

1 Subject

Affected Products	conga- TCA5
Subject	conga- TCA5 Benchmark & Power Consumption Comparison
Confidential/Public	Public
Date (yyyy.mm.dd)	28.11.2017
Author	RTO

2 Affected Article Numbers

2.1 Product Data

Affected Number(s)	Product
048510	conga-TCA5/i-E3950
048511	conga-TCA5/i-E3940
048512	conga-TCA5/i-E3930
048530	conga-TCA5/N3350
048531	conga-TCA5/N4200

3 Information

The following benchmark results help to compare the product variants of the above Intel® Apollo Lake based COMs. All benchmarks were performed on Windows 10 64bit with conga-TCA5 A.0 hardware and ta50r017.bin BIOS.

The following DDR3-L memory configuration was used for the benchmarks:

2x 4GB DDR3-L 1866

See the table below for detailed information about the Intel® processors used for these benchmarks.

SKU	#Cores/ Threads	Frequency Base / Turbo	Cache	TDP	Processor Graphic
i-E3950	4	1.60 / 2.00 GHz	2MB	12W	Intel® HD Graphics 505
i-E3940	4	1.60 / 1.80 GHz	2MB	9.5W	Intel® HD Graphics 500
i-E3930	2	1.30 / 1.80 GHz	2MB	6.5W	Intel® HD Graphics 500
N3350	2	1.10 / 2.40 GHz	2MB	4W	Intel® HD Graphics 500
N4200	4	1.10 / 2.50 GHz	2MB	6W	Intel® HD Graphics 505

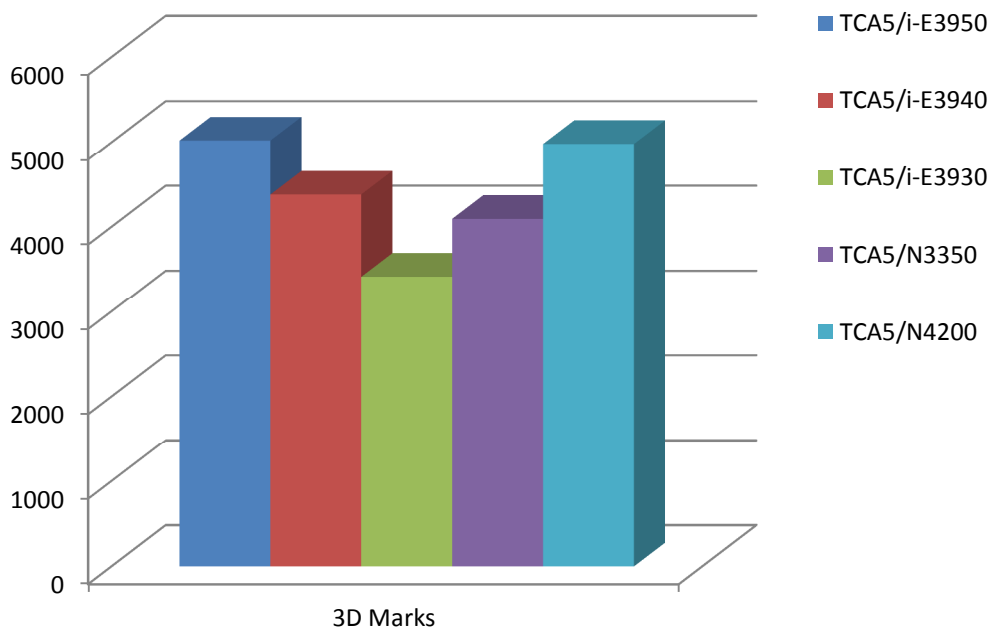


Note

Turbo mode was enabled on variants that support it.

