

# 1. Stability Test:

## 1.1 CPU Function Test:

<b>Test Purpose</b>	Test CPU functions work normally under Windows Operating System
<b>Test Procedure</b>	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
<b>Test Criteria</b>	It should be correct for each test step

No.	CPU	Type	Idle CPU Temp.	Full Loading CPU Temp.	Result
1	AMD / 2.00GHz	Ryzen V1605B (Embedded / YE1605C4T4MFB) / 12-25W / SOC	36.0°C	55.0°C	Pass
2	AMD / 2.30GHz	Ryzen V1202B (Embedded / TE1202C4T2OFG) / 12-25W / SOC	36.5°C	58.0°C	Pass
3	AMD / 2.40GHz	Ryzen V1505G (Embedded / YE1505C4TOFG) / 12-25W / SOC	32.0°C	44.0°C	Pass
4	AMD / 2.60GHz	Ryzen V1606G (Embedded / YE1606C4T2OFG) / 12-25W / SOC	31.0°C	41.0°C	Pass
5	AMD / 2.0GHz	Ryzen V1404I (Embedded / YE1404C4T4MFB) / 12-25W / SOC	35.5°C	57.0°C	Pass

### 1.1.1 Application Test:

No.	Software	Test Keypoint	Result
1	CPU-Z Ver.1.92.0	1. Check all information.	Pass

## 1.2 Memory Function Test:

<b>Test Purpose</b>	Test Memory functions work normally under Windows Operating System
<b>Test Procedure</b>	<ol style="list-style-type: none"> <li>1. Install Windows Operating System</li> <li>2. Install M/B Device Driver</li> <li>3. Run AIDA64 Cache and Memory Benchmark Ver.6.20.5300 - 1 time</li> <li>4. Run Passmark Performance Test 9.0 Build1035 - 1 time</li> <li>5. Run 3DMark for Windows Ver.2.11.6846 BenchMark - 3 times</li> <li>6. S3(Sleep)/S4(Hibernate)/S5(Shutdown) test - 3 times</li> </ol>
<b>Test Criteria</b>	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

### 1.2.2 Application Test:

No.	Software	Test Keypoint	Test Environment	Result
1	PassMark MemTest86 V8.3 Pro	1. Burn-In test 12 hours.	DDR4: DDR4-2666/Kingston-CBD26D4S9D8ME-16/Micron-8PE75 D9VPP/16GB*/1080215B-1 (DIMM-1) SINGLE CHANNEL O.S.: UEFI Shell Memtest86 V8.3	Pass

### 1.2.3 DDR4 Approved List:

No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	Kingston	Micron	16GB	DDR4-2666	8PE75 D9VPP	CBD26D4S9D8ME-16	Pass
2	Apacer	SEC	16GB	DDR4-2666	K4A8G085WC-BCTD	78.D2GG7.4010B	Pass
3	Innodisk	SEC	16GB	DDR4-2666	K4A8G085W-BCTD	M4SI-AGS1OC0K-C	Pass
4	Innodisk	SEC	8GB	DDR4-2666	K4A8G085WC-BCTD	M4SI-8GS1NC0K-C	Pass
5	Innodisk	SEC	8GB	DDR4-2666	K4A4G085WF-BCTD	M4SI-8GSSOC0K-F	Pass
6	Apacer	SEC	8GB	DDR4-2666	K4A8G085WC-BCTD	78.C2GG7.4000B	Pass
7	Transcend	SEC	8GB	DDR4-2666	K4A8G085WC-BCTD	TS1GSH64V6B	Pass
8	Innodisk	SEC	8GB	DDR4-2666	K4A4G085WE-BCTD	M4S0-8GSSOICIK	Pass
9	Apacer	SEC	4GB	DDR4-2666	K4A4G085WF-BCTD	78.B2GG5.4000B	Pass
10	Innodisk	SEC	4GB	DDR4-2666	K4A4G085WE-BCTD	M4SI-4GSSNC0K-F	Pass
11	Kingston	Micron	4GB	DDR4-2666	8KE77-D9WFH	CBD26D4S9S1ME	Pass
12	Transcend	SEC	4GB	DDR4-2400	K4A4G085WE-BCRC	TS512MSH64V4H	Pass
13	Apacer	SEC	4GB	DDR4-2666	K4A8G165WC-BCTD	78.B2GG6.4000B	Pass
14	Transcend	SEC	4GB	DDR4-2666	K4A4G085WD-BCPB	TS512MSH64V1H	Pass
15	Innodisk	SEC	4GB	DDR4-2666	K4A4G085WE-BCTD	M4S0-4GSSNICIK	Pass

