

ROC286 SERIES

PERFECTRON SYSTEM

RELIABILITY/ENVIRONMENT TEST PLAN

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Version History			
Document Release	Date	Change Item	Remarks
V1.0	11/25/2019	Preliminary release	

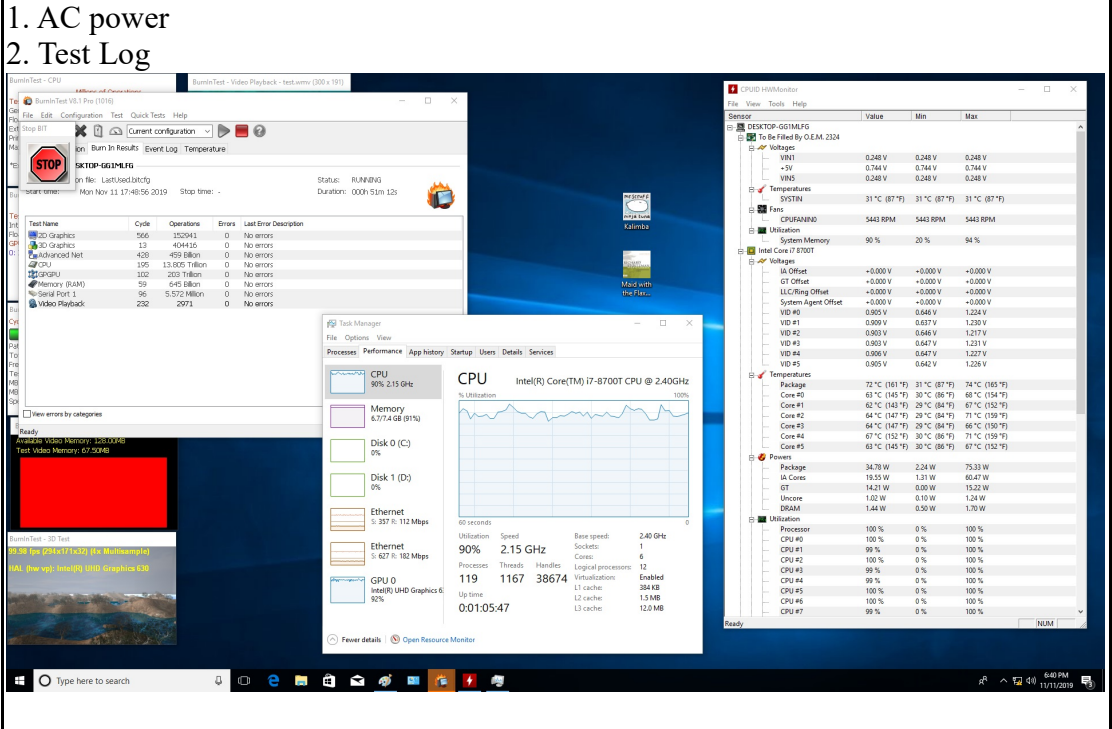
System Configuration	
Motherboard	MITAC PH14FEI
CPU	Intel® Core™ i7-8700T Processor 2.4 GHz
PCH	Intel Q370
Memory	Innodisk 8GB SOD DDR4 2133
SATA port1	InnDisk 3MG2 SSD 64G
SATA port2	Apacer SSD 256G
LAN1	Intel®i210 GbE LAN
LAN2	Intel® i219 GbE LAN

System Test Items Configuration _ Test Results Definition				
No.	Test Item	Qty	System Sample	
			No.1	Remark
1.	AC Input Voltage Fuctuation Test	1	PASS	
2.	IO Function Test	1	PASS	
3.	Operation System & Drivers Test	1	PASS	
4.	Power Consumption	1	PASS	
5.	I/O Integrated Stress Test	1	PASS	
6.	Temperature Alternate Operation Test	1	PASS	
7.	High Temperature Operating Test	1	PASS	
8.	High Temperature and Humidity Operating Test	1	PASS	
9.	Low Temperature Operation Test	1	PASS	
10.	High Temperature Power ON/OFF Test	1	PASS	
11	Low Temperature Power ON/OFF Test	1	PASS	
12	Thermal Measurement	1	PASS	

System Reliability/Environment Test table of Contents

1. AC Input Voltage Fluctuation Test
2. IO Function Test
3. Operation System & Drivers Test
4. Power Consumption
5. I/O Integrated Stress Test
6. Temperature Alternate operation Test
7. High Temperature Operating Test
8. High Temperature and Humidity Operating Test
9. Low Temperature Long Thermal Operation Test
10. High Temperature Power ON/OFF Test
11. Low Temperature Power ON/OFF Test
12. Thermal Measurement

