

1. Stability Test:

1.1 CPU Function Test:

Test Purpose	Test CPU functions work normally under Windows Operating System
Test Procedure	1. Install Windows operating system 2. Install M/B device drivers 3. Check CPU temperature in BIOS setup menu 4. Run 3DMark for Windows Ver.2.4.4264 BenchMark 3 times and check CPU Temp. 5. Using CPU-Z check CPU info
Test Criteria	It should be correct for each test step

No.	CPU	Type	Idle CPU Temp.	Full Loading CPU Temp.	Result
1	Intel / 1.60GHz	Intel Atom E3950 / (SR33P)	33.0°C	39.0°C	Pass
2	Intel / 1.10GHz	Intel Celeron N3350 / (SR2Z7)	26.0°C	49.0°C	Pass
3	Intel / 1.10GHz	Intel Pentium N4200 / (SR2Z5)	33.0°C	50.0°C	Pass
4	Intel / 1.60GHz	Intel Atom E3940 / (SR33M)	25.0°C	37.0°C	Pass

1.1.1 Application Test:

No.	Software	Test Keypoint	Result
1	CPU-Z ver1.86	1. Check all information.	Pass

1.2 Memory Function Test:

Test Purpose	Test Memory functions work normally under Windows Operating System
Test Procedure	<ol style="list-style-type: none"> 1. Install Windows Operating System 2. Install M/B Device Driver 3. Run AIDA64 Cache and Memory Benchmark Ver.5.97.4600 1 time 4. Run Passmark Performance Test 9.0 Build1023 1 time 5. Run 3DMark for Windows Ver.2.6.6238 BenchMark 3 times 6. S3/Hibernate Test 3 times
Test Criteria	It should be no problem for the test

1.2.1 DDR4:

No.	Function	Result
1	DDR4 DIMM Slot Examine	Pass
2	Single Channel mode	Pass
3	Dual channel mode	Pass
4	Warning beep sound when no memory install	Pass
5	DIMM Slot1	Pass
6	DIMM Slot2	Pass

1.2.2 Application Test:

No.	Software	Test Keypoint	Test Environment	Result
1	MemTest86 Ver.8.1 Pro	1. Burn-In test 24 hours	DDR3: PC3L- 12800(DDR3L-1600)Kingston CBD16D3LS1KKBG/Kingston D5128EETBPGGBU/8GB*2 (1071012B-1/2) (DIMM-1/2) DUAL CHANNEL O.S.: DOS	Pass

1.2.3 DDR4 Approved List:

No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	Kingston	Kingston	8GB	DDR4-1600	D5128EETBPGGBU	CBD16D3LS1KKBG	Pass
2	Crucial	Micron	4GB	PC3L-12800 (DDR3L-1600)	2RM77D9PFJ	CT51264BF160B.16FMR (MT16KTF51264HZ-1G6M1) 1.35V/135V [256Mx8b-x16/512Mx64b,CCL=11-11-11-30]	Pass
3	Kingston	Kingston	4GB	DDR4-1600	D5128EETBPGGBU	CBD16D3LS1KKBG	Pass
4	TLA	Samsung	4GB	DDR4-1600	K4B4G1646E BYMA	AD3SSW4GB1WB-DKGCEL	Pass
5	Transcend	Hynix	2GB	PC3L-10600 (DDR3L-1333)	H5TQ2G83BFR-H9C	TS256MSK64W3N 1.35V/1.5V [256Mx8b-x8/256Mx64b,CL=9]	Pass
6	Transcend	SEC	4GB	PC3L-12800 (DDR3L-1600)	K4B4G0846D	TS512MSK64W6H 1.35V/1.5V [512Mx8b-x8x8/512Mx64b,CL=11-11-11]	Pass
7	TLA	Samsung	8GB	DDR4-1600	K4B4G0846E	AD3SST8GSAWB-DKGCEL	Pass
8	Apacer	Micron	8GB	PC3L-12800 (DDR3L-1600)	2ED27-D9PCP	75.C93DL. G000C 1.35V/1.5V [512Mx8b-x16x16/1024Mx64b,CL=11]	Pass
9	Apacer	Micron	4GB	PC3L-12800 (DDR3L-1600)	2DM77-D9PFJ	75.B83DL. G000C 1.35V/1.5V [256Mx8b-xx16/512Mx64b,CL=11]	Pass
10	Crucial	Micron	2GB	PC3L-10600 (DDR3L-1333)	2EM77D9PFJ	CT25664BF1339.8FMR (MT8KTF25664HZ-1G4M1) 1.35V/1.5V [56Mx8b-x8/256Mx64b,CL=9]	Pass

