

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 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

Test Environment	
DUT:	DUT#1
M/B:	RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100054]
M/B BIOS:	B237.14A (AMI)
CPU:	Intel Core i7-13700E 1.9GHz
DDR5:	Transcend (TS2GLA64V8E [1Rx8]) / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800) / 16GB *4
SSD:	innodisk /DGS25-A28D81SW1QC /128GB (using SATA1(R5))
Display:	Onboard DP
DVD-ROM:	ASUS /SDRW-08U7M-U/BLK/G/AS /90DD01X0-M2T000
Power:	FSP-1200-50AAG 1200W
Monitor:	ASUS /PA238Q 23" (1920*1080*60p)
O.S.:	Windows 11 IOT Enterprise (x64) Build 22621.1485 (22H2) (UEFI)
DUT:	DUT#2
M/B:	RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100186]
M/B BIOS:	B237.14B (AMI)
CPU:	Intel Core i5-13600K 3.5GHz
DDR5:	Apacer (D12.31492S.001) / SEC (K4RAH165VB-BCQK) / PC5-38400 (DDR5-4800) / 8GB *4
SSD:	Transcend /TS128GSSD420K /128GB (using SATA0(R4))
Display:	Onboard DP
DVD-ROM:	ASUS /SDRW-08U7M-U/BLK/G/AS /90DD01X0-M2T000
Power:	FSP-1200-50AAG 1200W
Monitor:	ASUS /PA238Q 23" (1920*1080*60p)
O.S.:	Windows 11 IOT Enterprise (x64) Build 22621.1485 (22H2) (UEFI)

1.1.1 CPU Approved List:

No.	CPU	Type	Idle CPU Temp.	Full Loading CPU Temp.	Result
1	Intel / 2.4GHz	Core i9-12900K (Alder Lake-S) / 125W / FC-LGA16A	41 °C	46 °C	Pass
2	Intel / 2.7GHz	Core i7-12700K (Alder Lake-S) / 125W / FC-LGA16A	40 °C	43 °C	Pass
3	Intel / 2.4GHz	Core i9-12900 (AlderLake-S) / 65W) / FCLGA1700	35 °C	38 °C	Pass
4	Intel / 2.3GHz	Core i9-12900E (AlderLake-S) / 65W / FCLGA1700	35 °C	37 °C	Pass
5	Intel / 2.1GHz	Core i7-12700 (AlderLake-S) / 65W / FCLGA1700	30 °C	35 °C	Pass
6	Intel / 2.1GHz	Core i7-12700E (AlderLake-S) / 65W / FCLGA1700	31 °C	33 °C	Pass
7	Intel / 1.4GHz	Core i7-12700TE (AlderLake-S) / 35W / FCLGA1700	30 °C	33 °C	Pass
8	Intel / 3.0GHz	Core i5-12500 (AlderLake-S) / 65W / FCLGA1700	27 °C	32 °C	Pass
9	Intel / 2.9GHz	Core i5-12500E (AlderLake-S) / 65W / FCLGA1700	26 °C	30 °C	Pass
10	Intel / 1.9GHz	Intel / Core i5-12500TE (AlderLake-S) / 35W / FCLGA1700	35 °C	37 °C	Pass
11	Intel / 3.3GHz	Core i3-12100 (AlderLake-S) / 60W / FCLGA1700	37 °C	38 °C	Pass
12	Intel / 2.1GHz	Core i3-12100TE (AlderLake-S) / 35W / FCLGA1700	29 °C	31 °C	Pass
13	Intel / 3.0GHz	Pentium Gold G7400TE (AlderLake-S) / 35W / FCLGA1700	30 °C	32 °C	Pass
14	Intel / 3.0GHz	Celeron G6900E (AlderLake-S) / 46W / FCLGA1700	31 °C	32 °C	Pass
15	Intel / 3.0GHz	Core i9-13900K (RaptorLake) / 125W / LGA1700	43 °C	47 °C	Pass
16	Intel / 1.8GHz	Core i9-13900E (RaptorLake) / 65W / LGA1700	30 °C	38 °C	Pass
17	Intel / 1.0GHz	Core i9-13900TE (RaptorLake) / 35W / LGA1700	37 °C	40 °C	Pass
18	Intel / 3.4GHz	Core i7-13700K (RaptorLake) / 125W / LGA1700	31 °C	33 °C	Pass
19	Intel / 1.9GHz	Core i7-13700E (RaptorLake) / 65W / LGA1700	36 °C	38 °C	Pass
20	Intel / 1.1GHz	Core i7-13700TE (RaptorLake) / 35W / LGA1700	30 °C	38 °C	Pass
21	Intel / 3.5GHz	Core i5-13600K (RaptorLake) / 125W / LGA1700	34 °C	36 °C	Pass
22	Intel / 2.4GHz	Core i5-13400E (RaptorLake) / 65W / LGA1700	35 °C	37 °C	Pass
23	Intel / 1.3GHz	Core i5-13500TE (RaptorLake) / 35W / LGA1700	37 °C	40 °C	Pass
24	Intel / 2.5GHz	Core i5-13500E (RaptorLake) / 35W / LGA1700	26 °C	31 °C	Pass
25	Intel / 1.6GHz	Core i5-13500T (RaptorLake) / 125W / LGA1700	27 °C	31 °C	Pass
26	Intel / 2.4GHz	Core i5-13400E (RaptorLake) / 65W / LGA1700	31 °C	33 °C	Pass
27	Intel / 3.3GHz	Core i3-13100E (RaptorLake) / 65W / LGA1700	35 °C	40 °C	Pass
28	Intel / 2.4GHz	Core i3-13100TE (RaptorLake) / 35W / LGA1700	30 °C	35 °C	Pass
29	Intel / 2.4GHz	Core i3-13100T (RaptorLake) / 35W / LGA1700	29 °C	31 °C	Pass

