

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 BurnIn Test and Check CPU temperature. 5. Using CPU-Z check CPU info 6. S3(Sleep)/S4(Hibernate)/S5(Shutdown) test - 3 times
Test Criteria	It should be correct for each test step

No.	CPU	Type	Idle CPU Temp.	Full Loading CPU Temp.	Result
1	Intel / 1.8GHz	Core i7-9700TE (CoffeeLake-S/R0-QSJN)/35W/LGA1151	32.0°C	54.0°C	Pass
2	Intel / 2.4GHz	Core i7-8700T (CoffeeLake-S/U0-QP4P)/35W/LGA1151	36.0°C	58.0°C	Pass
3	Intel / 2.2GHz	Core i5-9500TE (CoffeeLake-S/QT8N)/35W/LGA1151	36.0°C	58.0°C	Pass
4	Intel / 2.1GHz	Core i5-8500T (CoffeeLake-S/QP5H)/35W/LGA1151	37.0°C	60.0°C	Pass
5	Intel / 2.2GHz	Core i3-9100TE (CoffeeLake-S/B0-QT8P)/35W/LGA1151	35.0°C	56.0°C	Pass
6	Intel / 3.1GHz	Core i3-8100T (CoffeeLake-S/B0-QP5Q)/35W/LGA1151	35.0°C	57.0°C	Pass
7	Intel / 2.0GHz	Xeon E-2278GEL (CoffeeLake-S/R0-QSJL)/35W/LGA1151	36.0°C	59.0°C	Pass
8	Intel / 3.1GHz	Pentium-G5400T (CoffeeLake-S/B0-QP5X)/35W/LGA1151	38.0°C	60.0°C	Pass
9	Intel / 2.9GHz	Celeron G4900T (CoffeeLake-S/B0-QP5Z)/35W/LGA1151	36.0°C	58.0°C	Pass

1.1.1 Application Test:

No.	Software	Test Keypoint	Result
1	CPU-Z Ver.1.91	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.6.20.5300 1 time 4. Run Passmark Performance Test 9.0 Build1035 1 time 5. Run 3DMark for Windows Ver.2.11.6866 BenchMark 3 times 6. Run Memtest86 Stress test 12 hours 7. S3(Sleep)/S4(Hibernate)/S5(Shutdown) 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	DIMM Slot1	Pass
4	Memory Frequency Check	Pass
5	Memory Capacity Check	Pass

1.2.2 Application Test:

No.	Software	Test Keypoint	Test Summary	Result
1	MemTest86 Ver.8.4 Pro	1. Burn-In test 12 hours.	DUT: DUT#1 DDR4: ATP (X4F32Q28BVTDME-7-DR1) / Micron (0CB45-D9XPF) / PC4-21300 (DDR4-2666)/ECC / 32GB *1 (SO_DIMM1, Single channel) DUT: DUT#4 DDR4: ADATA (AD4S2666732G19-BSSA 1.2V) [32Gx16] / SEC (K4AAG085WA-BCTD) / PC4-21300 (DDR4-2666) / 32GB *1 (SO_DIMM1, Single channel) O.S.: UEFI Shell	Pass

