

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 PassMark BurnIn Test 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 / 3.7GHz	Core i7-8700K (CoffeeLake/SR3QR) / 95W / LGA1151	41 °C	60 °C	Pass
2	Intel / 2.4GHz	Core i7-8700T (CoffeeLake/QP4P) / 35W / LGA1151	33 °C	59 °C	Pass
3	Intel / 3.2GHz	Core i7-8700 (CoffeeLake/QNML) / 65W / LGA1151	40 °C	62 °C	Pass
4	Intel / 3.0GHz	Core i5-8500 (CoffeeLake/QP5J) / 65W / LGA1151	36 °C	60 °C	Pass
5	Intel / 2.1GHz	Core i5-8500T (CoffeeLake/QP5H) / 35W / LGA1151	32 °C	58 °C	Pass
6	Intel / 3.6GHz	Core i3-8100 (CoffeeLake/QP5K) / 65W / LGA1151	37 °C	60 °C	Pass
7	Intel / 3.1GHz	Core i3-8100T (CoffeeLake/QP5Q) / 35W / LGA1151	37 °C	62 °C	Pass
8	Intel / 3.1GHz	Celeron G4900 (CoffeeLake/SR3W4) / 54W / LGA1151	34 °C	59 °C	Pass
9	Intel / 3.7GHz	Pentium Gold G5400 (CoffeeLake/SR3X9) / 58W / LGA1151	36 °C	60 °C	Pass
10	Intel / 3.4GHz	Xeon E-2124G (CoffeeLake/SR3WL) / 71W / LGA1151	34 °C	60 °C	Pass

1.1.1 Application Test:

No.	Software	Test Keypoint	Result
1	CPU-Z ver.1.86.0	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 Build1029 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	Single Channel mode	Pass
2	Dual Channel mode	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/Transcend-TS2GLH64V4B/SEC-K4A86085WB-BCRC/16GB*4/DR041-1/2/3/4 (DIMM-1/2/3/4) DUAL CHANNEL O.S.: UEFI Shell Memtest86 V8.1	Pass
2	PassMark MemTest86 V8.1 Pro	1. Burn-In test 12 hours.	DDR4: DDR4-2400/ADATA-AD4E240031617-BHYA /SK Hynix-H5AN8G8NAFR-UHC/16GB*4 (ECC)/DR044-1/2/3/4 (DIMM-1/2/3/4) DUAL CHANNEL O.S.: UEFI Shell Memtest86 V8.1	Pass

1.2.3 DDR4 Approved List:

No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	Transcend	SEC	16GB	DDR4-2400	K4A86085WB-BCRC	TS2GLH64V4B	Pass
2	Transcend	SEC	8GB	DDR4-2666	K4A8G085WC-BCTD	TS1GLH64V6B	Pass
3	Innodisk	SEC	8GB	DDR4-2666	K4A8G085WC-BCTD	M4U0-8GS1JCIK	Pass
4	Kingston	Micron	8GB	DDR4-2400	7TE77D9VPP	CBD24D4U7S8ME-8	Pass
5	Transcend	SEC	8GB	DDR4-2400	K4A4G085WE-BCRC	TS1GLH64V4H	Pass
6	Innodisk	SEC	8GB	DDR4-2666	K4A4G085WE-BCTD	M4U0-8GSSKCIK	Pass
7	Apacer	SEC	8GB	DDR4-2666	K4A8G085WB-BCTD	78.C1GS7.40F0B	Pass
8	Kingston	Micron	4GB	DDR4-2400	7QE75D9WEH	CBD24D4U7S1ME-4	Pass
9	Apacer	SEC	4GB	DDR4-2666	K4A4G085WE-BCTD	78.B1GS6.40F0B	Pass
10	ADATA	SK hynix	16GB	DDR4-2400	H5AN8G8NAFR-UHC	AD4E240031617-BHYA	Pass
11	ADATA	SEC	16GB	DDR4-2666	K4A8G085WC-BCT0	AD4E2666316G19-BSSC	Pass
12	ATP	SEC	16GB	DDR4-2666	K4A8G085WC-BCTD	X4C16QE8BNTDSE-7-DR1	Pass
13	Transcend	SEC	8GB	DDR4-2133	K4A4G085WE-BCRC	TS1GLH72V1H	Pass
14	Transcend	SEC	4GB	DDR4-2133	K4A4G085WD-BCPB	TS8AAEESD	Pass
15	Kingston	Hynix	8GB	DDR4-2400	H5AN8G8NJJR VKC	KVR24N17S8/8	Pass

