



# Performance Test Report

## THOR11-D27-HSC



Product Manager	R&D Leader	Mechanical Engineer	System Engineer	Test Engineer
Vinnie Yuan	James Chan	Chen, Jie-Tong	William Cheng	Mike Chen

# Performance Test

THOR11-D27-HSC

---



# INDEX

<b>1. SPECIFICATION .....</b>	<b>3</b>
1-1. SYSTEM CONFIGURATION .....	3
<b>2. TEST PLAN.....</b>	<b>4</b>
2.1. THERMAL MEASUREMENT PROCESS .....	4
2.2. TEST RESULT <TEST ITEM> .....	5
2.2.1. Temperature Cycle.....	5
2.2.2. I/O Function .....	6
2.2.3. Low-temperature & Boot-up.....	7
<b>3. THERMAL TEST POINT.....</b>	<b>8</b>
<b>4. TEST PHOTO IN LAB .....</b>	<b>9</b>
<b>5. THERMAL TEST RESULT(-35°C ~ +60°C).....</b>	<b>16</b>
<b>6. I/O FUNCTION TEST .....</b>	<b>18</b>
6-1. USB 3.0 .....	18
6-2. IPMI PORT .....	20
6-3. LAN (1GBPS).....	21
6-4. LAN (10GBPS).....	25
6-5. LAN(25GBPS) .....	27
6-6. VGA PORT .....	29
<b>7. OPERATING SYSTEM COMPATIBILITY .....</b>	<b>30</b>
7-1. UBUNTU 22.04 LTS.....	30

# Performance Test

THOR11-D27-HSC

## 1. SPECIFICATION

### 1-1. SYSTEM CONFIGURATION

<b>Motherboard</b>	Micro-ATX Board Serial Number: WM23CS006362 BMC Firmware Version: 00.14.11 Redfish Version: 1.9.0 BIOS Firmware Version 1.5
<b>CPU</b>	Intel® Xeon® D-2796NT Processor Vertical Segment: Server Lithography: 10 nm Total Cores: 20 # of Performance-cores: 20 Total Threads: 40 Processor Base Frequency: 2.00 GHz Cache: 30 MB TDP: 120 W
<b>Memory</b>	Part Number: M393A4K40DB3-CWE Density: 32GB DDR: DDR4 Dimm Type: RDIMM Speed: 3200 Mbps
<b>Storage</b>	M.2 SSD Part Number: SSDPEKKW128G7X1 128GB
<b>Power Module</b>	AC-DC Dedundant Power Supply Part Number: CDR-8611-3M1 AC INPUT RATING 800W: 100-127V / 9.4A-7.4A / 50-60Hz 860W: 200-240V / 4.8-4.0A / 50-60Hz DC OUTPUT 800W: +12V / 66.6A ; +5Vsb / 4.0A 860W: +12V /71.6A; +5Vsb /4.0A

# Performance Test

THOR11-D27-HSC

## 2. TEST PLAN

### 2.1. THERMAL MEASUREMENT PROCESS

Test Purpose	<p>The purpose of performing thermal profile testing is to identify potential thermal issues with the EUT. Considering that semiconductor failure rates rise rapidly with increasing junction temperature, it can aid product reliability assessment.</p> <p>As the system cools down, the mode will change with stack selection, temperature/heat.</p> <p>Mapping can help develop the best tracking arrangements.</p>																																										
Test Equipment	1. KSON THS-B4T-150 Chamber.																																										
Quantity Tested	Minimum 1 Set																																										
Test Software	1. Stress CPU: PassMark Burn-in Test Software Ver 9.0 2. LAN Speed Test: iPerf3																																										
Test Procedure	<ol style="list-style-type: none"><li>1. Thermal pre-scan measurement: Temperature: <b>-35°C~60°C</b> Humidity: <b>85%RH (Temperature above 25°C)</b></li><li>2. Actual thermal measurement:<ol style="list-style-type: none"><li>2-1. Select the test point based on the infrared photo and connect the thermocouple to the hot spot.</li><li>2-2. Place the EUT into the hot chamber and set the test temperature curve Specification.</li><li>2-3. Open the hot cell and power up the EUT, enter the Windows Server 2022 environment and perform a maximum power test + stress application.</li><li>2-4. After the EUT executes the test software for 8 hours, record the maximum heat generation of each thermocouple point.</li><li>2-5. Turn off the hot cell and EUT.</li><li>2-6. Verify and check that the recorded information for each component complies with the operating temperature range listed in the specification/approval sheet for each component being tested.</li></ol></li></ol>																																										
Test Diagram of Curves	<p>Environment defines for 154 hours.</p> <table border="1"><caption>Test Diagram of Curves Data</caption><thead><tr><th>Time (hour)</th><th>Temperature (°C)</th><th>Humidity (%RH)</th></tr></thead><tbody><tr><td>1.0</td><td>25</td><td>0</td></tr><tr><td>10.0</td><td>-35</td><td>0</td></tr><tr><td>19.5</td><td>-20</td><td>0</td></tr><tr><td>35.5</td><td>-20</td><td>0</td></tr><tr><td>36.0</td><td>-10</td><td>0</td></tr><tr><td>59.5</td><td>25</td><td>85</td></tr><tr><td>70.5</td><td>25</td><td>85</td></tr><tr><td>71.0</td><td>40</td><td>85</td></tr><tr><td>88.0</td><td>40</td><td>85</td></tr><tr><td>88.5</td><td>50</td><td>85</td></tr><tr><td>110.5</td><td>50</td><td>85</td></tr><tr><td>111.0</td><td>60</td><td>85</td></tr><tr><td>154.0</td><td>60</td><td>85</td></tr></tbody></table>	Time (hour)	Temperature (°C)	Humidity (%RH)	1.0	25	0	10.0	-35	0	19.5	-20	0	35.5	-20	0	36.0	-10	0	59.5	25	85	70.5	25	85	71.0	40	85	88.0	40	85	88.5	50	85	110.5	50	85	111.0	60	85	154.0	60	85
Time (hour)	Temperature (°C)	Humidity (%RH)																																									
1.0	25	0																																									
10.0	-35	0																																									
19.5	-20	0																																									
35.5	-20	0																																									
36.0	-10	0																																									
59.5	25	85																																									
70.5	25	85																																									
71.0	40	85																																									
88.0	40	85																																									
88.5	50	85																																									
110.5	50	85																																									
111.0	60	85																																									
154.0	60	85																																									

# Performance Test

## THOR11-D27-HSC

### 2.2. TEST RESULT <TEST ITEM>

#### 2.2.1. Temperature Cycle

# Aging test of various parts at different temperatures under maximum load and full load conditions.

Test Temperature	Test Result
-35°C	PASS
-20°C	PASS
0°C	PASS
25°C / 85%RH	PASS
40°C / 85%RH	PASS
50°C / 85%RH	PASS
60°C / 85%RH	PASS

# Performance Test

## THOR11-D27-HSC

### 2.2.2. I/O Function

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

Item	Test Criteria	Result
<b>LAN Port</b> (1Gbps)	Connection LAN SWITCH/HUB transfer data test, it can work normally.	<b>PASS</b>
<b>LAN Port</b> (1Gbps)	Connection LAN SWITCH/HUB transfer data test, it can work normally.	<b>PASS</b>
<b>LAN Port</b> (10Gbps)	Connection LAN SWITCH/HUB transfer data test, it can work normally.	<b>PASS</b>
<b>LAN Port</b> (10Gbps)	Connection LAN SWITCH/HUB transfer data test, it can work normally.	<b>PASS</b>
<b>LAN Port</b> (25Gbps)	Connection LAN SWITCH/HUB transfer data test, it can work normally.	<b>PASS</b>
<b>LAN Port</b> (25Gbps)	Connection LAN SWITCH/HUB transfer data test, it can work normally.	<b>PASS</b>
<b>USB3.0</b>	Connect a PassMark USB 3.0 Loopback Plugs for testing, it can work normally.	<b>PASS</b>
<b>USB3.0</b>	Connect a PassMark USB 3.0 Loopback Plugs for testing, it can work normally.	<b>PASS</b>
<b>IPMI Port</b>	Check work well.	<b>PASS</b>
<b>VGA Port</b>	Check work well. (Resolution:1920 x 1080)	<b>PASS</b>