1.2.3 DDR4 SO-DIMM Approved List:

No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	ADATA	SEC	32GB	PC4-21300 (DDR4-2666)	K4AAG085WA-BCTD	ADAS2666732G19-BSSA	Pass
2	ATP	Micron	32GB	PC4-21300 (DDR4-2666)/ECC	0CB45-D9XPF	X4F32Q28BVTDME-7-DR1	Pass
3	Kingston	Micron	16GB	PC4-21300 (DDR4-2666)	8PE75-D9VPP	CBD26D4S9D8ME-16 1.2V	Pass
4	ADATA	SEC	16GB	PC4-21300 (DDR4-2666)/ECC	K4A8G085WC-BCTD	AD4B2666316G19-BSSC 1.2V [16Gx18]	Pass
5	Transcend	SEC	16GB	PC4-21300 (DDR4-2666)/ECC	K4A8G085WC-BCTD	TS2GSH72V6B 1.2V [2Rx8]	Pass
6	Transcend	SEC	8GB	PC4-21300 (DDR4-2666)	K4A8G085WC-BCTD	TS1GSH64V6B 1.2V [1Rx8]	Pass
7	Innodisk	SEC	8GB	PC4-21300 (DDR4-2666)	K4A4G085WE-BCTD	M4S0-8GSSOCIK	Pass
8	Transcend	SEC	8GB	PC4-17000 (DDR4-2133)/ECC	K4A4G085WE-BCRC	TS1GSH72V1H 1.2V [2Rx8]	Pass
9	Transcend	SEC	8GB	PC4-17000 (DDR4-2133)/ECC	K4A4G085WD-BCPB	TS8D41IG21SES1 1.2V	Pass
10	Transcend	SEC	8GB	PC4-17000 (DDR4-2133)/ECC	K4A4G085WE-BCRC	TS1GSH72V1H 1.2V [2Rx8]	Pass
11	Innodisk	SEC	4GB	PC4-21300 (DDR4-2666)	K4A4G085WE-BCTD	M4S0-4GSSNCIK	Pass
12	Kingston	Micron	4GB	PC4-21300 (DDR4-2666)	8KE77-D9WFH	CBD26D4S9S1ME-4 1.2V	Pass
13	Transcend	SEC	4GB	PC4-17000 (DDR4-2133)	K4A4G085WD-BCPB	TS512MSH64V1H 1.2V [1Rx8]	Pass

1.2.4 DDR4 SO-DIMM Test Procedures:

No.	DDR4 Module	Test Environment	Result
1	ADATA (ADAS2666732G19-BSSA) / SEC (K4AAG085WA-BCTD) / PC4-21300 (DDR4-2666) / 32GB *1	DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] CPU: Intel / Core i7-9700TE (CoffeeLake-S/R0-QSJN,35W) / 1.8GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:18717 MB/s WRITE:18638 MB/s COPY:20057 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:11889.6 Memory Mark:2474.4 3.3DMark for Windows ver.2.11.6866 Cloud Gate:10210 Ice Storm:49681 Sky diver:4921 Fire Strike:1138	Pass
		DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] CPU: Intel / Core i3-9100TE (CoffeeLake-S/R0-QT8P,35W) / 2.2GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.25.5400 READ:17231 MB/s WRITE:17206 MB/s COPY:17175 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:5257 Memory Mark:1841.7 3.3DMark for Windows ver.2.12.6964 Cloud Gate:6598 Ice Storm:39702 Sky diver:4131 Fire Strike:975	Pass
		DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] CPU: Intel / Core G4900T (CoffeeLake-S/B0-QP5Z,35W) / 2.9GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.25.5400 READ:17008 MB/s WRITE:17293 MB/s COPY:16969 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:3155.6 Memory Mark:2108 3.3DMark for Windows ver.2.12.6964 Cloud Gate:4428 Ice Storm:26116 Sky diver:2585 Fire Strike:643	Pass
2	ATP (X4F32Q28BVTDM7-DR1) / Micron (OCB45-D9XPF) / PC4-21300 (DDR4-2666)/ECC / 32GB *1	DUT: DUT#1 M/B: CS551-C246-BCA Rev.2 (021) [774-CS5511-000G/BSK152300001] CPU: Intel / Xeon E-2278GEL (CoffeeLake-S/R0-QS JL,35W) / 2.0GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:20302 MB/s WRITE:19400 MB/s COPY:20379 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:12885.8 Memory Mark:2327 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:11038 Ice Storm:49751 Sky diver:5026 Fire Strike:1181	Pass