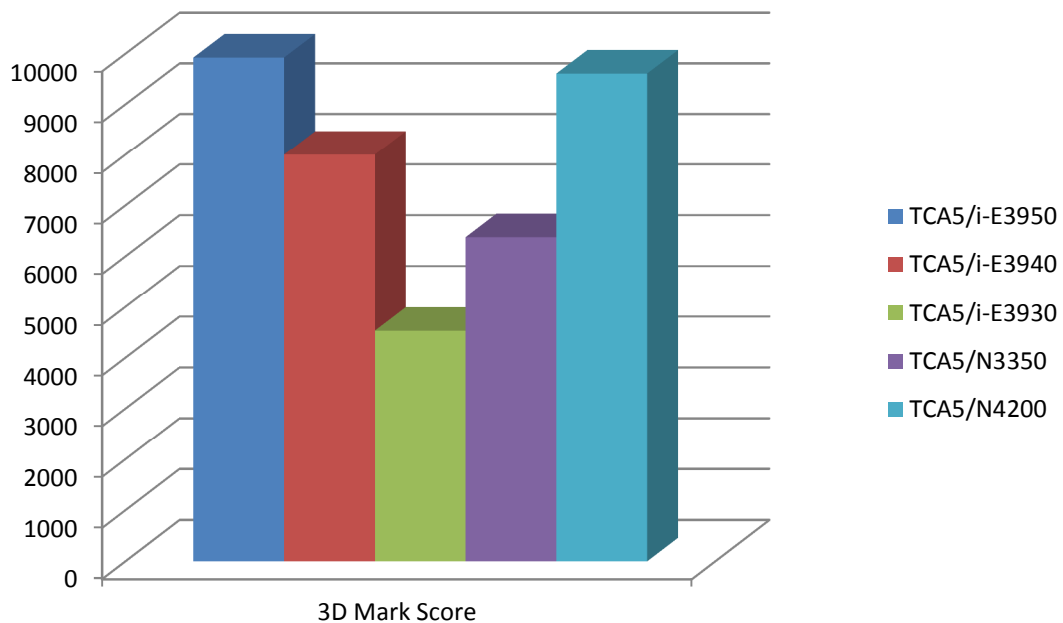
3.1 3D Mark06

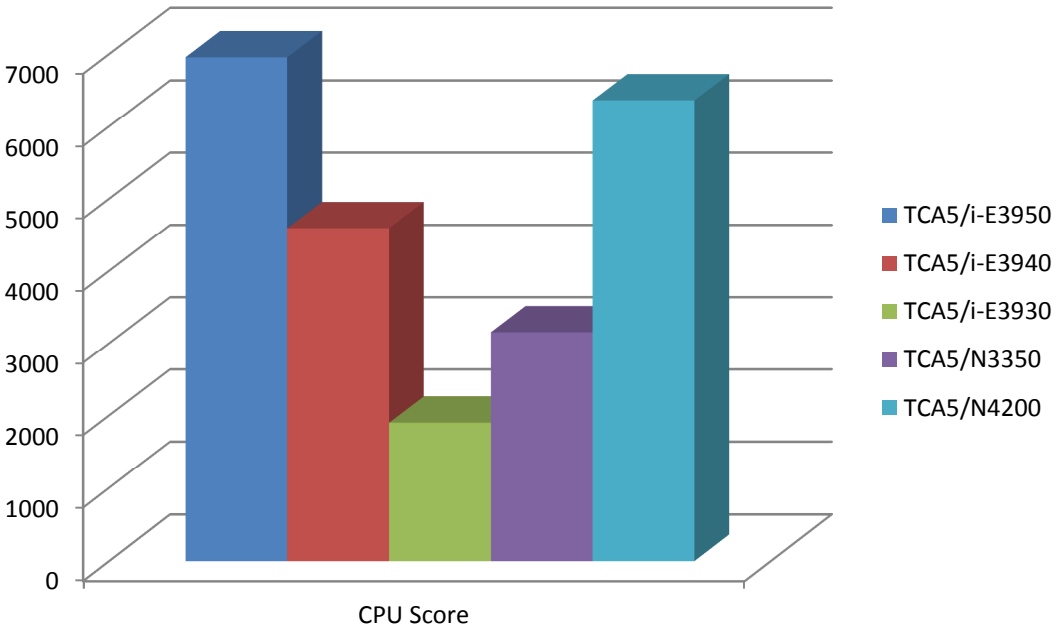
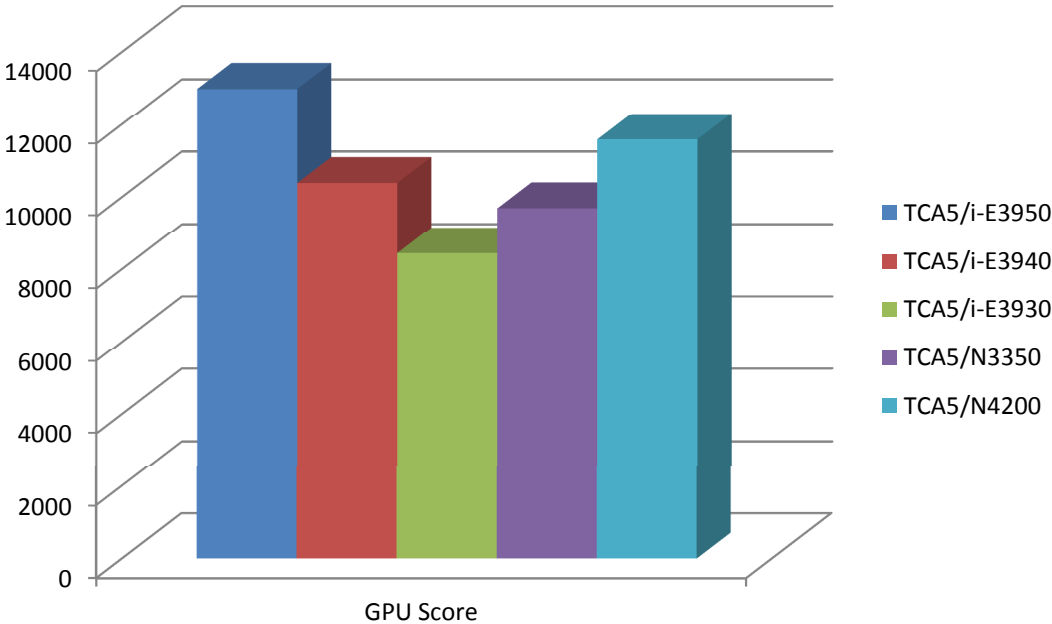
	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
3D Marks	5023	4381	3415	4095
SM2.0 Score	1952	1591	1320	1466
HDR/SM3.0 Score	2295	1799	1563	1758
CPU Score	3269	2047	1054	1806
TCA5/N4200				
	048531			
3D Marks	4982			
