.52	7472	80.30	**2.44**	3034	197.76	**6.02**	1691	354.82	**10.80**
				28	911	14846	40.41	6440	93.17	2.31	3740	160.43	3.97	5922	101.32	**2.51**	2074	289.30	**7.16**	1106	542.50	**13.42**
				33	459	13063	45.93	5820	103.09	2.24	3120	192.31	4.19	5236	114.59	**2.49**	1681	356.93	**7.77**	850	705.88	**15.37**
				38	247	12144	49.41	5290	113.42	2.30	2600	230.77	4.67	4924	121.85	**2.47**	1560	384.62	**7.78**	690	869.57	**17.60**
	Johnny	60	600	23	1508	17629	34.03	7980	75.19	2.21	4920	121.95	3.58	7425	80.81	**2.37**	2599	230.86	**6.78**	1425	421.05	**12.37**
				28	459	14777	40.60	6270	95.69	2.36	3590	167.13	4.12	5963	100.62	**2.48**	1892	317.12	**7.81**	943	636.27	**15.67**
				33	203	13493	44.47	5720	104.90	2.36	3020	198.68	4.47	5372	111.69	**2.51**	1612	372.21	**8.37**	732	819.67	**18.43**
				38	106	13032	46.04	5130	116.96	2.54	2610	229.89	4.99	4773	125.71	**2.73**	1351	444.12	**9.65**	570	1052.63	**22.86**
	KristenAnd Sara	60	600	23	1875	19750	30.38	9050	66.30	2.18	5670	105.82	3.48	8459	70.93	**2.33**	3003	199.80	**6.58**	1511	397.09	**13.07**
				28	729	16571	36.21	7390	81.19	2.24	4240	141.51	3.91	7059	85.00	**2.35**	2204	272.23	**7.52**	1114	538.60	**14.88**
				33	339	15044	39.88	6530	91.88	2.30	3600	166.67	4.18	6337	94.68	**2.37**	1848	324.68	**8.14**	858	699.30	**17.53**
				38	177	13617	44.06	5860	102.39	2.32	3080	194.81	4.42	5534	108.42	**2.46**	1595	376.18	**8.54**	693	865.80	**19.65**
1280x720 (Class F)	*Slide Editing*	30	300	23	488	4760	63.03	2280	131.58	2.09	1230	243.90	3.87	1740	172.41	**2.74**	600	500.00	**7.93**	310	967.74	**15.35**
				28	361	4740	63.29	2260	132.74	2.10	1150	260.87	4.12	1760	170.45	**2.69**	560	535.71	**8.46**	280	1071.43	**16.93**
				33	266	4770	62.89	2260	132.74	2.11	1140	263.16	4.18	1740	172.41	**2.74**	550	545.45	**8.67**	270	1111.11	**17.67**
				38	190	4610	65.08	2260	132.74	2.04	1090	275.23	4.23	1710	175.44	**2.70**	530	566.04	**8.70**	240	1250.00	**19.21**
	Slide Show	20	500	23	657	10730	46.60	5500	90.91	1.95	2670	187.27	4.02	3940	126.90	**2.72**	1540	324.68	**6.97**	680	735.29	**15.78**
				28	398	10070	49.65	4550	109.89	2.21	2330	214.59	4.32	3730	134.05	**2.70**	1350	370.37	**7.46**	630	793.65	**15.98**
				33	251	9740	51.33	4340	115.21	2.24	2140	233.64	4.55	3510	142.45	**2.77**	1220	409.84	**7.98**	540	925.93	**18.04**
				38	162	9370	53.36	4150	120.48	2.26	2020	247.52	4.64	3440	145.35	**2.72**	1160	431.03	**8.08**	490	1020.41	**19.12**
Average										2.20			4.04			**2.60**			**6.26**			**14.54**

LentoidDec filter vs Elecard HEVC decoder plugIn via GraphStudio | Environment: i7-2600, 8GB, Windows 7 System | 2013.11								
Resolution (Test group)	**Sequence**					**Decoding Speed Comparison**		
	Name	**frame rate**	**frame number**	**QP**	**Bitrate (kbps)**	**Elecard 4 threads**	**Lentoid 4 threads**	
						FPS	**FPS**	**Speedup**
2560x1600 (Class A)	*PeopleOnStreet*	30	150	23	32957	6.95	35.57	5.12
				28	15898	9.08	48.30	5.32
				33	8495	11.08	61.33	5.54
				38	4857	12.60	75.37	5.98
	Traffic	30	300	23	12010	11.50	48.74	4.24
				28	4674	14.77	71.46	4.84
				33	2085	17.41	97.42	5.60
				38	1008	19.82	127.37	6.43
1920x1080 (Class B)	*Cactus*	50	500	23	18859	18.40	81.13	4.41
				28	5661	29.79	214.08	7.19
				33	2634	34.39	235.18	6.84
				38	1347	37.62	238.74	6.35
	BQTerrace	60	600	23	38543	13.80	55.89	4.05
				28	8083	25.26	106.46	4.21
				33	2209	32.52	179.18	5.51
				38	856	35.61	247.32	6.95
	BasketBallDrive	50	500	23	18030	17.85	81.13	4.55
				28	6349	24.24	130.54	5.39
				33	3028	28.36	168.85	5.95
				38	1629	31.14	205.92	6.61
	ParkScene	24	240	23	7147	19.20	77.78	4.05
				28	3061	24.17	112.83	4.67
				33	1380	27.74	156.49	5.64
				38	628	31.92	211.44	6.62
	Kimono	24	240	23	4771	21.26	111.50	5.24
