



# MINERVA

## DP9105 PCIe x4 Gen4 for U.2(SFF-8639) AIC

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### Performance & Burn In Test Rev. 1. 0

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# DP9105Rev1.0 Host Bus Adapter

## 1. Overview

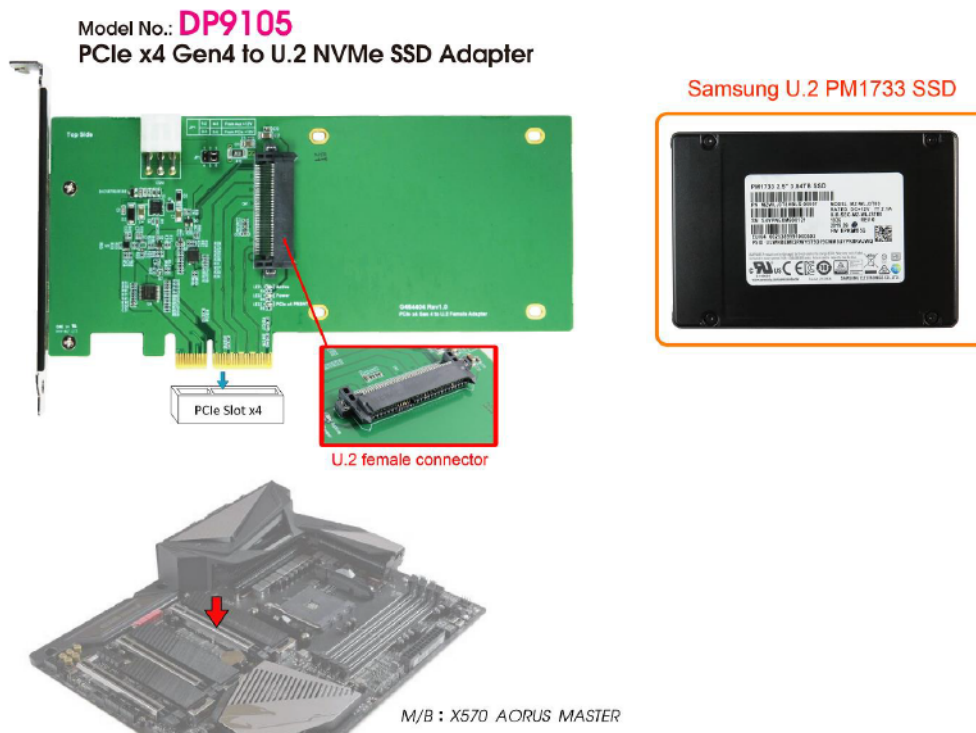
The Host Bus Adapter may provide PCIe x4 Gen4, 16GT/s high-speed signals extension to U.2 (SFF-8639).

## 2. Tools and Results of Performance Measurement

### 2.1 Test Platform:

M/B : GIGABYTE **X570 AORUS MASTER**  
CPU : AMD **Ryzen 7, 3700X 8-Core**  
Memory : Kingston **KVR26N19D8/16, DDR4-2666MHz, 32GB**(16GB DIMM\*2)  
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply  
AIC: DP9105 PCIe x4 Gen4 to U.2(SFF-8639) ADD-in Card  
OS : Microsoft **Windows 10 64bit OS**

### 2.2 Test target: DP9105 & **Samsung PM1733 U.2, 4TB NVMe SSD**



## 2.3 Install Hardware

The U.2 NVMe SSD inserts into DP9105 AIC and then the DP9105 AIC plugs into GIGABYTE **X570 AORUS MASTER**.

## 2.4 BIOS & Windows 10 OS environment setup

- 2.4.1 Primary SATA SSD installed Windows 10 OS.
- 2.4.2 U.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.