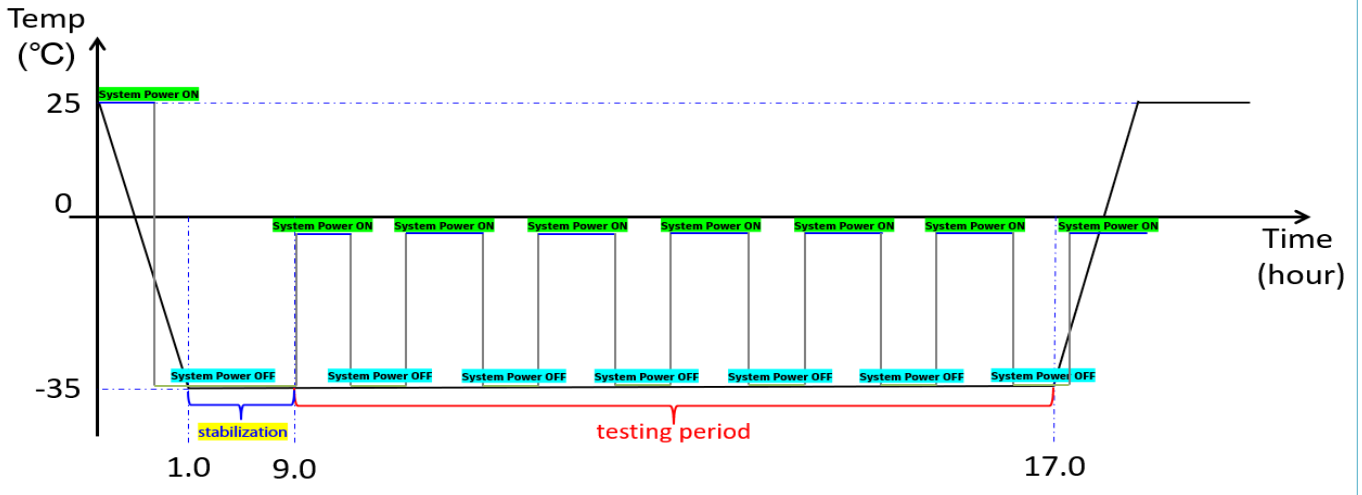
# Performance Test

## THOR11-D27-HSC

### 2.2.3.Low-temperature & Boot-up

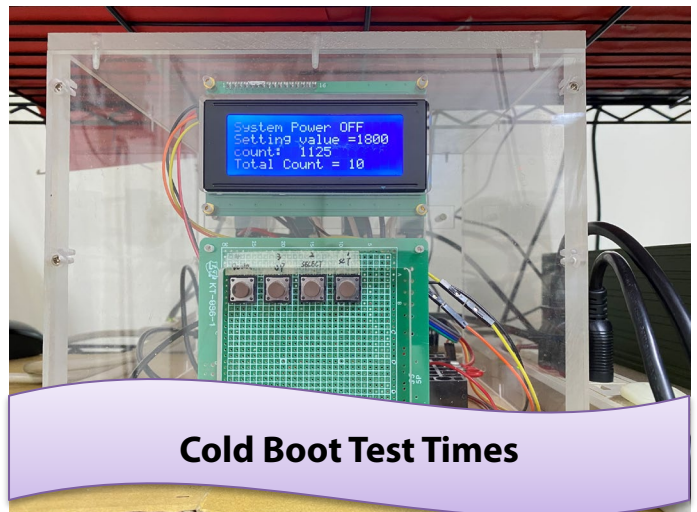
#Power supply under -35°C and ensure that the system boot up properly

Ambient Temp.	Cold Boot Test Times	Test Result
-35°C	10 times	PASS



OVERVIEW				
2024/11/15 18:31:43				
EVB.T 1hour				
1	-35.7	7	-35.7	13
2	-36.8	8	-over	14
3	-36.2	9	-over	15
4	-36.2	10	-over	16
5	-36.5	11	-over	17
6	-36.6	12	-over	18
				19
				20
				21
				22
				23
				24
				-over
				-over
				-over
				-over
				-over
				-over

thermocouple Temperature


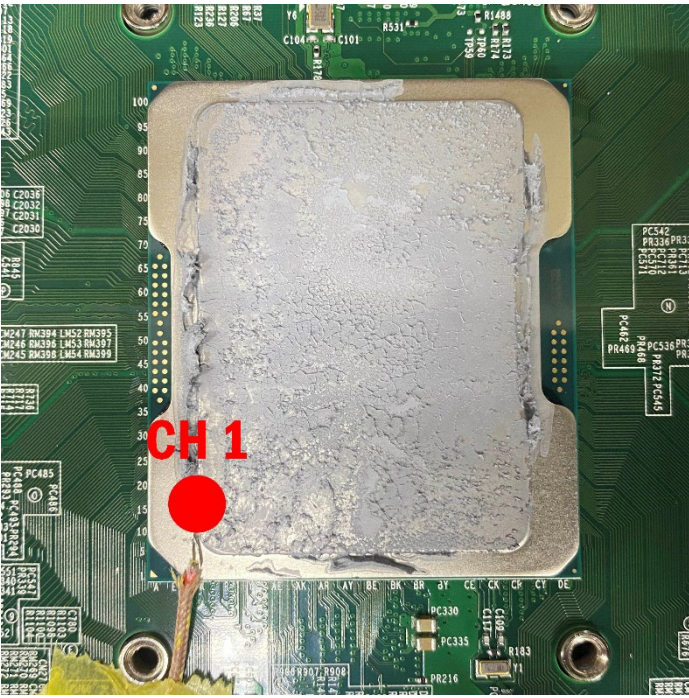




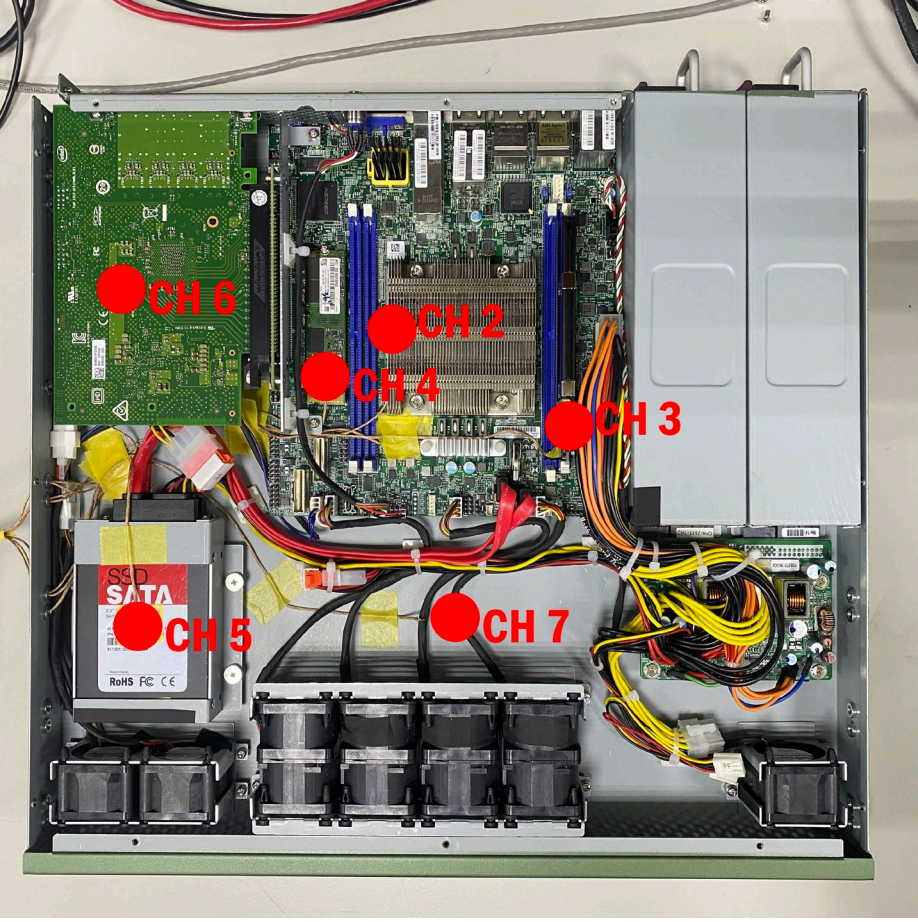
# Performance Test

THOR11-D27-HSC

## 3. THERMAL TEST POINT



OVERVIEW				
2024/11/15 10:31:43				
EVENT 1hour				
1	CPU	7	inside the chassis	13
				-Over
2	CPU Heat Sink	8		20
		-Over	-Over	-Over
3	DRAM	9		21
		-Over	-Over	-Over
4	M.2 SSD	10		22
		-Over	-Over	-Over
5	2.5" SSD	11		23
		-Over	-Over	-Over
6	25GbE SFP	12		24
		-Over	-Over	-Over



# Performance Test

THOR11-D27-HSC

## 4. TEST PHOTO IN LAB

- Chamber in -35°C

**CPU Test**

Test	Threads Executed	Verified
General:	63209807.8	63209807
Floating Point:	0	111136992.1
Extensions:	5	95455047.9
Primes:	35	176709.2
Max Heat:	N/A	176709.2

**Disk (C:) Test (1 of 2)**

Free disk scan progress: 77%

Platform: 0x554455A455A55A55A  
 MBytes Written: 865548.0  
 MBytes Verified: 774468.0  
 Current Speed: 188.8 MB/Sec

**Memory (RAM) Test**

Cycle 107: Testing 8%

Pattern: 84-bit Binary 2 (01010101)

Total RAM: 32383.9 MB  
 Free RAM: 9501.1 MB  
 Test RAM: 19679.3 MB  
 MBytes Written: 2115514.5 MB  
 MBytes Verified: 2105010.0 MB  
 Speed (W/R): 0.0 / 19223.1 MB/Sec

**Core Temp 1.18.1**

Select CPU: Processor #0 | 20 Core(s) | 40 Thread(s)

Platform: Intel Xeon D 2796NT  
 VID: 0.9225 v  
 Frequency: 2500.00MHz (100.00 x 25.0)  
 Modulation: 10 nm  
 CPUID: 0x606C1  
 TDP: 120.0 Watts

Processor #0: Temperature Readings

Power:	Tj Max:	Core #0:	Core #1:	Core #2:	Core #3:	Core #4:	Core #5:	Core #6:	Core #7:	Core #8:	Core #9:	Core #10:	Core #11:	Core #12:	Core #13:	Core #14:	Core #15:	Core #16:	Core #17:	Core #18:	Core #19:
108.0W	102°C	26°C	22°C	26°C	23°C	18°C	26°C	22°C	24°C	21°C	19°C	23°C	23°C	20°C	20°C	16°C	18°C	18°C	22°C	20°C	16°C
N/A	N/A	54°C	52°C	56°C	54°C	52°C	57°C	53°C	56°C	54°C	52°C	56°C	53°C	53°C	51°C	54°C	51°C	47°C	52°C	50°C	47°C
N/A	N/A	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

**Task Manager**

Process: Performance

CPU: Intel(R) Xeon(R) D-2796NT CPU @ 2.00GHz  
 100% 2.50 GHz

Memory: 22.3/31.6 GB (71%)

Utilization: 100%  
 Speed: 2.50 GHz  
 Processes: 114  
 Threads: 1410  
 Handles: 36270  
 Up time: 0:09:40:08

OVERVIEW				
2024/11/15 20:12:24				
1	7	13	19	
1.1	-32.8	-over	-over	-over
2	8	14	20	
-17.4	-over	-over	-over	-over
3	9	15	21	
-30.9	-over	-over	-over	-over
4	10	16	22	
-23.3	-over	-over	-over	-over
5	11	17	23	
-31.5	-over	-over	-over	-over
6	12	18	24	
-18.8	-over	-over	-over	-over

