



AV710-X3

SYSTEM TEST REPORT

Product Manager	System Leader	System Engineer
Vinnie Yuan	James Chan	Darren Chen

Test Report

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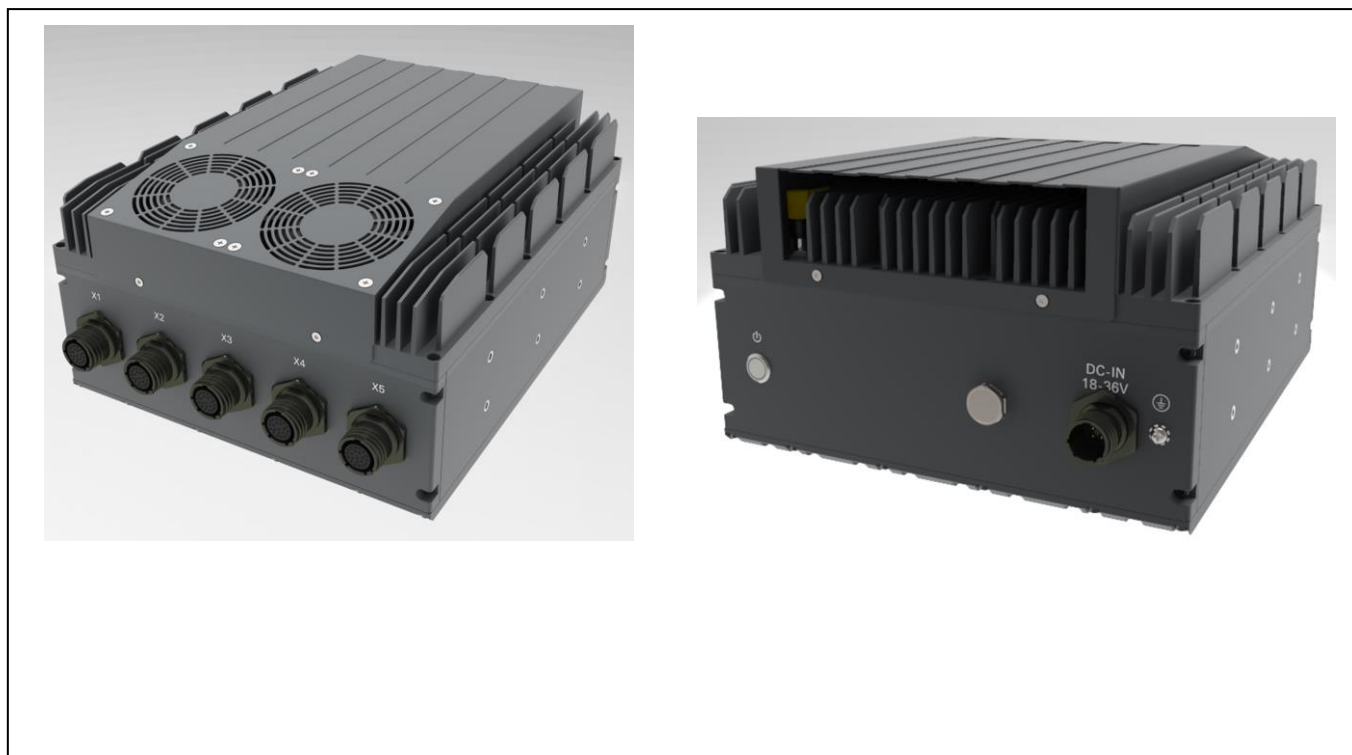
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1. SYSTEM SPEC

1-1. PRODUCT PHOTOS



1-2. SYSTEM COFIGURATION

System Configuration	
Motherboard	SK515
CPU	Xeon® D1577 1.3/2.1GHz 24MB, 45W (16C)
Memory	SAMSUNG 32GB DDR4 SODIMM*2
SSD	SATAIII SSD, Phison (7SLSSB960GMLEX-D2C-8) 960GB*2
GPU	NVIDIA RTX5000
X1	Intel® Ethernet Connection i210-LM
X2~X3	Intel® X710-BM2 Controller
X4	DVI-D
X5	COM