SM2.0 Score	1713			
HDR/SM3.0 Score	2047			
CPU Score	3018			



3.2 3D Mark Vantage (Entry)

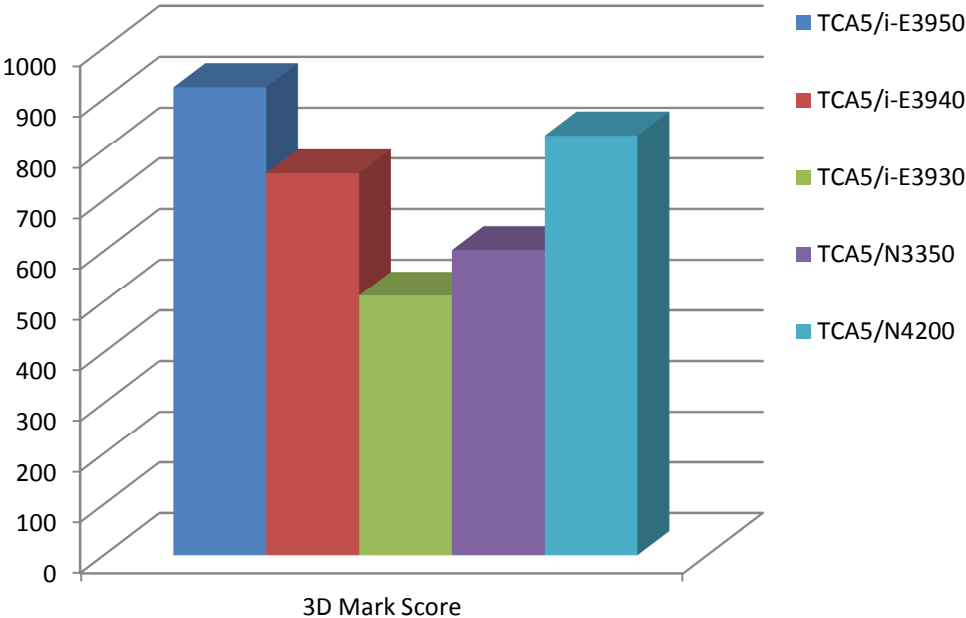
	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
3D Mark Score	9927	8004	4533	6380
GPU Score	12983	10383	8439	9687
CPU Score	6956	4592	1898	3152
TCA5/N4200				
	048531			
3D Mark Score	9611			
GPU Score	11583			
CPU Score	6361			