1.AC Input Voltage Fluctuation Test

Test Purpose	To evaluate the influence on the EUT under voltage fluctuation from the AC power Source	Test Result	PASS																																													
Test Equipment	Passmark USB3.0 Plug																																															
Quantity Tested	Minimum 1 Set																																															
Test Condition	<p>Test Software: Passmark BURN-IN Test Program under Microsoft Windows 10</p> <p>Test Procedure: 1. Adjust AC power source to upper limit 2. Turn on the system and perform the function test with 100% loading for a period of 1 hour at least 3. Check the functions of the system and record it 4. Change AC power source to lower limit 5. Repeat steps 2~3</p>																																															
Test Criteria	All units must be pass 1 hour Burn-In test program, without any error occur. The EUT must be no damage or safety problem occurred.																																															
Test Log / Photo	 <p>The screenshot displays the BurnInTest v8.1 Pro (1016) interface. The main window shows a 'STOP' button and 'Burn In Results' for 'BURN-IN TEST'. The test name is 'BURN-IN TEST' and it is currently 'RUNNING'. The duration is 00:01:55:12. The test results table shows the following data:</p> <table border="1"> <thead> <tr> <th>Test Name</th> <th>Cycle</th> <th>Operations</th> <th>Errors</th> <th>Last Error Description</th> </tr> </thead> <tbody> <tr> <td>3D Graphics</td> <td>566</td> <td>352941</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>2D Graphics</td> <td>13</td> <td>404416</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>MultiThreaded Net</td> <td>428</td> <td>459 Billion</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>CPU</td> <td>195</td> <td>13.805 Trillion</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>GPU</td> <td>102</td> <td>300 Trillion</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>Memory (RAM)</td> <td>59</td> <td>645 Billion</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>% Serial Port 1</td> <td>96</td> <td>5.572 Million</td> <td>0</td> <td>No errors</td> </tr> <tr> <td>Video Playback</td> <td>202</td> <td>2971</td> <td>0</td> <td>No errors</td> </tr> </tbody> </table> <p>Additional windows show system performance: Task Manager (CPU 96% 2.15 GHz), CPUID HWMonitor (CPU 96% 2.15 GHz), and Windows System Information (CPU 90% 2.15 GHz). The CPUID HWMonitor window shows various system metrics including voltages, temperatures, and power consumption.</p>			Test Name	Cycle	Operations	Errors	Last Error Description	3D Graphics	566	352941	0	No errors	2D Graphics	13	404416	0	No errors	MultiThreaded Net	428	459 Billion	0	No errors	CPU	195	13.805 Trillion	0	No errors	GPU	102	300 Trillion	0	No errors	Memory (RAM)	59	645 Billion	0	No errors	% Serial Port 1	96	5.572 Million	0	No errors	Video Playback	202	2971	0	No errors
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Video Playback	202	2971	0	No errors																																												

2. IO Function Test

Item		Criteria	Result	Note
SATA Port 1		SATAIII Onboard SSD device Run PassMark 20 minutes with all disks	Pass	
SATA Port 2		SATAIII Onboard SSD device Run PassMark 20 minutes with all disks	Pass	
USB1	can use any USB device		Pass	
	Loopback Plugs for USB 2.0 Trouble shooting and Testing		Pass	
USB2	can use any USB device		Pass	
	Loopback Plugs for USB 2.0 Trouble shooting and Testing		Pass	
USB1	can use any USB device		Pass	
	Loopback Plugs for USB 3.1 Trouble shooting and Testing		Pass	
USB2	can use any USB device		Pass	
	Loopback Plugs for USB 3.1 Trouble shooting and Testing		Pass	
USB3	can use any USB device		Pass	
	Loopback Plugs for USB 3.1 Trouble shooting and Testing		Pass	
USB4	can use any USB device		Pass	
	Loopback Plugs for USB 3.1 Trouble shooting and Testing		Pass	
COM1		Check work well	Pass	
COM2		Check work well	Pass	
Display output	DP1	Check work well	Pass	
	DP2		Pass	
	HDMI		Pass	
LAN port1		Intel i210 LAN Function Test	Pass	
LAN port2		Intel i219 LAN Function Test	Pass	
Power SWITCH		Check work well	Pass	
LINE-OUT/ MIC in		Check work well	Pass	
Power supply on/off		Check work well	Pass	
HDD slot 1/2		Check work well	Pass	
Power Led		Check work well	Pass	
HDD Led		Check work well	Pass	
AC in 110V		Check work well	Pass	

3. Operation System & Drivers Test

Publisher	Package & Version	DUT-1	Note
Microsoft OS	DOS98	Pass	
Microsoft OS	Microsoft Windows 10 64Bit	Pass	

Driver and Application software	Version / Details	DUT-1	Note
INF	10.1.1.42	Pass	
VGA	igfx_win10_100.7000	Pass	
Audio	6.0.1.7541	Pass	
LAN	12.13.17.7	Pass	
ME	ime12	Pass	

Display Function Test

DP Test							
Test Method	1. Use 800x600 1024x768 1280x720(or highest solution) and 16&32 bit to test display correctly. 2. Check display with test pattern 3. check display can nothas any cross-color, water wave, and ghost.						
resolution	800x600, 60Hz	800x600, 75Hz	1024x768, 60Hz	1024x768, 75Hz	1280x720, 60Hz	1280x720, 75Hz	1920x1080, 60Hz
DP1	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Resolution test			
Monitor Model	ASUS 27" PB278Q , Maximum resolution : 2560 x 1440 ASUS 23" PA238 , Maximum resolution : 1920 x 1080		
Resolution	DP1	DP2	DP3
1024 x 768	✓	✓	✓
1280 x 1024	✓	✓	✓
1366 x 768	✓	✓	✓
1920 x 1080	✓	✓	✓
1920 x1200	✓	✓	✓
2560 x 1440	✓	✓	✓

4. Power Consumption

Test Purpose	To measure power consumption of the EUT during operation/suspend mode/power off mode
Quantity Tested	Minimum 1 Set
Test Procedure	<ol style="list-style-type: none"> 1. Turn on the power source and set the output voltage frequency following to the test specification 2. Connect the Power Meter between EUT and power source 3. Connect maximum quantity of external devices on all I/O (ex. USB, COM, etc...), and have the full loading status on each device 4. Turn on the EUT and set the EUT on each consumption mode 5. Measure and record the power consumption value shown on Power Meter as Watt
Test Criteria	<ol style="list-style-type: none"> 1. The Max. power consumption value must not exceed the output ability of used power supply, the derating while in high temperature environment must also to be considered 2. By following the EuP LOT 6 requirement, the power consumption of the standby mode is limited 1.0 Watt (for w/o WOL model) and 1.7Watt (for w/ WOL model)