Measuring Point	Ambient Temp.	-35°C
	CPU Cores Max Temperature	21.6 °C
	CPU Cores Frequency (Unit: GHz)	2.50 GHz
CH1	CPU	1.1 °C
CH2	CPU Heatsink	-17.4 °C
CH3	DRAM	-30.9 °C
CH4	M.2 SSD	-23.3 °C
CH5	2.5" SSD	-31.5 °C
CH6	25GbE Network Adapter E810-XXVDA4	-18.8 °C
CH7	Inside the Chassis	-32.8 °C



# Performance Test

## THOR11-D27-HSC

### - Chamber in -20°C

**CPU Test**

General	Threads Executed	Verified
General: 1	166573087	166573086
Floating Point: 8	297037821.1	297037821
Extensions: 31	255766413.3	255766412
Primes: 0	487186.4	487186.4
Max Heat: N/A		

**Disk (C:) Test (1 of 2)**

Free disk scan progress: 34%

**Memory (RAM) Test**

Cycle 284: Testing

Pattern	4K-9K Ones (111111111)
Total RAM:	32353.9 MB
Free RAM:	9304.0 MB
Test RAM:	19679.3 MB
MBytes Written:	5578818.5 MB
MBytes Verified:	5578818.5 MB
Speed (W / R):	0.0 / 19882.9 MB/Sec

**Core Temp 1.18.1**

Processor: Intel Xeon D 2796NT

Frequency: 2500.00MHz (100.00 x 25.0)

VID: 0.8899 v

Revision: 0x606C1

Lithography: 10 nm

TDP: 120.0 Watts

**Task Manager**

CPU: 100% 2.50 GHz

Memory: 22.371.6 GB (71%)

Utilization: 100%  
Speed: 2.50 GHz  
Processes: 107  
Threads: 1295  
Handles: 33960  
Up time: 1:05:30:43

Base speed: 2.00 GHz  
Sockets: 1  
Cores: 20  
Logical processors: 40  
Virtualization: Enabled  
L1 cache: 1.6 MB  
L2 cache: 25.0 MB  
L3 cache: 30.0 MB

**RUNNING (0 Errors)**

OVERVIEW				
2024/11/16 12:16:02				
1	7	13	19	
32.3	-18.5	-Over	-Over	
2	8	14	20	
12.7	-Over	-Over	-Over	
3	9	15	21	
-12.6	-Over	-Over	-Over	
4	10	16	22	
-4.7	-Over	-Over	-Over	
5	11	17	23	
-18.8	-Over	-Over	-Over	
6	12	18	24	
-3.6	-Over	-Over	-Over	

Measuring Point	Ambient Temp.	-20°C
	CPU-P-Cores Max Temperature	50.1 °C
	CPU E-Cores Frequency (Unit: GHz)	2.50 GHz
CH1	CPU	32.3 °C
CH2	DRAM	12.7 °C
CH3	GPU	-12.6 °C
CH4	GPU RAM	-4.7 °C
CH5	CPU Heatsink	-18.0 °C
CH6	GPU Heatsink	-3.6 °C
CH7	SK715 Power Module	-18.5 °C



# Performance Test

## THOR11-D27-HSC

### - Chamber in 0°C

OVERVIEW					
2024/11/19 09:09:41					
1		7		13	19
37.8		1.4		-Over	-Over
2		8		14	20
23.0		-Over		-Over	-Over
3		9		15	21
5.1		-Over		-Over	-Over
4		10		16	22
13.6		-Over		-Over	-Over
5		11		17	23
1.9		-Over		-Over	-Over
6		12		18	24
13.6		-Over		-Over	-Over

Measuring Point	Ambient Temp.	0°C
	CPU P-Cores Max Temperature	56.3 °C
	CPU E-Cores Frequency (Unit: GHz)	2.50 GHz
CH1	CPU	37.8 °C
CH2	DRAM	23.0 °C
CH3	GPU	2.1 °C
CH4	GPU RAM	13.6 °C
CH5	CPU Heatsink	1.9 °C
CH6	GPU Heatsink	13.6 °C
CH7	SK715 Power Module	1.4 °C



# Performance Test

## THOR11-D27-HSC

### - Chamber in 25°C / 85%RH

**CPU Test**

Test	Threads	Executed	Verified
General	0	1420675167	142067571
Floating Point	2	251204918.0	251204918
Extensions	5	215792122.2	215792122
Primes	33	405138.7	405138.7
Max Heat	N/A		

**Disk (C:) Test (1 of 2)**

Disk C:-- Cycle: 1419 Verifying (Disk 1/2)

Free disk scan progress: 53%

Pattern: Random data, random seek

Mbytes Written: 1897992.0 (+ W/Seeks: 35580)

Mbytes Verified: 1720524.0 (+ R/Seeks: 35620)

Current Speed: 190.0 MB/Sec

**Memory (RAM) Test**

Cycle 241: Testing

Pattern: 62%

64-bit Binary 1 (1010101010)

Total RAM: 32353.9 MB

Free RAM: 9462.1 MB

Test RAM: 18678.2 MB

Mbytes Written: 4744496.0 MB

Mbytes Verified: 4732237.0 MB

Speed (W / R): 20584.5 / 0.0 MB/Sec

**Core Temp 1.18.1**

Processor #0: [20 Core(s)] [40 Thread(s)]

Model: Intel Xeon D 2796NT

Frequency: 2500.00MHz (100.00 x 25.0)

VID: 0.8749 v

Revision: 0x606C1

CPUID: 0x606C1

Lithography: 10 nm

TDP: 120.0 Watts

**Task Manager**

CPU: 100% 2.50 GHz

Memory: 22.4/31.6 GB (71%)

Utilization: 100% Speed: 2.50 GHz

Processes: 115 Threads: 1453 Handles: 36258

Up time: 1:15:39:43

**RUNNING (0 Errors)**

OVERVIEW				
2024/11/19 20:03:02				
EVENT 1hour				
1	51.2	7	26.9	13 -Over
2	37.9	8	-Over	14 -Over
3	29.3	9	-Over	15 -Over
4	32.4	10	-Over	16 -Over
5	27.4	11	-Over	17 -Over
6	34.8	12	-Over	18 -Over
		19	-Over	20 -Over
		21	-Over	22 -Over
		23	-Over	24 -Over

Measuring Point	Ambient Temp.	25°C
	CPU P-Cores Max Temperature	68.1 °C
	CPU E-Cores Frequency (Unit: GHz)	2.50 GHz
CH1	CPU	51.2 °C
CH2	DRAM	37.9 °C
CH3	GPU	29.3 °C
CH4	GPU RAM	32.4 °C
CH5	CPU Heatsink	27.4 °C
CH6	GPU Heatsink	34.8 °C
CH7	SK715 Power Module	26.9 °C



# Performance Test

## THOR11-D27-HSC

### - Chamber in 40°C / 85%RH

**CPU Test**

Millions of Operations	Threads Executed	Verified
General: 19	540003975.0	540003975
Floating Point: 5	1040467401.9	104046742
Extensions: 1	896884134.8	896884134
Primes: 16	1728794.8	1728794.8
Max Heat: N/A		

**Disk (C:) Test (1 of 2)**

Disk C: - Cycle 5824 Writing (Disk 1/2)

Free disk scan progress: 89%

Pattern: Random date pattern

MBytes Written: 7859452.0

MBytes Verified: 7058688.0

Current Speed: 74.8 MB/Sec

**Memory (RAM) Test**

Cycle 1005 - Testing

Pattern: 44-94 Sequence (0,1,2...)

Total RAM: 32353.9 MB

Free RAM: 9358.3 MB

Test RAM: 19678.2 MB

MBytes Written: 19773922.0 MB

MBytes Verified: 19766228.0 MB

Speed (W/R): 17625.3 / 0.0 MB/Sec

**Core Temp 1.18.1**

Select CPU: Processor #0 (20 Core(s) / 40 Thread(s))

Processor Information

Model: Intel Xeon D 2796NT

Frequency: 2500.00MHz (100.00 x 25.0)

VID: 0.8650 v

Modulation: N/A

CoreTemp: 0x69C1

Lithography: 10 nm

TDP: 120.0 Watts

Processor #0: Temperature Readings

Power	Tj Max	Core #0	Core #1	Core #2	Core #3	Core #4	Core #5	Core #6	Core #7	Core #8	Core #9	Core #10	Core #11	Core #12	Core #13	Core #14	Core #15	Core #16	Core #17	Core #18	Core #19
106.5W	N/A	N/A	N/A	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C	37°C
3.20V	102°C	80°C	80°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C	82°C
N/A	Min.	37°C	34°C	37°C	37°C	35°C	35°C	35°C	36°C	35°C	37°C	38°C	36°C	30°C	37°C	36°C	34°C	34°C	35°C	32°C	35°C
N/A	Max.	82°C	82°C	84°C	84°C	81°C	86°C	86°C	86°C	84°C	81°C	86°C	84°C	83°C	79°C	84°C	81°C	78°C	79°C	79°C	77°C
N/A	Load	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

**Task Manager**

CPU: 100% 2.50 GHz

Memory: 22.3/31.6 GB (71%)

Intel(R) Xeon(R) D-2796NT CPU @ 2.00GHz

% Utilization over 60 seconds

Utilization: 100%

Speed: 2.50 GHz

Base speed: 2.00 GHz

Processes: 111

Threads: 1383

Handles: 35654

Up time: 2:13:41:00

Sockets: 1

Cores: 20

Logical processors: 40

Virtualization: Enabled

L1 cache: 1.6 MB

L2 cache: 25.0 MB

L3 cache: 30.0 MB

**RUNNING (0 Errors)**

OVERVIEW		EVENT		1hour	
2024/11/20 12:47:33					
1	62.7	7	42.9	13	-Over
2	49.6	8	-Over	14	-Over
3	45.0	9	-Over	15	-Over
4	46.8	10	-Over	16	-Over
5	43.6	11	-Over	17	-Over
6	49.3	12	-Over	18	-Over
				19	-Over
				20	-Over
				21	-Over
				22	-Over
				23	-Over
				24	-Over