1.1.2 Application Test:

No.	Software	Test Keypoint	Result
1	CPU-Z Ver.2.03	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 drivers 3. Run PassMark Performance Test 10.2 Build1012 - 1 time 4. Run 3DMark for Windows Ver.2.15.7088 BenchMark - 3 times 5. Run PassMark BurnInTest Professional 10.2 Build1004 - 5 minutes 6. Run Memtest86 Stress test 12 hours 7. S3(Sleep)/S4(Hibernate)/S5(Shutdown) test - 3 times
Test Criteria	It should be correct for each test step

Test Environment	
DUT:	DUT#1
M/B:	RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100054]
M/B BIOS:	B237.14A (AMI)
CPU:	Intel Core i7-13700E 1.9GHz
DDR5:	Transcend (TS2GLA64V8E [1Rx8]) / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800) / 16GB *4
SSD:	innodisk /DGS25-A28D81SW1QC /128GB (using SATA1(R5))
Display:	Onboard DP
DVD-ROM:	ASUS /SDRW-08U7M-U/BLK/G/AS /90DD01X0-M2T000
Power:	FSP-1200-50AAG 1200W
Monitor:	ASUS /PA238Q 23" (1920*1080*60p)
O.S.:	Windows 11 IOT Enterprise (x64) Build 22621.1485 (22H2) (UEFI)
DUT:	DUT#2
M/B:	RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100186]
M/B BIOS:	B237.14B (AMI)
CPU:	Intel Core i5-13600K 3.5GHz
DDR5:	Apacer (D12.31492S.001) / SEC (K4RAH165VB-BCQK) / PC5-38400 (DDR5-4800) / 8GB *4
SSD:	Transcend /TS128GSSD420K /128GB (using SATA0(R4))
Display:	Onboard DP
DVD-ROM:	ASUS /SDRW-08U7M-U/BLK/G/AS /90DD01X0-M2T000
Power:	FSP-1200-50AAG 1200W
Monitor:	ASUS /PA238Q 23" (1920*1080*60p)
O.S.:	Windows 11 IOT Enterprise (x64) Build 22621.1485 (22H2) (UEFI)

1.2.1 DDR5:

No.	Function	Result
1	DDR5 DIMM Slot Examine	Pass
2	Single Channel mode	Pass
3	Dual channel mode	Pass
4	Warning beep sound when no memory install	Pass
5	DIMM Slot1	Pass
6	DIMM Slot2	Pass
7	DIMM Slot3	Pass
8	DIMM Slot4	Pass
9	Memory Frequency Check	Pass
10	Memory Capacity Check	Pass