Item	Device Information (Full load)
CPU	Intel® Core™ i7-8700T Processor 2.4 GHz
PCH	Intel Q370
Memory	Innodisk 8GB SOD DDR4 2133
SATA port 1	InnDisk 3MG2 SSD 64G
SATA port 2	Apacer SSD 256G
DP	Dell U2312
LAN1 ~ LAN2	LAN (Loopback)
USB1~USB6	1A 水泥電阻
COM	Com port loopback
Operating System	Windows 10 Professional 64-bit
Test Equipment	FSP060-DBAE1、PROVA 11_AC/DC mA clamp meter、Agilent U1252B
Test Software	Burnin test v8、IntelBurnTest 1.9 XTU CPU STRESS,FU MARK

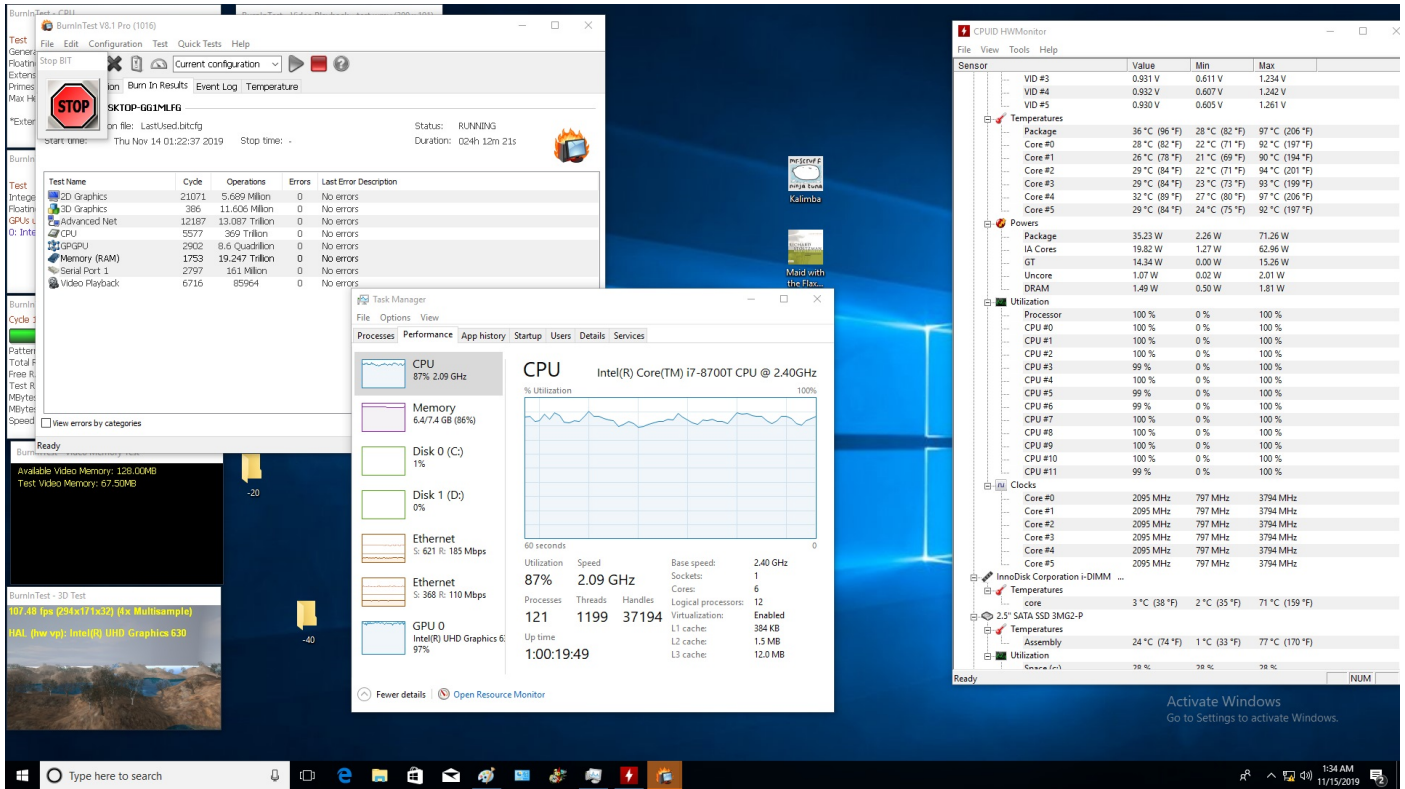
Power Measure (Full loading)				
Model	Test Voltage	Voltage	Current	Power consumption
I7-8700T	110V AC	24.15V DC	5.52A	133.3W

Power Measure (Heavy load)							
Item	Voltage/ Condition	S3	S4	S5	Current	Power consumption	Note
Core I7-8700T Processor	24.15 V	0.08 A	0.09 A	0.08 A	4.6 A	111 W	