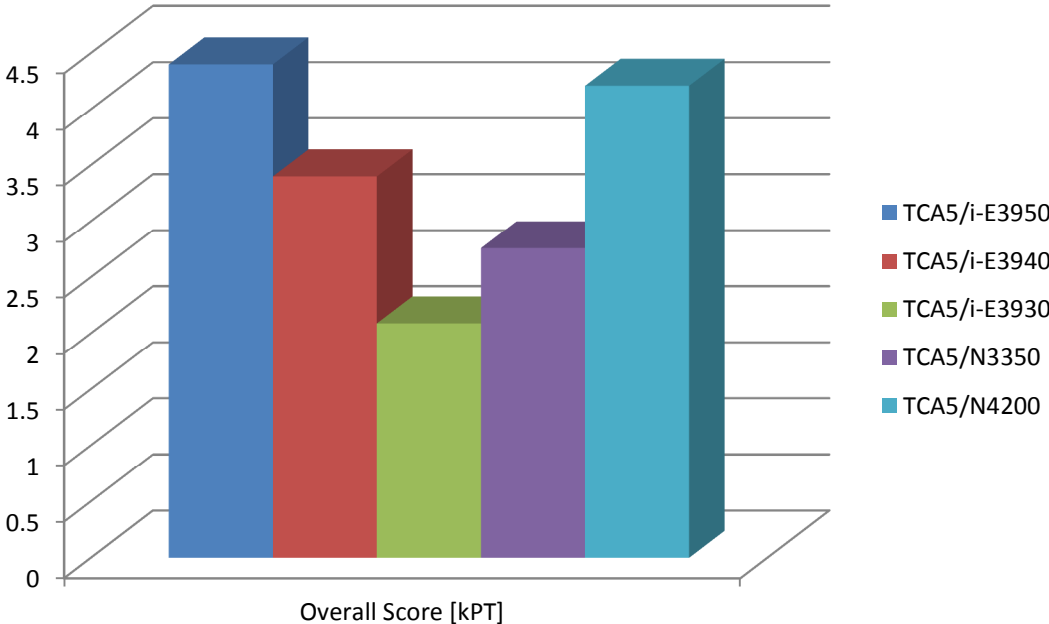
3.3 3D Mark11

	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
3D Mark Score	923	753	512	602
Graphics Score	761	633	468	540
Physics Score	2327	1813	973	1474
Combined Score	751	641	519	592
TCA5/N4200				
	048531			
3D Mark Score	828			
Graphics Score	743			
Physics Score	2104			
Combined Score	730			



