

1. Stability Test: Rev.021

1.1 CPU Function Test:

Test Purpose	Test CPU 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. CPU-Z check CPU info 4. Run AIDA64 Cache and Memory Benchmark Ver.5.60.3700 1 time 5. Run Passmark Performance Test 8.0 Build1053 1 time 6. Run 3DMark for Windows Ver.1.5.915 BenchMark 3 times 7. S3/Hibernate Test 3 times
Test Criteria	It should be no problem for all tests

No.	CPU	Type	CPU Temp.	Result
1	Intel / 1.6GHz	Pentium-N3710 (Braswell/D1-QK0G) / 6W / FCBGA1170	40 °C	Pass
2	Intel / 1.6GHz	Celeron N3060 (Braswell/D1-QK0J) / 6W / FCBGA1170	35 °C	Pass
3	Intel / 1.6GHz	Celeron N3160 (Braswell/D1-QK0K) / 6W / FCBGA1170	40 °C	Pass
4	Intel / 1.04GHz	Celeron N3010 (Braswell/D1-QK0H) / 4W / FCBGA1170	33 °C	Pass
5	Intel / 1.04GHz	Atom x5 E8000 (Braswell/D1/QKFT) / 5W / FCBGA1170	37 °C	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.5.60.3700 1 time 4. Run Passmark Performance Test 8.0 Build1053 1 time 5. Run 3DMark for Windows Ver.1.5.915 BenchMark 3 times 6. S3/Hibernate Test 3 times
Test Criteria	It should be no problem for the test

1.2.1 DDRIII:

No.	Function	Result
1	Single Channel mode	Pass
2	DIMM Slot1	Pass

1.2.2 Application Test:

No.	Software	Test Keypoint	Test Environment	Result
1	MemTest86 Ver.6.0.0 Pro	1. Burn-In test 12 hours.	M/B: BW051 (N3710) Rev.2 (021) (BSG020900009) [HDMI] & EIO-EVT Rev.2 (021) (BSG040700024) M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Pentium-N3710 (Braswell/D1-QK0G) / 1.6GHz DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 SSD: Transcend / TS60GSSD25D-M SATA2 60GB/2.5" Display: On Board (using DP) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Delta / GPS-500BB 500W O.S.: DOS	Pass

1.2.3 DDR3 SO-DIMM Approved List:

No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	Apacer	Micron	8GB	PC3L-12800 (DDR3L-1600)	2ED27-D9PCP	75.C93DL.G000C 1.35V/1.5V [512Mx8b-x16/1024Mx64b,CL=11]	Pass
2	Crucial	Micron	8GB	PC3L-12800 (DDR3L-1600)	2RD27D9PCP	CT102464BF160B.16FDD (MT16KTF1G64HZ-1G6D1) 1.35/1.5V [512Mx8b-x16/1024Mx64b,CL=11-11-11-30]	Pass
3	ADATA	Micron	8GB	PC3L-12800 (DDR3L-1600)	3DE77D9Q8J	ADDS1600W8G11-BMIE (10281788) 1.35V/1.5V [512Mx8b-x16/1GBx64b,CL=11-11-11]	Pass
4	Crucial	Micron	4GB	PC3L-12800 (DDR3L-1600)	2RM77D9PFJ	CT51264BF160B.16FMR (MT16KTF51264HZ-1G6M1) 1.35V/1.35V [256Mx8b-x16/512Mx64b,CL=11-11-11-30]	Pass
5	ADATA	Micron	4GB	PC3L-12800 (DDR3L-1600)	3DE77D9Q8J	ADDS1600W4G11-BMIE (10281820) 1.35V/1.5V [512Mx8b-x8/512Mx64b,CL=11-11-11]	Pass
6	Transcend	SEC	4GB	PC3L-12800 (DDR3L-1600)	K4B4G0846D	TS512MSK64W6H 1.35V/1.5V [512Mx8b-x8/512Mx64b,CL=11-11-11]	Pass
7	Transcend	Hynix	4GB	PC3-10600 (DDR3L-1333)	H5TQ2G83BFR-H9C	TS512MSK64W3N 1.35V/1.5V [256Mx8b-x16/512Mx64b,CL=9]	Pass
8	Transcend	Hynix	2GB	PC3-10600 (DDR3L-1333)	H5TQ2G83BFR-H9C	TS256MSK64W3N 1.35V/1.5V [256Mx8b-x8/256Mx64b,CL=9]	Pass
9	Crucial	Micron	2GB	PC3L-10600 (DDR3L-1333)	2EM77D9PFJ	CT25664BF1339.8FMR (MT8KTF25664HZ-1G4M1) 1.35V/1.5V [56Mx8b-x8/256Mx64b,CL=9]	Pass