5. I/O Integrated Stress Test

System configuration				
CPU	Intel® Core™ i7-8700T Processor 2.4 GHz			
RAM1	Innodisk 8GB SOD DDR4 2133			
O.S.	Windows 10 SP1 Ultimate Edition 64bit			
Temperature	Room temperature			
Testing Utility and preference				
Test Software	Test Preference	Test Time(Hours)	Result	Note
PASSMARK BrunIn test (8.1)	Reference below setting	12	PASS	
Test item	Loading (%)	Test preference		
CPU	100	Default preference: Select CPU test types: General purpose instructions, Floating Point Unit instructions, Prime number test Extension instructions: MMX, 3DNow!, SSE, SSE2 CPU affinity: Normal task scheduling		
RAM	100	Default preference: RAM test mode and test pattern: Standard Test: Default(Cyclic)		
Com Port(s)	100	Default preference: Detect and loopback test Send and receive timeout: 3500 Port speed: 115200 Kbits/Sec		
USB	100	Default preference: USB3.0 device loopback		
Video	100	Default preference: Select video playback files: C:\...\Clock.avi		
2D Graphics	100	Default preference: 2D Graphics Test: All available Video Memory		
3D Graphics	100	Default preference: Test window setup (Multiple monitor of testing): Number of: 1(default) Window placement: Auto placement on primary monitor (default) Window size: 300x200 pixels (default)		
LAN port 1	100	LAN port Loopback		
LAN port 2	100	LAN port Loopback		

Test photo



BurnInTest V8.1 Pro (1016)

Test Name: SKTOP-GG1MLFG
 on file: LastUsed.bitcfg
 Status: RUNNING
 Start time: Thu Nov 14 01:22:37 2019 Stop time: -
 Duration: 024h 12m 21s

Test Name	Cycle	Operations	Errors	Last Error Description
Integri	21071	5,699 Million	0	No errors
Floati	386	11,636 Million	0	No errors
GPU V	12187	13,087 Trillion	0	No errors
0: Inte	5577	369 Trillion	0	No errors
GPU	2902	8.6 Quadrillion	0	No errors
Memory (RAM)	1753	19,247 Trillion	0	No errors
Serial Port 1	2797	351 Million	0	No errors
Video Playback	6716	85964	0	No errors

Task Manager - Performance - CPU

Intel(R) Core(TM) i7-8700T CPU @ 2.40GHz

87% 2.09 GHz

64/74 GB (86%)

1% 0%

5: 621 R: 185 Mbps

5: 368 R: 110 Mbps

97%

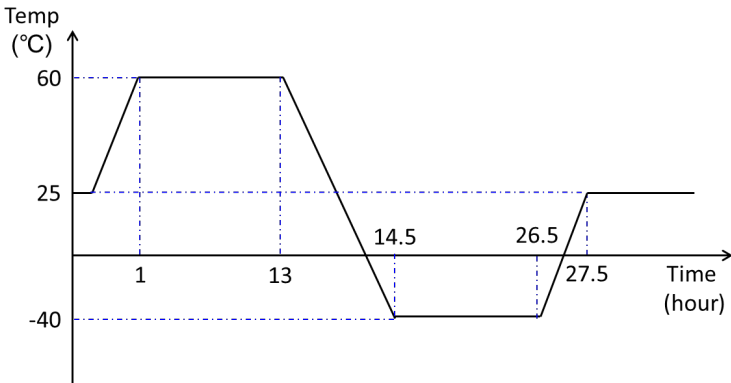
Utilization: 87% Speed: 2.09 GHz
 Processes: 121 Threads: 1199 Handles: 37194
 Up time: 1:00:19:49

Base speed: 2.40 GHz
 Sockets: 1
 Cores: 6
 Logical processors: 12
 Virtualization: Enabled
 L1 cache: 384 KB
 L2 cache: 1.5 MB
 L3 cache: 12.0 MB