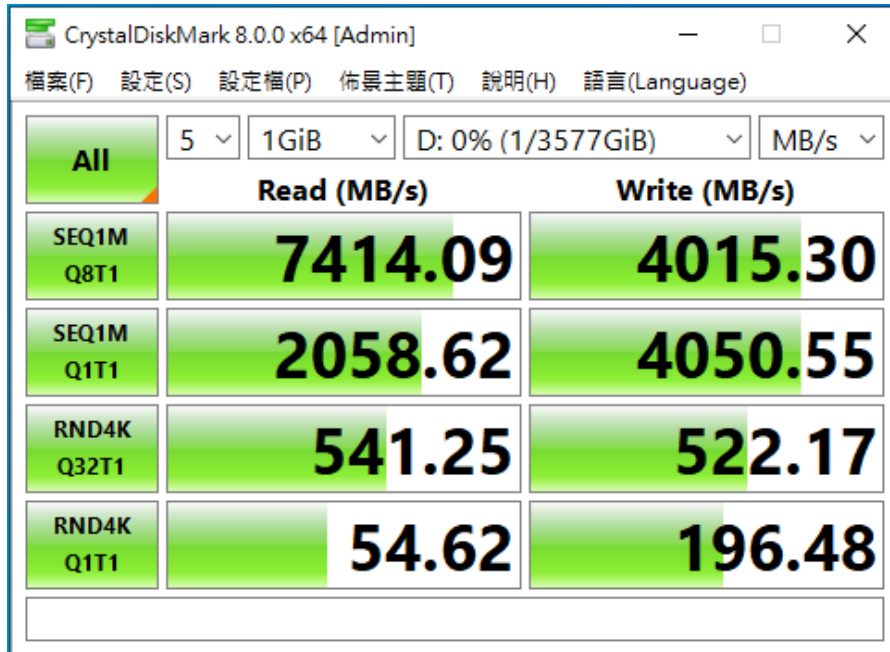


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## 2.5 CrystalDiskMark 8.0 x64 performance test

※ Benchmark (Sequential Read & Write / default = 1MB)

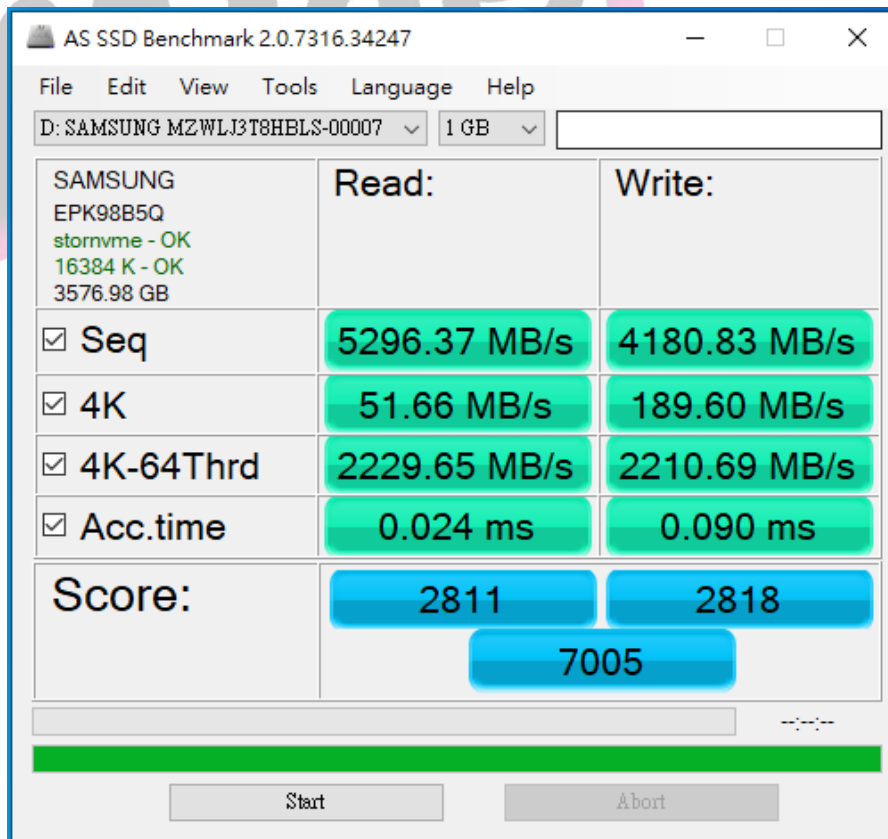
2.5.1 Samsung PM1733 U.2, 4TB NVMe SSD performance as below:



## 2.6 AS SSD Benchmark 2.0.73 performance test

※ Benchmark (Read & Write by MB/s, default block size = 16MB)

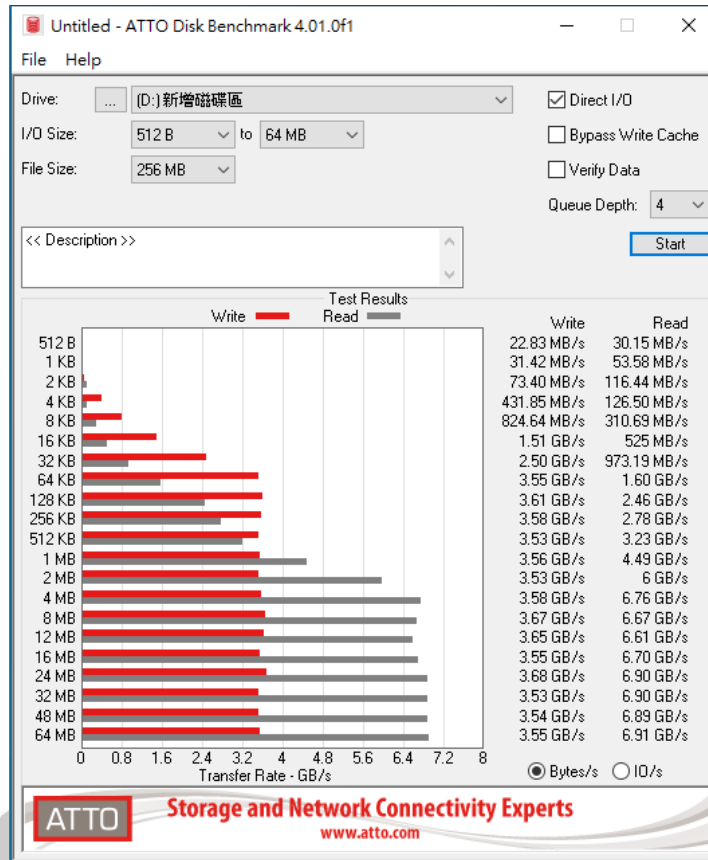
2.6.1 Samsung PM1733 U.2, 4TB NVMe SSD performance as below:



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## 2.7 ATTO Disk Benchmark 4.01 performance test

