



MINERVA

PC802A Slimline SAS(SFF-8654)8i to M.3 NF1 NVMe converter

Performance & Burn In Test Rev 1.0

Table of Contents

1. Overview

2. Performance Measurement Tools and Results

2.1 Test Platform

2.2 Test target and M.3 NF1 NVMe SSD

2.3 Install Hardware

2.4 BIOS & Windows 10 OS environment setup

2.5 CrystalDiskMark 6.02 x64 performance test

2.6 AS SSD Benchmark 2.0.6 performance test

2.7 ATTO Disk Benchamrk 3.05 performance test

2.8 AnvilBenchmark_V110_B337 Benchmark performance test

3. Burn In Tests and Results

3.1 BurnInTestv8.1 Pro burn in test

4. Summary

PC802A Rev1.0 Converter Card

1. Overview

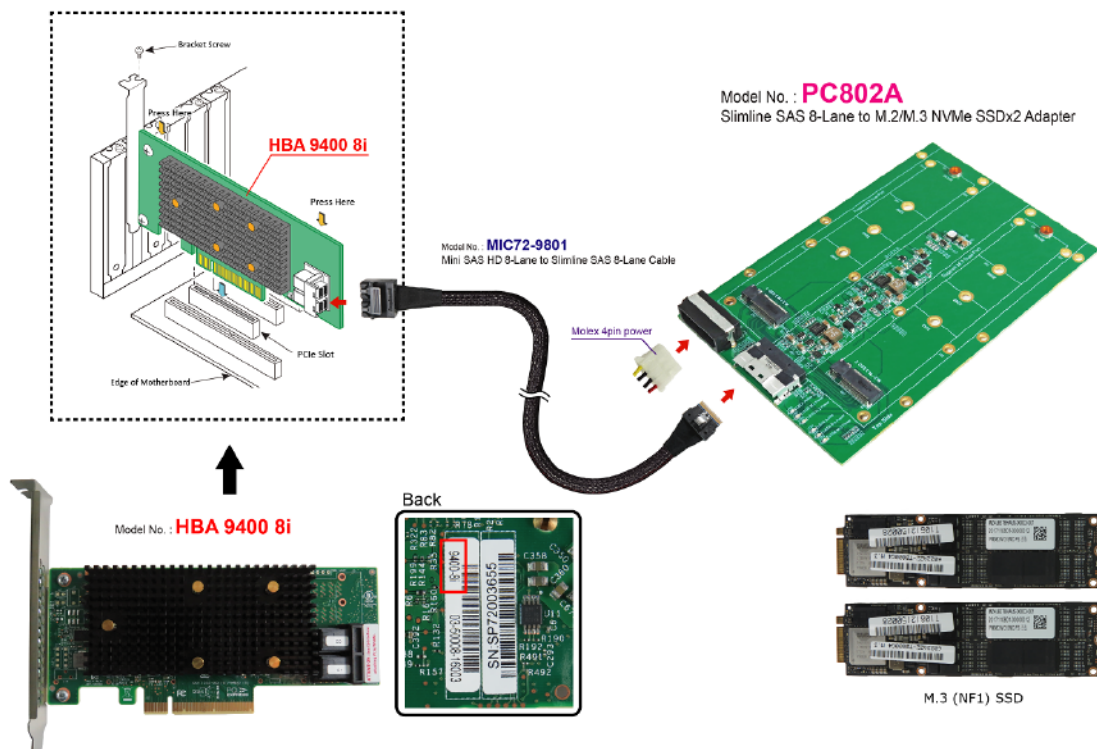
This riser card has built-in Slimline SAS(SFF-8654) 8i connector and M.2 M-KEY connector, which can be inserted into M.2 or M.3 NVMe SSD. It is designed for use by Broadcom MegaRAID and HBA series, and can be set as needed for independent drive, or merge into RAID mode.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : GIGABYTE **Z270-Gaming 8**
CPU : Intel **i7-7700**, 3.6GHz/ 8M Cache/ LGA1151
Memory : Kingston **KVR21N15D8/8**, **DDR4-2133MHz**, **16GB**(8GB DIMM*2)
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
Graphic : Z270 Chipsets built-in **HD Graphics 630**
AIC: Broadcom HBA-9400-8i Tri-mode Storage Adapter
Adapter: PC802A SFF-8654(Slimline SAS) 8-Lane to M.2/M.3 Adapter Dual ports
Cable: SFF-8643(MINI SAS HD) 8-Lane to SFF-8654(Slimline SAS) 8-Lane Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: PC802A adapter and M.3 NF1 **Samsung MZ4LB3T8HALS-000 4TB NVMe SSD**