2. Test Plan

2-1. Thermal Measurement Process

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)																												
Quantity Tested	Minimum 1 Set																												
Test Software	Passmark Burn-In Test under Windows 10																												
Test Procecedure	1. Thermal pre-scan measurement: Temperature: -40~60°C /85%RH 2. Thermal actual measurement: - Select the test points according to the IR photo and attach thermocouples to the hot points - Put the EUT in thermal chamber and set the temperature profile of as test specification - Turn on the thermal chamber and power on the EUT to enter windows environment to run Max Power Test + 3DMARK 2003 application program - After the EUT executing the test software for 4 hours, record thermal maximum value for each thermocouples point. - Turn off the thermal chamber and EUT - 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	The graph illustrates the thermal profile over time. The y-axis represents temperature in degrees Celsius, ranging from -40 to 60. The x-axis represents time in hours, ranging from 0 to 27. A red line indicates the testing period, which begins at 13.5 hours and ends at 27 hours. The temperature profile is as follows: <table border="1"> <thead> <tr> <th>Time (hour)</th> <th>Temperature (°C)</th> </tr> </thead> <tbody> <tr><td>0</td><td>25</td></tr> <tr><td>0.5</td><td>-40</td></tr> <tr><td>4.5</td><td>-40</td></tr> <tr><td>5</td><td>-20</td></tr> <tr><td>9</td><td>-20</td></tr> <tr><td>9.5</td><td>0</td></tr> <tr><td>13.5</td><td>0</td></tr> <tr><td>14</td><td>40</td></tr> <tr><td>18</td><td>40</td></tr> <tr><td>18.5</td><td>50</td></tr> <tr><td>22.5</td><td>50</td></tr> <tr><td>23</td><td>60</td></tr> <tr><td>27</td><td>60</td></tr> </tbody> </table>	Time (hour)	Temperature (°C)	0	25	0.5	-40	4.5	-40	5	-20	9	-20	9.5	0	13.5	0	14	40	18	40	18.5	50	22.5	50	23	60	27	60
Time (hour)	Temperature (°C)																												
0	25																												
0.5	-40																												
4.5	-40																												
5	-20																												
9	-20																												
9.5	0																												
13.5	0																												
14	40																												
18	40																												
18.5	50																												
22.5	50																												
23	60																												
27	60																												

2-2. AV710-X3 TEST RESULT

TEST ITEM:

2-2.1 TEMPERATURE CYCLE

Burn-in test under each temperature with maximum quantity of external devices on all I/O connected and full loading status on each device

Test Temperature	Test Result
-40℃	PASS
-20℃	PASS
0℃	PASS
40℃	PASS
50℃	PASS
60℃	PASS

2-2.2 I/O FUNCTION

#Confirm the system specifications and I/O connection to ensure that they are functioning properly

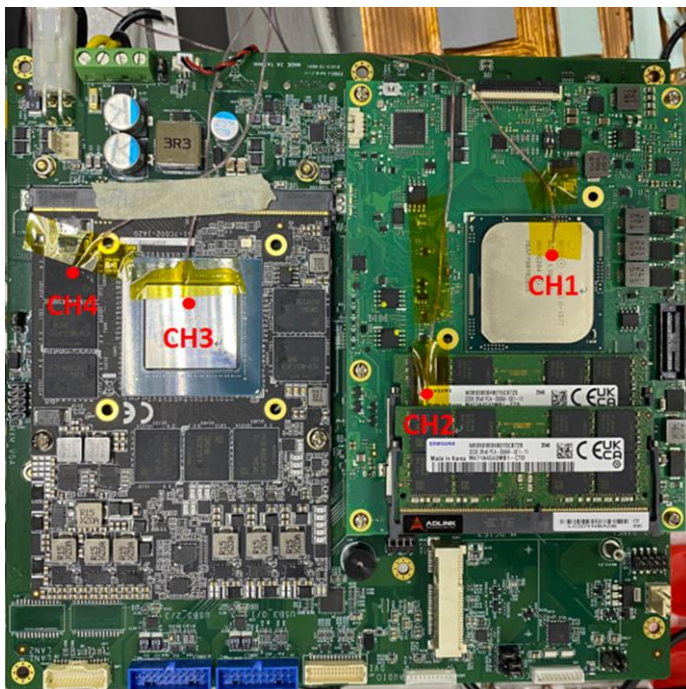
Item	Criteria	Result
X1	LAN	PASS
X2~X3	LAN.	PASS
X4	DVI	PASS
X5	COM	PASS