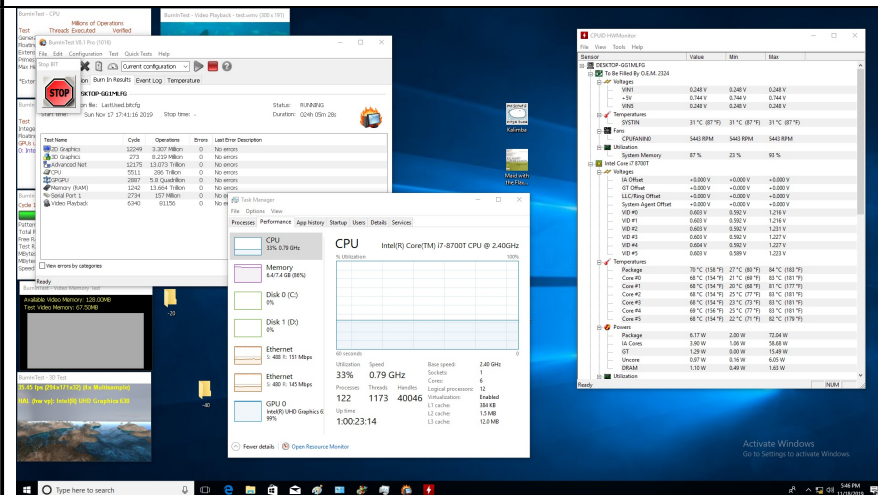
CPUID HWMonitor

Sensor	Value	Min	Max
VID #3	0.931 V	0.611 V	1.234 V
VID #4	0.932 V	0.607 V	1.242 V
VID #5	0.930 V	0.605 V	1.261 V
Temperatures			
Package	36 °C (86 °F)	28 °C (82 °F)	87 °C (206 °F)
Core #0	28 °C (82 °F)	22 °C (71 °F)	92 °C (197 °F)
Core #1	26 °C (78 °F)	21 °C (69 °F)	90 °C (194 °F)
Core #2	29 °C (84 °F)	22 °C (71 °F)	94 °C (201 °F)
Core #3	29 °C (84 °F)	23 °C (73 °F)	93 °C (199 °F)
Core #4	32 °C (89 °F)	27 °C (80 °F)	97 °C (206 °F)
Core #5	29 °C (84 °F)	24 °C (75 °F)	92 °C (197 °F)
Powers			
Package	35.23 W	2.26 W	71.26 W
IA Cores	19.82 W	1.27 W	62.96 W
GT	14.34 W	0.00 W	15.26 W
Uncore	1.07 W	0.02 W	2.01 W
DRAM	1.49 W	0.50 W	1.81 W
Utilization			
Processor	100 %	0 %	100 %
CPU #0	100 %	0 %	100 %
CPU #1	100 %	0 %	100 %
CPU #2	100 %	0 %	100 %
CPU #3	99 %	0 %	100 %
CPU #4	100 %	0 %	100 %
CPU #5	99 %	0 %	100 %
CPU #6	99 %	0 %	100 %
CPU #7	100 %	0 %	100 %
CPU #8	100 %	0 %	100 %
CPU #9	100 %	0 %	100 %
CPU #10	100 %	0 %	100 %
CPU #11	99 %	0 %	100 %
Clocks			
Core #0	2095 MHz	797 MHz	3794 MHz
Core #1	2095 MHz	797 MHz	3794 MHz
Core #2	2095 MHz	797 MHz	3794 MHz
Core #3	2095 MHz	797 MHz	3794 MHz
Core #4	2095 MHz	797 MHz	3794 MHz
Core #5	2095 MHz	797 MHz	3794 MHz
ImmoDisk Corporation i-DIMM ...			
core	3 °C (38 °F)	2 °C (35 °F)	71 °C (159 °F)
2.5" SATA SSD 3MG2-P			
Temperatures			
Assembly	24 °C (74 °F)	1 °C (33 °F)	77 °C (170 °F)
Utilization			
GPU (V)	39 %	39 %	39 %

6. Temperature Alternate Operation Test

Device Model	ROC286BB	Test Result	PASS
<p style="text-align: center;">Diagram of curves</p> 		Test Temperature	Test Time
		High	60°C
		Low	12h
		Test Standard	Reference IEC60068-2
		Test Software	Burnin test v8.1

Test picture



Test procedure

1. This operation test is under temperature range $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$
2. Standards is referred to IEC60068-2-14 Change of temperature
3. Have the subject inside the chamber and set up related cables.
4. Set up the temperature
5. If it's OK then rise up temperature to 60°C and run Burnin test v6.0 for stress test
6. Keep unpowered subject for 12 hours on -40°C
7. Power on test and Perform minimum 3 power on/off cycles (to be sure that subject can reboot)
8. Observe the temperature and the subject in the test execution
9. Check the damage on the subject by visual and do function test

Note:

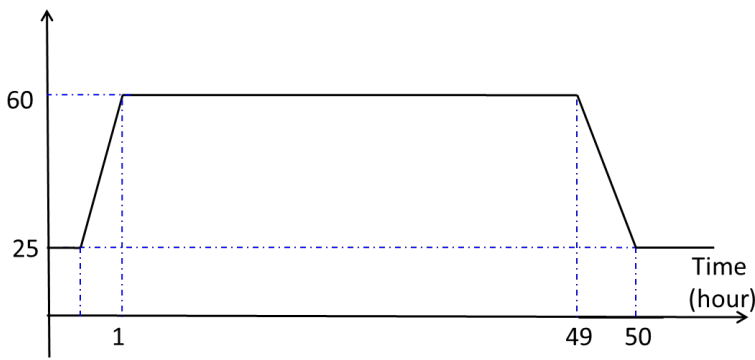
Electronic function check:

1. All system functions must be checked with appropriate testing programs and should pass the inspection.
2. Running Windows for OS, the system should not have degradation in its performance.

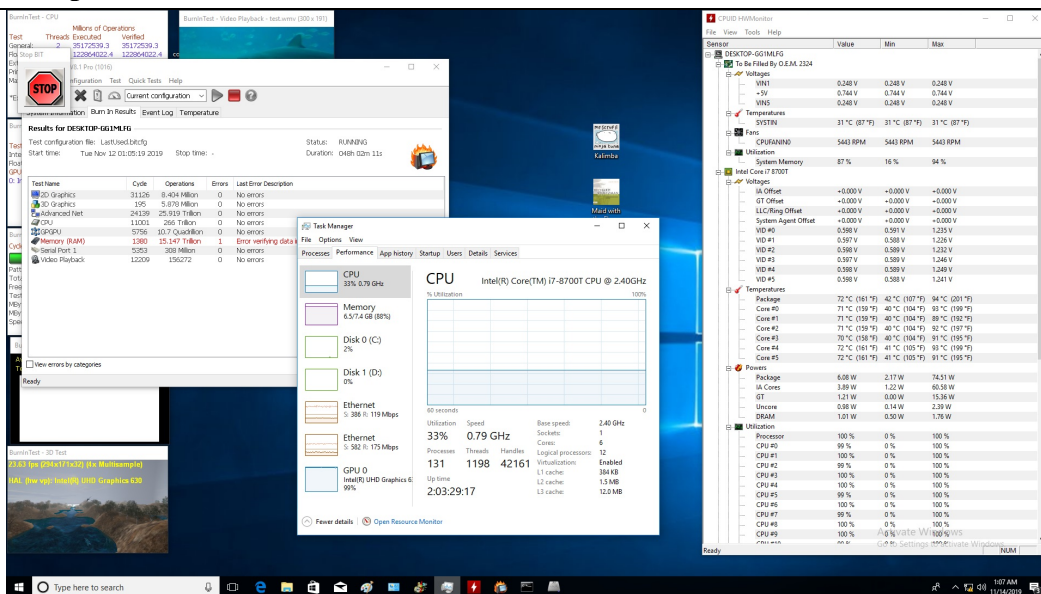
Mechanical function check:

1. The connectors and components should work properly without any interference.
2. All screws should be tightened up appropriately.