Measuring Point	Ambient Temp.	40°C
	CPU P-Cores Max Temperature	79.0 °C
	CPU E-Cores Frequency (Unit: GHz)	2.50 GHz
CH1	CPU	62.7 °C
CH2	DRAM	49.6 °C
CH3	GPU	45.0 °C
CH4	GPU RAM	46.8 °C
CH5	CPU Heatsink	43.6 °C
CH6	GPU Heatsink	49.3 °C
CH7	SK715 Power Module	42.9 °C



# Performance Test

## THOR11-D27-HSC

### - Chamber in 50°C / 85%RH

**CPU Test**

Test	Threads	Executed	Verified
General:	69237000.5	69237000	
Floating Point:	23	1247959461.5	124795946
Extensions:	13	1075503821.3	107550382
Primes:	2	2006681.7	2006681.7
Max Heat:	N/A		

**Disk (C:) Test (1 of 2)**

Test: C: - Cycle 6922 Writing (Disk 1/2)

Free disk scan progress: 69%

Pattern: Binary data pattern 2 (0101)

MBytes Written: 898546.0

MBytes Verified: 838464.0

Current Speed: 188.0 MB/Sec

**Memory (RAM) Test**

Pattern: 64-bit Binary 2 (01010101)

Total RAM: 3238.9 MB

Free RAM: 3038.4 MB

Test RAM: 19678.2 MB

MBytes Written: 2366242.0 MB

MBytes Verified: 2366246.0 MB

Speed (W / R): 13439.7 / 9739.6 MB/Sec

**Task Manager**

CPU: Intel(R) Xeon(R) D-2796NT CPU @ 2.00GHz

100% 2.50 GHz

25.9/31.6 GB (71%)

Utilization: 100% Speed: 2.50 GHz Base speed: 2.00 GHz

Processes: 110 Threads: 1317 Handles: 35294

Logical processors: 40

Virtualization: Enabled

L1 cache: 1.6 MB

L2 cache: 25.0 MB

L3 cache: 30.0 MB

Up time: 3:01:09:12

**Core Temp 1.15.1**

Processor #0: Intel Xeon D 2796NT

Model: Intel Xeon D 2796NT

Platform: 0x00000000

Frequency: 2500.00MHz (100.00 x 25.0)

VID: 0.8524 v

Modulation: 100%

Cache: 32 MB

Lithography: 10 nm

CPUID: 0x0609C1

TPM: 120.0 Watts

Processor #0: Temperature Readings

Power	Tj Max	Min	Max	Load
114.1W	N/A	N/A	N/A	3.3W
Tj Max:	102°C			
Core #0:	93°C	37°C	95°C	100%
Core #1:	92°C	34°C	95°C	100%
Core #2:	96°C	37°C	97°C	100%
Core #3:	93°C	34°C	95°C	100%
Core #4:	90°C	35°C	93°C	100%
Core #5:	90°C	38°C	99°C	100%
Core #6:	94°C	35°C	97°C	100%
Core #7:	97°C	36°C	100°C	100%
Core #8:	95°C	35°C	98°C	100%
Core #9:	91°C	37°C	93°C	100%
Core #10:	95°C	38°C	98°C	100%
Core #11:	93°C	36°C	97°C	100%
Core #12:	92°C	33°C	96°C	100%
Core #13:	90°C	37°C	92°C	100%
Core #14:	94°C	36°C	97°C	100%
Core #15:	91°C	34°C	94°C	100%
Core #16:	85°C	35°C	90°C	100%
Core #17:	91°C	35°C	94°C	100%
Core #18:	89°C	32°C	90°C	100%
Core #19:	86°C	35°C	88°C	100%

**Ready**

**RUNNING (0 Errors)**

OVERVIEW					
2024/11/21 10:47:50					
EVENT 1hour					
1	73.1	52.6	13	19	-Over
2	59.4	-Over	14	20	-Over
3	54.9	-Over	15	21	-Over
4	55.9	-Over	16	22	-Over
5	53.1	-Over	17	23	-Over
6	58.7	-Over	18	24	-Over

Measuring Point	Ambient Temp.	50°C
	CPU P-Cores Max Temperature	92.2 °C
	CPU E-Cores Frequency (Unit: GHz)	2.50 GHz
CH1	CPU	73.1 °C
CH2	DRAM	59.4 °C
CH3	GPU	54.9 °C
CH4	GPU RAM	55.9 °C
CH5	CPU Heatsink	53.1 °C
CH6	GPU Heatsink	58.7 °C
CH7	SK715 Power Module	52.6 °C



# Performance Test

## THOR11-D27-HSC

### - Chamber in 60°C / 85%RH

**CPU Test**

Test	Threads	Executed	Verified
General:	10	474972748.0	476973744
Floating Point:	5	862713318.4	862713311
Extensions:	3	716532293.1	71653228
Primes:	22	1533527.2	1533527.2
Max Heat:	N/A		

**Memory (RAM) Test**

General:	Pattern:	Total RAM:	Free RAM:
84187 GByte (111111111)		32355.9 MB	3350.0 MB
Test RAM:		26396.9 MB	
Mbytes Written:		17082758.0 MB	
Mbytes Verified:		17059986.0 MB	
Speed (W / R):		0.0 / 20169.6 MB/sec	

**Processor Information**

Processor #0: Intel Xeon D 2796NT

Platform: D400C1

Frequency: 2400.00MHz (100.00 x 24.0)

VID: 0.8250 v

Revision: D400C1

Modulation: 10 nm

Lithography: 10 nm

TDP: 120.0 Watts

**Processor #0: Temperature Readings**

Core #	Temp	Min	Max	Load
Core #0:	100°C	75°C	101°C	100%
Core #1:	99°C	73°C	102°C	100%
Core #2:	100°C	74°C	102°C	100%
Core #3:	99°C	72°C	102°C	100%
Core #4:	99°C	74°C	102°C	100%
Core #5:	101°C	76°C	102°C	100%
Core #6:	100°C	73°C	102°C	100%
Core #7:	101°C	74°C	102°C	100%
Core #8:	101°C	73°C	102°C	100%
Core #9:	97°C	74°C	100°C	100%
Core #10:	101°C	75°C	102°C	100%
Core #11:	98°C	73°C	102°C	100%
Core #12:	99°C	72°C	102°C	100%
Core #13:	98°C	75°C	98°C	100%
Core #14:	101°C	75°C	102°C	100%
Core #15:	98°C	72°C	101°C	100%
Core #16:	94°C	73°C	97°C	100%
Core #17:	97°C	75°C	101°C	100%
Core #18:	99°C	72°C	99°C	100%
Core #19:	93°C	74°C	96°C	100%

**Task Manager**

CPU: 100% 2.37 GHz

Memory: 28.3/91.6 GB (90%)

Utilization: 100%

Speed: 2.37 GHz

Processes: 108

Threads: 1305

Handles: 35008

Up time: 1:19:58:08

Base speed: 2.00 GHz

Sockets: 1

Cores: 20

Logical processors: 40

Virtualization: Enabled

L1 cache: 1.6 MB

L2 cache: 25.0 MB

L3 cache: 30.0 MB

OVERVIEW				
2024/11/23 10:36:01				
1	7	13	19	
82.7	63.1	-Over	-Over	
2	8	14	20	
68.5	-Over	-Over	-Over	
3	9	15	21	
65.3	-Over	-Over	-Over	
4	10	16	22	
63.1	-Over	-Over	-Over	
5	11	17	23	
63.2	-Over	-Over	-Over	
6	12	18	24	
69.2	-Over	-Over	-Over	

Measuring Point	Ambient Temp.	60°C
	CPU P-Cores Max Temperature	98.5 °C
	CPU E-Cores Frequency (Unit: GHz)	2.37 GHz
CH1	CPU	82.7 °C
CH2	DRAM	68.5 °C
CH3	GPU	65.3 °C
CH4	GPU RAM	63.1 °C
CH5	CPU Heatsink	63.2 °C
CH6	GPU Heatsink	69.2 °C
CH7	SK715 Power Module	63.1 °C