1.2.4 DDR4 Module Test Procedures:

No.	DDR4 Module	Test Procedures	Result
1	DDR4-2400/Transcend-TS2GLH64V4B/SEC-K4A86085WB-BCRC/16GB*4	CPU: Intel Core i7-8700K 3.70GHz (SR3QR) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2/3/4) READ:35129 MB/s WRITE:37075 MB/s COPY:34762 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:16001.8 Memory Mark:3353.6 3DMark for Windows(V 2.6.6238)3times Cloud Gate:11696 Ice Storm:66891 Sky diver:5393 Fire Strike:1349	Pass
2	DDR4-2666/Transcend-TS1GLH64V6B/SEC-K4A8G085WC-BCTD/8GB*	CPU: Intel Core i5-8500T 2.10GHz (QP5H) DIMM Slot: DIMM-2 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-2) READ:20005 MB/s WRITE:19323 MB/s COPY:19061 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:6938.2 Memory Mark:1750.2 3DMark for Windows(V 2.6.6238)3times Cloud Gate:7293 Ice Storm:47236 Sky diver:4323 Fire Strike:1015	Pass
3	DDR4-2666/Innodisk-M4UO-8GS1JCIK/SEC-K4A8G085WC-BCTD/8GB*	CPU: Intel Core i7-8700T 2.40GHz (QP4P) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1) READ:20589 MB/s WRITE:19204 MB/s COPY:18562 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:8783 Memory Mark:1909.2 3DMark for Windows(V 2.6.6238)3times Cloud Gate:9018 Ice Storm:52493 Sky diver:4735 Fire Strike:1091	Pass
4	DDR4-2400/Kingston-CBD24D4U7S8ME-8/Micron-7TE77D9VPP/8GB*2	CPU: Intel Celeron G4900 3.10GHz (SR3W4) DIMM Slot: DIMM-1/2 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1/2) READ:17587 MB/s WRITE:18295 MB/s COPY:17848 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:3376 Memory Mark:2183.7 3DMark for Windows(V 2.6.6238)3times Cloud Gate:4528 Ice Storm:27793 Sky diver:2561 Fire Strike:641	Pass

5	DDR4-2400/Transcend-TS1GLH64V4H/SEC-K4A4G085WE-BCRC/8GB*	CPU: Intel Pentium Gold G5400 3.70GHz (SR3X9) DIMM Slot: DIMM-4 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-4) READ:18187 MB/s WRITE:18413 MB/s COPY:18444 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:5400.2 Memory Mark:2284.8 3DMark for Windows(V 2.6.6238)3times Cloud Gate:5687 Ice Storm:31443 Sky diver:2687 Fire Strike:662	Pass
6	DDR4-2666/Innodisk-M4U0-8GSSKCIK/SEC-K4A4G085WE-BCTD/8GB*2	CPU: Intel Core i7-8700 3.20GHz (QNML) DIMM Slot: DIMM-3/4 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-3/4) READ:21026 MB/s WRITE:20542 MB/s COPY:22246 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:13837.5 Memory Mark:2683.4 3DMark for Windows(V 2.6.6238)3times Cloud Gate:10178 Ice Storm:59333 Sky diver:4999 Fire Strike:1179	Pass
7	DDR4-2666/Apacer-78.C1GS7.40F0B/SEC-K4A8G085WB-BCTD/8GB*	CPU: Intel Core i3-8100 3.60GHz (QP5K) DIMM Slot: DIMM-3 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-3) READ:15862 MB/s WRITE:15494 MB/s COPY:15543 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:7852.7 Memory Mark:1999.7 3DMark for Windows(V 2.6.6238)3times Cloud Gate:6041 Ice Storm:23715 Sky diver:3690 Fire Strike:871	Pass
8	DDR4-2400/Kingston-CBD24D4U7S1ME-4/Micron-7QE75D9WEH/4GB*2	CPU: Intel Core i5-8500 3.00GHz (QP5J) DIMM Slot: DIMM-1/3 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/3) READ:31858 MB/s WRITE:33967 MB/s COPY:29601 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:9760.1 Memory Mark:2322.5 3DMark for Windows(V 2.6.6238)3times Cloud Gate:8943 Ice Storm:60679 Sky diver:4785 Fire Strike:1147	Pass
9	DDR4-2666/ Apacer-78.B1GS6.40F0B/ SEC-K4A4G085WE-BCTD/4GB*2	CPU: Intel Core i3-8100T 3.10GHz (QP5Q) DIMM Slot: DIMM-2/4 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-2/4) READ:33541 MB/s WRITE:35821 MB/s COPY:31242 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:7566.2 Memory Mark:2423.2 3DMark for Windows(V 2.6.6238)3times Cloud Gate:8336 Ice Storm:59342 Sky diver:4695 Fire Strike:1177	Pass

