

1. Stability Test:

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 drivers 3. Check CPU temperature in BIOS setup menu 4. Run PassMark BurnInTest 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 / 4.20GHz	Core i7-7700K (Kabylake / SR33A) / 91W / LGA1151	39°C	64°C	Pass
2	Intel / 3.60GHz	Core i7-7700 (Kabylake / SR338) / 65W / LGA1151	38°C	61°C	Pass
3	Intel / 3.50GHz	Core i5-7600 (Kabylake / SR334) / 65W / LGA1151	38°C	59°C	Pass
4	Intel / 4.00GHz	Core i3-7300 (Kabylake / SR359) / 51W / LGA1151	37°C	61°C	Pass
5	Intel / 4.00GHz	Core i7-6700K (SkyLake/SR2L0) / 95W / LGA1151	38°C	60°C	Pass
6	Intel / 3.40GHz	Core i7-6700(Skylake/SR2BT) / 65W / LGA1151	37°C	60°C	Pass
7	Intel / 3.20GHz	Core i5-6500(Skylake/SR2BX) / 65W / LGA1151	36°C	59°C	Pass
8	Intel / 2.30GHz	Core i5-6500TE(Skylake/SR2LR) / 35W / LGA1151	33.5°C	58°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 drivers 3. Run AIDA64 Cache and Memory Benchmark Ver.5.97.4600 - 1 time 4. Run PassMark Performance Test 9.0 Build1029 - 1 time 5. Run 3DMark for Windows Ver.2.8.6546 BenchMark - 3 times 6. S3(Sleep)/S4(Hibernate)/S5(Shutdown) test - 3 times
Test Criteria	It should be correct for each test step

1.2.1 DDR4:

No.	Function	Result
1	DDR4 DIMM Slot Examine	Pass
2	Single Channel mode	Pass
3	Dual channel mode	Pass
4	DIMM Slot1	Pass

1.2.2 Application Test:

No.	Software	Test Keypoint	Test Environment	Result
1	PassMark MemTest86 V8.1 Pro	1. Burn-In test 12 hours.	DDR4: DDR4-2400/Apacer-78.D2GF2.4010B/SEC-K4A8G085WB-BCRC/16GB*2/1071204D-3/4 (DIMM-1/2) DUAL CHANNEL O.S.: UEFI Shell Memtest86 V8.1 Pro	Pass



1.2.3 DDR4 Approved List:

No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	Apacer	SEC	16GB	DDR4-2400	K4A8G085WB-BCRC	78.D2GF2.4010B	Pass
2	Kingston	Micron	8GB	DDR4-2666	8QE75-D9VPP	CBD26D4S9S8ME-8	Pass
3	Apacer	SEC	8GB	DDR4-2400	K4A8G085WB-BCRC	78.C2GF2.4000B	Pass
4	Apacer	SEC	4GB	DDR4-2400	K4A8G165WB-BCRC	78.B2GFR.4000B	Pass
5	Transcend	SEC	4GB	DDR4-2400	K4A4G085WE-BCRC	TS512MSH64V4H	Pass
6	Transcend	SEC	4GB	DDR4-2133	K4A4G085WD-BCPB	TS512MSH64V1H	Pass
7	Apacer	SEC	16GB	DDR4-2400	K4A8G085WB-BCRC	78.D2GF2.4010B	Pass