# Performance Test

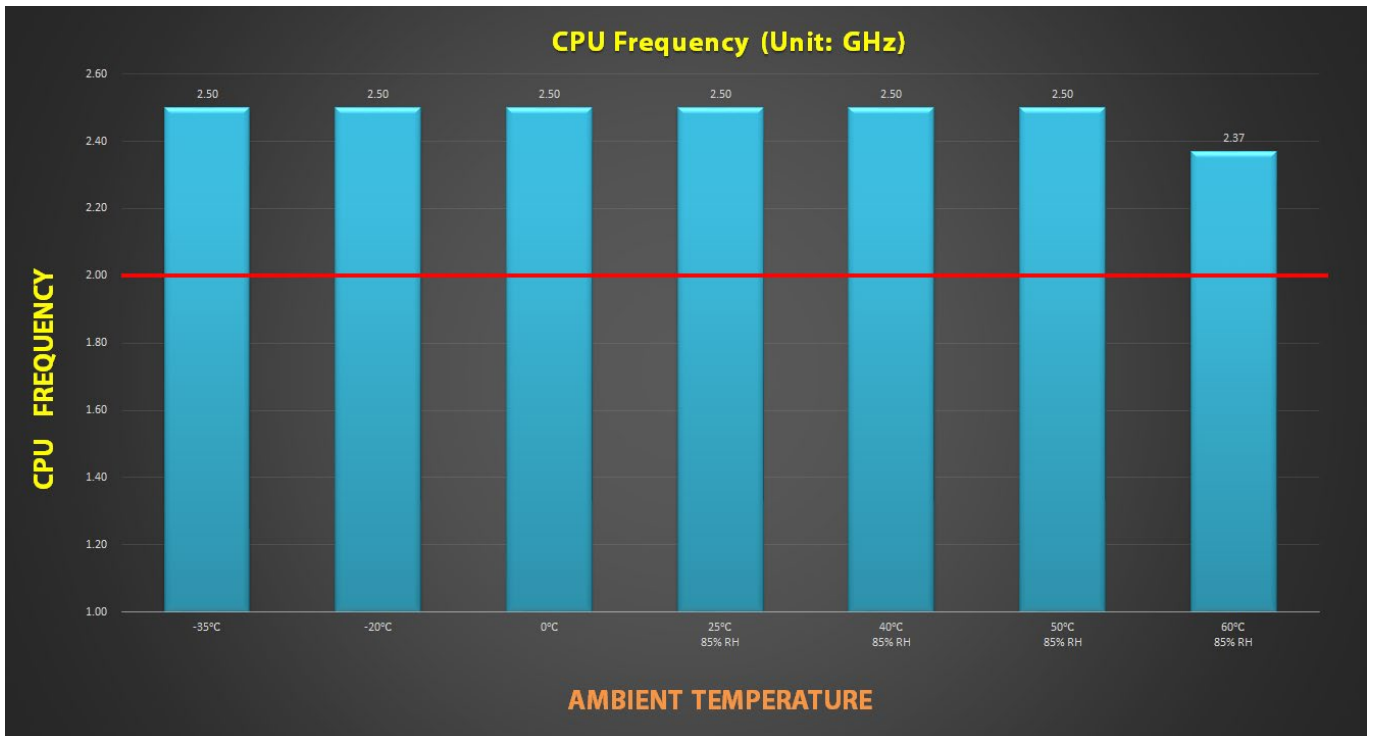
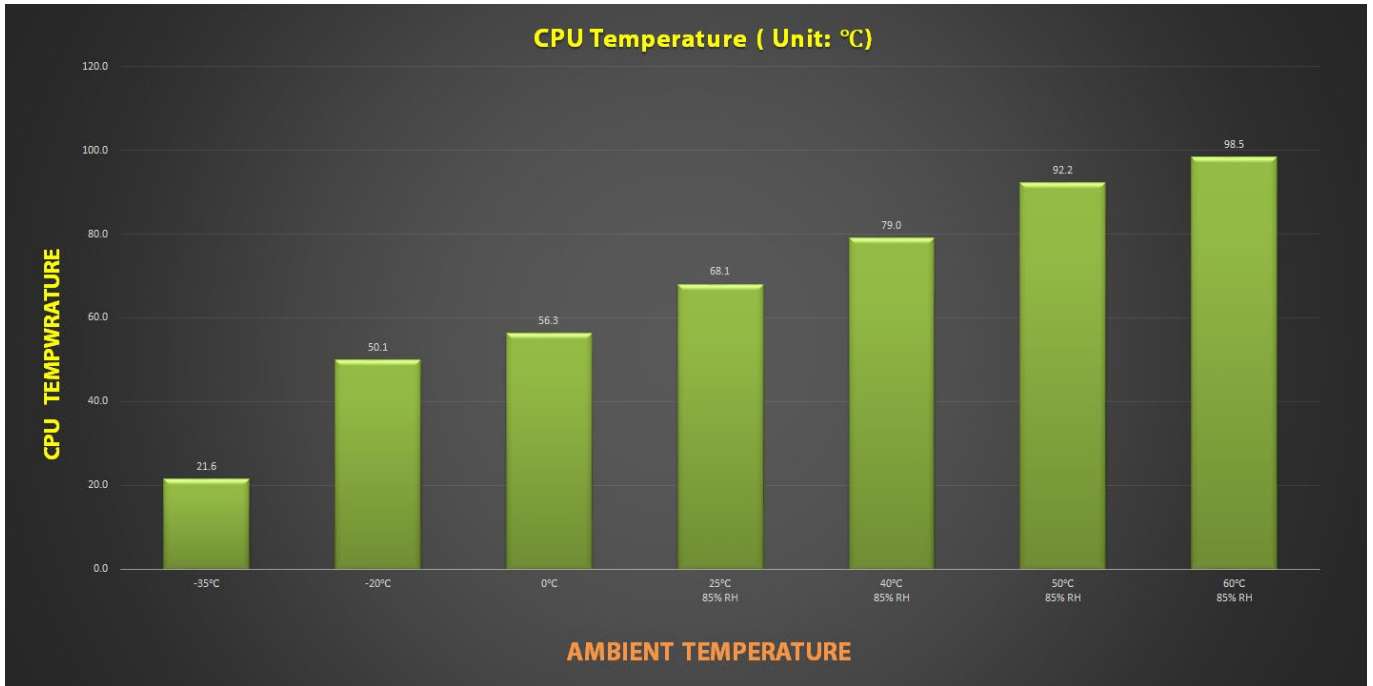
THOR11-D27-HSC

## 5. THERMAL TEST RESULT(-35°C ~ +60°C)

CPU Temperature & Frequency								Intel® Xeon® D-2796NT
Temperature	AmbientTemp.	-35°C	-20°C	0°C	25°C	40°C	50°C	60°C
Frequency					85% RH	85% RH	85% RH	85% RH
CPU Cores Max Temperature ( Unit: °C)		21.6	50.1	56.3	68.1	79.0	92.2	98.5
CPU Cores Frequency (Unit: GHz) <small>Processor Base Frequency: 2.00GHz</small>		2.50	2.50	2.50	2.50	2.50	2.50	2.37
Thermocouple Measurements Temperature								
Thermocouple	AmbientTemp.	-35°C	-20°C	0°C	25°C	40°C	50°C	60°C
Measuring point and Temperature					85% RH	85% RH	85% RH	85% RH
CH1	CPU	1.1	32.3	37.8	51.2	62.7	73.1	82.7
CH2	CPU Heatsink	-17.4	12.7	23.0	37.9	49.6	59.4	68.5
CH3	DRAM	-30.9	-12.6	2.1	29.3	45.0	54.9	65.3
CH4	M.2 SSD	-23.3	-4.7	13.6	32.4	46.8	55.9	63.1
CH5	2.5" SSD	-31.5	-18.0	1.9	27.4	43.6	53.1	63.2
CH6	25GbE Network Adapter E810-XXVDA4	-18.8	-3.6	13.6	34.8	49.3	58.7	69.2
CH7	Inside the Chassis	-32.8	-18.5	1.4	26.9	42.9	52.6	63.1

# Performance Test

## THOR11-D27-HSC

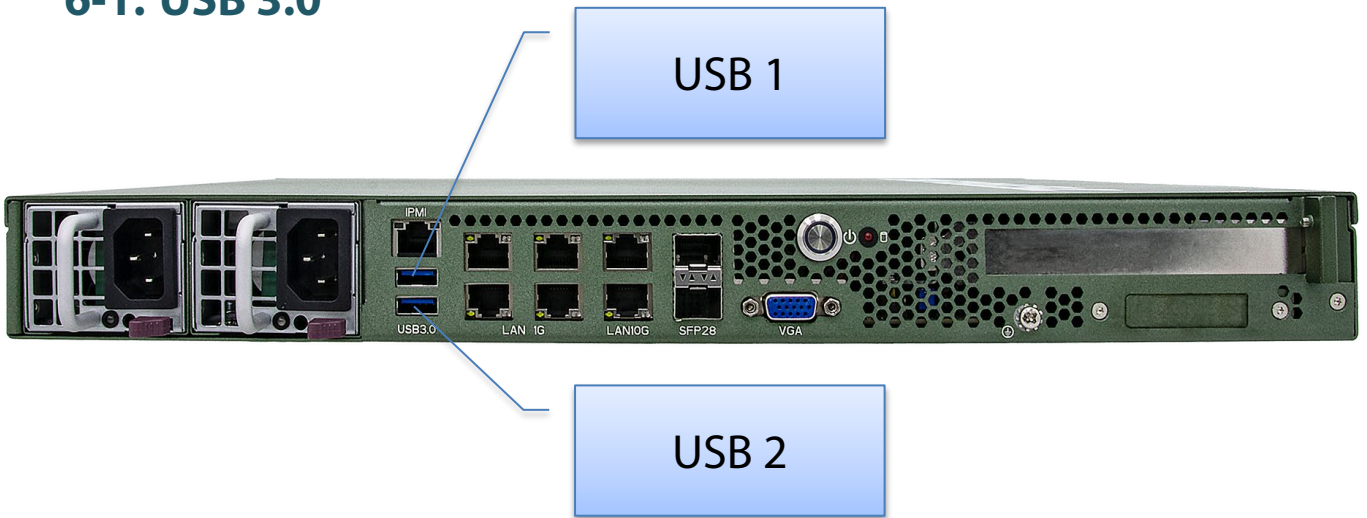


# Performance Test

THOR11-D27-HSC

## 6. I/O FUNCTION TEST

### 6-1. USB 3.0



The screenshot displays the PassMark(TM) USB3Test software interface. It includes a configuration section for selecting a USB device and connection type, a test mode selection (Loopback or Benchmark), and a detailed results table. A bar chart on the right shows the maximum rate achieved during the test. A 'USB 1' callout box points to the software window.