2-2.3 LOW-TEMP. BOOT-UP

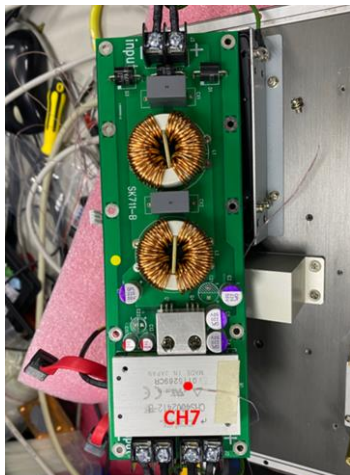
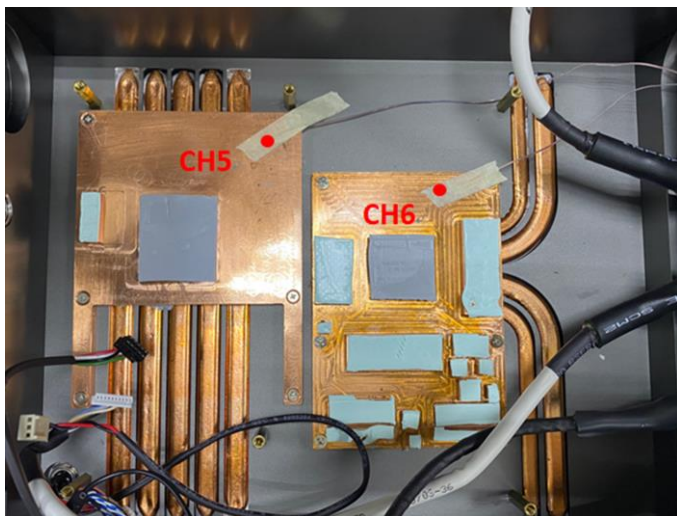
#Power supply under -40℃ and ensure that the system boot up properly

Ambient Temp.	Test Result
-40℃	PASS

3. Thermal Test Point

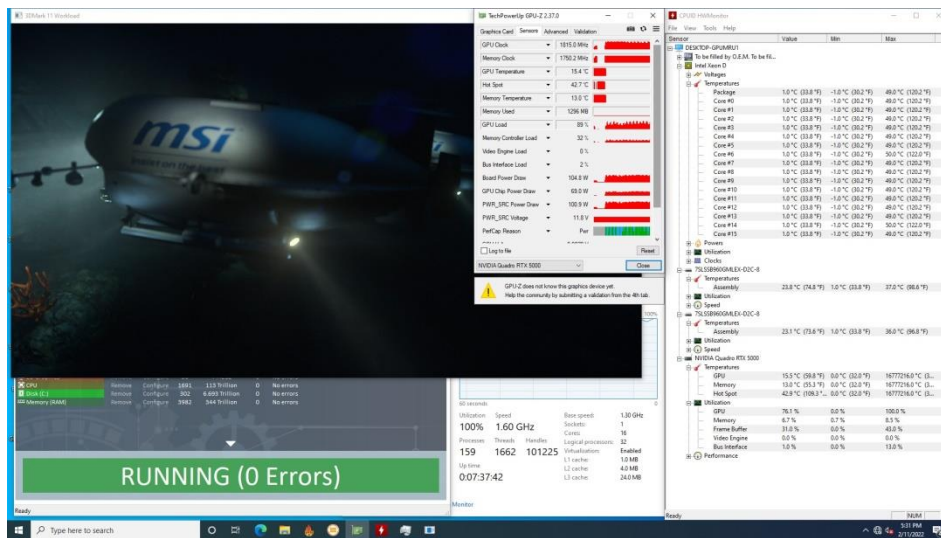


TEST POINT NO.	Test Point
1	CPU
2	DRAM
3	GPU
4	GPU RAM
5	CPU Heatsink
6	GPU Heatsink
7	Power(SK502)
8	SSD