1.2.2 Application Test:

No.	Software	Test Keypoint	Test Summary	Result
1	MemTest86 Ver.10.5 Pro	1. Burn-In test 12 hours.	DUT#1 MB: RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100054] O.S.:UEFI Shell	Pass
			DUT#2 MB: RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100186] O.S.:UEFI Shell	Pass

1.2.3 DDR5 Approved List:

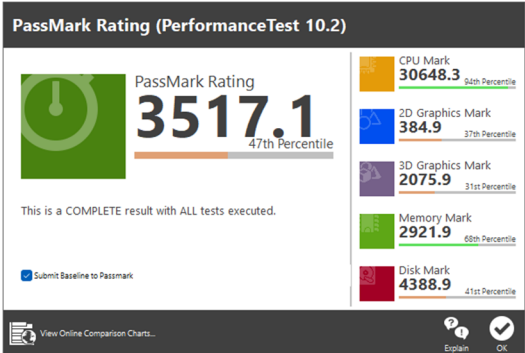
No.	Brand	Chip	Size	Type	Chip Model No.	Vendor Part No.	Result
1	Transcend	SEC	32GB	PC5-38400 (DDR5-4800)	K4RAH086VB-BCQK	TS4GLA64V8E [2Rx8]	Pass
2	Transcend	SEC	32GB	PC5-38400 (DDR5-4800)/ECC	K4RAH086VB-BCQK	TS4GLA72V8E 1.1V [2Rx8]	Pass
3	Apacer	SkHynix	16GB	PC5-44800 (DDR5-5600)	H5CG48AGBDX018	D13.35285H.002	Pass
4	TEAM	SkHynix	16GB	PC5-44800 (DDR5-5600)	H5CG48AGBDX018	TE16GFLXV2MH 1.1V	Pass
5	Transcend	SEC	16GB	PC5-38400 (DDR5-4800)	K4RAH086VB-BCQK	TS2GLA64V8E [1Rx8]	Pass
6	Transcend	SEC	16GB	PC5-38400 (DDR5-4800)/ECC	K4RAH086VB-BCQK	TS2GLA72V8E 1.1V [1Rx8]	Pass
7	Apacer	SkHynix	8GB	PC5-44800 (DDR5-5600)	H5CG46AGBDX017	D13.35492H.002	Pass
8	Kingston	Micron	8GB	PC5-38400 (DDR5-4800)	D8BNK-2DA45	CBD48U40BS6MA-8 [1Rx16]	Pass
9	Transcend	SEC	8GB	PC5-38400 (DDR5-4800)	K4RAH165VB-BCQK	TS1GLA64V8G [1Rx16]	Pass
10	Apacer	SEC	8GB	PC5-38400 (DDR5-4800)	K4RAH165VB-BCQK	D12.31492S.001	Pass

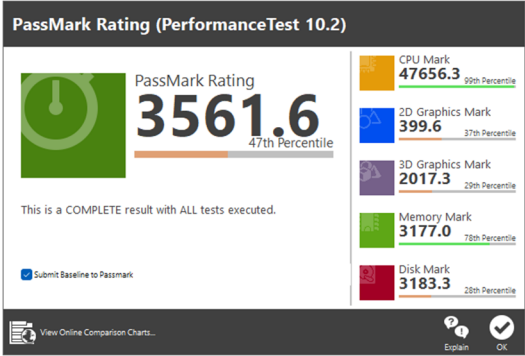
1.2.4 Memory Compatibility Test:

No.	DDR5 Memory	Test Summary	Result
1	Transcend (TS4GLA64V8E) [2Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800) / 32GB *4	DUT: DUT#1 M/B: RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] M/B BIOS: B237.14B (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i7-13700K @3.40GHz (Q1EK) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass
2	Transcend (TS4GLA72V8E 1.1V) [2Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800)/ECC / 32GB *4	DUT: DUT#2 M/B: RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] M/B BIOS: B237.14A (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.Install OS 2.Power Management Function Test 3.Memory Frequency Check 4.Memory Capacity Check	Pass
3	Apacer (D13.35285H.002) / SkHynix (H5CG48AGBDX018) / PC5-44800 (DDR5-5600) / 16GB *2	DUT: DUT#1 M/B: RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] M/B BIOS: B237.14B (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i7-13700K @3.40GHz (Q1EK) DIMM Slot: DIMM-1/3 Dual Channel Test Summary: 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass
4	TEAM (TE16GFLXV2MH 1.1V) / SkHynix (H5CG48AGBDX018) / PC5-44800 (DDR5-5600) / 16GB *2	DUT: DUT#2 M/B: RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] M/B BIOS: B237.14A (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM Slot: DIMM-2/4 Dual Channel Test Summary: 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass

5	Transcend (TS2GLA64V8E) [1Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800) / 16GB *3	DUT: M/B: M/B BIOS: M/B Driver: CPU: DIMM Slot: Test Summary:	DUT#1 RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] B237.14B (AMI) RPS630 Demo driver_20230718 Intel Core i7-13700K @3.40GHz (Q1EK) DIMM-1/2/3 Dual Channel 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass
6	Transcend (TS2GLA72V8E 1.1V) [1Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800)/ECC / 16GB *3	DUT: M/B: M/B BIOS: M/B Driver: CPU: DIMM Slot: Test Summary:	DUT#2 RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] B237.14A (AMI) RPS630 Demo driver_20230718 Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM-2/3/4 Dual Channel 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass
7	Apacer (D13.35492H.002) / SkHynix (H5CG46AGBDX017) / PC5-44800 (DDR5-5600) / 8GB *1	DUT: M/B: M/B BIOS: M/B Driver: CPU: DIMM Slot: Test Summary:	DUT#1 RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] B237.14B (AMI) RPS630 Demo driver_20230718 Intel Core i7-13700K @3.40GHz (Q1EK) DIMM-1 Single Channel 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass
8	Kingston (CBD48U40BS6MA-8) [1Rx16] / Micron (D8BNK-2DA45) / PC5-38400 (DDR5-4800) / 8GB *1	DUT: M/B: M/B BIOS: M/B Driver: CPU: DIMM Slot: Test Summary:	DUT#2 RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] B237.14A (AMI) RPS630 Demo driver_20230718 Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM-3 Single Channel 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass
9	Transcend (TS1GLA64V8G) [1Rx16] / SEC (K4RAH165VB-BCQK) / PC5-38400 (DDR5-4800) / 8GB *4	DUT: M/B: M/B BIOS: M/B Driver: CPU: DIMM Slot: Test Summary:	DUT#1 RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] B237.14B (AMI) RPS630 Demo driver_20230718 Intel Core i7-13700K @3.40GHz (Q1EK) DIMM-1/2/3/4 Dual Channel 1.Install OS 2.Power Management Function Test 3.Memory Frequency Check 4.Memory Capacity Check	Pass
10	Apacer (D12.31492S.001) / SEC (K4RAH165VB-BCQK) / PC5-38400 (DDR5-4800) / 8GB *4	DUT: M/B: M/B BIOS: M/B Driver: CPU: DIMM Slot: Test Summary:	DUT#2 RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] B237.14A (AMI) RPS630 Demo driver_20230718 Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM-1/2/3/4 Dual Channel 1.Power Management Function Test 2.Memory Frequency Check 3.Memory Capacity Check	Pass