7. High Temperature Operating Test

Device Model	ROC286BB	Test Result	PASS	
		Test Temperature	Test Time	
		High	60°C	48Hours
		Test Standard	Reference IEC-60068-2	
Test Software	Burnin test v8.1			

Test picture



Test procedure

10. This operation test is under temperature range 25°C ~ 60°C
11. Standards is referred to IEC60068-2-14 Change of temperature
12. Have the subject inside the chamber and set up related cables.
13. Set up the temperature
14. If it's OK then rise up temperature to 60°C and run Burnin test v6.0 for stress test
15. Power on test and Perform minimum 3 power on/off cycles (to be sure that subject can reboot)
16. Observe the temperature and the subject in the test execution
17. Check the damage on the subject by visual and do function test

Note:

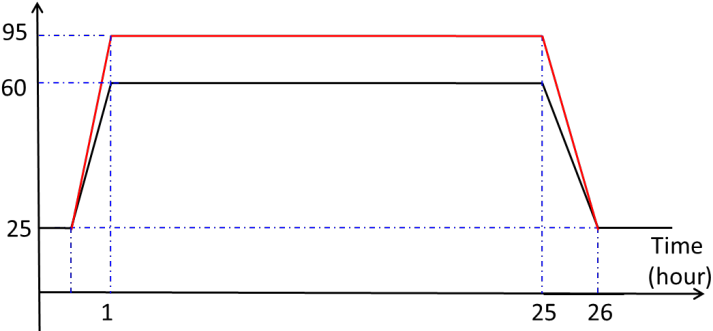
Electronic function check:

1. All system functions must be checked with appropriate testing programs and should pass the inspection.
2. Running Windows for OS, the system should not have degradation in its performance.

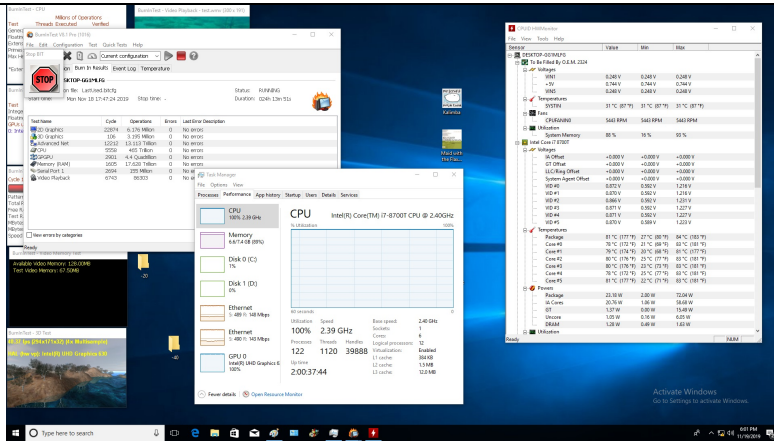
Mechanical function check:

1. The connectors and components should work properly without any interference.
2. All screws should be tightened up appropriately.

8. High Temperature and Humidity Operating Test

Device Model	ROC286BB		Test Result	PASS
Diagram of curves 			Test Temperature	
			High	60°C
Humidity	95%			
Test Standard			Reference IEC60068-2	
Test Software			Burnin test v8.1	

Test picture



Test procedure

18. This operation test is under temperature range 25°C ~ 60°C
19. Standards is referred to IEC60068-2-3 Change of temperature
20. Have the subject inside the chamber and set up related cables.
21. Set up the temperature
22. If it's OK then rise up temperature to 60°C and run Burnin test v6.0 for stress test
23. Power on test and Perform minimum 3 power on/off cycles (to be sure that subject can reboot)
24. Observe the temperature and the subject in the test execution
25. Check the damage on the subject by visual and do function test
26. Humidity: 95%

Note:

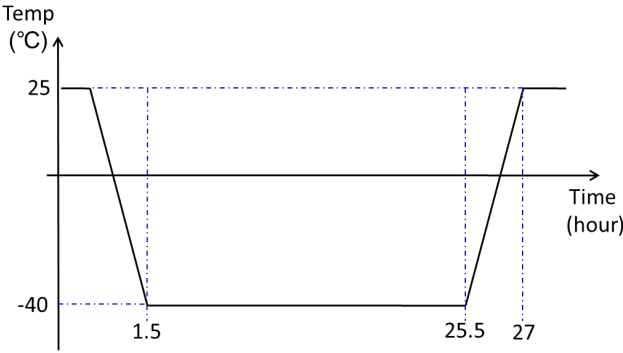
Electronic function check:

1. All system functions must be checked with appropriate testing programs and should pass the inspection.
2. Running Windows for OS, the system should not have degradation in its performance.

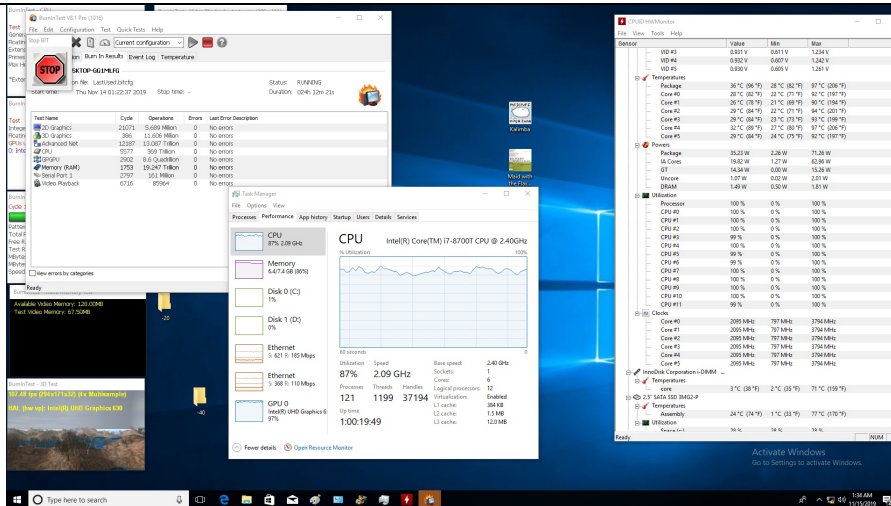
Mechanical function check:

1. The connectors and components should work properly without any interference.
2. All screws should be tightened up appropriately.