4. Test Photo in LAB

- Chamber in -40°C

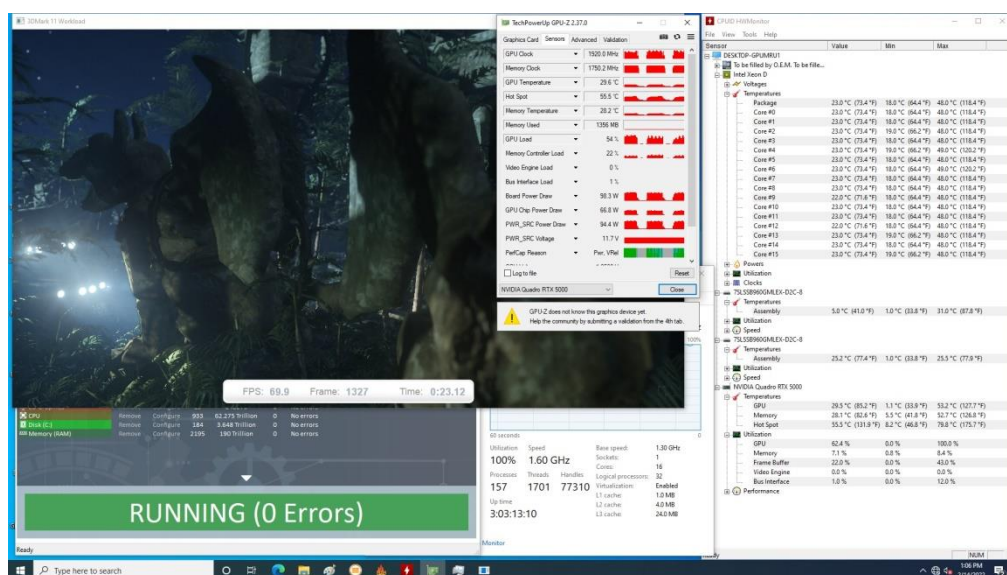


1	-14.6	7	-21.4	13	-Over	19	-Over
2	19.5	8	-22.1	14	-Over	20	-Over
3	-9.0	9	449.7	15	-Over	21	-Over
4	-17.5	10	300.7	16	-Over	22	-Over
5	-27.1	11	198.8	17	-Over	23	-Over
6	-22.9	12	163.8	18	-Over	24	-Over

Test Point	Ambient Temp	-40° C
CPU		-14.6
DRAM		19.5
GPU		-9
GPU RAM		-17.5
CPU Heatsink		27.1
GPU Heatsink		22.9
Power(SK502)		-21.4
SSD		-22.1