				28	2188	25.45	151.61	5.96
				33	1082	28.62	183.15	6.40
				38	564	32.56	215.48	6.62
832x480 (Class C)	*BQMall*	60	600	23	3784	101.54	428.68	4.22
				28	1789	125.39	601.46	4.80
				33	906	144.82	783.95	5.41
				38	478	162.84	1032.53	6.34
	RaceHorses	30	300	23	4755	63.78	307.96	4.83
				28	2085	85.62	421.11	4.92
				33	1002	104.93	558.89	5.33
				38	494	124.54	733.01	5.89
	BasketBallDrill	50	500	23	3380	99.77	472.19	4.73
				28	1642	121.65	624.69	5.14
				33	820	142.50	803.63	5.64
				38	449	161.21	999.82	6.20
	PartyScene	50	500	23	6779	75.83	282.66	3.73
				28	3154	97.93	395.85	4.04
				33	1476	119.84	545.63	4.55
				38	675	143.63	751.00	5.23
1280x720 (Class E)	*FourPeople*	60	600	23	2234	74.57	366.51	4.91
				28	911	94.44	573.04	6.07
				33	459	105.40	725.98	6.89
				38	247	110.89	844.66	7.62
	Johnny	60	600	23	1508	78.71	426.95	5.42
				28	459	97.41	691.79	7.10
				33	203	104.13	875.40	8.41
				38	106	112.68	1026.02	9.11
	KristenAndSara	60	600	23	1875	71.65	395.43	5.52
				28	729	86.66	575.10	6.64
				33	339	95.14	714.20	7.51
				38	177	103.41	829.35	8.02
1280x720 (Class F)	*SlideEditing*	30	300	23	488	116.66	851.61	7.30
				28	361	117.56	912.27	7.76
				33	266	120.80	957.33	7.92
				38	190	122.19	1023.00	8.37
	SlideShow	20	500	23	657	90.88	666.30	7.33
				28	398	97.18	744.61	7.66
				33	251	102.19	809.76	7.92
				38	162	106.20	878.47	8.27
Average								**6.69**

LentoidDec 4k video decoding performance test | Environment: i7-2600, 8GB, Windows 7 System | 2013.11																
Resolution	**Sequence**				**Decoding Speed Comparison**											
	Name	**Frame rate**	**Frame number**	**Bitrate (kbps)**	**HM 10.0**		**Lentoid C**			**Lentoid SIMD**			**Lentoid SIMD 4 threads**			
					Time(ms)	**FPS**	**Time(ms)**	**FPS**	**Speedup**	**Time(ms)**	**FPS**	**Speedup**	**Time(ms)**	**FPS**	**Speedup**	**CPU usage**
3840x2160	Cactus	24	331	10000	110430	3.00	40040	8.27	**2.76**	16920	19.56	**6.53**	8220	40.27	**13.43**	27.04%
				7500	103080	3.21	38050	8.70	**2.71**	14710	22.50	**7.01**	7260	45.59	**14.20**	24.40%
				5000	95861	3.45	35430	9.34	**2.71**	12790	25.88	**7.49**	6320	52.37	**15.17**	21.07%
	Coastguard	24	238	10000	95127	2.50	37930	6.27	**2.51**	14240	16.71	**6.68**	5360	44.40	**17.75**	30.51%
				7500	89580	2.66	36220	6.57	**2.47**	12860	18.51	**6.97**	4860	48.97	**18.43**	27.67%
				5000	82600	2.88	33550	7.09	**2.46**	11340	20.99	**7.28**	4180	56.94	**19.76**	24.75%
	Foreman	24	247	10000	79740	3.10	28880	8.55	**2.76**	11970	20.63	**6.66**	5260	46.96	**15.16**	26.02%
				7500	74730	3.31	27870	8.86	**2.68**	10610	23.28	**7.04**	4530	54.53	**16.50**	23.40%
				5000	68920	3.58	25600	9.65	**2.69**	9240	26.73	**7.46**	3800	65.00	**18.14**	21.07%
	Mobile	24	352	10000	116060	3.03	46250	7.61	**2.51**	18190	19.35	**6.38**	8700	40.46	**13.34**	29.94%
				7500	110211	3.19	43710	8.05	**2.52**	16440	21.41	**6.70**	7530	46.75	**14.64**	27.21%
				5000	103140	3.41	41720	8.44	**2.47**	14570	24.16	**7.08**	6260	56.23	**16.48**	24.16%
	News	24	253	10000	64760	3.91	24430	10.36	**2.65**	10270	24.63	**6.31**	4430	57.11	**14.62**	21.56%
				7500	61040	4.14	23150	10.93	**2.64**	9300	27.20	**6.56**	3980	63.57	**15.34**	19.06%
				5000	57780	4.38	22240	11.38	**2.60**	8170	30.97	**7.07**	3370	75.07	**17.15**	17.50%
	Suzie	24	352	10000	102960	3.42	38740	9.09	**2.66**	15810	22.26	**6.51**	7680	45.83	**13.41**	24.23%
				7500	96990	3.63	37340	9.43	**2.60**	14160	24.86	**6.85**	6810	51.69	**14.24**	22.16%
				5000	90280	3.90	35510	9.91	**2.54**	12390	28.41	**7.29**	5550	63.42	**16.27**	19.96%
Average									**2.61**			**6.88**			**15.78**	
Average speedup by using data-level or task-level approaches												**2.64**			**2.29**	