MINERVA
PF807A Mini SAS HD 2x(SFF-8644) to PCIe x8 Gen3 Slot Adapter

Performance & Burn In Test   Rev 1.1

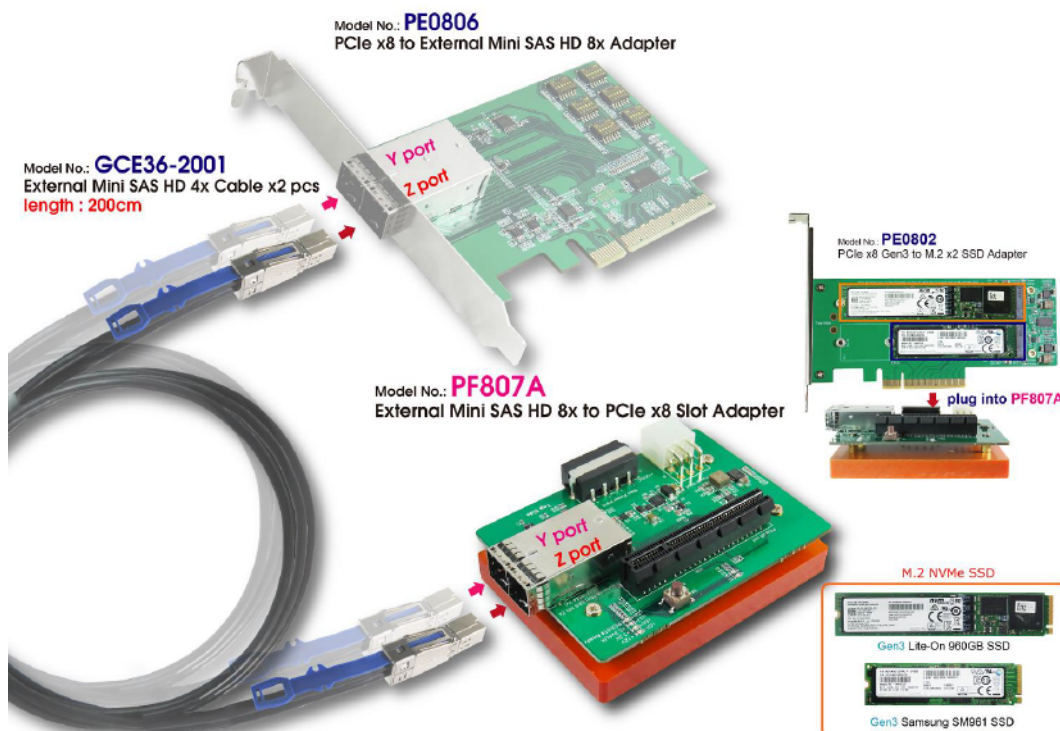## Table of Contents

PF807A Rev1.1

1. Overview

This adapter card has built-in external Mini SAS HD(SFF-8644) 2x connector. It is designed for use by PCIe x8 Gen3 data link width.

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
Add in Card: PE0806 PCIe x8 to SFF-8644 2x AIC
Cable: PCIe Gen 3 external Mini SAS 1x, **200cm** Cable x2
Adapter: PF807A SFF-8644 2x to PCIe x8 Slot adapter
Add in Card: PE0802 PCIe x8 to M.2 dual port
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: PE0806, PF807A adapter & PE0802 with M.2 NVMe SSD x2

PF807A Rev1.1

2.3   Install Hardware

First inserts the M.2 SSD into the PE0802 M.2 connector, then with copper nuts, and screws to fix SSDs. (Please refer to the Installation Notes). Plugs PE0802 into PF807A adapter and connects it to the PE0806 AIC card (PCIe x8 Gen3 to SFF-8644 2x), using the **GCE36-2001, 200cm** Cables, and Plugs PE0806 AIC into GIGABYTE **X570 AORUS MASTER**.