1.2.4 DDR4 Test Procedures:

No.	DDR4 Module	Test Environment	Result
1	DDR4-2400/Apacer-78.D2GF2.4010B/SEC-K4A8G085WB-BCRC/16GB*2	CPU: Intel Core i7-7700K 4.20GHz (SR33A) DIMM Slot: DIMM-1/2 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:35250 MB/s WRITE:36315 MB/s COPY:34306 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:9110.1 Memory Mark:2770.3 3DMark for Windows(V 2.8.6546)3times Cloud Gate:6943 Ice Storm:47585 Sky diver:3454 Fire Strike:862	Pass
2	DDR4-2400/Apacer-78.D2GF2.4010B/SEC-K4A8G085WB-BCRC/16GB*2	CPU: Intel Core i7-6700K 4.00GHz (SR2L0) DIMM Slot: DIMM-1/2 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:31293 MB/s WRITE:32335 MB/s COPY:30767 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:9689.3 Memory Mark:3051.1 3DMark for Windows(V 2.8.6546)3times Cloud Gate:9804 Ice Storm:61378 Sky diver:4706 Fire Strike:1119	Pass
3	DDR4-2666/Kingston-CBD26D4S9S8ME-8/Micron-8QE75-D9VPP/8GB*2	CPU: Intel Core i5-7600 3.50GHz (SR334) DIMM Slot: DIMM-1/2 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:33621 MB/s WRITE:34969 MB/s COPY:30679 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:8327.8 Memory Mark:2775 3DMark for Windows(V 2.8.6546)3times Cloud Gate:8821 Ice Storm:62536 Sky diver:4864 Fire Strike:1172	Pass
4	DDR4-2400/Apacer-78.C2GF2.4000B/SEC-K4A8G085WB-BCRC/8GB*	CPU: Intel Core i5-6500 3.20GHz (SR3BX) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1) READ:16143 MB/s WRITE:15685 MB/s COPY:15000 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:7183.6 Memory Mark:2018.3 3DMark for Windows(V 2.8.6546)3times Cloud Gate:6643 Ice Storm:43119 Sky diver:3765 Fire Strike:370	Pass



5	DDR4-2400/Apacer-78.C2GF2.4000B/SEC-K4A8G085WB-BCRC/8GB*	<p>CPU: Intel Pentium G4400TE 2.40GHz (SR2LT)</p> <p>DIMM Slot: DIMM-2 Single Channel</p> <p>Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-2)</p> <p>READ:15779 MB/s</p> <p>WRITE:15935 MB/s</p> <p>COPY:15211 MB/s</p> <p>Passmark PerformanceTest 9.0 Build 1029</p> <p>CPU Mark:2268.7</p> <p>Memory Mark:1314.2</p> <p>3DMark for Windows(V 2.8.6546)3times</p> <p>Cloud Gate:1341</p> <p>Ice Storm:11736</p> <p>Sky diver:579</p> <p>Fire Strike:151</p>	Pass
6	DDR4-2400/Apacer-78.D2GF2.4010B/SEC-K4A8G085WB-BCRC/16GB*	<p>CPU: Intel Core i3-6100TE 2.70GHz (SR2LS)</p> <p>DIMM Slot: DIMM-1 Single Channel</p> <p>Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1)</p> <p>READ:16242 MB/s</p> <p>WRITE:16314 MB/s</p> <p>COPY:16455 MB/s</p> <p>Passmark PerformanceTest 9.0 Build 1029</p> <p>CPU Mark:4470.5</p> <p>Memory Mark:1954</p> <p>3DMark for Windows(V 2.8.6546)3times</p> <p>Cloud Gate:5638</p> <p>Ice Storm:37487</p> <p>Sky diver:3450</p> <p>Fire Strike:778</p>	Pass
7	DDR4-2400/Apacer-78.B2GFR.4000B/SEC-K4A8G165WB-BCRC/4GB*2	<p>CPU: Intel Core i3-7300 4.00GHz (SR359)</p> <p>DIMM Slot: DIMM-1/2 Dual Channel</p> <p>Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2)</p> <p>READ:32402 MB/s</p> <p>WRITE:35599 MB/s</p> <p>COPY:26881 MB/s</p> <p>Passmark PerformanceTest 9.0 Build 1029</p> <p>CPU Mark:5266.1</p> <p>Memory Mark:2719.8</p> <p>3DMark for Windows(V 2.8.6546)3times</p> <p>Cloud Gate:6610</p> <p>Ice Storm:48597</p> <p>Sky diver:4266</p> <p>Fire Strike:990</p>	Pass
8	DDR4-2400/Transcend-TS512MSH64V4H/SEC-K4A4G085WE-BCRC/4GB*2	<p>CPU: Intel Core i7-7700 3.60GHz (SR338)</p> <p>DIMM Slot: DIMM-1/2 Dual Channel</p> <p>Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2)</p> <p>READ:34585 MB/s</p> <p>WRITE:35572 MB/s</p> <p>COPY:31149 MB/s</p> <p>Passmark PerformanceTest 9.0 Build 1029</p> <p>CPU Mark:10445.5</p> <p>Memory Mark:2635.2</p> <p>3DMark for Windows(V 2.8.6546)3times</p> <p>Cloud Gate:10039</p> <p>Ice Storm:62372</p> <p>Sky diver:5012</p> <p>Fire Strike:1176</p>	Pass
9	DDR4-2133/Transcend-TS512MSH64V1H/SEC-K4A4G085WD-BCPB/4GB*	<p>CPU: Intel Core i7-6700 3.40GHz (SR2BT)</p> <p>DIMM Slot: DIMM-1/2 Dual Channel</p> <p>Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2)</p> <p>READ:31485 MB/s</p> <p>WRITE:31652 MB/s</p> <p>COPY:28711 MB/s</p> <p>Passmark PerformanceTest 9.0 Build 1029</p> <p>CPU Mark:9814.2</p> <p>Memory Mark:2470.1</p> <p>3DMark for Windows(V 2.8.6546)3times</p> <p>Cloud Gate:9497</p> <p>Ice Storm:58778</p> <p>Sky diver:4689</p> <p>Fire Strike:1116</p>	Pass