## 1.2.4 DDR4 Module Test Procedures:

No.	DDR4 Module	Test Procedures	Result
1	DR4-2666/Kingston CBD26D4S9D8ME-16/Micron-8PE75 D9VPP/16GB*	M/B: GH551-BCI-R1606 Rev.1 (011) (BSJ461800004) CPU: AMD Ryzen Embedded R1606G with Radeon Vega Gfx 2.60GHz (YE1606C4T2OFG) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:16523 MB/s WRITE:16006 MB/s COPY:16564 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:8071.5 Memory Mark:1720.9 3DMark for Windows(V 2.11.6846)3times Cloud Gate:6968 Ice Storm:42688 Sky diver:3636 Fire Strike:770	Pass
2	DR4-2666/ Apacer 78.D2GG7.4010B /SEC- K4A8G085WC-BCTD/16GB*	M/B: GH551-BCI-R1606 Rev.1 (011) (BSJ461800004) CPU: AMD Ryzen Embedded R1606G with Radeon Vega Gfx 2.60GHz (YE1606C4T2OFG) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18367 MB/s WRITE:18844 MB/s COPY:17645 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:5306.5 Memory Mark:1610.6 3DMark for Windows(V 2.11.6846)3times Cloud Gate:6765 Ice Storm:47273 Sky diver:4138 Fire Strike:1102	Pass
3	DDR4-2666/ Innodisk- M4SI 8GS1NC0K-C/ SEC-K4A8G085WC BCTD/8GB*	M/B: GH551-BCI-R1605 Rev.1 (011) (BSJ461600007) CPU: AMD Ryzen Embedded V1605B with Radeon Vega Gfx 2.00GHz (YE1605C4T4MFB) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18242 MB/s WRITE:18749 MB/s COPY:16915 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:7785.3 Memory Mark:1524.7 3DMark for Windows(V 2.11.6846)3times Cloud Gate:10109 Ice Storm:50874 Sky diver:6018 Fire Strike:1649	Pass
4	DDR4-2666/ Innodisk- M4SI 8GSSOC0K-F/ SEC- K4A4G085WF BCTD/8GB*	M/B: GH551-BCI-V1605 Rev.1 (011) (BSJ461600007) CPU: AMD Ryzen Embedded V1605B with Radeon Vega Gfx 2.00GHz (YE1605C4T4MFB) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18242 MB/s WRITE:18749 MB/s COPY:16915 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:7785.3 Memory Mark:1524.7 3DMark for Windows(V 2.11.6846)3times Cloud Gate:10109 Ice Storm:50874 Sky diver:6018 Fire Strike:1649	Pass

5	DDR4-2666/ Apacer 78.C2GG7.4000B/ SEC- K4A8G085WC-BCTD/8GB*	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-V1605 Rev.1 (011) (BSJ461600007) AMD Ryzen Embedded V1605B with Radeon Vega Gfx 2.00GHz (YE1605C4T4MFB) AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18729 MB/s WRITE:17961 MB/s COPY:17052 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:7485.5 Memory Mark:1498.9 3DMark for Windows(V 2.11.6846)3times Cloud Gate:9945 Ice Storm:49632 Sky diver:5895 Fire Strike:1615	Pass
6	DR4-2666/ Transcend TS1GSH64V6B/ SEC- K4A8G085WC BCTD/8GB*	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-R1505 Rev.1 (011) (BSJ461700001) AMD Ryzen Embedded R1505G with Radeon Vega Gfx (YE1505C4TOFG) DIMM-1 Single Channel AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18036 MB/s WRITE:17944 MB/s COPY:16646 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:3798.6 Memory Mark:1327 3DMark for Windows(V 2.11.6846)3times Cloud Gate:5700 Ice Storm:40481 Sky diver:3590 Fire Strike:985	Pass
7	DDR4-2666/ Innodisk- M4S0- 8GSSOC1K/ SEC- K4A4G085WE BCTD/8GB*	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-R1505 Rev.1 (011) (BSJ461700001) AMD Ryzen Embedded R1505G with Radeon Vega Gfx (YE1505C4TOFG) DIMM-1 Single Channel AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18405 MB/s WRITE:18626 MB/s COPY:17754 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:3660 Memory Mark:1358.9 3DMark for Windows(V 2.11.6846)3times Cloud Gate:5776 Ice Storm:41226 Sky diver:3636 Fire Strike:999	Pass
8	DDR4-2666/ Apacer- 78.B2GG5.4000B/ SEC K4A4G085WF-BCTD/4GB*	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-V1605 Rev.1 (011) (BSJ461600007) AMD Ryzen Embedded V1605B with Radeon Vega Gfx 2.00GHz (YE1605C4T4MFB) DIMM-1 Single Channel AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18280 MB/s WRITE:18209 MB/s COPY:17070 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:7489.8 Memory Mark:1287.2 3DMark for Windows(V 2.11.6846)3times Cloud Gate:10030 Ice Storm:48329 Sky diver:5933 Fire Strike:1616	Pass