1.2.4 DDR3 SO-DIMM Test Procedures:

No.	DDR3 Module	Test Environment	Result
1	Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1	M/B: BW051 (N3710) Rev.2 (021) (BSG020900009) [HDMI] & EIO-EVT Rev.2 (021) (BSG040700024) M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Pentium-N3710 (Braswell/D1-QK0G) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SSD: Transcend / TS60GSSD25D-M SATA2 60GB/2.5" Display: On Board (using DP) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Delta / GPS-500BB 500W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:23.9°C CPU Temp.:41.0°C CPU Temp. after 3DMark:40.0°C 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:8175 MB/s WRITE:9175 MB/s COPY:8103 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:1381 Memory Mark:584 3.3DMark for Windows Ver.1.5.915 Cloud Gate:2194 Ice Storm:16108 Sky Diver:999 Strike Test:232	Pass

2	<p>Crucial (CT102464BF160B.16FDD (MT16KTF1G64HZ-1G6D1) 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11-11-11-30] / Micron (2RD27D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1</p>	<p>M/B: BW051 (N3160) Rev.2 (021) (BSG021000015) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3160 (Braswell/D1-QK0K) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SSD: Transcend / TS60GSSD25D-M SATA2 60GB/2.5" Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Delta / GPS-500BB 500W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:23.9℃ CPU Temp.:41.0℃ CPU Temp. after 3DMark:40.0℃ 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:8171 MB/s WRITE:9133 MB/s COPY:8056 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:1316 Memory Mark:578 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1622 Ice Storm:8284 Sky Diver:982 Strike Test:114</p>	Pass
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No.	DDR3 Module	Test Environment	Result
3	ADATA (ADDS1600W8G11-BMIE (10281788) 1.35V/1.5V) [512Mx8b-x16/1GBx64b,CL=11-11-11] / Micron (3DE77D9Q8J) / PC3L-12800 (DDR3L-1600) / 8GB *1	M/B: BW051 (E8000) Rev.2 (021) (BSG021000002) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Atom x5 E8000 (Braswell/D1-QKFT) / 1.04GHz DIMM Slot: DIMM-1 (Single channel) SSD: Transcend / TS60GSSD25D-M SATA2 60GB/2.5" Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Delta / GPS-500BB 500W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:26.5°C CPU Temp.:37.0°C CPU Temp. after 3DMark:37.0°C 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:7809 MB/s WRITE:6770 MB/s COPY:6988 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:459.9 Memory Mark:228.4 3.3DMark for Windows Ver.1.5.915 Cloud Gate:862 Ice Storm:7241 Sky Diver:608 Strike Test:63	Pass



4	<p>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</p>	<p>M/B: BW051 (N3010) Rev.2 (021) (BSG020900007) [HDMI] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3010 (Braswell/D1-QK0H) / 1.04GHz DIMM Slot: DIMM-1 (Single channel) SSD: Transcend / TS60GSSD25D-M SATA2 60GB/2.5" Display: On Board (using HDMI) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Delta / GPS-500BB 500W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:26.7°C CPU Temp.:33.0°C CPU Temp. after 3DMark:33.0°C 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:7804 MB/s WRITE:9366 MB/s COPY:8252 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:655 Memory Mark:441.4 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1609 Ice Storm:13731 Sky Diver:1029 Strike Test:222</p>	Pass
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No.	DDR3 Module	Test Environment	Result
5	ADATA (ADDS1600W4G11-BMIE (10281820) 1.35V/1.5V) [512Mx8b-x8/512Mx64b,CL=11-11-11] / Micron (3DE77D9Q8J) / PC3L-12800 (DDR3L-1600) / 4GB *1	M/B: BW051 (N3060) Rev.2 (021) (BSG021000038) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3060 (Braswell/D1-QK0J) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SATA HDD: Hitachi / HDP725025GLA380 SATA2 NCQ 250GB/7200RPM Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Jagier / KY-580ATX 480W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:23.7°C CPU Temp.:32.0°C CPU Temp. after 3DMark:33.0°C 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:7776 MB/s WRITE:9326 MB/s COPY:8177 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:728 Memory Mark:447.1 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1298 Ice Storm:10226 Sky Diver:940 Strike Test:203	Pass