10	DDR4-2400/Transcend-TS512MSH64V4H/SEC-K4A4G085WE-BCRC/4GB*	CPU: DIMM Slot: Test Summary:	Intel Core i5-6500TE 2.30GHz (SR2LR) DIMM-2 Single Channel AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-2) READ:16183 MB/s WRITE:15854 MB/s COPY:15666 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:5473.3 Memory Mark:1592.7 3DMark for Windows(V 2.8.6546)3times Cloud Gate:5956 Ice Storm:40384 Sky diver:3627 Fire Strike:788	Pass
11	DDR4-2400/Apacer-78.B2GFR.4000B/SEC-K4A8G165WB-BCRC/4GB*2	CPU: DIMM Slot: Test Summary:	Intel Pentium G4400 3.30GHz (SR2DC) DIMM-1/2 Dual Channel AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:28112 MB/s WRITE:31039 MB/s COPY:25854 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:3719.2 Memory Mark:2406.4 3DMark for Windows(V 2.8.6546)3times Cloud Gate:4582 Ice Storm:27477 Sky diver:2320 Fire Strike:586	Pass
12	DDR4-2400/Apacer-78.B2GFR.4000B/SEC-K4A8G165WB-BCRC/4GB*2	CPU: DIMM Slot: Test Summary:	Intel Core i3-6100 3.70GHz (SR2HG) DIMM-1/2 Dual Channel AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:29056 MB/s WRITE:31593 MB/s COPY:25756 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:5762.4 Memory Mark:2340.4 3DMark for Windows(V 2.8.6546)3times Cloud Gate:6329 Ice Storm:39964 Sky diver:3748 Fire Strike:882	Pass
13	DDR4-2133/Transcend-TS512MSH64V1H/SEC-K4A4G085WD-BCPB/4GB*2	CPU: DIMM Slot: Test Summary:	Intel Celeron G3900 2.80GHz (SR2HV) DIMM-1/2 Dual Channel AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2) READ:28885 MB/s WRITE:31881 MB/s COPY:27633 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:3175.6 Memory Mark:2262.9 3DMark for Windows(V 2.8.6546)3times Cloud Gate:4210 Ice Storm:25913 Sky diver:2218 Fire Strike:568	Pass
14	DDR4-2133/Transcend-TS512MSH64V1H/SEC-K4A4G085WD-BCPB/4GB*	CPU: DIMM Slot: Test Summary:	Intel Celeron G3900TE 2.30GHz (SR2LU) DIMM-1 Single Channel AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1) READ:15801 MB/s WRITE:15943 MB/s COPY:15064 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:2559 Memory Mark:1550.4 3DMark for Windows(V 2.8.6546)3times Cloud Gate:3615 Ice Storm:22355 Sky diver:2037 Fire Strike:500	Pass