11	ADATA	Micron	4GB	PC3L-12800 (DDR3L-1600)	3DE77D9Q8J	ADDS1600W4G11-BMIE (10281820) 1.35V/1.5V [512Mx8b-x8/512Mx64b,CL=11-11-11]	Pass
12	ADATA	Micron	8GB	PC3L-12800 (DDR3L-1600)	3DE77D9Q8J	ADDS1600W8G11-BMIE (10281788) 1.35V/1.5V [512Mx8b-x16/1GBx64b,CL=11-11-11]	Pass

1.2.4 DDR4 Module Test Procedures:

No	DDR4 Module	Test Procedures	Result
1	PC3L-12800(DDR3L-1600)Kingston CBD16D3LS1KBG/ Kingston D5128EETBPGGBU/8GB*2	M/B: AL102-DC-E3950 Rev.2 (021) [774-AL1021000G/ BSI491710001] CPU: Intel Atom x7-E3950 1.60GHz (SR33P) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:14841 MB/s WRITE:17032 MB/s COPY:15709 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:2054.0 Memory Mark:1010.5 3DMark for Windows(V 2.6.6238)3times Cloud Gate:3509 Ice Storm Extreme: 27434 Skydiver: 2039 Fire Strike:543	Pass
2	Crucial (CT51264BF160B.16FMR (MT16KTF51264HZ- 1G6M1) 1.35V/1.5V [256Mx8b-x16/512Mx64b,CL=11-11-11-30] / Micron (2RM77D9PFJ) / PC3L-12800 (DDR3L-1600) / 4GB *1	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/ BSI491810002] CPU: Intel Atom x5-E3940 1.60GHz (SR33M) DIMM Slot: DIMM-2 SINGLE Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-2) READ:11652 MB/s WRITE:11650 MB/s COPY:10890 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1824.5 Memory Mark:859.9 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2531 Ice Storm Extreme:16073 Skydiver: 1138 Fire Strike:329	Pass
3	PC3L-12800(DDR3L-1600)Kingston CBD16D3LS1KBG/ Kingston D5128EETBPGGBU/4GB*2	M/B: AL2-DC-N3350 Rev.2 (021) [774-AL1021-200G/ BSI491910005] CPU: Intel Celeron N3350 1.10GHz (SR2Z7) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark (V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:12622 MB/s WRITE:10705 MB/s COPY:14838 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:992.4 Memory Mark:1045.7 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2339 Ice Storm Extreme:15631 Skydiver: 1228 Fire Strike:384	Pass