PC802A Rev1.0 Converter Card

2.3 Install Hardware

First insert the M.3 NF1 SSD into the PC802A riser card M.2 connector, then with copper nuts, and screws to fix SSDs. (Please refer to the Installation Notes). To connect the PC802A adapter to the Broadcom HBA 9400-8i AIC card using the **MIC72-9801 Cable**, and Plugs HBA 9400-8i AIC card into GIGABYTE GIGABYTE **Z270-Gaming 8**.

2.4 BIOS & Windows 10 OS environment setup

2.4.1 Primary NVMe SSD install Windows 10 OS.

2.4.2 Two M.3 NF1 NVMe SSD , formatted to NTFS Mode. Don't install any program.

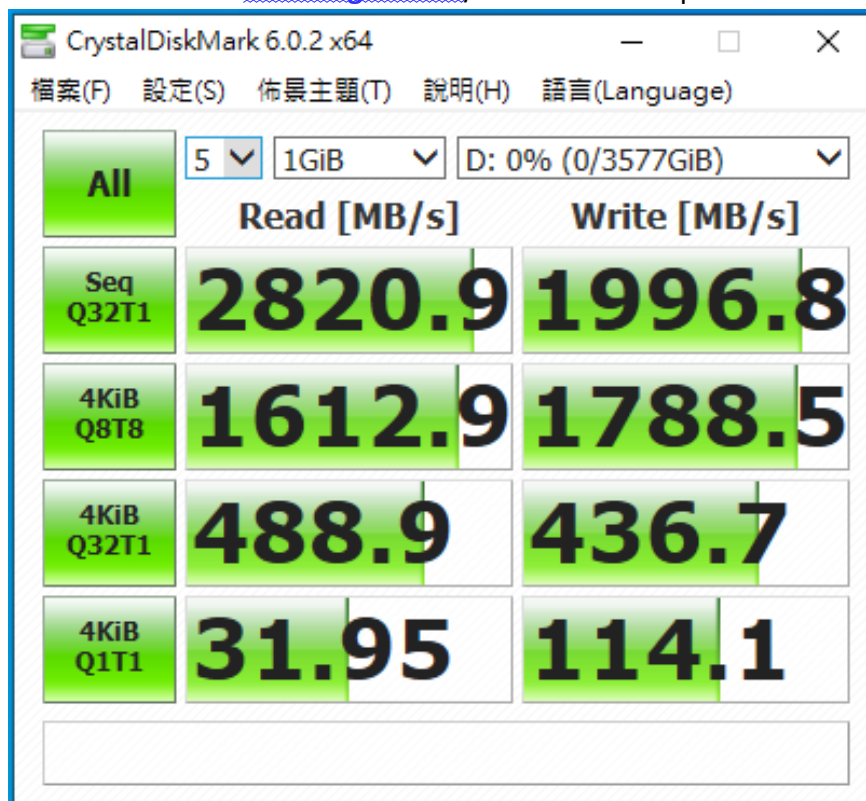


PC802A Rev1.0 Converter Card

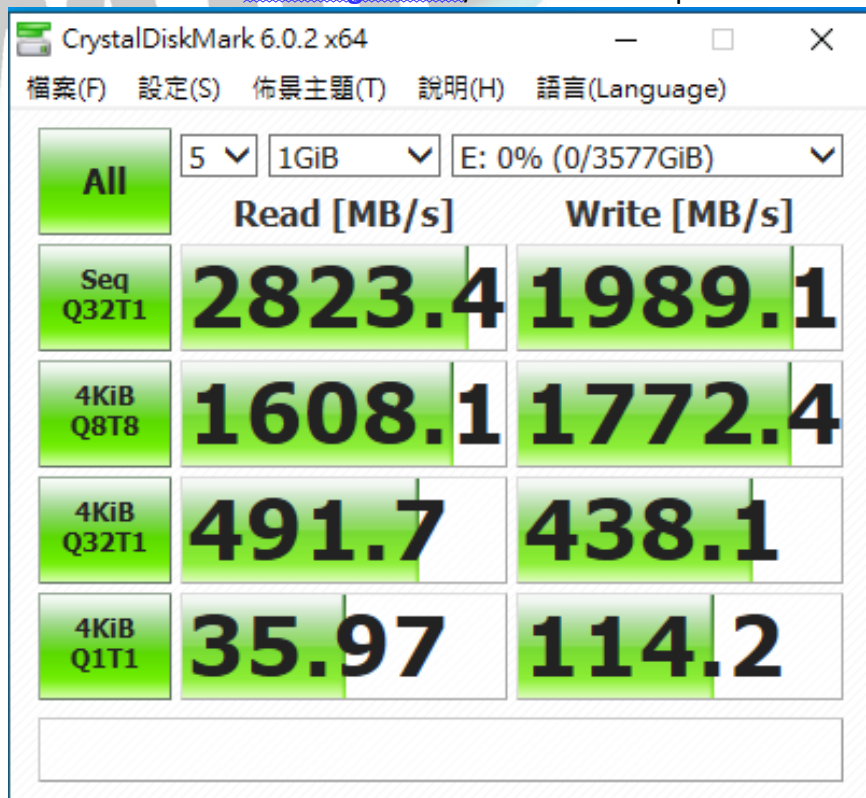
2.5 CrystalDiskMark 6.0.2 x64 performance test

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

2.5.1 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive D: performance as below:



2.5.2 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive E: performance as below:

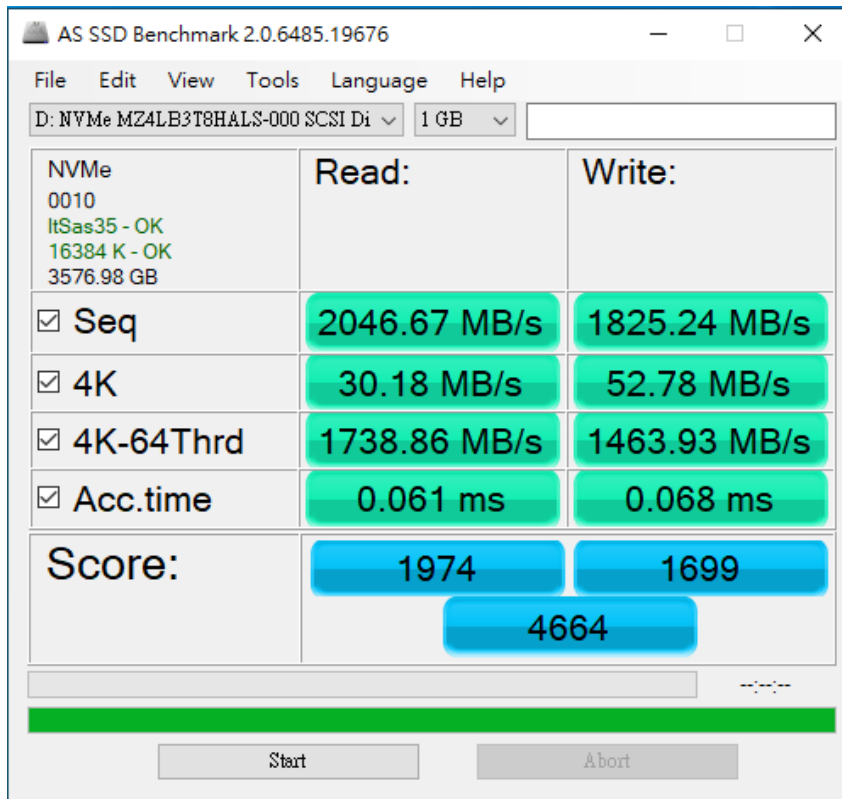


PC802A Rev1.0 Converter Card

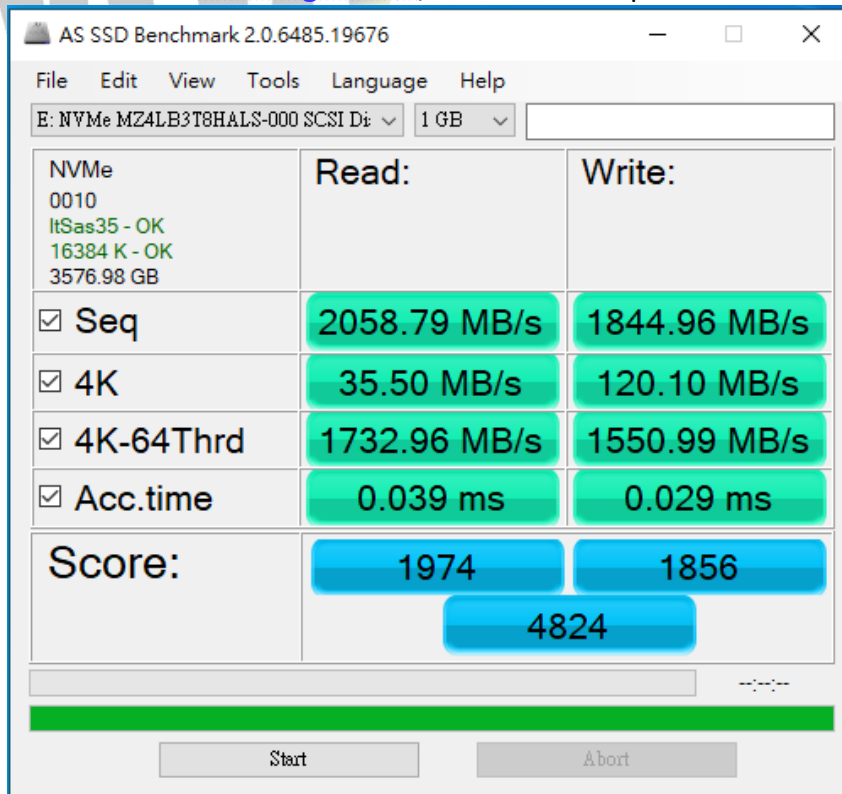
2.6 AS SSD Benchmark 1.9 performance test

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