9. Low Temperature Operation Test

Device Model	ROC286BB	Test Result	PASS
<p style="text-align: center;">Diagram of curves</p> 		Test Temperature	Test Time
		Low	-40°C
		Test Standard	Reference IEC60068-2
		Test Software	Burnin test v8.1

Test picture



Test procedure

27. This operation test is under temperature range 25°C ~ -40°C
28. Standards is referred to IEC60068-2-1 Change of temperature
29. Have the subject inside the chamber and set up related cables.
30. Set up the temperature
31. If it's OK then rise up temperature to -40°C and run Burnin test v6.0 for stress test
32. Power on test and Perform minimum 3 power on/off cycles (to be sure that subject can reboot)
33. Observe the temperature and the subject in the test execution
34. Check the damage on the subject by visual and do function test

Note:

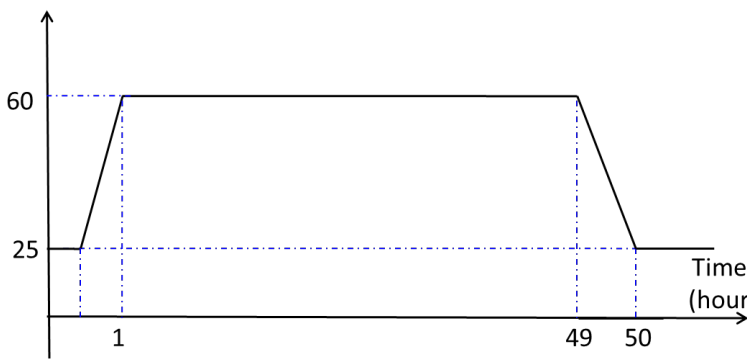
Electronic function check:

1. All system functions must be checked with appropriate testing programs and should pass the inspection.
2. Running Windows for OS, the system should not have degradation in its performance.

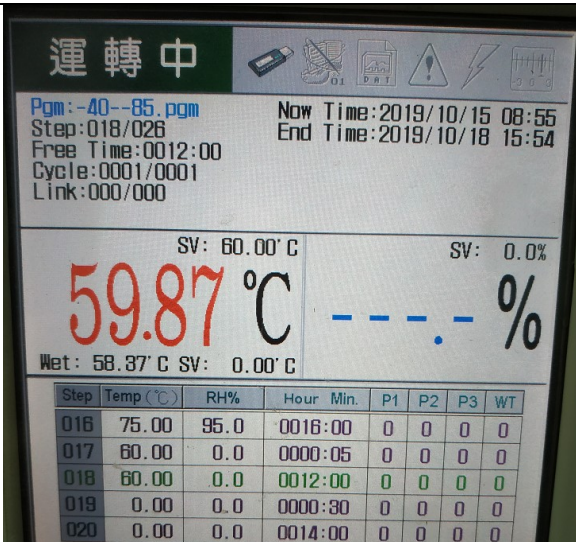
Mechanical function check:

1. The connectors and components should work properly without any interference.
2. All screws should be tightened up appropriately.

10. High Temperature Power ON/OFF Test

Device Model	ROC286BB	Test Result	PASS
Diagram of curves 		Test Temperature	Test Time
		High	60°C
		Test Standard	Reference IEC60068-2
		criteria	System can power on 10 times under high temperature On/off rule On → 10 minute/time Off → 40 minute/time Total: 50 minute/cycle

Test picture



Test procedure

35. This operation test is under temperature range 25°C ~ 60°C
36. Standards is referred to IEC60068-2-2 Change of temperature
37. Have the subject inside the chamber and set up related cables.
38. Set up the temperature
39. If it's OK then rise up temperature to 60°C and DOS mode run counter.exe for test
40. Unpowered subject should be burn up to 70°C
41. Power on test and Perform minimum 3 power on/off cycles (to be sure that subject can reboot)
42. Observe the temperature and the subject in the test execution
43. Check the damage on the subject by visual and do function test

Note:

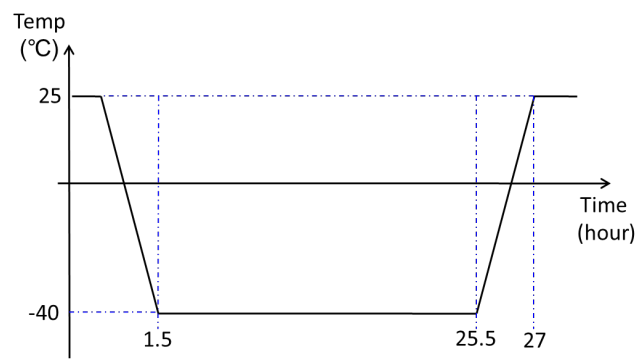
Electronic function check:

1. All system functions must be checked with appropriate testing programs and should pass the inspection.
2. Running Windows for OS, the system should not have degradation in its performance.

Mechanical function check:

1. The connectors and components should work properly without any interference.
2. All screws should be tightened up appropriately.