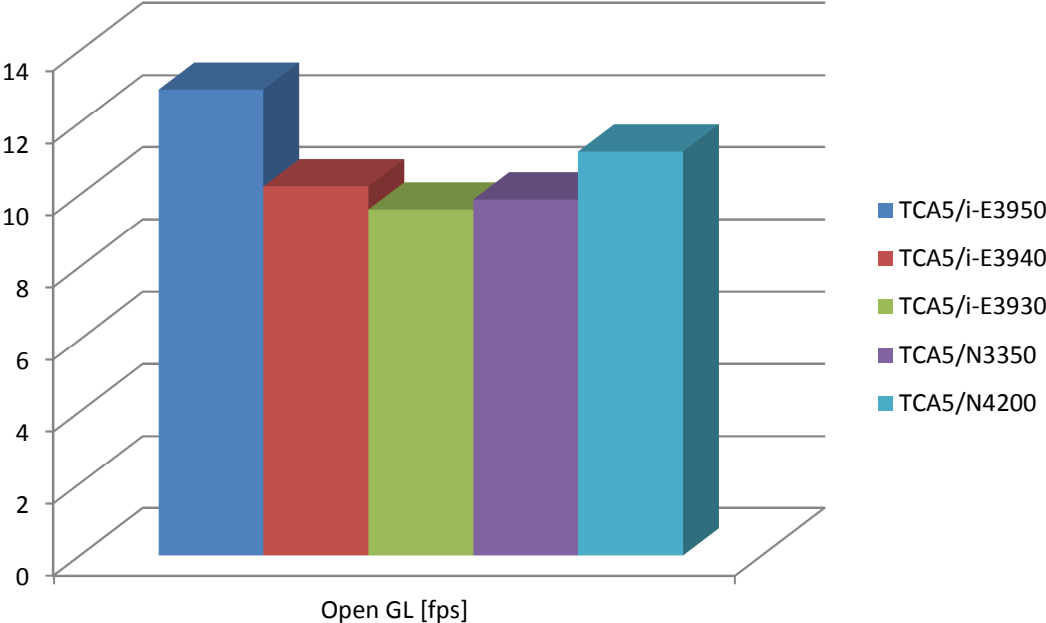
3.4 Sisoft Sandra Lite Platinum

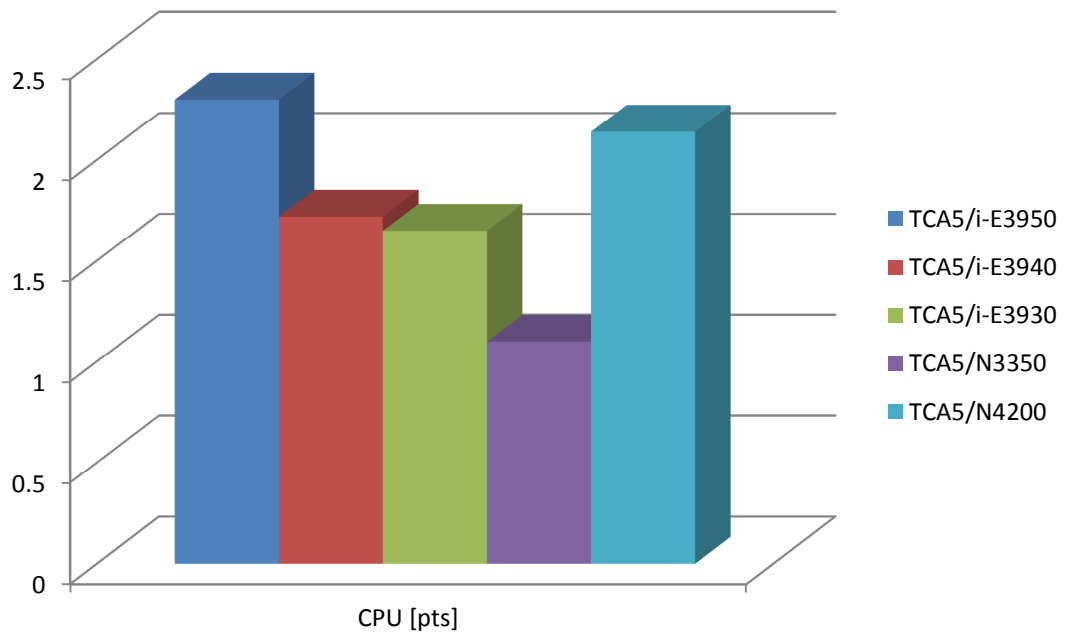
	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
Processor Multi-Media [Mpixl/s]	55.93	28.94	16.79	29.75
Cryptography [GB/s]	2.903	1.582	0.793	1.388
GP Financial Analysis [kOPT/s]	6.4	3.1	1.83	3.45
Scientific analysis [GFLOPS]	5.1	2.9	2.21	3.37
.NET Arithmetic [GOPSI]	10.02	3.5	2.8	4.88
Memory Bandwidth [GB/s]	14.241	8.731	6.966	8.917
Memory latency [ns]	49	47	46	37.3
File System Bandwidth [MB/s]	542.481	525.839	527.566	519.537
File System I/O [IOPS]	6838.5	4301.9	2763.7	4054.9
GP Processing [Mpixl/s]	59.42	36.91	29.84	35.18
Cryptography GP [GB/s]	0.834	0.542	0.352	0.413
GP Financial Analysis [kOPT/s]	59.15	30.81	16.96	20
GP Scientific Analysis [kOPT/s]	41.19	29.4	25.25	26.77
Media Converting [MB/s]	5.929	4.94	4.42	5.099
GP Bandwith [GB/s]	11.003	8.417	6.151	6.252
GP Memory latency [ns]	508.4	460.1	417.1	453.4
Overall Score [kPT]	4.4	3.4	2.09	2.76
TCA5/N4200				
	048531			
Processor Multi-Media [Mpixl/s]	55.29			
Cryptography [GB/s]	2.604			
GP Financial Analysis [kOPT/s]	6.19			
Scientific analysis [GFLOPS]	4.6			
.NET Arithmetic [GOPSI]	9.87			
Memory Bandwidth [GB/s]	12.431			
Memory latency [ns]	48.3			
File System Bandwidth [MB/s]	523.293			
File System I/O [IOPS]	6572.1			
GP Processing [Mpixl/s]	54.88			
Cryptography GP [GB/s]	0.773			
GP Financial Analysis [kOPT/s]	20			
GP Scientific Analysis [kOPT/s]	26.77			
Media Converting [MB/s]	5.099			
GP Bandwith [GB/s]	6.252			
GP Memory latency [ns]	517.3			
Overall Score [kPT]	4.21			