4	DDR3-1600 TLA AD3SSW4GB1WB-DKGCEL SEC 743 K4B4G1646E BYMA 4GB*2	M/B: AL102-DC-N4200 Rev.2 (021) [774-AL1021-300G/BSI492010001] CPU: Intel Pentium N4200 1.10GHz (SR2Z 5) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DI M-1/2) READ:15556 MB/s WRITE:17067 MB/s COPY:16197 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:2463.7 Memory Mark:1146.5 3DMark for Windows(V 2.6.6238)3times Cloud Gate:3979 Ice Storm Extreme:28484 Skydiver: 2317 Fire Strike:604	Pass
5	Transcend (TS256MSK64W3N 1.35V/1.5V) [256Mx8b-x8/256Mx64b,CL=9] / Hynix (H5TQ2G83BFR-H9C) / PC3-10600 (DDR3 L-1333) / 2GB *2	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DI M-1/2) READ:12748 MB/s WRITE:16659 MB/s COPY:14196 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1882.0 Memory Mark:848.7 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2734 Ice Storm Extreme:16775 Skydiver: 1182 Fire Strike:360	Pass
6	Transcend (TS512 MSK64W6H 1.35V/1.5V) [512Mx8b-x8/512M SEC (K4B4G0846D) PC3L-12800(DDR3L 4GB *1	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-2 SINGLE Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-2) READ:11472 MB/s WRITE:11242 MB/s COPY:9845 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1827.2 Memory Mark:860.9 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2451 Ice Storm Extreme:15809 Skydiver: 1126 Fire Strike:311	Pass
7	DDR3-1600 TLA AD3SST8GSAWB-DKGCEL SEC 746 BYMA K4B4G0846E 8GB*2	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DI M-1/2) READ:14697 MB/s WRITE:17023 MB/s COPY:15602 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1897.0 Memory Mark:983.0 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2816 Ice Storm Extreme:16958 Skydiver: 1211 Fire Strike:376	Pass

8	Apacer (75.C93DL.G000C 1.35V/1.5V) 512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB*2	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/ BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DI M-1/2) READ:14809 MB/s WRITE:17032 MB/s COPY:15577 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1922.0 Memory Mark:982.6 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2825 Ice Storm Extreme:17086 Skydiver: 1212 Fire Strike:379	Pass
9	Apacer (75.B83DL.G000C 1.35V/1.5V) [256Mx8b-x16/512Mx64b,CL=11] / Micron (2DM77-D9 PFJ) / PC3L-12800 (DDR3L-1600) / 4GB *2	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/ BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DI M-1/2) READ:14741 MB/s WRITE:17048 MB/s COPY:15677 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1897.5 Memory Mark:950.7 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2828 Ice Storm Extreme:17037 Skydiver: 1213 Fire Strike:378	Pass
10	Crucial (CT25664BF1339.8FMR (MT8KTF25664HZ-1G4M1) 1.35V/1.5V) 256Mx8b-x8/256Mx64b,CL=9] / Micron (2EM77D9PFJ) / PC3L-10600 (DDR3L-1333) / 2GB *2	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/ BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1/2 DUAL Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DI M-1/2) READ:13058 MB/s WRITE:16655 MB/s COPY:13941 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1856.1 Memory Mark:843.0 3DMark for Windows(V 2.6.6238)3times Cloud Gate:3707 Ice Storm Extreme:16822 Skydiver: 1186 Fire Strike:363	Pass
11	DATA (ADDS1600W4G11-BMIE 10281820) 1.35V/1.5V) 512Mx8b-x8/512Mx64b,CL=11-11-1 Micron (3DE77D9 Q8J) / C3L-12800 (DDR3L-1600) / 4GB *1	M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/ BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1 SINGLE Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1) READ:11537 MB/s WRITE:11242 MB/s COPY:9873 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:2281.2 Memory Mark:979.5 3DMark for Windows(V 2.6.6238)3times Cloud Gate:3037 Ice Storm Extreme:22492 Skydiver: 1833 Fire Strike:408	Pass

12	<p>DATA (ADDS1600W8G11-BMIE (10281788) 1.35V/1.5V) [512Mx8b-x16/1GBx64b,CL=11-11-11] Micron (3DE77D9Q8J) / PC3L-12800(DDR3L-1600) / 8GB*1</p>	<p>M/B: AL102-DC-E3940 Rev.2 (021) [774-AL1021-100G/ BSI491810002] CPU: Intel Atom x5-E394 1.60GHz (SR33M) DIMM Slot: DIMM-1 SINGLE Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1) READ:10733 MB/s WRITE:9914 MB/s COPY:10992 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:1265.7 Memory Mark:1032.1 3DMark for Windows(V 2.6.6238)3times Cloud Gate:2216 Ice Storm Extreme:15625 Skydiver: 1191 Fire Strike:354</p>	Pass
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