**PassMark(TM) USB3Test**

Select USB Device

Device: PMU33ZQ2CX (SuperSpeed 5Gb/s)

Connection Type: SuperSpeed 5Gb/s

Test mode

Loopback

Benchmark

**Results** *Status: BENCHMARK test - Complete*

Duration: 000h 10m 00s	Operations: 0	Errors: 0
Write block 805: 3368.7 Mb/s (421.1 MB/s)		
Read block 806: 3369.0 Mb/s (421.1 MB/s)		
Write block 806: 3371.3 Mb/s (421.4 MB/s)		
Read block 807: 3368.7 Mb/s (421.1 MB/s)		
Write block 807: 3370.8 Mb/s (421.4 MB/s)		
Read block 808: 3364.1 Mb/s (420.5 MB/s)		
Write block 808: 3371.9 Mb/s (421.5 MB/s)		
Read block 809: 3369.7 Mb/s (421.2 MB/s)		
<b>OVERALL BENCHMARK RESULT:</b>		
Test Start time:		
Duration: 000h 10m 00s		
Total number of bytes written: 103020 MB		
Total number of bytes read: 103147 MB		
Maximum Write Data Rate: 3372.5 Mb/s (421.6 MB/s)		
Maximum Read Data Rate: 3372.7 Mb/s (421.6 MB/s)		
Minimum Write Data Rate: 3087.2 Mb/s (385.9 MB/s)		
Minimum Read Data Rate: 3362.6 Mb/s (420.3 MB/s)		
Average Write Data Rate: 3369.9 Mb/s (421.2 MB/s)		
Average Read Data Rate: 3369.2 Mb/s (421.2 MB/s)		
Average Data Rate: 3369.6 Mb/s (421.2 MB/s)		
Minimum Data Rate: 3087.2 Mb/s (385.9 MB/s)		

Max. Rate: 3372

Duration: 10 Minutes

Voltage 4.98V  
Speed 5Gb/s

Start Stop

Configure Flash LEDs

Clear Serial Save Log

Reset All Help

About Exit

# Performance Test

THOR11-D27-HSC

USB 2

PassMark(TM) USB3Test
✕

Select USB Device


Device: PMU33ZQ2DG (SuperSpeed 5Gb/s)


Connection Type: SuperSpeed 5Gb/s

Test mode

Loopback

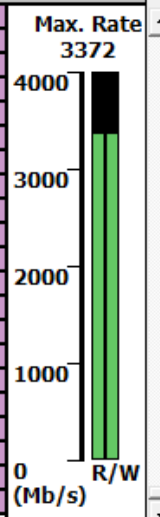
Benchmark





**Results** Status: *BENCHMARK test - Complete*

Duration: 000h 30m 00s	Operations: 0	Errors: 0
Write block 2383: 3368.1 Mb/s (421.0 MB/s)		
Read block 2384: 3368.0 Mb/s (421.0 MB/s)		
Write block 2384: 3371.8 Mb/s (421.5 MB/s)		
Read block 2385: 3370.5 Mb/s (421.3 MB/s)		
Write block 2385: 3371.7 Mb/s (421.5 MB/s)		
Read block 2386: 3368.7 Mb/s (421.1 MB/s)		
Write block 2386: 3371.2 Mb/s (421.4 MB/s)		
Read block 2387: 3369.7 Mb/s (421.2 MB/s)		
<b>OVERALL BENCHMARK RESULT:</b>		
Test Start time:		
Duration: 000h 30m 00s		
Total number of bytes written: 304215 MB		
Total number of bytes read: 304342 MB		
Maximum Write Data Rate: 3372.1 Mb/s (421.5 MB/s)		
Maximum Read Data Rate: 3372.7 Mb/s (421.6 MB/s)		
Minimum Write Data Rate: 2731.4 Mb/s (341.4 MB/s)		
Minimum Read Data Rate: 2733.3 Mb/s (341.7 MB/s)		
Average Write Data Rate: 3350.8 Mb/s (418.8 MB/s)		
Average Read Data Rate: 3362.1 Mb/s (420.3 MB/s)		
Average Data Rate: 3356.4 Mb/s (419.6 MB/s)		
Minimum Data Rate: 2731.4 Mb/s (341.4 MB/s)		



Max. Rate: 3372

Voltage 5.01V

Speed 5Gb/s

Duration:  Minutes

Start Stop

Configure Flash LEDs

Clear Serial Save Log

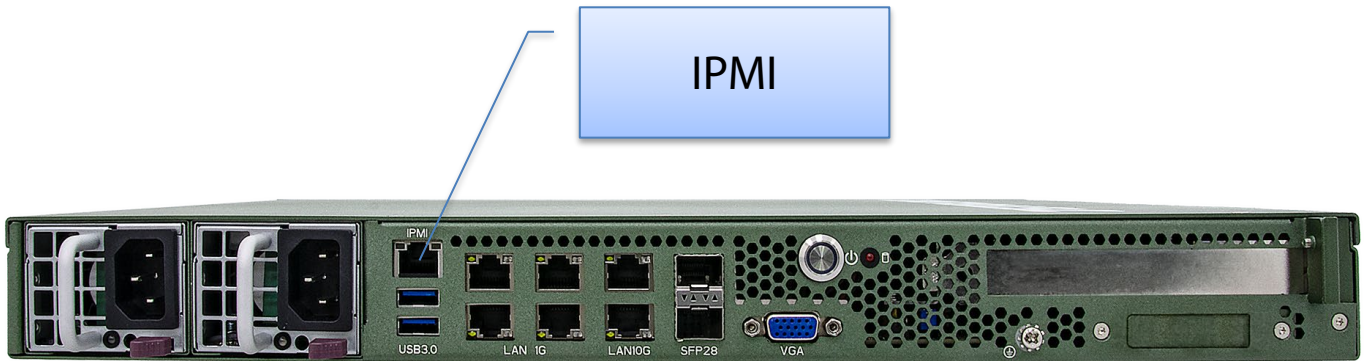
Reset All Help

About Exit

# Performance Test

## THOR11-D27-HSC

### 6-2. IPMI Port



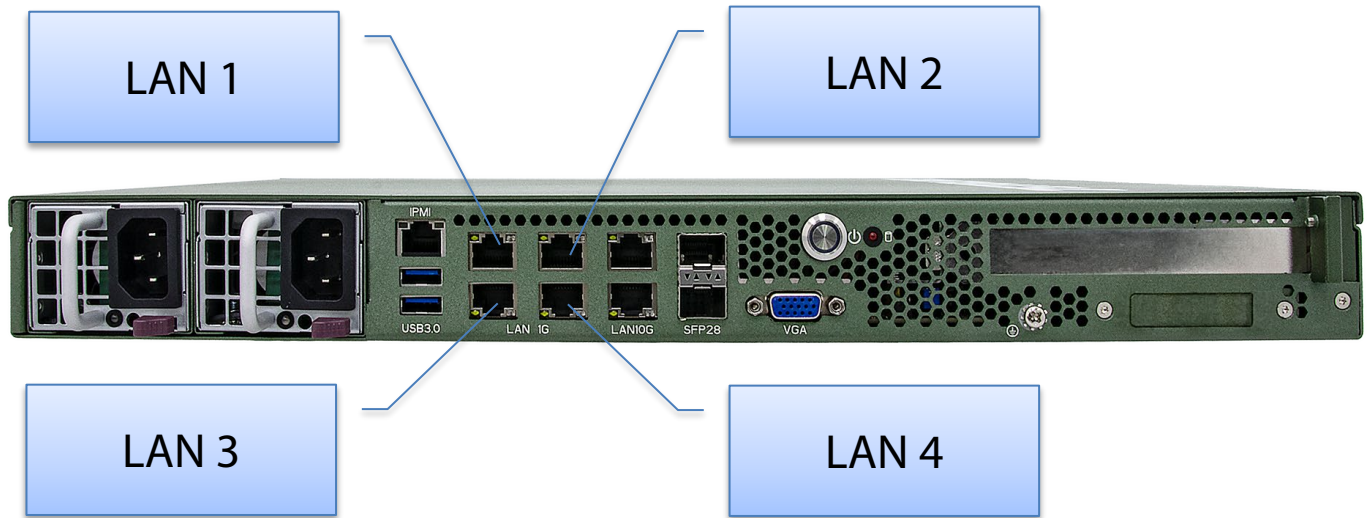
The screenshot displays a server management dashboard with the following sections:

- System:**
  - Firmware Version: 00.14.11
  - Firmware Build Time: 02/23/2023
  - Redfish Version: 1.9.0
  - BIOS Firmware Version: 1.5
  - BIOS Build Time: 10/26/2023
  - BMC MAC Address: 7C:C2:55:E1:4C:58
  - LAN1 MAC Address: 7C:C2:55:E1:41:6A
  - LAN2 MAC Address: 7C:C2:55:E1:41:6B
  - LAN3 MAC Address: 7C:C2:55:E1:41:6C
  - LAN4 MAC Address: 7C:C2:55:E1:41:6D
  - LAN5 MAC Address: 7C:C2:55:E1:42:F4
  - LAN6 MAC Address: 7C:C2:55:E1:42:F5
  - LAN7 MAC Address: 7C:C2:55:E1:44:D8
  - LAN8 MAC Address: 7C:C2:55:E1:44:D9
- Host:**
  - Server Host Name:
  - Server IP Address: 192.168.0.61
  - IPv6 Address 1: fe80:0:0:7ec2:55ff:fe1:4c58
- Power Consumption:** A line graph showing power consumption in Watts over time. The X-axis represents time in minutes (-55 m to -10 m), and the Y-axis represents power consumption in Watts (0 to 160). Three lines are plotted: Min Peak (green), Average Usage (blue), and Max Peak (orange). All lines show a sharp increase in power consumption starting around -25 minutes.
- Remote Console Preview:** A preview of the remote console showing a Windows desktop environment. It includes buttons for "JAVA plug-in" and "HTML5".
- Recent Log:** A section for viewing recent log entries.