11. Low Temperature Power ON/OFF Test

Device Model	ROC286BB	Test Result	PASS
Diagram of curves		Test Temperature	Test Time
		Low	-40°C
		7.5Hours	
		Test Standard	Reference IEC-60068-2
Criteria	System can power on 10 times under low temperature	On/off rule On → 10min/time Off → 40min/time Total: 50min/cycle	

Test picture



Test procedure

44. This operation test is under temperature range 25°C ~ -40°C
45. Standards is referred to IEC60068-2-14 Change of temperature
46. Have the subject inside the chamber and set up related cables.
47. Set up the temperature
48. If it's OK then rise down temperature to -40°C and DOS mode run counter.exe for test
49. Unpowered subject should be cool down to -40°C
50. Keep unpowered subject for four hours on -40°C
51. Power on test and Perform minimum 3 power on/off cycles (to be sure that subject can reboot)
52. Observe the temperature and the subject in the test execution
53. Check the damage on the subject by visual and do function test

Note:

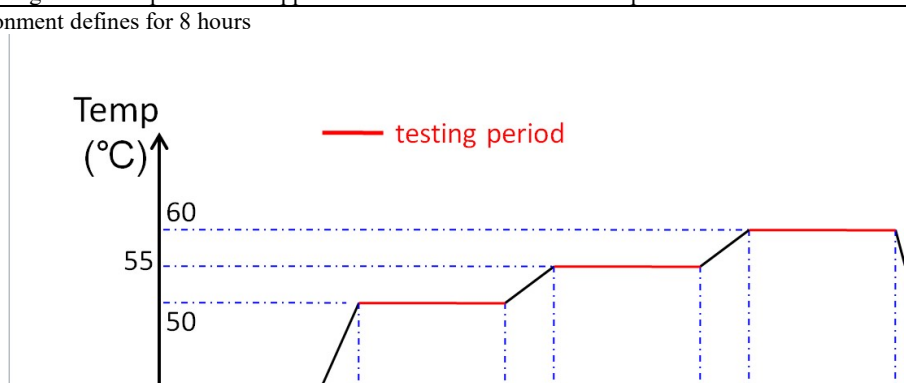
Electronic function check:

1. All system functions must be checked with appropriate testing programs and should pass the inspection.
2. Running Windows for OS, the system should not have degradation in its performance.

Mechanical function check:

1. The connectors and components should work properly without any interference.
2. All screws should be tightened up appropriately.

12. Thermal Measurement

Test Purpose	The purpose of performing thermal profile test is to identify potential thermal problem of the EUT. And it is to aid products in reliability assessment considering that semiconductor failure rates rise rapidly with increasing junction temperature In case of systems cooling, patterns will vary with stacking choices, temperature/thermal mapping can aid in the development of optimum tacking arrangements
Test Equipment	1. KSON THS-B4T-150 Chamber 2. YOKOGAWA MV1000, Thermometer (FLUKE50D K/J) 3. Infrared thermal imaging camera Model TVS-200EX
Quantity Tested	Minimum 1 Set
Test Software	Passmark Burn-In Test under Windows 10
Test Procecedure	<ol style="list-style-type: none"> 1. Thermal pre-scan measurement: Temperature: 24~26°C/40~60%RH Capture thermal IR photo for whole boards after the EUT execute passmark burn-in test with 100% lading during 1 hour at least. 2. Thermal actual measurement: <ol style="list-style-type: none"> a. Select the test points according to the IR photo and attach thermocouples to the hot points b. Put the EUT in thermal chamber and set the temperature profile of as test specification c. Turn on the thermal chamber and power on the EUT to enter windows environment to run Max Power Test + 3DMARK 2003 application program d. After the EUT executing the test software for 4 hours, record thermal maximum value for each thermocouples point. e. Turn off the thermal chamber and EUT f. Verify and check recorded figure of each components to its' operating temperature range listed in specification/approval sheet of each measured component
Test diagram of curves	<p>Environment defines for 8 hours</p> 
Test picture	

Thermal point



Test Result

Point		-40°C	-20°C	0°C	25°C	40°C	50°C	55°C	60°C
CPU Frequency(GHz)		2.8	2.8	2.8	2.7	2.39	2.39	0.79	0.79
CPU T-J (°C)		36	45	36	71	71	77	71	72
1	CPU Die	21	29.1	18.3	58.4	61.4	68.3	71	72
2	CPU Heatsink	16	25.2	14.7	54.3	58.7	65.6	70	71
3	DRAM	1	11.2	26.6	75.9	72.1	78.6	84	89.8
4	PCH	19	29.5	42.3	86.7	86.5	90.8	95	100.6
5	Left Heatsink(PCIE)	-25	-15.8	8.9	51	50	58.4	64	68.6
6	Right Heatsink(CPU)	-23	-13.7	5.6	53.4	51.5	59.6	64	69.8
7	Left Power	-21	-11.8	10.1	49.1	48.6	58.4	63	68.8
8	Right Power	-21	-11.1	10	49.6	48.3	58.1	63	68.8
9	SSD1	-20	-16	4.5	44.1	41.1	52.4	57	63.2
10	SSD2	-20	-16.2	4.5	43.6	41.1	52.1	57	62.8
I219 LAN (Mb)		945	949	944	937	940	939	939	939
I210 LAN (Mb)		952	943	952	944	943	947	947	946
Innodisk 3MG2-P 64G (Read/Write MB)		503/161	413/182	502/199	503/198	502/197	507/198	508/197	505/197
Apacer SSD 256G (Read/Write MB)		276/157	284/327	287/321	287/330	284/332	285/330	286/328	284/326