2.6.1 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive D: performance as below:



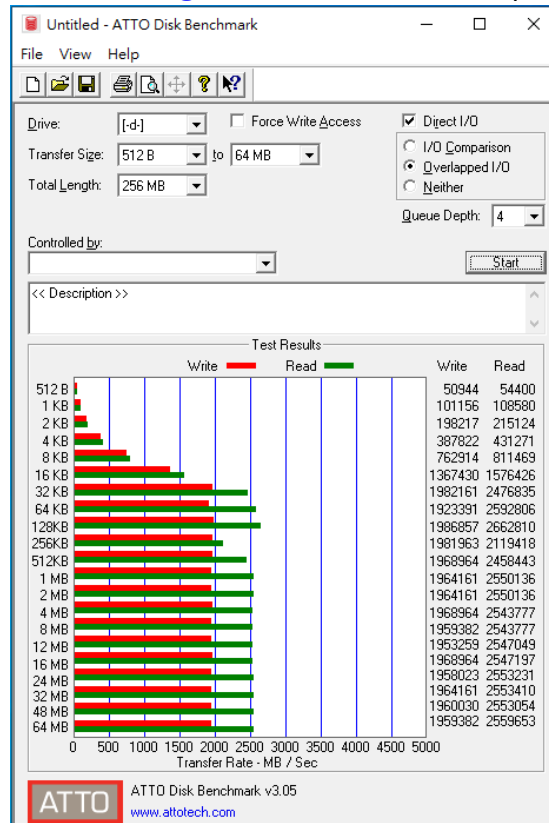
2.6.2 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive E: performance as below:



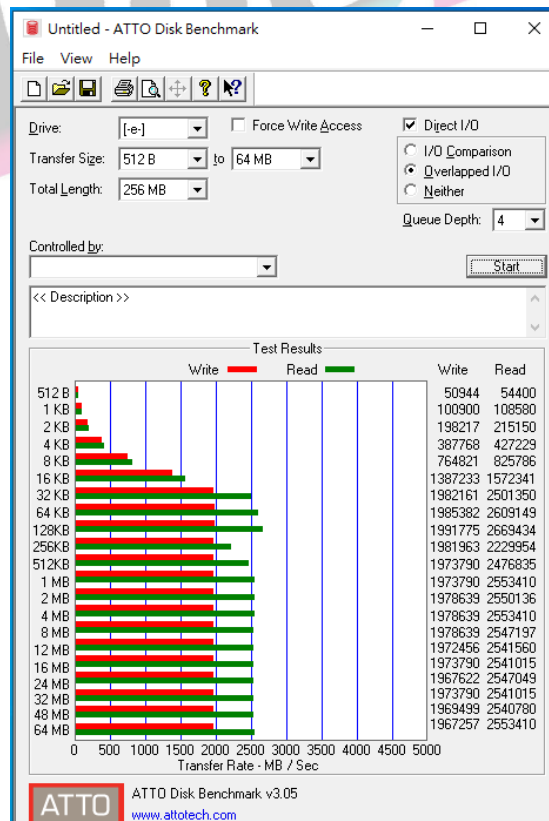
PC802A Rev1.0 Converter Card

2.7 ATTO Disk Benchmark 3.05 performance test

2.7.1 M.3 NF1 NVMe Samsung PM983/4TB in Drive D: performance as below:



2.7.2 M.3 NF1 NVMe Samsung PM983/4TB in Drive E: performance as below:



PC802A Rev1.0 Converter Card

2.8 AnvilBenchmark_V110_B337

2.8.1 M.3 NF1 NVMe Samsung PM983/4TB in Drive D: performance as below:



2.8.2 M.3 NF1 NVMe Samsung PM983/4TB in Drive E: performance as below:

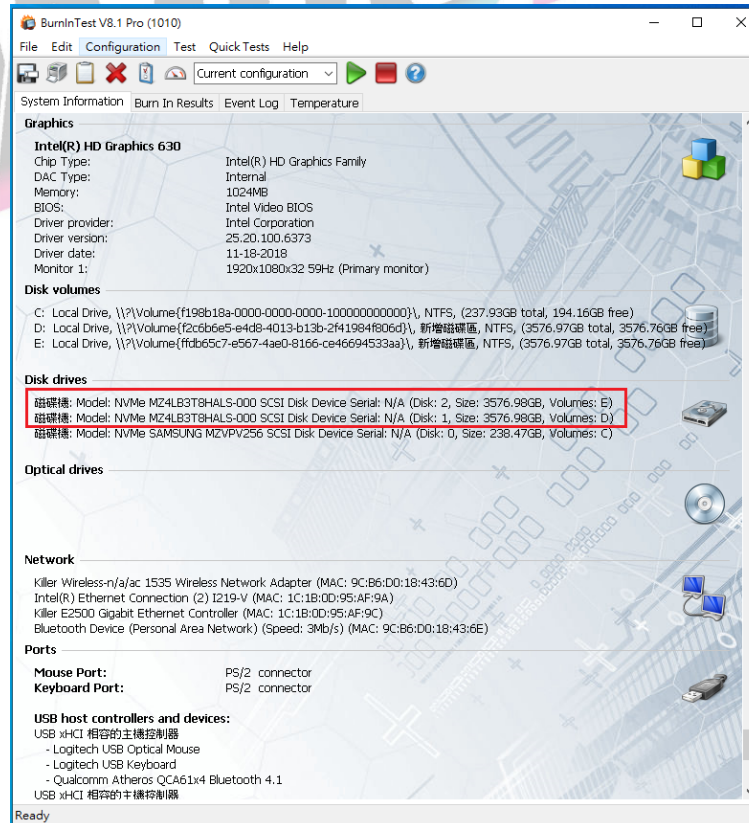