# Performance Test

## THOR11-D27-HSC

### 6-3. LAN (1Gbps)



#### LAN 1 SPEED

```
Administrator: Command Prompt
iperf -c 192.168.100.100 -t 500 -P 4 -S
iperf Done.
C:\>
```

Interval	Transfer	Bandwidth
0.00-0.00 sec	9.29 MBytes	162 Mbits/sec
0.00-0.00 sec	18.2 MBytes	153 Mbits/sec
0.00-0.00 sec	56.6 MBytes	475 Mbits/sec
SUM	113 MBytes	950 Mbits/sec
0.00-0.00 sec	18.9 MBytes	158 Mbits/sec
0.00-0.00 sec	19.0 MBytes	159 Mbits/sec
0.00-0.00 sec	18.5 MBytes	155 Mbits/sec
0.00-0.00 sec	56.6 MBytes	475 Mbits/sec
SUM	113 MBytes	947 Mbits/sec
0.00-0.00 sec	19.1 MBytes	161 Mbits/sec
0.00-0.00 sec	19.1 MBytes	161 Mbits/sec
0.00-0.00 sec	18.5 MBytes	155 Mbits/sec
0.00-0.00 sec	56.5 MBytes	475 Mbits/sec
SUM	113 MBytes	951 Mbits/sec
0.00-0.00 sec	19.0 MBytes	159 Mbits/sec
0.00-0.00 sec	18.6 MBytes	156 Mbits/sec
0.00-0.00 sec	18.9 MBytes	158 Mbits/sec
0.00-0.00 sec	56.6 MBytes	474 Mbits/sec
SUM	113 MBytes	943 Mbits/sec
0.00-0.00 sec	19.2 MBytes	162 Mbits/sec
0.00-0.00 sec	18.9 MBytes	158 Mbits/sec
0.00-0.00 sec	18.6 MBytes	156 Mbits/sec
0.00-0.00 sec	56.5 MBytes	475 Mbits/sec
SUM	113 MBytes	950 Mbits/sec
0.00-0.00 sec	19.1 MBytes	160 Mbits/sec
0.00-0.00 sec	18.8 MBytes	157 Mbits/sec
0.00-0.00 sec	19.6 MBytes	156 Mbits/sec
0.00-0.00 sec	56.6 MBytes	475 Mbits/sec
SUM	113 MBytes	949 Mbits/sec
0.00-0.00 sec	18.8 MBytes	157 Mbits/sec
0.00-0.00 sec	19.0 MBytes	159 Mbits/sec
0.00-0.00 sec	18.9 MBytes	158 Mbits/sec
0.00-0.00 sec	56.5 MBytes	474 Mbits/sec
SUM	113 MBytes	949 Mbits/sec
0.00-0.00 sec	19.1 MBytes	160 Mbits/sec
0.00-0.00 sec	18.8 MBytes	157 Mbits/sec
0.00-0.00 sec	19.6 MBytes	156 Mbits/sec
0.00-0.00 sec	56.5 MBytes	475 Mbits/sec
SUM	113 MBytes	949 Mbits/sec
0.00-0.00 sec	19.2 MBytes	162 Mbits/sec
0.00-0.00 sec	18.9 MBytes	158 Mbits/sec
0.00-0.00 sec	18.6 MBytes	156 Mbits/sec
0.00-0.00 sec	56.5 MBytes	475 Mbits/sec
SUM	113 MBytes	950 Mbits/sec

#### LAN 1 Data-Packet

```
Administrator: Command Prompt
ping -n 500 -l 32 192.168.100.100
Ping statistics for 192.168.100.100:
    Packets: Sent = 500, Received = 500, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 2ms
C:\>
```

#### Ethernet Status

General

Connection: No network access

IPv4 Connectivity: No Internet access

Media State: Enabled

Duration: 00:31:36

Speed: 1.0 Gbps

Activity: Sent 59,397,336,709 | Received 493,619,034

Properties | Disable | Diagnose

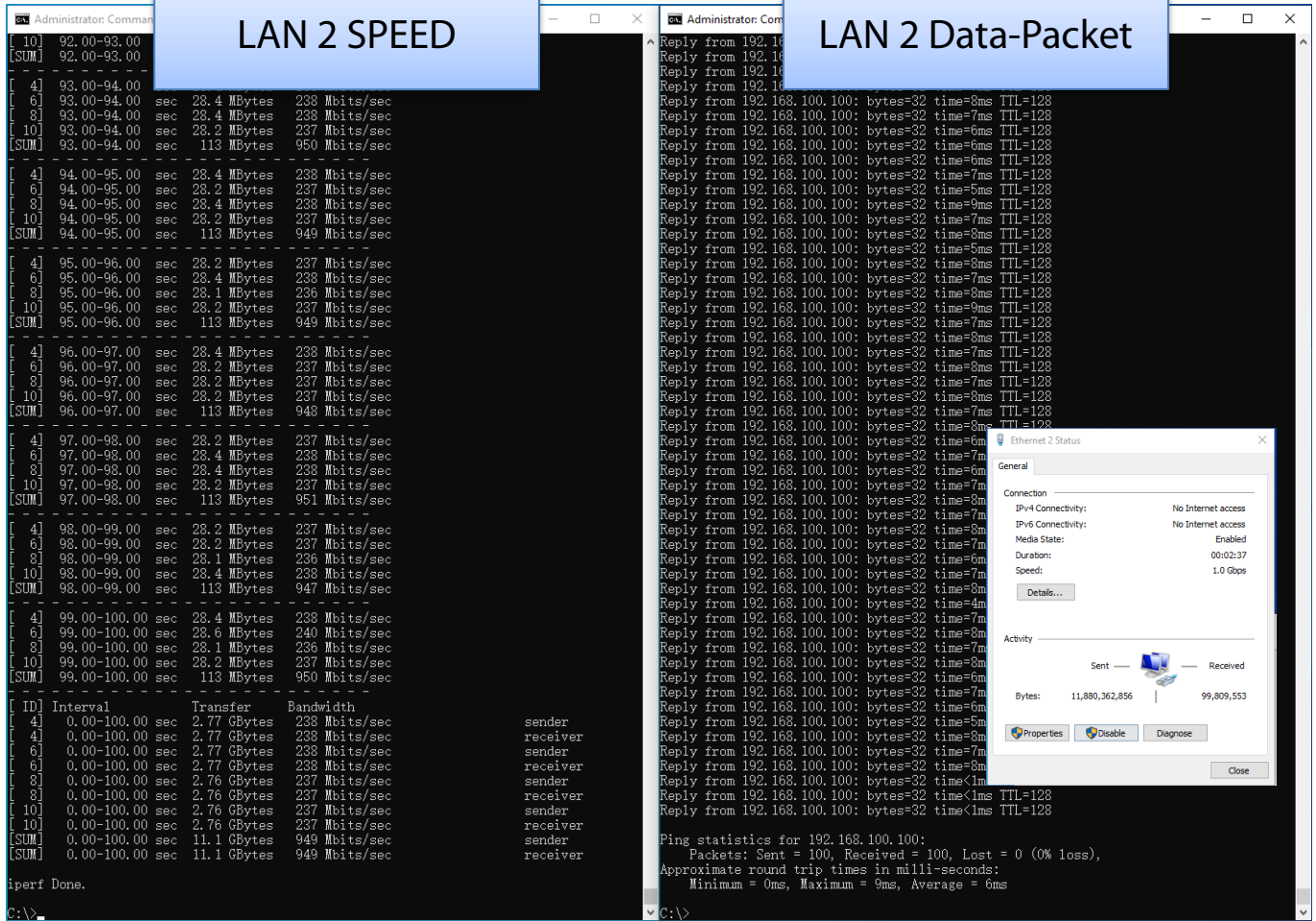
LAN Speed Test Result: Pass  
LAN Data-Packet Test Result: 0 Lost (0% loss)

# Performance Test

## THOR11-D27-HSC

LAN 2 SPEED

LAN 2 Data-Packet



The screenshot displays two windows from a Windows command prompt. The left window shows the output of an iperf speed test, and the right window shows the status of the Ethernet 2 network adapter.

**LAN 2 SPEED Test Results:**

Interval	Transfer	Bandwidth
0.00-100.00 sec	2.77 GBytes	238 Mbits/sec
0.00-100.00 sec	2.77 GBytes	238 Mbits/sec
0.00-100.00 sec	2.77 GBytes	238 Mbits/sec
0.00-100.00 sec	2.76 GBytes	237 Mbits/sec
0.00-100.00 sec	2.76 GBytes	237 Mbits/sec
0.00-100.00 sec	2.76 GBytes	237 Mbits/sec
0.00-100.00 sec	2.76 GBytes	237 Mbits/sec
0.00-100.00 sec	11.1 GBytes	949 Mbits/sec
0.00-100.00 sec	11.1 GBytes	949 Mbits/sec

**LAN 2 Data-Packet Test Results:**

The Ethernet 2 Status window shows the following activity:

- Bytes Sent: 11,880,362,856
- Bytes Received: 99,809,553

**Ping Statistics for 192.168.100.100:**

- Packets: Sent = 100, Received = 100, Lost = 0 (0% loss)
- Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 9ms, Average = 6ms

LAN Speed Test Result: Pass

LAN Data-Packet Test Result: 0 Lost (0% loss)

# Performance Test

## THOR11-D27-HSC

The screenshot displays two side-by-side windows. The left window, titled 'Administrator: Command Prompt', shows the output of an iperf test. A blue callout box labeled 'LAN 3 SPEED' highlights a summary row: [SUM] 493.00-494.00 sec 113 MBytes 949 Mbits/sec. Below this, a table summarizes the test results:

[ID]	Interval	Transfer	Bandwidth	Sender	Receiver
[ 4]	0.00-500.00	sec 13.8 GBytes	238 Mbits/sec	sender	receiver
[ 6]	0.00-500.00	sec 13.8 GBytes	237 Mbits/sec	sender	receiver
[ 8]	0.00-500.00	sec 13.8 GBytes	238 Mbits/sec	sender	receiver
[10]	0.00-500.00	sec 13.8 GBytes	237 Mbits/sec	sender	receiver
[SUM]	0.00-500.00	sec 55.2 GBytes	949 Mbits/sec	sender	receiver

The right window, also titled 'Administrator: Command Prompt', shows the output of a ping test. A blue callout box labeled 'LAN 3 Data-Packet' highlights a summary row: Ping statistics for 192.168.100.100: Packets: Sent = 500, Received = 500, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 9ms, Average = 6ms. Below this, a screenshot of the 'Ethernet 3 Status' window is shown, displaying network connectivity and activity statistics.