<p>6</p>	<p>Transcend (TS512MSK64W6H 1.35V/1.5V) [512Mx8b-x8/512Mx64b,CL=11-11-11] / SEC (K4B4G0846D) / PC3L-12800(DDR3L-1600) / 4GB *1</p>	<p>M/B: BW051 (N3060) Rev.2 (021) (BSG021000038) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3060 (Braswell/D1-QK0J) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SATA HDD: Hitachi / HDP725025GLA380 SATA2 NCQ 250GB/7200RPM Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Jagier / KY-580ATX 480W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:24.2℃ CPU Temp.:34.0℃ CPU Temp. after 3DMark:35.0℃ 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:5301 MB/s WRITE:5287 MB/s COPY:5671 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:747 Memory Mark:503 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1275 Ice Storm:9750 Sky Diver:943 Strike Test:197</p>	<p>Pass</p>
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No.	DDR3 Module	Test Environment	Result
7	Transcend (TS512MSK64W3N 1.35V/1.5V) [256Mx8b-x16/512Mx64b,CL=9] / Hynix (H5TQ2G83BFR-H9C) / PC3-10600 (DDR3L-1333) / 4GB *1	M/B: BW051 (N3060) Rev.2 (021) (BSG021000038) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3060 (Braswell/D1-QK0J) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SATA HDD: Hitachi / HDP725025GLA380 SATA2 NCQ 250GB/7200RPM Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Jagier / KY-580ATX 480W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:24.6°C CPU Temp.:37.0°C CPU Temp. after 3DMark:44.0°C 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:5737 MB/s WRITE:7299 MB/s COPY:6176MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:740 Memory Mark:458.4 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1215 Ice Storm:9546 Sky Diver:862 Strike Test:179	Pass

<p>8</p>	<p>Transcend (TS256MSK64W3N 1.35V/1.5V) [256Mx8b-x8/256Mx64b,CL=9] / Hynix (H5TQ2G83BFR-H9C) / PC3-10600 (DDR3L-1333) / 2GB *1</p>	<p>M/B: BW051 (N3160) Rev.2 (021) (BSG021000015) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3160 (Braswell/D1-QK0K) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SSD: Transcend / TS60GSSD25D-M SATA2 60GB/2.5" Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Delta / GPS-500BB 500W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:23.6℃ CPU Temp.:37.0℃ CPU Temp. after 3DMark:37.0℃ 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:5828 MB/s WRITE:6699 MB/s COPY:5928 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:1209 Memory MarK:440.2 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1784 Ice Storm:13563 Sky Diver:914 Strike Test:187</p>	<p>Pass</p>
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No.	DDR3 Module	Test Environment	Result
9	Crucial (CT25664BF1339.8FMR (MT8KTF25664HZ-1G4M1) 1.35V/1.5V) [256Mx8b-x8/256Mx64b,CL=9] / Micron (2EM77D9PFJ) / PC3L-10600 (DDR3L-1333) / 2GB *1	M/B: BW051 (N3060) Rev.2 (021) (BSG021000038) [VGA] M/B BIOS: Insyde 02/02/2016 M/B Driver: Demo ver.0.2.1511.0 CPU: Intel / Celeron N3060 (Braswell/D1-QK0J) / 1.6GHz DIMM Slot: DIMM-1 (Single channel) SATA HDD: Hitachi / HDP725025GLA380 SATA2 NCQ 250GB/7200RPM Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-XD01 USB2.0 Power: EDAC / EA10521C-120 Jagier / KY-580ATX 480W O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp.:25.3°C CPU Temp.:34.0°C CPU Temp. after 3DMark:34.0°C 1.AIDA64 Cache and Memory Benchmark Ver.5.60.3700 READ:5932 MB/s WRITE:7405 MB/s COPY:6335 MB/s 2.PassMark Performance Test 8.0 Build 1053 CPU Mark:732 Memory Mark:419.6 3.3DMark for Windows Ver.1.5.915 Cloud Gate:1540 Ice Storm:13453 Sky Diver:919 Strike Test:189	Pass