9	DDR4-2666/Innodisk-M4SI-4GSSNC0K-F/SEC-K4A4G085WE BCTD/4GB*	M/B: GH551-BCI-V1605 Rev.1 (011) (BSJ461600007) CPU: AMD Ryzen Embedded V1605B with Radeon Vega Gfx 2.00GHz (YE1605C4T4MFB) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18245 MB/s WRITE:18144 MB/s COPY:17279 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:7491.3 Memory Mark:1288 3DMark for Windows(V 2.11.6846)3times Cloud Gate:10036 Ice Storm:48529 Sky diver:5983 Fire Strike:1610	Pass
10	DDR4-2666/Kingston CBD26D4S9S1ME-4/Micron-8KE77-D9WFH/4GB*	M/B: GH551-BCI-V1605 Rev.1 (011) (BSJ461600007) CPU: AMD Ryzen Embedded V1605B with Radeon Vega Gfx 2.00GHz (YE1605C4T4MFB) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18014 MB/s WRITE:17858 MB/s COPY:15870 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:6690.4 Memory Mark:1193.2 3DMark for Windows(V 2.11.6846)3times Cloud Gate:9346 Ice Storm:46551 Sky diver:5392 Fire Strike:1425	Pass
11	DDR4-2400/ Transcend-TS512MSH644H/ SEC K4A4G085WE-BCRC/4GB*	M/B: GH551-BCI-R1606 Rev.1 (011) (BSJ461800004) CPU: AMD Ryzen Embedded R1606G with Radeon Vega Gfx 2.60GHz (YE1606C4T2OFG) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18316 MB/s WRITE:18149 MB/s COPY:17253 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:5208.4 Memory Mark:1302.7 3DMark for Windows(V 2.11.6846)3times Cloud Gate:6818 Ice Storm:46882 Sky diver:4121 Fire Strike:1084	Pass
12	DDR4-2666/ Apacer-78.B2GG6.4000B/ SEC-K4A8G165WC-BCTD/4GB*	M/B: GH551-BCI-R1505 Rev.1 (011) (BSJ461700001) CPU: AMD Ryzen Embedded R1505G with Radeon Vega Gfx (YE1505C4TOFG) DIMM Slot: DIMM-1 Single Channel Test Summary: AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18004 MB/s WRITE:17817 MB/s COPY:16693 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:4698.6 Memory Mark:1193 3DMark for Windows(V 2.11.6846)3times Cloud Gate:6051 Ice Storm:41628 Sky diver:3652 Fire Strike:996	Pass

13	DDR4-2666/Transcend TS512MSH64V1H/SEC-K4A4G085WD-BCPB/4GB*	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-R1505 Rev.1 (011) (BSJ461700001) AMD Ryzen Embedded R1505G with Radeon Vega Gfx (YE1505C4TOFG) AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:16270 MB/s WRITE:16133 MB/s COPY:15550 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:4910.6 Memory Mark:1235.3 3DMark for Windows(V 2.11.6846)3times Cloud Gate:6063 Ice Storm:42141 Sky diver:3584 Fire Strike:967	Pass
14	DDR4-2666/ Innodisk- M4S0-4GSSNCIK/ SEC- K4A4G085WE-BCTD/4GB*	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-R1505 Rev.1 (011) (BSJ461700001) AMD Ryzen Embedded R1505G with Radeon Vega Gfx (YE1505C4TOFG) AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18293 MB/s WRITE:18076 MB/s COPY:17028 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:4893.5 Memory Mark:1270.4 3DMark for Windows(V 2.11.6846)3times Cloud Gate:6281 Ice Storm:42976 Sky diver:3680 Fire Strike:994	Pass
15	DDR4-2666/Innodisk-M4S0-4GSSNCIK/SEC-K4A4G085WE-BCTD/4GB	M/B: CPU: DIMM Slot: Test Summary	GH551-BCI-V1202 Rev.1 (011) (BSJ461900005) AMD Ryzen Embedded V1202B with Radeon Vega Gfx 2.30GHz (YE1202C4T2OFB) AIDA64 Cache and Memory Benchmark(V6.20.5300) SINGLE CHANNEL(DIMM-1) READ:18180 MB/s WRITE:18143 MB/s COPY:16874 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:3699.4 Memory Mark:1410.1 3DMark for Windows(V 2.11.6846)3times Cloud Gate:5342 Ice Storm:41039 Sky diver:3665 Fire Strike:1050	Pass
16	DDR4-2666/Transcend TS1GSH64V6B/SEC-K4A8G085WC BCTD/8G*	M/B: CPU: DIMM Slot: Test Summary	GH551-ECI-V1404 Rev.2 (021) (BSK172300008) AMD Ryzen Embedded V1404I with Radeon Vega Gfx 2.00GHz (YE1404C4T4MFB) AIDA64 Cache and Memory Benchmark(V6.25.5400) SINGLE CHANNEL(DIMM-1) READ:18165 MB/s WRITE:17934 MB/s COPY:16349 MB/s Passmark PerformanceTest 9.0 Build 1035 CPU Mark:8023.8 Memory Mark:1518.6 3DMark for Windows(V 2.11.6866)3times Cloud Gate: Ice Storm: Sky diver: Fire Strike:	Pass