3.5 Cinebench Release 11.5

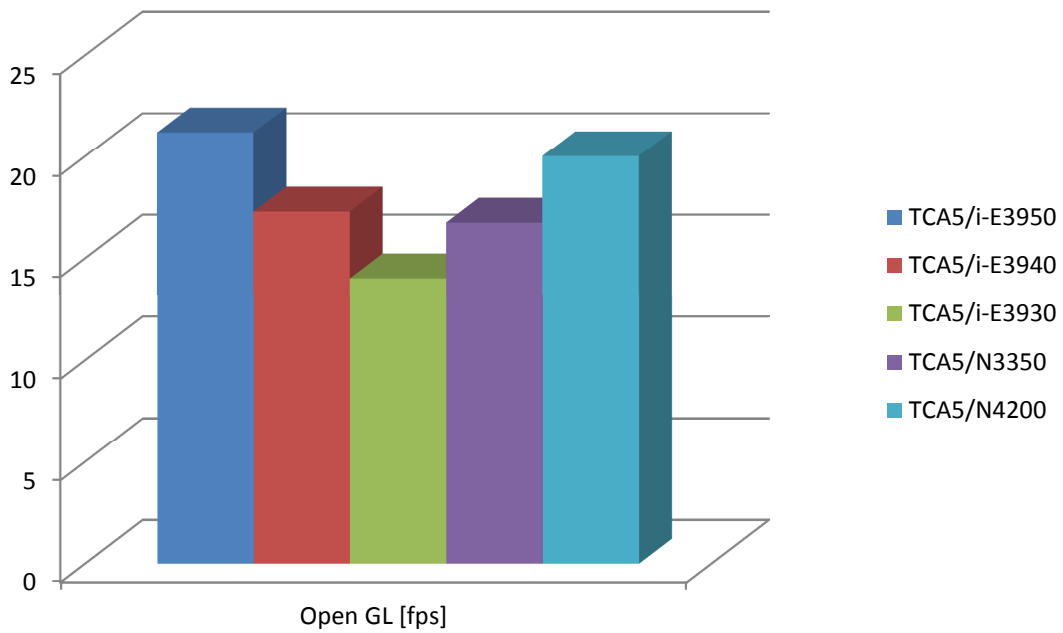
	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
Open GL [fps]	12.92	10.23	9.59	9.87
CPU [pts]	2.3	1.72	1.65	1.1
TCA5/N4200				
	048531			
Open GL [fps]	11.19			
CPU [pts]	2.14			