### 2.7.1 Samsung PM1733 U.2, 4TB NVMe SSD performance as below:



## 2.8 AnvilBenchmark\_V110\_B337

### 2.8.1 Samsung PM1733 U.2, 4TB NVMe SSD performance as below:

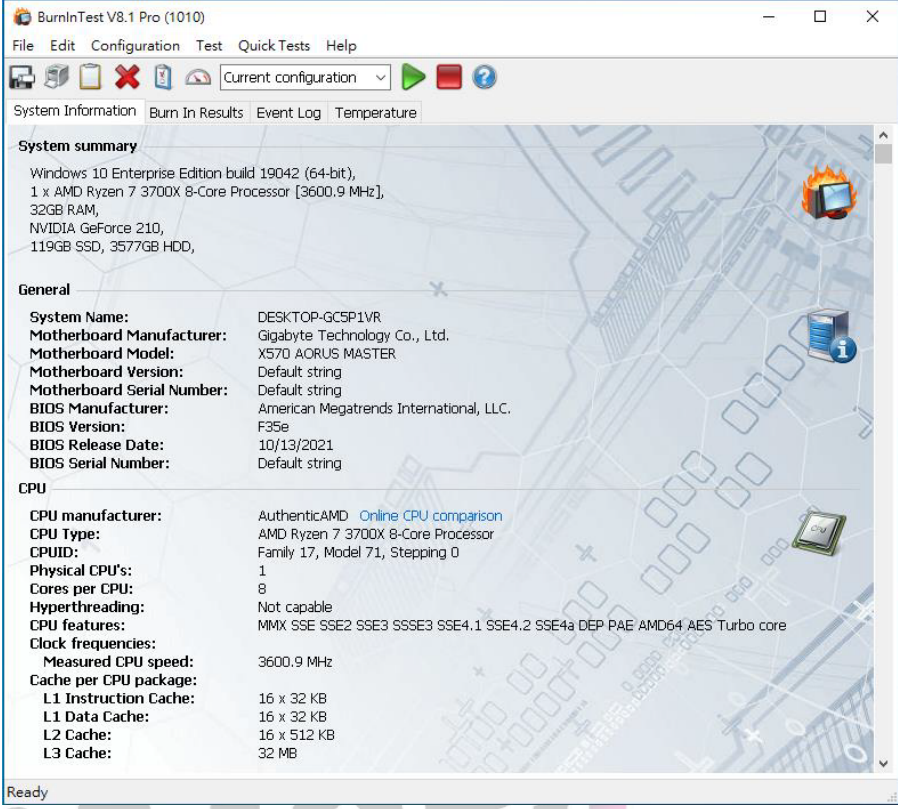


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## 3. Burn In Tests and Results

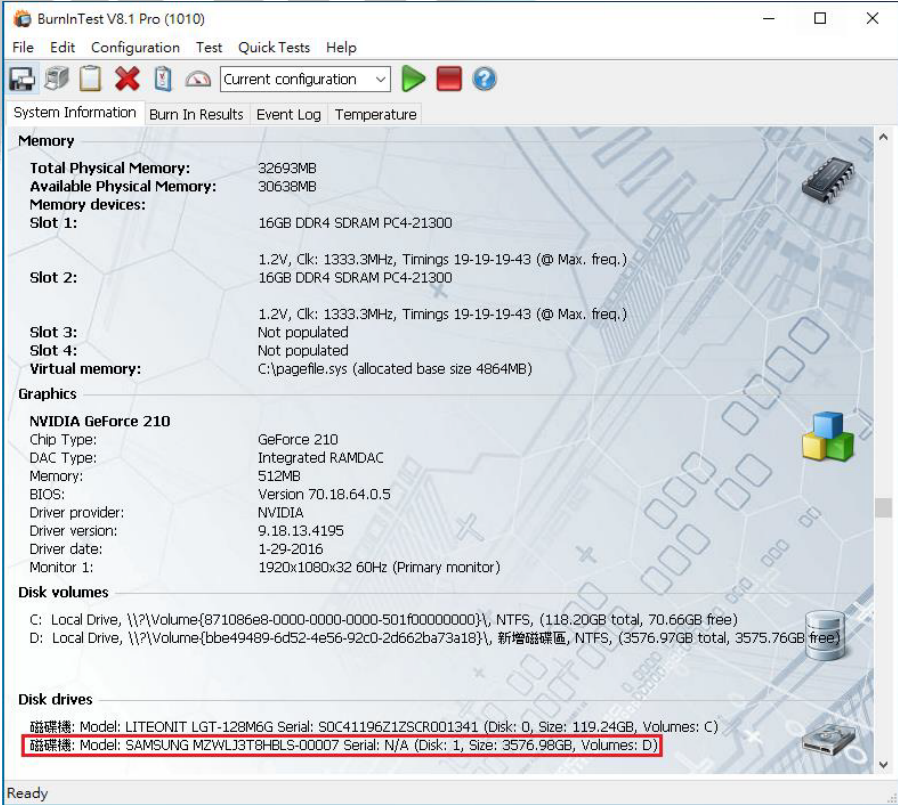
### 3.1 BurnInTest v8.1 Pro for Samsung PM1733 U.2, 4TB NVMe SSD

#### 3.1.1 System Information as below:



The screenshot shows the 'System Information' tab in BurnInTest v8.1 Pro. The window title is 'BurnInTest V8.1 Pro (1010)'. The menu bar includes File, Edit, Configuration, Test, Quick Tests, and Help. The toolbar shows icons for file operations and a 'Current configuration' dropdown. The main content area is titled 'System summary' and lists the following system details:

- Windows 10 Enterprise Edition build 19042 (64-bit), 1 x AMD Ryzen 7 3700X 8-Core Processor [3600.9 MHz], 32GB RAM, NVIDIA GeForce 210, 119GB SSD, 3577GB HDD.
- General**
  - System Name: DESKTOP-GC5P1VR
  - Motherboard Manufacturer: Gigabyte Technology Co., Ltd.
  - Motherboard Model: X570 AORUS MASTER
  - Motherboard Version: Default string
  - Motherboard Serial Number: Default string
  - BIOS Manufacturer: American Megatrends International, LLC.
  - BIOS Version: F35e
  - BIOS Release Date: 10/13/2021
  - BIOS Serial Number: Default string
- CPU**
  - CPU manufacturer: AuthenticAMD [Online CPU comparison](#)
  - CPU Type: AMD Ryzen 7 3700X 8-Core Processor
  - CPUID: Family 17, Model 71, Stepping 0
  - Physical CPU's: 1
  - Cores per CPU: 8
  - Hyperthreading: Not capable
  - CPU features: MMX SSE SSE2 SSE3 SSSE3 SSE4.1 SSE4.2 SSE4a DEP PAE AMD64 AES Turbo core
  - Clock frequencies:
    - Measured CPU speed: 3600.9 MHz
    - Cache per CPU package:
      - L1 Instruction Cache: 16 x 32 KB
      - L1 Data Cache: 16 x 32 KB
      - L2 Cache: 16 x 512 KB
      - L3 Cache: 32 MB

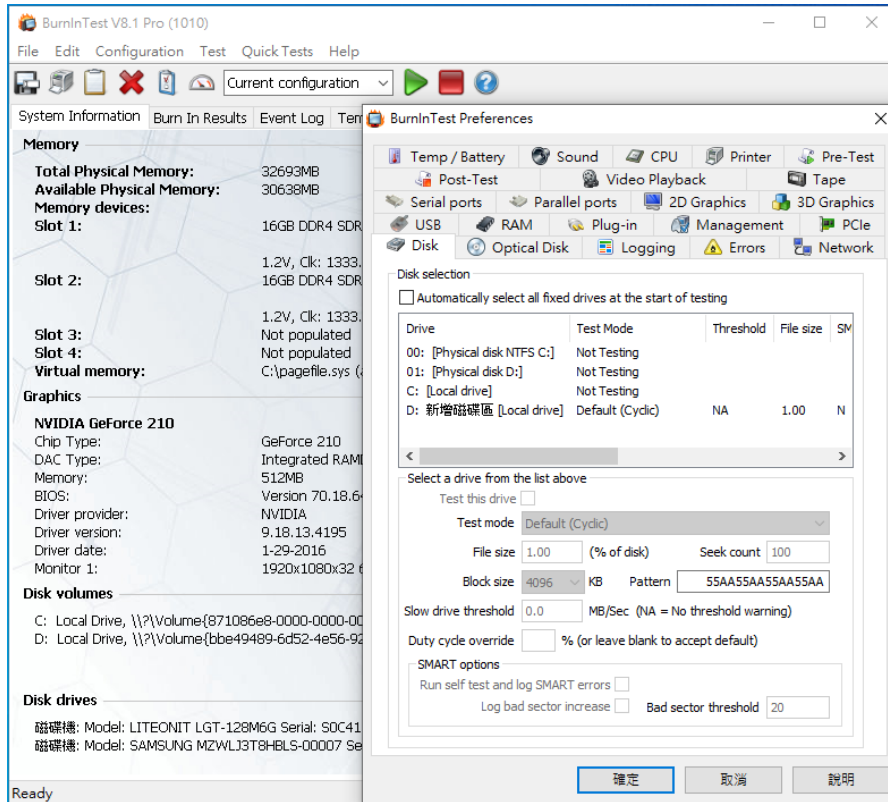


The screenshot shows the 'Memory' and 'Graphics' sections in BurnInTest v8.1 Pro. The window title is 'BurnInTest V8.1 Pro (1010)'. The menu bar includes File, Edit, Configuration, Test, Quick Tests, and Help. The toolbar shows icons for file operations and a 'Current configuration' dropdown. The main content area is titled 'Memory' and lists the following details:

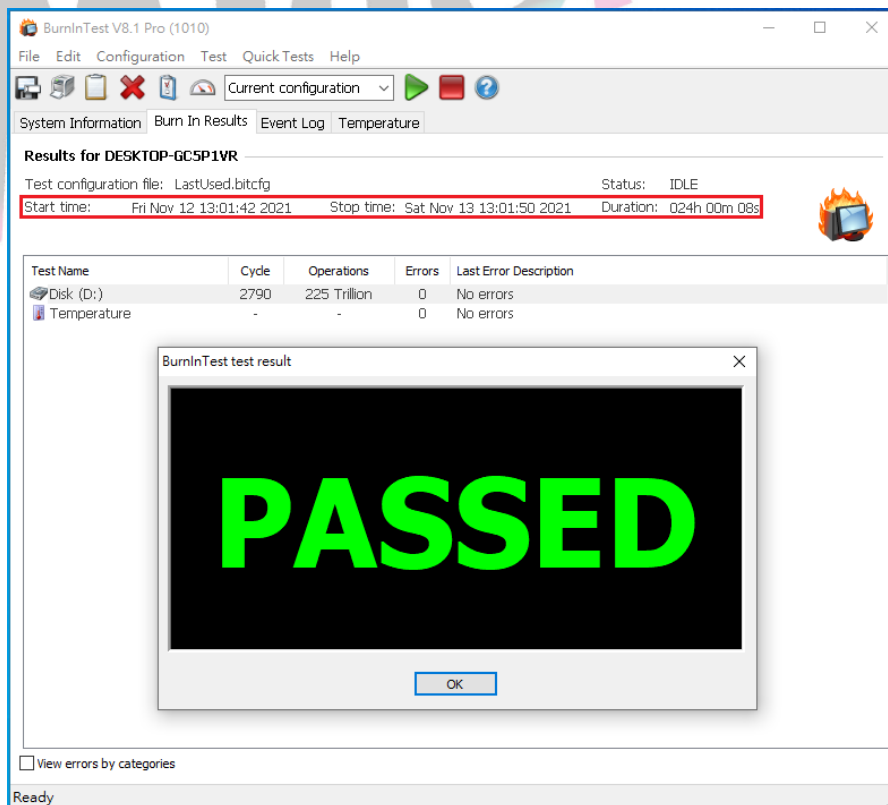
- Memory**
  - Total Physical Memory: 32693MB
  - Available Physical Memory: 30638MB
  - Memory devices:
    - Slot 1: 16GB DDR4 SDRAM PC4-21300
    - Slot 2: 1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.), 16GB DDR4 SDRAM PC4-21300
    - Slot 3: 1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.), Not populated
    - Slot 4: Not populated
    - Virtual memory: C:\pagefile.sys (allocated base size 4864MB)
- Graphics**
  - NVIDIA GeForce 210
    - Chip Type: GeForce 210
    - DAC Type: Integrated RAMDAC
    - Memory: 512MB
    - BIOS: Version 70.18.64.0.5
    - Driver provider: NVIDIA
    - Driver version: 9.18.13.4195
    - Driver date: 1-29-2016
    - Monitor 1: 1920x1080x32 60Hz (Primary monitor)
- Disk volumes**
  - C: Local Drive, \\?\Volume{871086e8-0000-0000-0000-501f00000000}\, NTFS, (118.20GB total, 70.66GB free)
  - D: Local Drive, \\?\Volume{bbe49489-6d52-4e56-92c0-2d662ba73a18}\, 新增磁碟區, NTFS, (3576.97GB total, 3575.76GB free)
- Disk drives**
  - 磁碟機: Model: LITEONIT LGT-128M6G Serial: SOC41196Z1ZSCR001341 (Disk: 0, Size: 119.24GB, Volumes: C)
  - 磁碟機: Model: SAMSUNG MZWLJ3T8HBL5-00007 Serial: N/A (Disk: 1, Size: 3576.98GB, Volumes: D)

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## 3.1.2 Disk test mode( 10 ways cycle test)



## 3.1.3 24-hour Burn-in test PASSED



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## 4. Summary

- 4.1 U.2 NVMe SSD is PCIe Gen 4, 16GT/s , 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 DP9105 Host Bus Adapter I/O performance is based on U.2 NVMe SSD.