PC802A Rev1.0 Converter Card

3. Burn In Tests and Results

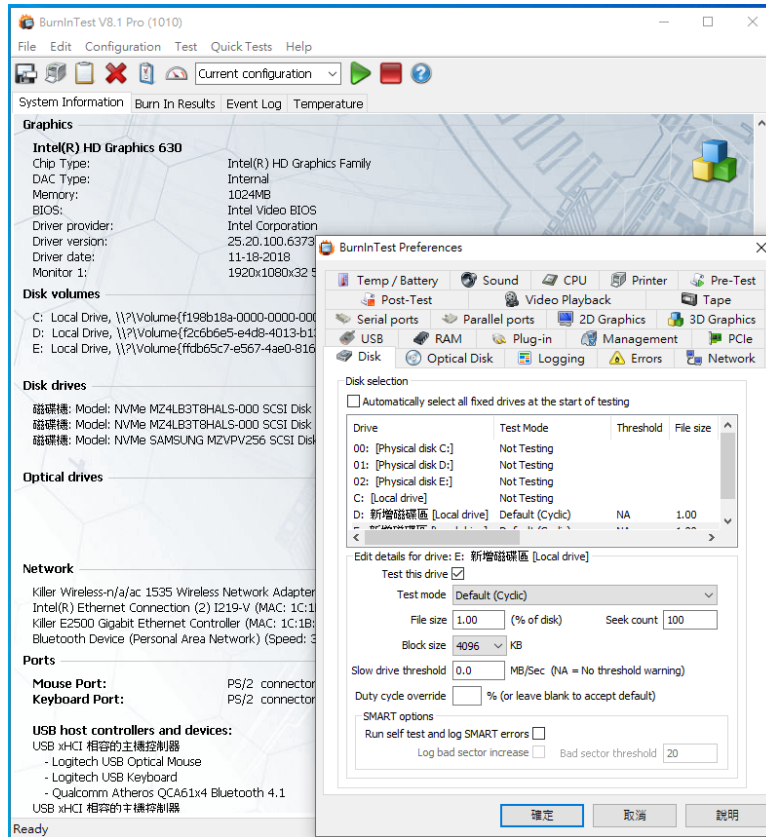
3.1 BurnInTest v8.1 Pro

3.1.1 system information as below:

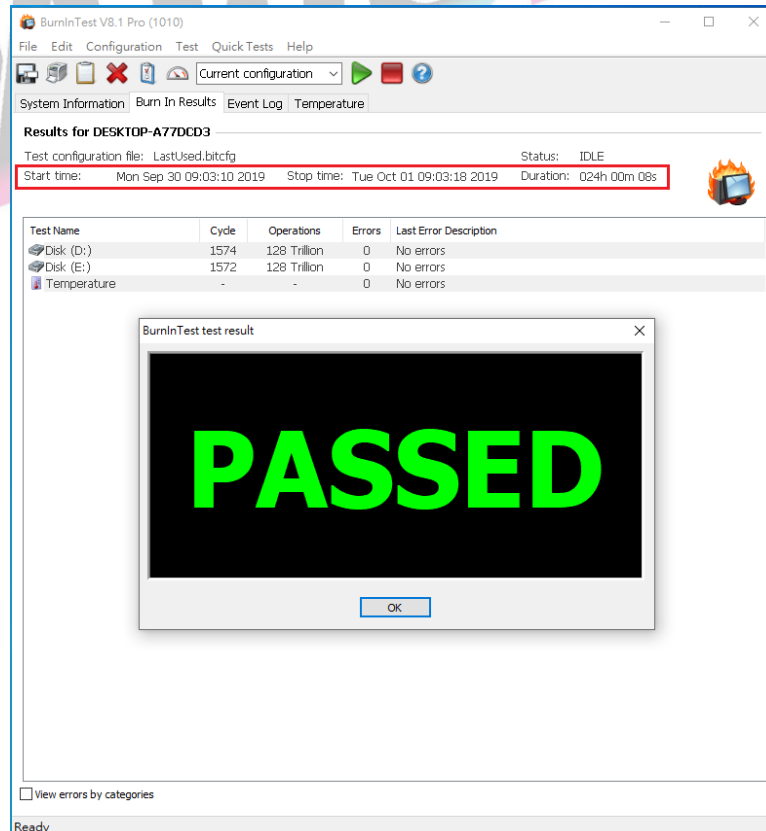


PC802A Rev1.0 Converter Card

3.1.2 Disk test mode (10 ways cycle test)



3.1.3 24-hour Burn-in test PASSED



4. Summary

- 4.1 M.3 NF1 NVMe SSD is PCI-e Gen 3 / 4 Lane Interface, I/O speed, max. to 32Gbps.
- 4.3 PC802A adapter I/O performance is based on M.3 NF1NVMe SSD.