1.2.5 DDR5 Test Procedures:

No.	DDR5 Memory	Test Summary		Result
1	Transcend (TS4GLA64V8E) [2Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800) / 32GB *4	DUT: M/B: M/B BIOS: M/B Driver: CPU:	DUT#1 RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] B237.14B (AMI) RPS630 Demo driver_20230718 Intel Core i7-13700K @3.40GHz (Q1EK)	Pass
2	Transcend (TS4GLA72V8E 1.1V) [2Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800)/ECC / 32GB *4	DUT: M/B: M/B BIOS: M/B Driver: CPU:	DUT#2 RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] B237.14A (AMI) RPS630 Demo driver_20230718 Intel Core i9-13900TE @1.0Ghz (Q1JA)	Pass
		DIMM Slot: Test Summary:	DIMM-1/2/3/4 Dual Channel 1.PassMark PerformanceTest 10.2 Build 1012	
			 <p>2.3DMark for Windows ver.2.15.7088 17 132 IN Cloud Gate (V1.1) 64 211 IN Ice Storm Extreme (V1.2) 10 034 IN Sky Diver (V1.0) 2 826 IN Fire Strike (V1.1)</p>	
3	Apacer (D13.35285H.002) / SkHynix (H5CG48AGBDX018) / PC5-44800 (DDR5-5600) / 16GB *2	DUT: M/B: M/B BIOS: M/B Driver: CPU:	DUT#1 RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] B237.14B (AMI) RPS630 Demo driver_20230718 Intel Core i7-13700K @3.40GHz (Q1EK)	Pass
4	TEAM (TE16GFLXV2MH 1.1V) / SkHynix (H5CG48AGBDX018) / PC5-44800 (DDR5-5600) / 16GB *2	DUT: M/B: M/B BIOS: M/B Driver: CPU:	DUT#2 RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] B237.14A (AMI) RPS630 Demo driver_20230718 Intel Core i9-13900TE @1.0Ghz (Q1JA)	Pass
5	Transcend (TS2GLA64V8E) [1Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800) / 16GB *3	DUT: M/B: M/B BIOS: M/B Driver: CPU:	DUT#1 RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] B237.14B (AMI) RPS630 Demo driver_20230718 Intel Core i7-13700K @3.40GHz (Q1EK)	Pass
		DIMM Slot: Test Summary:	DIMM-1/2/3/4 Dual Channel 1.BurnInTest 10.2 Build1004 - 5 minutes:pass 2.S3/S4/S5-3times:Pass	

6	Transcend (TS2GLA72V8E 1.1V) [1Rx8] / SEC (K4RAH086VB-BCQK) / PC5-38400 (DDR5-4800)/ECC / 16GB *3	DUT: DUT#2 M/B: RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] M/B BIOS: B237.14A (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.BurnInTest 10.2 Build1004 - 5 minutes:pass 2.S3/S4/S5-3times:Pass	Pass
7	Apacer (D13.35492H.002) / SkHynix (H5CG46AGBDX017) / PC5-44800 (DDR5-5600) / 8GB *1	DUT: DUT#1 M/B: RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] M/B BIOS: B237.14B (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i7-13700K @3.40GHz (Q1EK) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.BurnInTest 10.2 Build1004 - 5 minutes:pass 2.S3/S4/S5-3times:Pass	Pass
8	Kingston (CBD48U40BS6MA-8) [1Rx16] / Micron (D8BNK-2DA45) / PC5-38400 (DDR5-4800) / 8GB *1	DUT: DUT#2 M/B: RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] M/B BIOS: B237.14A (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.BurnInTest 10.2 Build1004 - 5 minutes:pass 2.S3/S4/S5-3times:Pass	Pass
9	Transcend (TS1GLA64V8G) [1Rx16] / SEC (K4RAH165VB-BCQK) / PC5-38400 (DDR5-4800) / 8GB *4	DUT: DUT#1 M/B: RPS630-Q670E Rev.2 (021) [774-RPS6301-000G/WSN060100294] M/B BIOS: B237.14B (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i7-13700K @3.40GHz (Q1EK) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.PassMark PerformanceTest 10.2 Build 1012  2.3DMark for Windows ver.2.15.7088 19 719 IN Cloud Gate (V1.1) 71 181 IN Ice Storm Extreme (V1.2) 10 267 IN Sky Diver (V1.0) 2 819 IN Fire Strike (V1.1) 3.BurnInTest 10.2 Build1004 - 5 minutes:pass 4.S3/S4/S5-3times:Pass	Pass
10	Apacer (D12.31492S.001) / SEC (K4RAH165VB-BCQK) / PC5-38400 (DDR5-4800) / 8GB *4	DUT: DUT#2 M/B: RPS630-R680E Rev.2 (021) [774-RPS6301-100G/WSN050100037] M/B BIOS: B237.14A (AMI) M/B Driver: RPS630 Demo driver_20230718 CPU: Intel Core i9-13900TE @1.0Ghz (Q1JA) DIMM Slot: DIMM-1/2/3/4 Dual Channel Test Summary: 1.BurnInTest 10.2 Build1004 - 5 minutes:pass 2.S3/S4/S5-3times:Pass	Pass