10	DDR4-2400/ADATA-AD4E240031617-BHYA/SK Hynix-AD4E240031617-BHYA/16GB*4 (ECC)	CPU: Intel Xeon E-2124G 3.40GHz (SR3WL) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2/3/4) READ:33713 MB/s WRITE:36720 MB/s COPY:34060 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:8486.9 Memory Mark:2862.1 3DMark for Windows(V 2.6.6238)3times Cloud Gate:8770 Ice Storm:56579 Sky diver:4860 Fire Strike:1244	Pass
11	DDR4-2666/ ADATA- AD4E2666316G19-BSSC/ SEC- K4A8G085WC-BCT0/16GB*4 (ECC)	CPU: Intel Xeon E-2176G 3.70GHz (QNT8) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/2/3/4) READ:37506 MB/s WRITE:41029 MB/s COPY:38122 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:14690.8 Memory Mark:3066.6 3DMark for Windows(V 2.6.6238)3times Cloud Gate:11269 Ice Storm:58605 Sky diver:5350 Fire Strike:1343	Pass
12	DDR4-2666/ ATP- X4C16QE8BNTDSE-7-DR1/ SEC- K4A8G085WC-BCTD/16GB* (ECC)	CPU: Intel Xeon E-2124G 3.40GHz (SR3WL) DIMM Slot: DIMM-1/3 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-1/3) READ:37441 MB/s WRITE:40810 MB/s COPY:35111 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:8540.5 Memory Mark:2881.2 3DMark for Windows(V 2.6.6238)3times Cloud Gate:8769 Ice Storm:56980 Sky diver:4900 Fire Strike:1251	Pass
13	DDR4-2133 / Transcend- TS1GLH72V1H / SEC- K4A4G085WE-BCRC / 8GB*2 (ECC)	CPU: Intel Xeon E-2176G 3.70GHz (QNT8) DIMM Slot: DIMM-2/4 Dual Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) DUAL CHANNEL(DIMM-2/4) READ:31855 MB/s WRITE:33080 MB/s COPY:31805 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:14175.4 Memory Mark:2870.9 3DMark for Windows(V 2.6.6238)3times Cloud Gate:11133 Ice Storm:58351 Sky diver:5246 Fire Strike:1313	Pass
14	DDR4-2133 / Transcend-TS8AAEESD/SEC-K4A4G085WD-BCPB/4GB* (ECC)	CPU: Intel Xeon E-2176G 3.70GHz (QNT8) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1) READ:16863 MB/s WRITE:15307 MB/s COPY:16837 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:11906.6 Memory Mark:1857.7 3DMark for Windows(V 2.6.6238)3times Cloud Gate:9092 Ice Storm:50243 Sky diver:4415 Fire Strike:994	Pass

15	DDR4-2400 / Kingston KVR24N17S8/8 / Hynix - H5AN8G8NJJR VKC / 8GB	CPU: Intel Xeon E-2176G 3.70GHz (QNT8) DIMM Solt: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V5.97.4600) SINGLE CHANNEL(DIMM-1/2) READ:13531 MB/s WRITE:15778 MB/s COPY:14661 MB/s Passmark PerformanceTest 9.0 Build 1029 CPU Mark:15215.5 Memory Mark:2632.9 3DMark for Windows(V 2.6.6238)3times Cloud Gate:10961 Ice Storm:49930 Sky diver:5082 Fire Strike:1183	Pass
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