2.4   BIOS & Windows 10 OS environment setup

2.4.1   Primary SATA NVMe SSD install Windows 10 OS.

2.4.2   Two M.2 NVMe SSDs , formatted to NTFS Mode. Don't install any program.

2.5 CrystalDiskMark 8.0.0 x64 performance test

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

2.5.1 **Samsung SM961 M.2 22x80mm/512GB** in **Drive D:** performance as below:

CrystalDiskMark 8.0.0 x64 [Admin]	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	3558.71	1821.05
SEQ1M Q1T1	2433.78	1821.90
RND4K Q32T1	538.20	543.56
RND4K Q1T1	55.81	188.38

5 / 1GiB / D: 0% (0/477GiB) / MB/s

2.5.2 **LITEON M.2 22x110mm/1TB** in **Drive E:** performance as below:

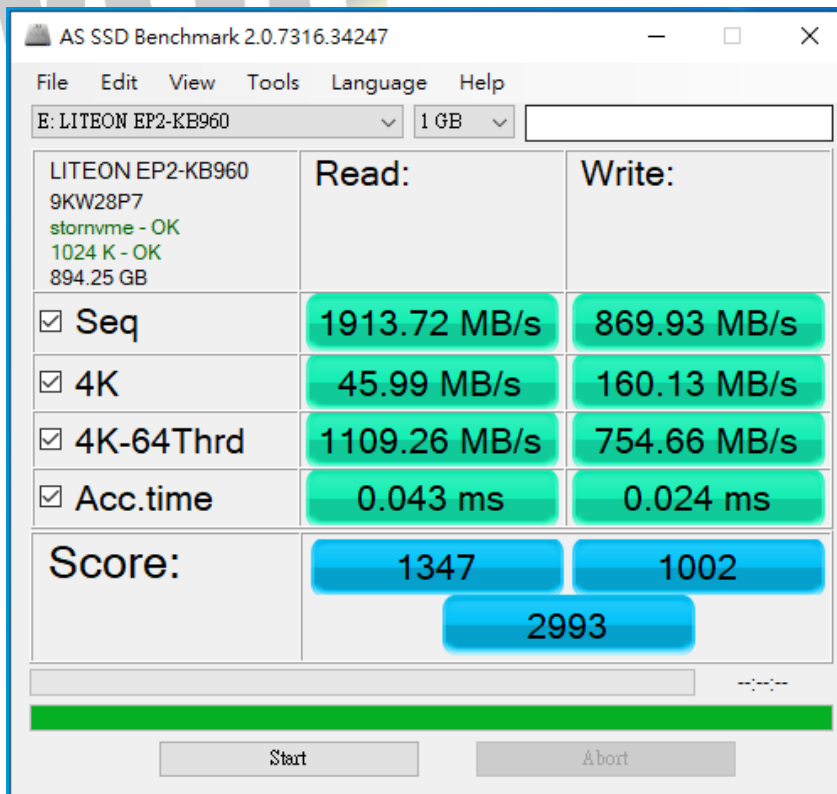| CrystalDiskMark 8.0.0 x64 [Admin]	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	2267.59	924.04
SEQ1M Q1T1	1826.68	923.62
RND4K Q32T1	532.47	506.47
RND4K Q1T1	48.73	182.63

5 / 1GiB / E: 0% (0/894GiB) / MB/s

2.6 AS SSD Benchmark 2.0 performance test

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

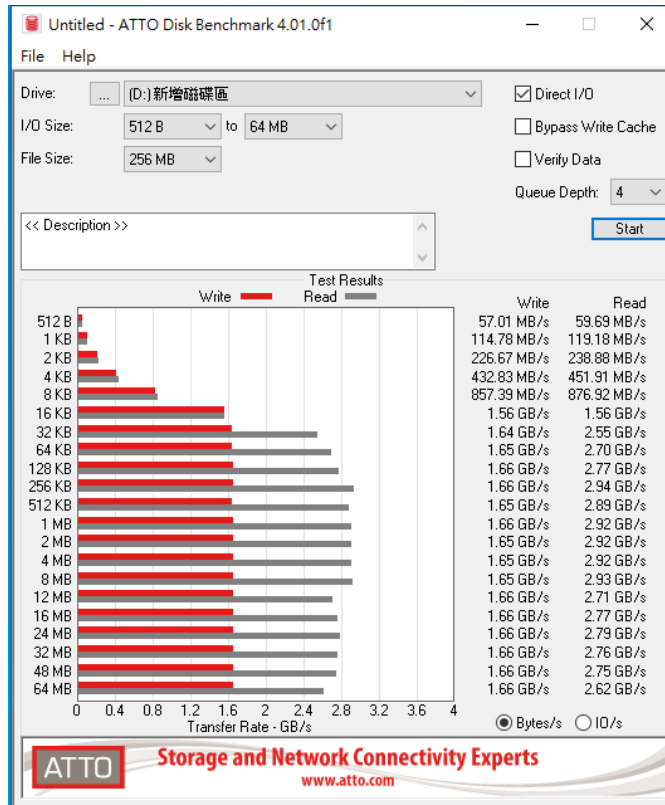2.6.1 **Samsung SM961 M.2 22x80mm**/**512GB** in **Drive D:** performance as below:

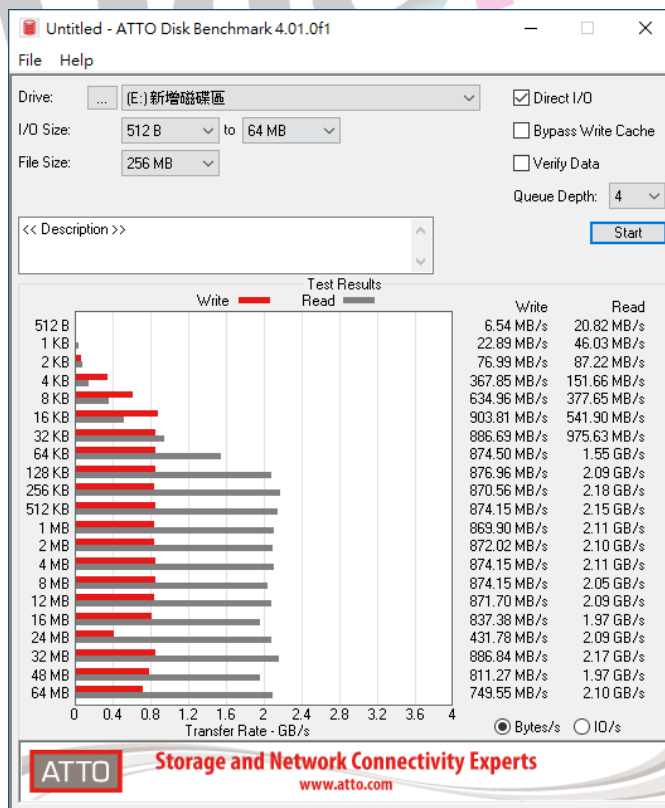2.6.2 **LITEON M.2 22x110mm**/**1TB** in **Drive E:** performance as below:

2.7 ATTO Disk Benchamrk 4.01 performance test

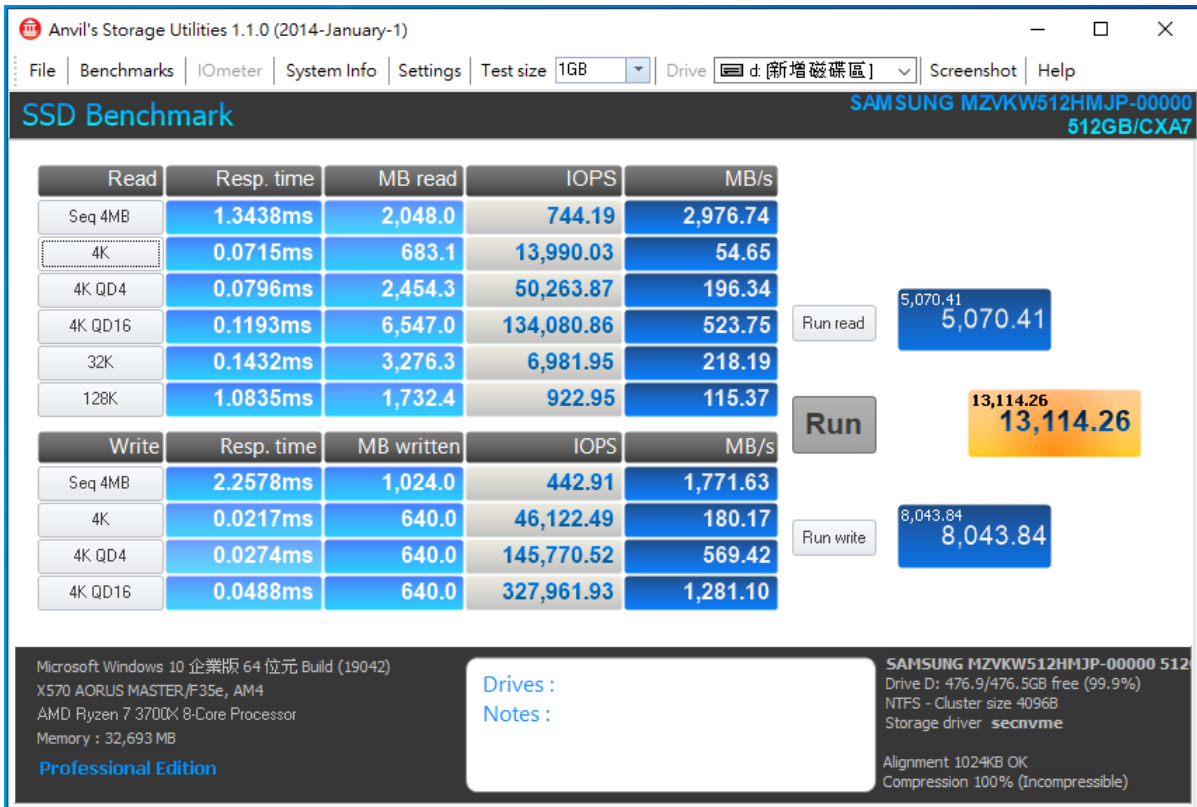2.7.1 **Samsung SM961 M.2 22x80mm**/**512GB** in **Drive D:** performance as below:

2.7.2 **LITEON M.2 22x110mm**/**1TB** in **Drive E:** performance as below:

2.8   AnvilBenchmark_V110_B337

2.8.1   **Samsung SM961 M.2 22x80mm/512GB** in **Drive D:** performance as below:

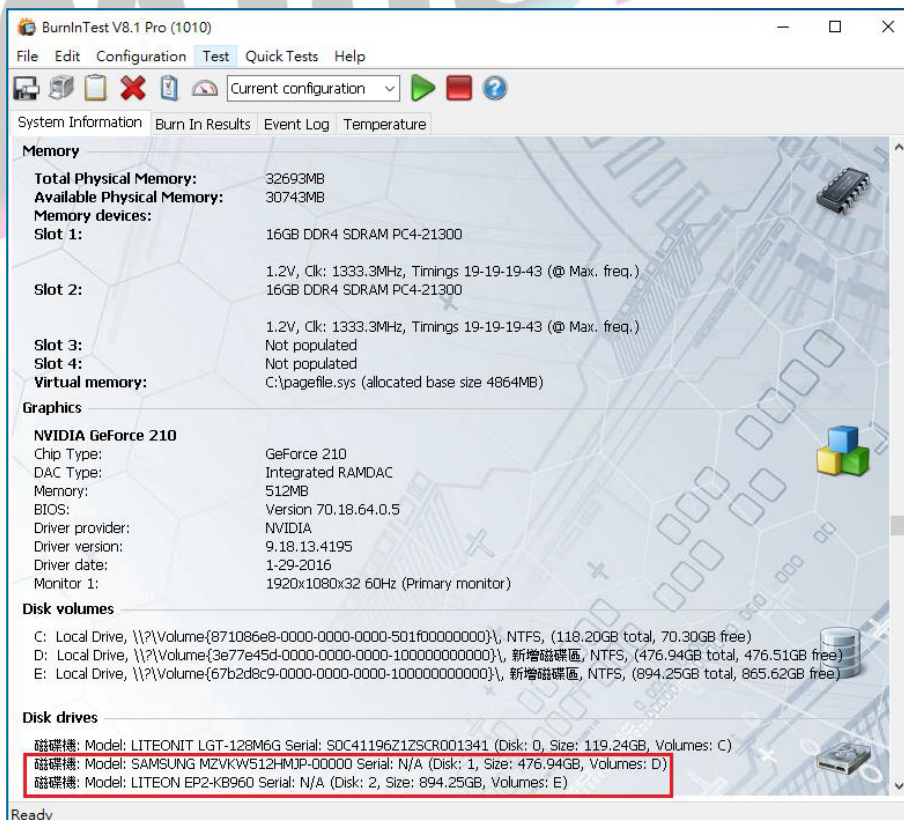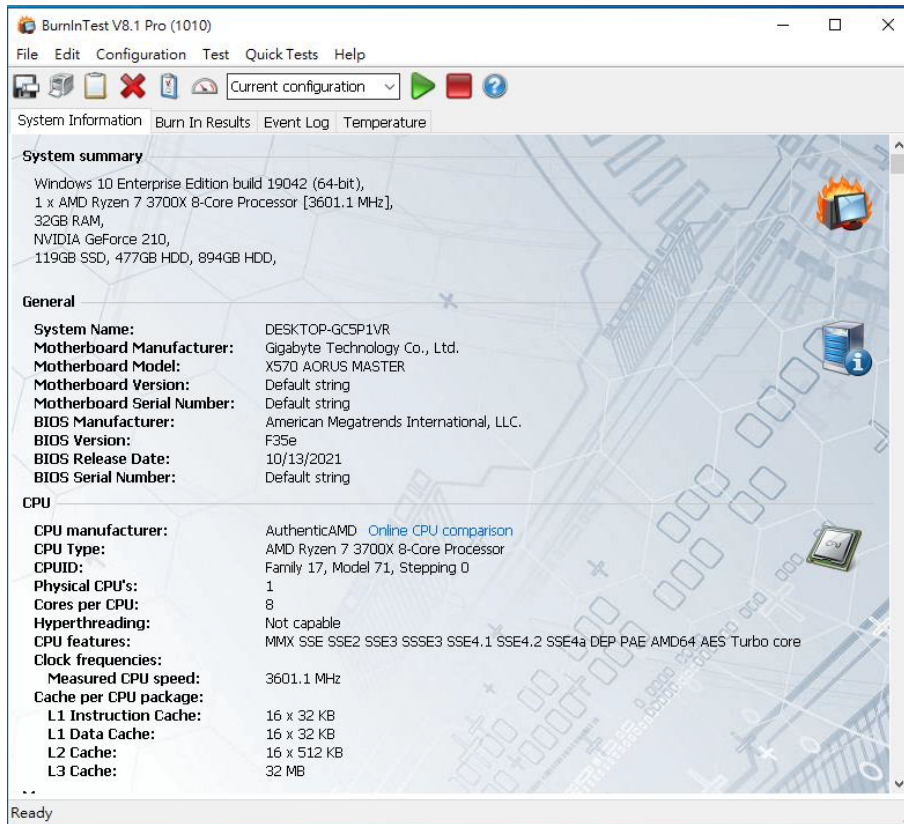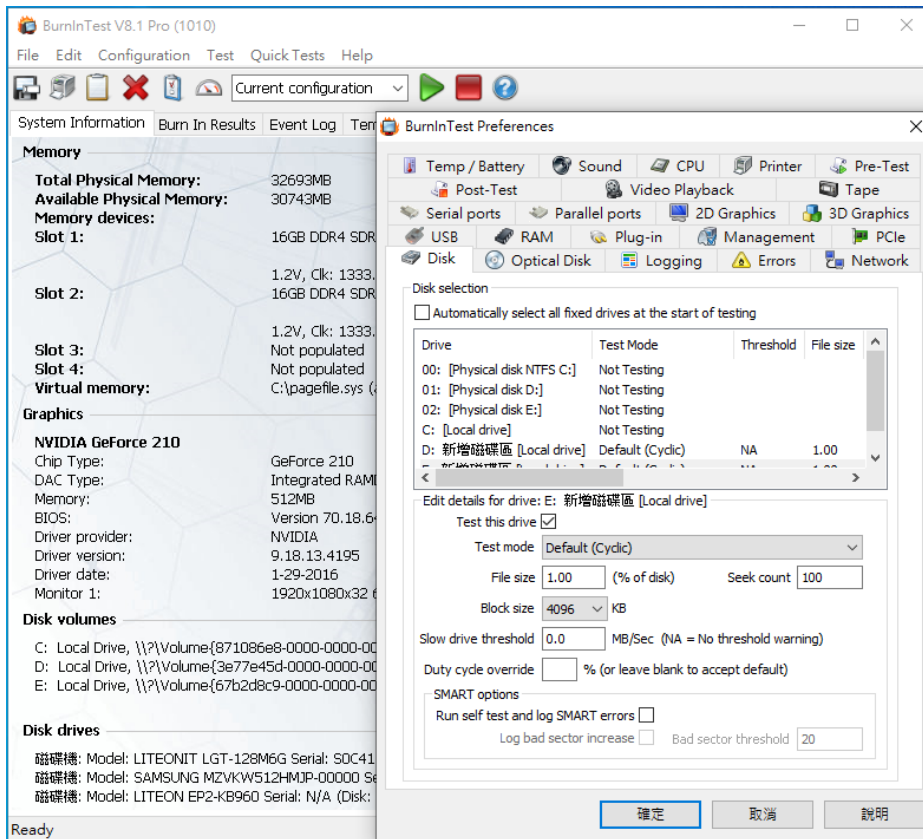2.8.2   **LITEON M.2 22x110mm/1TB** in **Drive E:** performance as below:

3. Burn In Tests and Results

3.1 BurnInTest v8.1 Pro
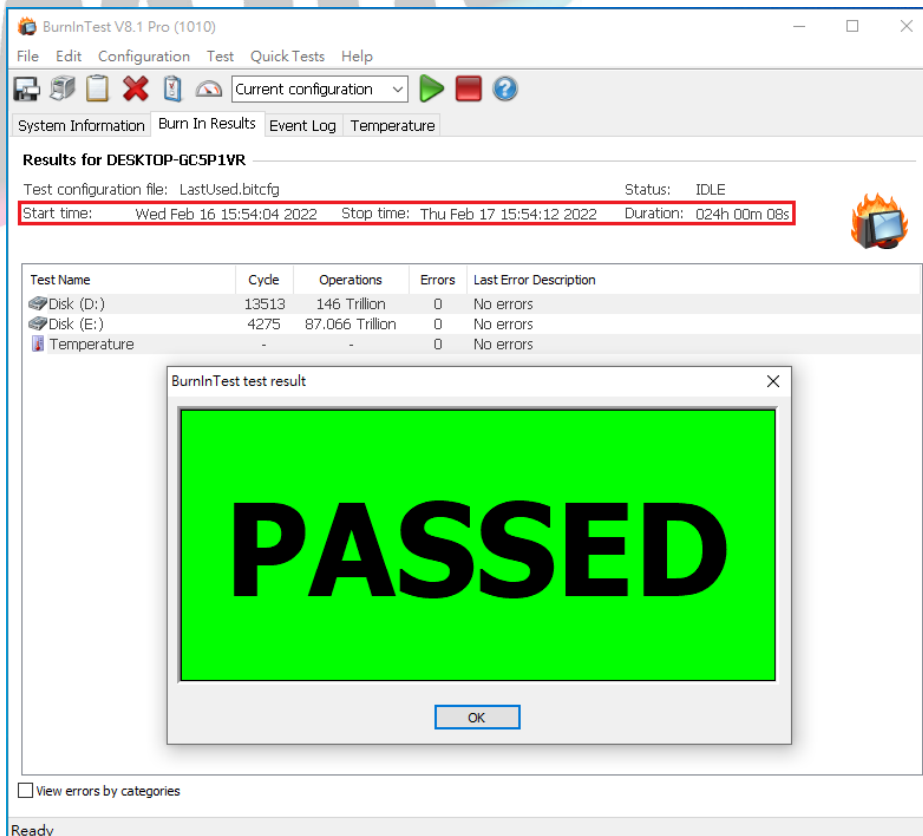
3.1.1 **system information** as below:

3.1.2 Disk test mode(10 ways cycle test)

3.1.3 24-hour Burn-in test PASSED

4. Summary

    4.1   M.2 NVMe SSD is PCIe Gen 3 / 4 Lane Interface, I/O speed, max. to 32Gbps.

    4.2   PF807A I/O performance is based on NVMe SSD.