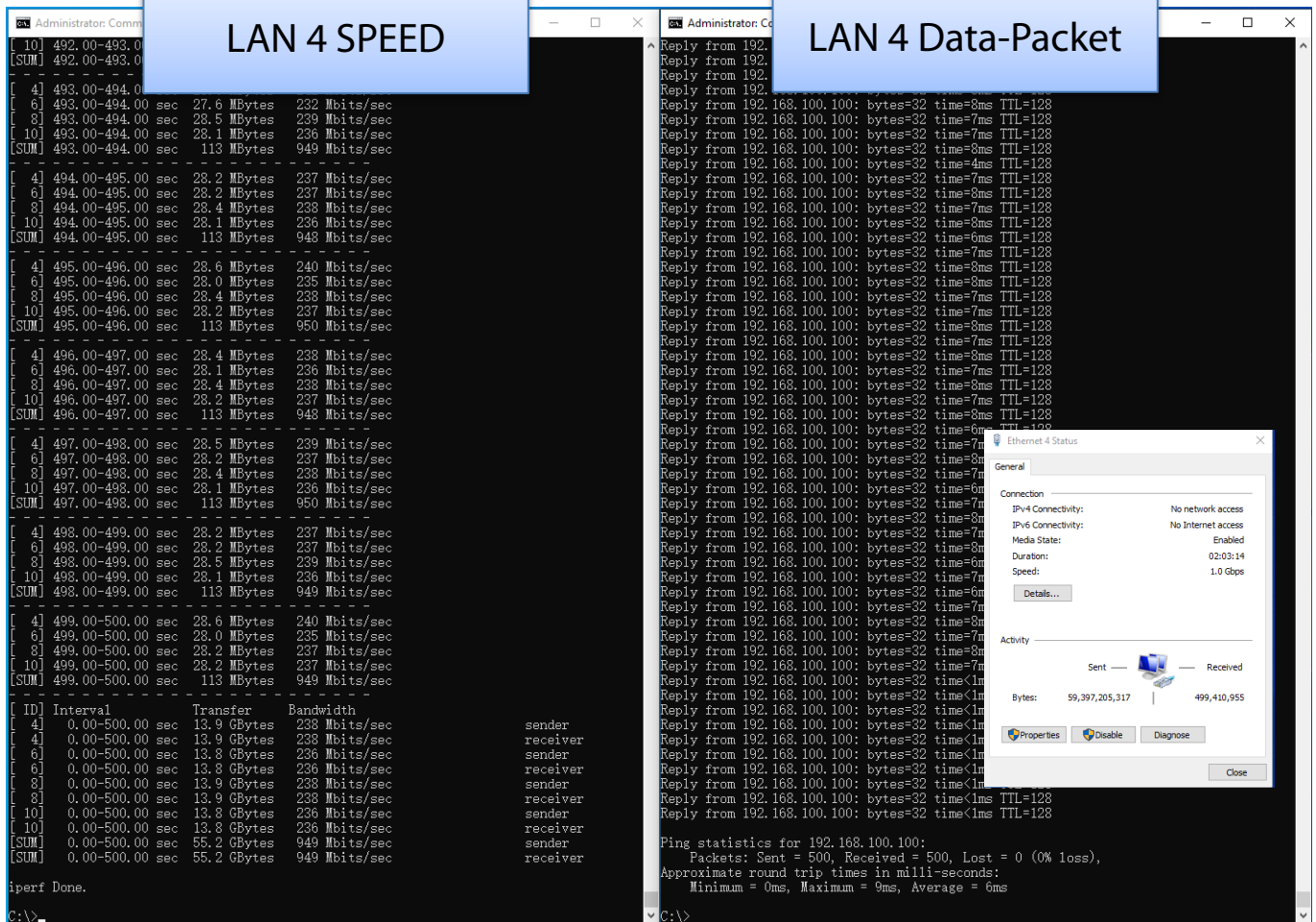
LAN Speed Test Result: Pass

LAN Data-Packet Test Result: 0 Lost (0% loss)



# Performance Test

## THOR11-D27-HSC



**LAN 4 SPEED**

```
iperf Done.
C:\>
```

Interval	Transfer	Bandwidth
0.00-500.00 sec	13.9 GBytes	238 Mbits/sec
0.00-500.00 sec	13.9 GBytes	238 Mbits/sec
0.00-500.00 sec	13.8 GBytes	236 Mbits/sec
0.00-500.00 sec	13.9 GBytes	238 Mbits/sec
0.00-500.00 sec	13.8 GBytes	236 Mbits/sec
0.00-500.00 sec	13.9 GBytes	238 Mbits/sec
0.00-500.00 sec	13.8 GBytes	236 Mbits/sec
0.00-500.00 sec	13.9 GBytes	238 Mbits/sec
0.00-500.00 sec	13.8 GBytes	236 Mbits/sec
0.00-500.00 sec	13.8 GBytes	236 Mbits/sec
0.00-500.00 sec	55.2 GBytes	949 Mbits/sec

**LAN 4 Data-Packet**

```
Ping statistics for 192.168.100.100:
Packets: Sent = 500, Received = 500, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 6ms
C:\>
```

**Ethernet 4 Status**

General

Connection: No network access

IPv4 Connectivity: No Internet access

Media State: Enabled

Duration: 02:03:14

Speed: 1.0 Gbps

Activity

Sent: 59,397,205,317 | Received: 499,410,955

Properties | Disable | Diagnose

LAN Speed Test Result: Pass

LAN Data-Packet Test Result: 0 Lost (0% loss)



# Performance Test

## THOR11-D27-HSC

LAN 7 SPEED

LAN 7 Data-Packet

The screenshot shows two windows. The left window displays the output of an iperf test, showing transfer rates and bandwidth for various intervals. The right window shows the output of a ping test, displaying 'Reply from 192.168.100.1: bytes=32 time<ms TTL=128' for each of the 5000 packets sent. A status window for Ethernet 7 is also visible, showing connection details like IPv4/IPv6 connectivity, media state, and speed (10.0 Gbps).

ID	Interval	Transfer	Bandwidth
4	0.00-5000.00 sec	642 GBytes	1.10 Gbits/sec
6	0.00-5000.00 sec	0.00 GBytes	2.12 Gbits/sec
8	0.00-5000.00 sec	0.00 GBytes	2.27 Gbits/sec
10	0.00-5000.00 sec	0.00 GBytes	2.26 Gbits/sec
12	0.00-5000.00 sec	387 GBytes	1.52 Gbits/sec
[SUM]	0.00-5000.00 sec	0.00 GBytes	9.27 Gbits/sec

iperf Done.

Ping statistics for 192.168.100.1:  
 Packets: Sent = 5000, Received = 4998, Lost = 0 (0% loss),  
 Approximate round trip times in milli-seconds:  
 Minimum = 0ms, Maximum = 1ms, Average = 0ms

LAN Speed Test Result: Pass  
 LAN Data-Packet Test Result: 0 Lost (0% loss)

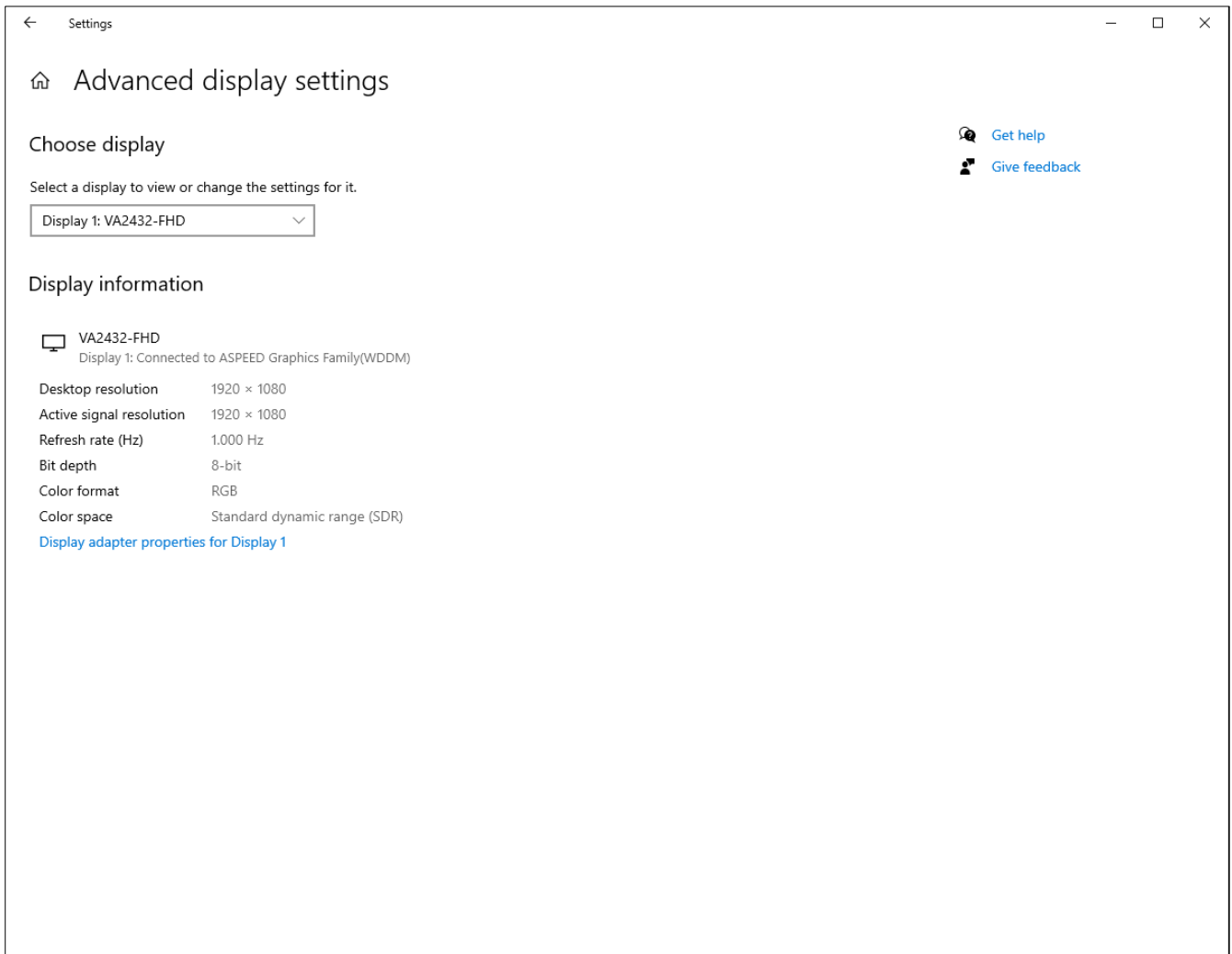




# Performance Test

## THOR11-D27-HSC

### 6-6. VGA Port



# Performance Test

THOR11-D27-HSC

## 7. OPERATING SYSTEM COMPATIBILITY

### 7-1. Ubuntu 22.04 LTS