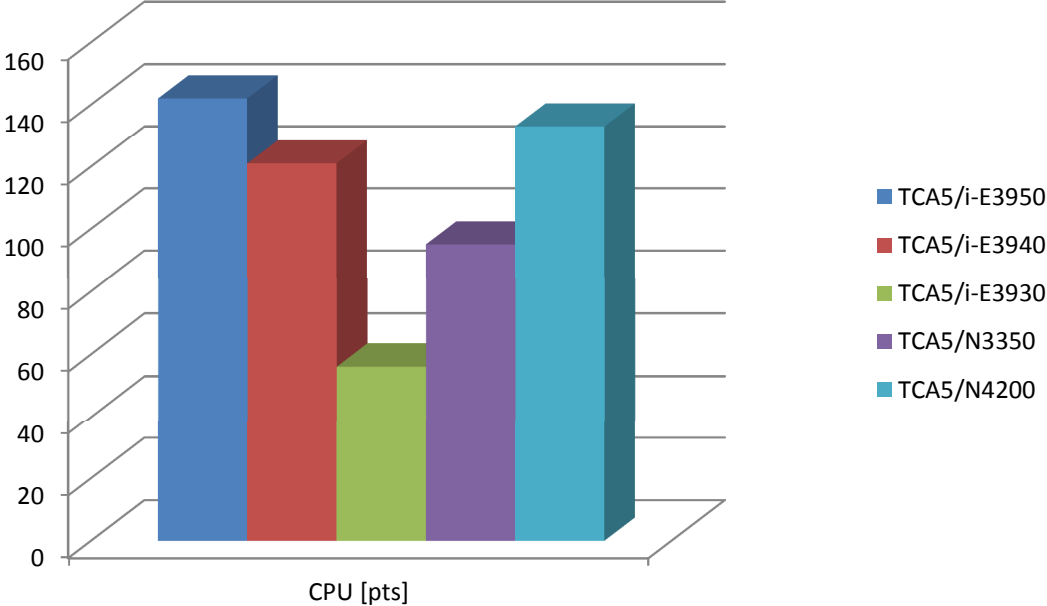




3.6 Cinebench Release 15

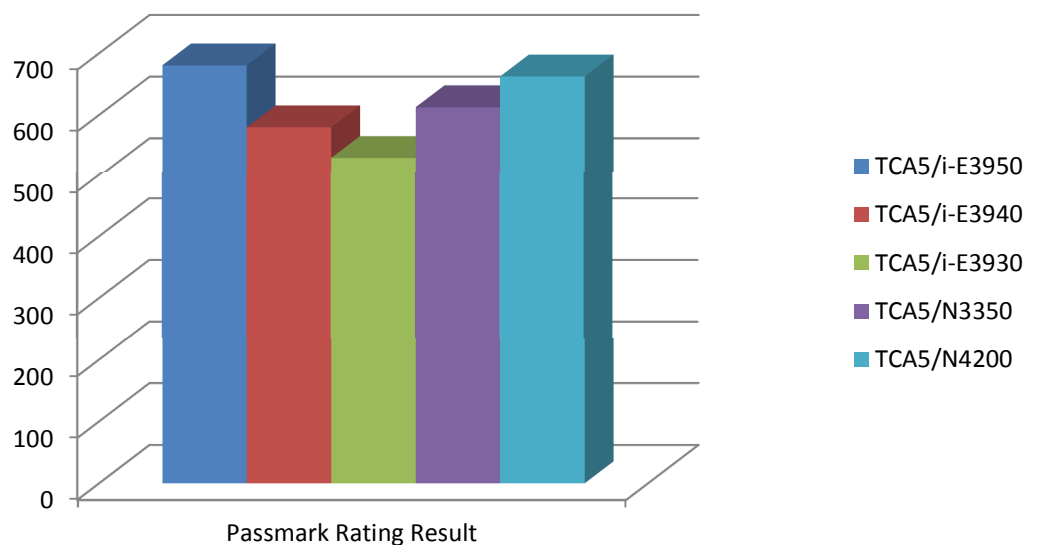
	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
Open GL [fps]	21.2	17.3	14.02	16.76
CPU [pts]	142	121	56	95
TCA5/N4200				
	048531			
Open GL [fps]	20.03			
CPU [pts]	133			