3	Kingston (CBD26D4S9D8ME-16 1.2V) / Micron (8PE75-D9VPP) / PC4-21300 (DDR4-2666) / 16GB *1	DUT: M/B: CPU: DIMM Slot: Test Summary:	DUT#4 CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] Intel / Core i7-9700TE (CoffeeLake-S/R0-QSJM,35W) / 1.8GHz SO_DIMM1 (Single channel) 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:20501 MB/s WRITE:19203 MB/s COPY:18478 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:7254 Memory Mark:1613 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:8784 Ice Storm:44338 Sky diver:4841 Fire Strike:1155	Pass
		DUT: M/B: CPU: DIMM Slot: Test Summary:	DUT#2 CS551-H310-BCA Rev.2 (021) [774-CS5511-100G/BSK152500002] Intel / Core i5-9500TE (CoffeeLake-S/QT8N,35W) / 2.2GHz SO_DIMM1 (Single channel) 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:20261 MB/s WRITE:19142 MB/s COPY:20162 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:7198.9 Memory Mark:1886.1 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:7926 Ice Storm:44743 Sky diver:4382 Fire Strike:1031	Pass
4	ADATA (AD4B2666316G19-BSSC 1.2V) [16Gx18] / SEC (K4A8G085WC-BCTD) / PC4-21300 (DDR4-2666)/ECC / 16GB *1	DUT: M/B: CPU: DIMM Slot: Test Summary:	DUT#1 CS551-C246-BCA Rev.2 (021) [774-CS5511-000G/BSK152300001] Intel / Xeon E-2278GEL (CoffeeLake-S/R0-QSJM,35W) / 2.0GHz SO_DIMM1 (Single channel) 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:20128 MB/s WRITE:19578 MB/s COPY:20216 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:8820.4 Memory Mark:1690.1 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:6874 Ice Storm:36310 Sky diver:4169 Fire Strike:1150	Pass
5	Transcend (TS2GSH72V6B 1.2V) [2Rx8] / SEC (K4A8G085WC-BCTD) / PC4-21300 (DDR4-2666)/ECC / 16GB *1	DUT: M/B: CPU: DIMM Slot: Test Summary:	DUT#1 CS551-C246-BCA Rev.2 (021) [774-CS5511-000G/BSK152300001] Intel / Xeon E-2278GEL (CoffeeLake-S/R0-QSJM,35W) / 2.0GHz SO_DIMM1 (Single channel) 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:21138 MB/s WRITE:19307 MB/s COPY:20997 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:12885.7 Memory Mark:2491.6 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:11100 Ice Storm:50345 Sky diver:5081 Fire Strike:1198	Pass

6	Transcend (TS1GSH64V6B 1.2V) [1Rx8] / SEC (K4A8G085WC-BCTD) / PC4-21300 (DDR4-2666) / 8GB *1	DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] CPU: Intel / Core i7-8700T (CoffeeLake-S/U0-QP4P,35W) / 2.4GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:19793 MB/s WRITE:18791 MB/s COPY:17886 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:8591.9 Memory Mark:1845.4 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:9433 Ice Storm:46215 Sky diver:4937 Fire Strike:1132	Pass
7	Innodisk (M4S0-8GSSOIC) / SEC (K4A4G085WE-BCTD) / PC4-21300 (DDR4-2666) / 8GB *1	DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] CPU: Intel / Core i5-8500T (CoffeeLake-S/QP5H,35W) / 2.1GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:20141 MB/s WRITE:19308 MB/s COPY:20026 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:6936.1 Memory Mark:1764.6 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:7912 Ice Storm:44355 Sky diver:4681 Fire Strike:1119	Pass
8	Transcend (TS1GSH72V1H 1.2V) [2Rx8] / SEC (K4A4G085WE-BCRC) / PC4-17000 (DDR4-2133)/ECC / 8GB *1	DUT: DUT#1 M/B: CS551-C246-BCA Rev.2 (021) [774-CS5511-000G/BSK152300001] CPU: Intel / Xeon E-2278GEL (CoffeeLake-S/R0-QS JL,35W) / 2.0GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:17073 MB/s WRITE:15660 MB/s COPY:17451 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:12176 Memory Mark:2105.3 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:10665 Ice Storm:47994 Sky diver:4884 Fire Strike:1129	Pass
9	Transcend (TS8D41IG21SES1 1.2V) / SEC (K4A4G085WD-BCPB) / PC4-17000 (DDR4-2133)/ECC / 8GB *1	DUT: DUT#1 M/B: CS551-C246-BCA Rev.2 (021) [774-CS5511-000G/BSK152300001] CPU: Intel / Xeon E-2278GEL (CoffeeLake-S/R0-QS JL,35W) / 2.0GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:16934 MB/s WRITE:15708 MB/s COPY:17851 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:12238.8 Memory Mark:2128 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:10668 Ice Storm:48035 Sky diver:4890 Fire Strike:1126	Pass