- Chamber in -20°C

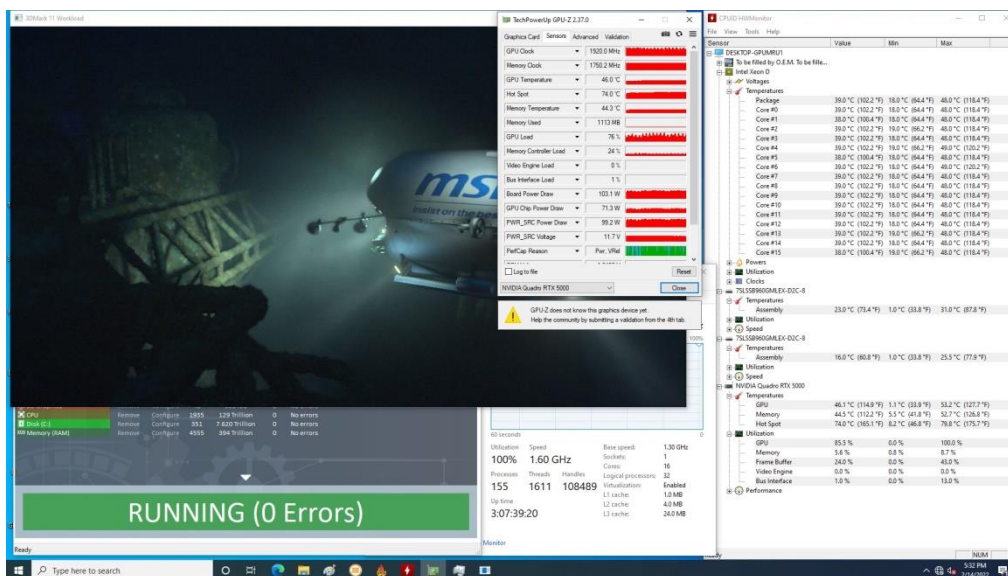


1	5.8	0.1	-Over	-Over
2	39.5	-5.6	-Over	-Over
3	0.2	384.4	-Over	-Over
4	-2.8	445.6	-Over	-Over
5	-5.9	445.0	-Over	-Over
6	-4.3	431.4	-Over	-Over
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Test Point	Ambient Temp	-20° C
CPU		5.8
DRAM		39.5
GPU		0.2
GPU RAM		-2.8
CPU Heatsink		-5.9
GPU Heatsink		-4.3
Power(SK502)		0.1
SSD		-5.6



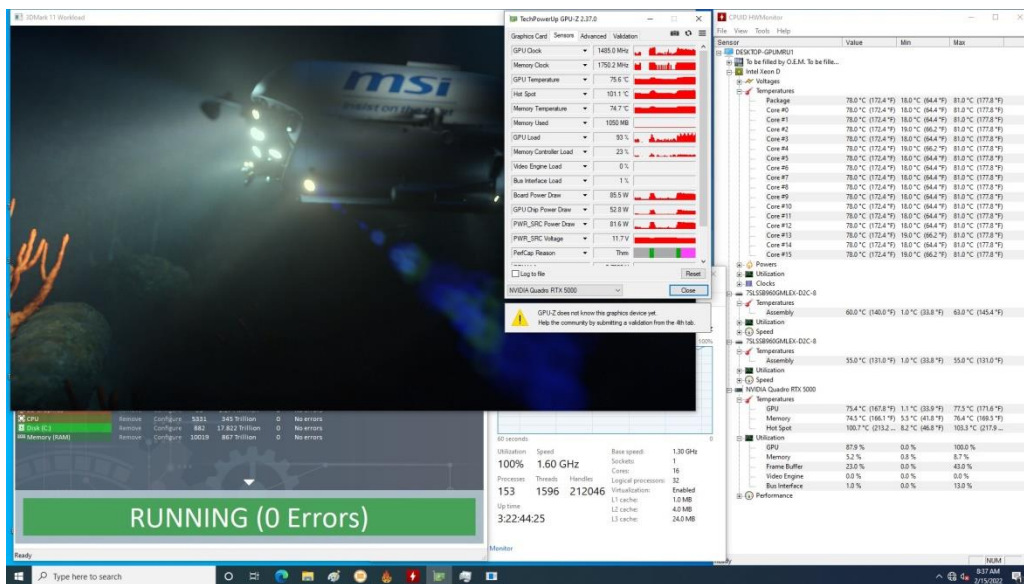
- Chamber in 0°C



Test Point	Ambient Temp	0° C
CPU		22.8
DRAM		56.8
GPU		29.5
GPU RAM		18.1
CPU Heatsink		12.8
GPU Heatsink		14.8
Power(SK502)		19.7
SSD		10.8