3.7 Passmark Performance Test 7.0

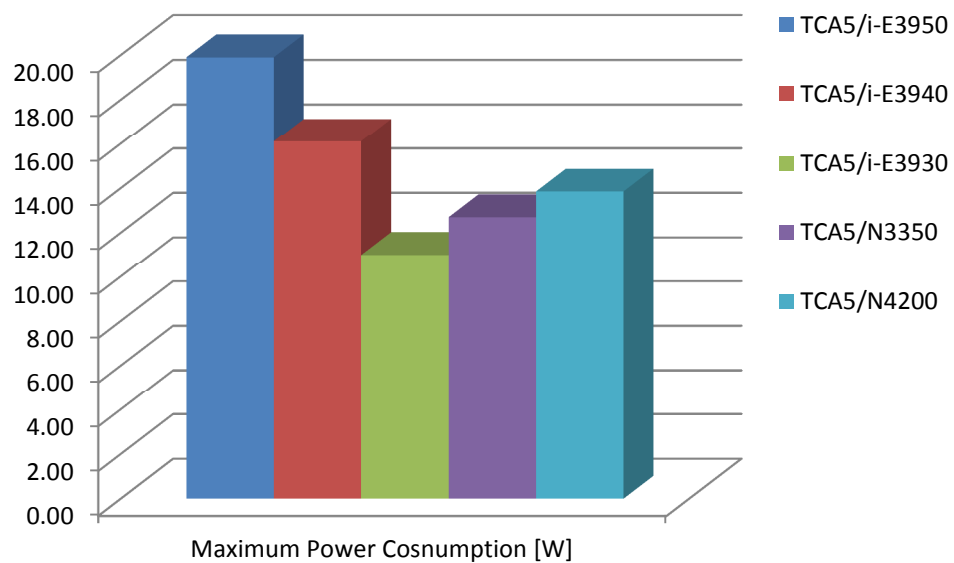
	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
Passmark Rating Result	680.6	580.1	530.4	612.7
CPU-Mark	1416.5	979.4	741	850
2D-Grafics-Mark	144.8	133.5	120.4	143.2
3D-Grafics-Mark	361.6	320.1	283.1	309.4
Memory-Mark	733.2	700.9	403.6	698.6
Disk-Mark	4609.3	4429.1	2586.4	4377.6
TCA5/N4200				
	048531			
Passmark Rating Result	662.6			
CPU-Mark	1383.2			
2D-Grafics-Mark	137.7			
3D-Grafics-Mark	350.4			
Memory-Mark	723.4			
Disk-Mark	4507.4			



3.8 Power Consumption

	TCA5/i-E3950	TCA5/i-E3940	TCA5/i-E3930	TCA5/N3350
	048510	048511	048512	048530
Desktop Idle [W]	1.67	1.95	1.34	1.4
100% CPU [W]	9.46	7.54	4.8	6.6
100% GPU[W]	15.91	10.88	9.12	10.7
100% CPU & 100% GPU[W]	19.9	16.11	11	12.7
Maximum Power Consumption [W]	19.9	16.11	11	12.7
Suspend to RAM [W]	0.59	0.58	0.58	0.47

TCA5/N4200				
	048531			
Desktop Idle [W]	1.57			
100% CPU [W]	10.33			
100% GPU[W]	13.85			
100% CPU & 100% GPU[W]	12.5			
Maximum Power Consumption [W]	13.85			
Suspend to RAM [W]	0.54			



4 Revision History

Revision	Date (yyyy-mm-dd)	Author	Changes
1.0	2017-03-	TSE	Initial release