10	Transcend (TS1GSH72V1H 1.2V) [2Rx8] / SEC (K4A4G085WE-BCRC) / PC4-17000 (DDR4-2133)/ECC / 8GB *1	<p>DUT: DUT#1 M/B: CS551-C246-BCA Rev.2 (021) [774-CS5511-000G/BSK152300001]</p> <p>CPU: Intel / Xeon E-2278GEL (CoffeeLake-S/R0-QSJL,35W) / 2.0GHz SO_DIMM1 (Single channel)</p> <p>DIMM Slot: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 Test Summary: READ:17318 MB/s WRITE:15712 MB/s COPY:18429 MB/s</p> <p>2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:12162.4 Memory Mark:2133.2</p> <p>3. 3DMark for Windows ver.2.11.6866 Cloud Gate:10691 Ice Storm:48052 Sky diver:4889 Fire Strike:1133</p>	Pass
11	Innodisk (M4S0-4GSSNCIK) / SEC (K4A4G085WE-BCTD) / PC4-21300 (DDR4-2666) / 4GB *1	<p>DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007]</p> <p>CPU: Intel / Core i3-8100T (CoffeeLake-S/B0-QP5Q,35W) / 3.1GHz SO_DIMM1 (Single channel)</p> <p>DIMM Slot: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 Test Summary: READ:17585 MB/s WRITE:17306 MB/s COPY:17259 MB/s</p> <p>2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:7064.7 Memory Mark:1787.1</p> <p>3. 3DMark for Windows ver.2.11.6866 Cloud Gate:7530 Ice Storm:41740 Sky diver:4356 Fire Strike:1003</p>	Pass
		<p>DUT: DUT#2 M/B: CS551-H310-BCA Rev.2 (021) [774-CS5511-100G/BSK152500002]</p> <p>CPU: Intel / Pentium-G5400T (CoffeeLake-S/B0-QP5X,35W) / 3.1GHz SO_DIMM1 (Single channel)</p> <p>DIMM Slot: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 Test Summary: READ:16982 MB/s WRITE:17621 MB/s COPY:17510 MB/s</p> <p>2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:4497.8 Memory Mark:2235.9</p> <p>3. 3DMark for Windows ver.2.11.6866 Cloud Gate:5601 Ice Storm:28349 Sky diver:2851 Fire Strike:695</p>	Pass
12	Kingston (CBD26D4S9S1ME-4 1.2V) / Micron (8KE77-D9WFH) / PC4-21300 (DDR4-2666) / 4GB *1	<p>DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007]</p> <p>CPU: Intel / Core i7-8700T (CoffeeLake-S/U0-QP4P,35W) / 2.4GHz SO_DIMM1 (Single channel)</p> <p>DIMM Slot: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 Test Summary: READ:18914MB/s WRITE:18626 MB/s COPY:19127 MB/s</p> <p>2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:10413 Memory Mark:1824.2</p> <p>3. 3DMark for Windows ver.2.11.6866 Cloud Gate:9175 Ice Storm:45993 Sky diver:4488 Fire Strike:964</p>	Pass

13	<p>Transcend (TS512MSH64V1H 1.2V) [1Rx8] / SEC (K4A4G085WD-BCPB) / PC4-17000 (DDR4-2133) / 4GB *1</p>	<p>DUT: DUT#4 M/B: CS551-Q370-BCA Rev.2 (021) [774-CS5511-200G/BSK152700007] CPU: Intel / Core i7-9700TE (CoffeeLake-S/R0-QSJN,35W) / 1.8GHz DIMM Slot: SO_DIMM1 (Single channel) Test Summary: 1. AIDA64 Cache and Memory Benchmark ver.6.20.5300 READ:16319 MB/s WRITE:15371 MB/s COPY:16872 MB/s 2. Passmark PerformanceTest 9.0 Build1035 CPU Mark:11226.6 Memory Mark:1730.3 3. 3DMark for Windows ver.2.11.6866 Cloud Gate:9462 Ice Storm:45985 Sky diver:4659 Fire Strike:1056</p>	Pass
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