- Chamber in 40°C

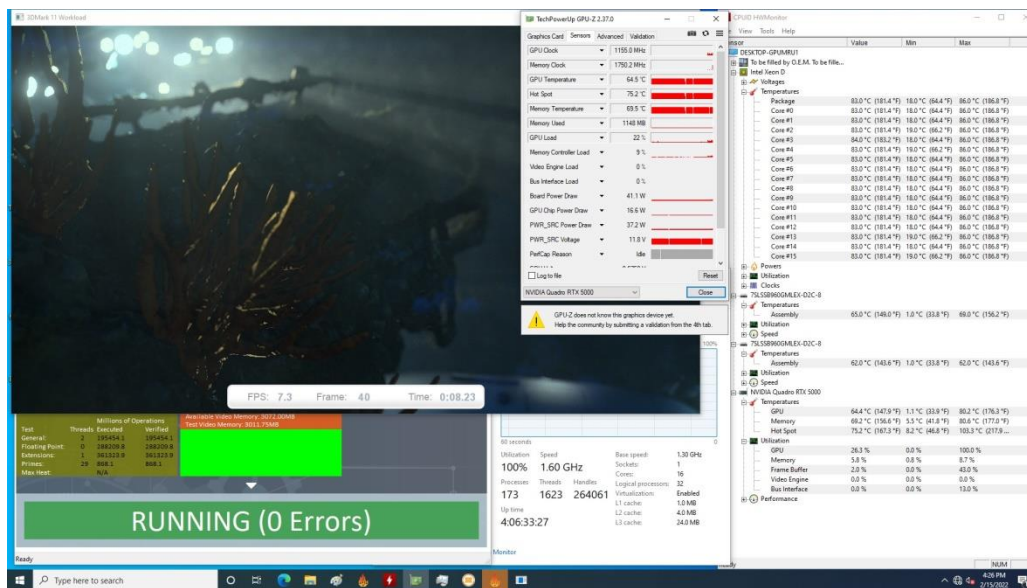


1	7	13	19
63.2	59.7	-Over	-Over
2	8	14	20
93.2	56.8	-Over	-Over
3	9	15	21
68.5	493.7	-Over	-Over
4	10	16	22
58.3	535.8	-Over	-Over
5	11	17	23
51.7	542.3	-Over	-Over
6	12	18	24
54.3	539.8	-Over	-Over

Test Point	Ambient Temp	40° C
CPU		63.2
DRAM		93.2
GPU		68.5
GPU RAM		58.3
CPU Heatsink		51.7
GPU Heatsink		54.3
Power(SK502)		59.7
SSD		56



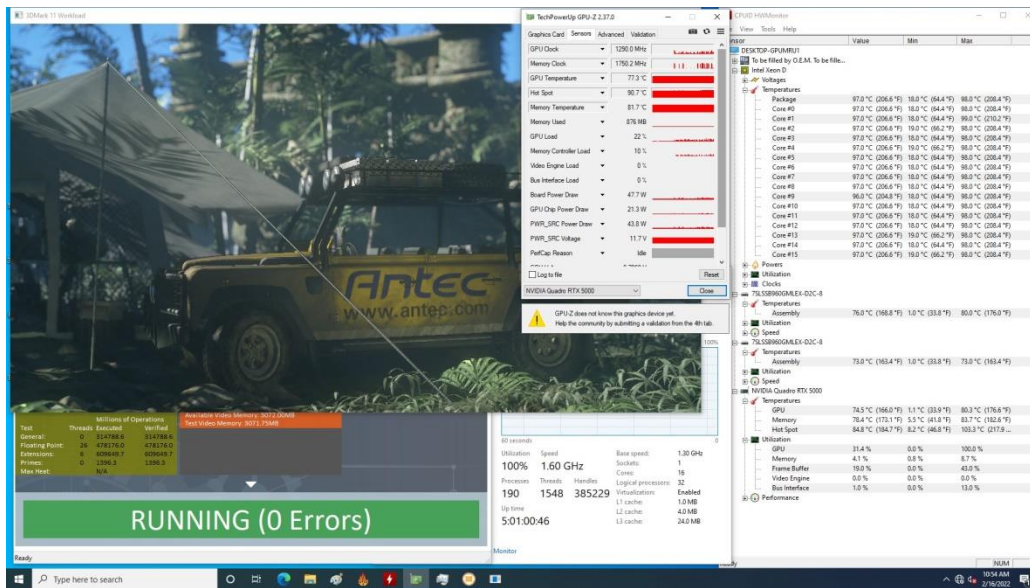
- Chamber in 50°C



Test Point	Ambient Temp	50° C
CPU		71.1
DRAM		97.5
GPU		63.1
GPU RAM		59.6
CPU Heatsink		60.4
GPU Heatsink		58.7
Power(SK502)		66.1
SSD		60.5



- Chamber in 60°C



1	7	13	19
81.9	78.1	-Over	-Over
2	8	14	20
99.0	74.4	-Over	-Over
3	9	15	21
74.6	120.2	-Over	-Over
4	10	16	22
70.6	77.9	-Over	-Over
5	11	17	23
71.1	130.6	-Over	-Over
6	12	18	24
69.6	-47.4	-Over	-Over

Test Point	Ambient Temp	60° C
CPU		81.9
DRAM		99
GPU		74.6
GPU RAM		70.6
CPU Heatsink		71.1
GPU Heatsink		69.6
Power(SK502)		78.1
SSD		74.4



AV710-X3

Low Temperature SYSTEM Boot up Test

- Ambient Temp. -40°C

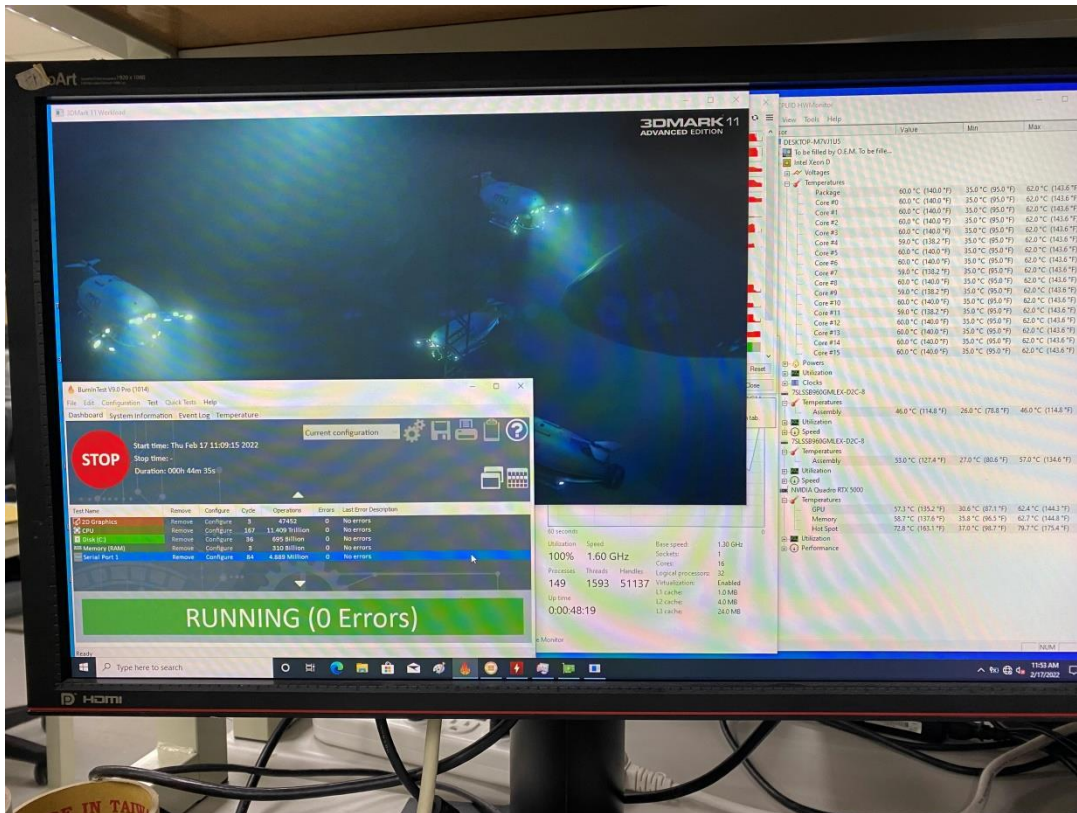


5. AV710-X3 THERMAL TEST RESULT (40~60 DEGREE)

TEST POINT NO.	Ambient Temp. Test Point	-40° C	-20° C	0° C	40° C	50° C	60° C
1	CPU	-14.6	5.8	22.8	63.2	71.1	81.9
2	DRAM	19.5	39.5	56.8	93.2	97.5	99
3	GPU	-9	0.2	29.5	68.5	63.1	74.6
4	GPU RAM	-17.5	-2.8	18.1	58.3	59.6	70.6
5	CPU Heatsink	27.1	-5.9	12.8	51.7	60.4	71.1
6	GPU Heatsink	22.9	-4.3	14.8	54.3	58.7	69.6
7	SK502	-21.4	0.1	19.7	59.7	66.1	78.1
8	SSD	-22.1	-5.6	10.8	56	60.5	74.4
	CPU TJ	1	23	39	75	83	97
	CPU FRQ	1.6GHz	1.6GHz	1.6GHz	1.6GHz	1.6GHz	1.6GHz
	GPU TJ	15.5	29.5	46.1	70.4	64.4	74.5
	GPU (MHZ)	1815MHz	1920MHz	1920MHz	1575MHz	1155MHz	1290MHz

6. I/O FUNCTION TEST

(1) COM TEST



(2) LAN TEST

