



MINERVA

PE0804 PCIe 8 Lanes to Slimline SAS 8i Converter Card

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.2 & M.3 NF1 NVMe SSD
- 2.3 Install Hardware
- 2.4 BIOS & Windows 10 OS environment setup
- 2.5 CrystalDiskMark 6.0.2 x64 performance test
- 2.6 AS SSD Benchmark 2.0.6 performance test
- 2.7 ATTO Disk Benchamrk 3.0.5 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

PE0804 Rev1.0 Converter Card

1. Overview

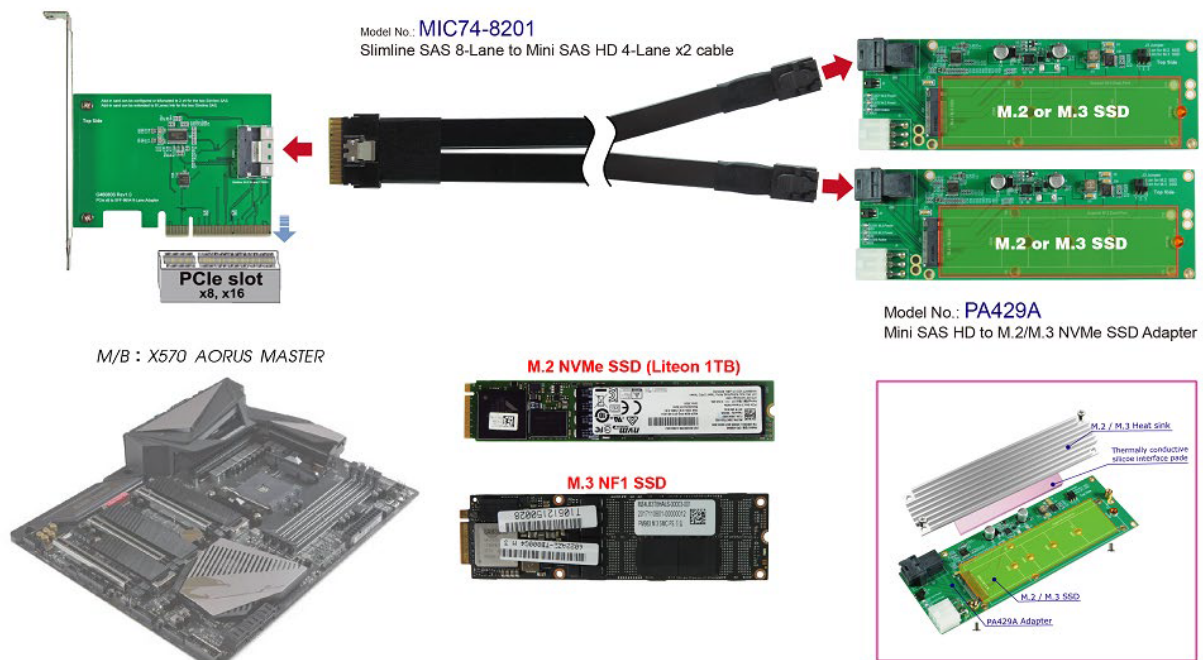
This riser card has built-in SFF-8654 8i connector. It is designed for use by PCIe x8 to configure two x4 bifurcations or can be extended PCIe x8 data width link.

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: PE0804 PCIe x8 to Slimline SAS 8i Adapter
Cable: SFF-8654(Slimline SAS 8i) to SFF-8643(MINI SAS HD 4X) x2 Y-Cable
Adapter: PA429A SFF-8643 4X to M.2/M.3 Adapter dual ports
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: cable, adapter, M.3 NF1 & M.2 NVMe SSD



PE0804 Rev1.0 Converter Card

2.3 Install Hardware

First inserts PE0804 riser card into GABYTE **X570 AORUS MASTER** PCIe x16 Slot and, using the MIC74-8201 Cable to connect PA429A adapter with M.3 NF1 & M.2 NVMe SSD.

2.4 BIOS & Windows 10 OS environment setup

2.4.1 Primary M.2 NVMe SSD install Windows 10 OS.

2.4.2 M.3 NF1&M.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.

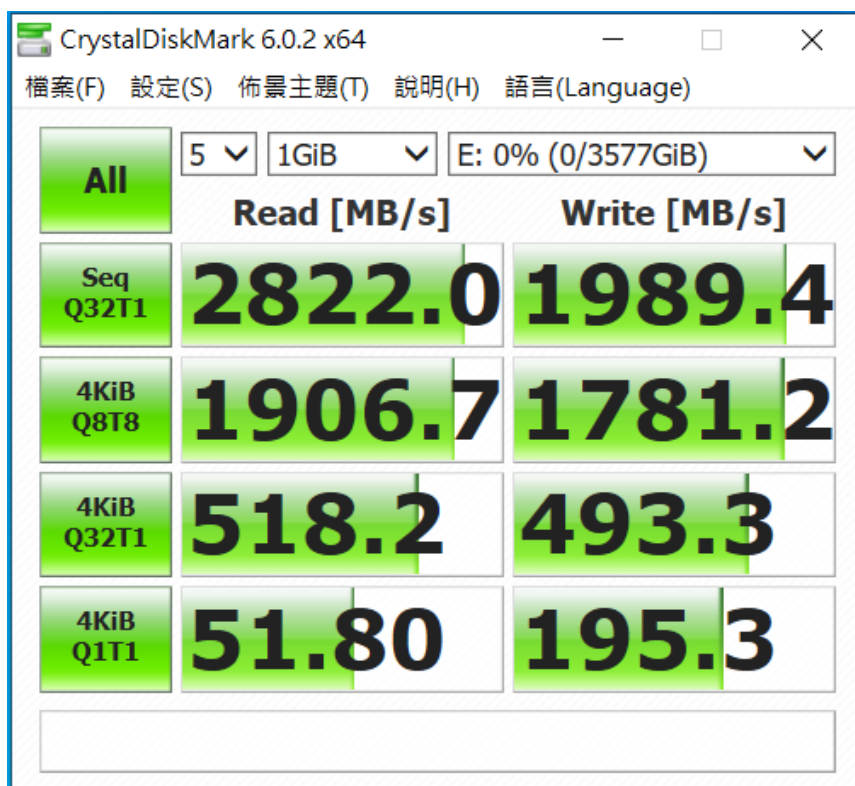


PE0804 Rev1.0 Converter Card

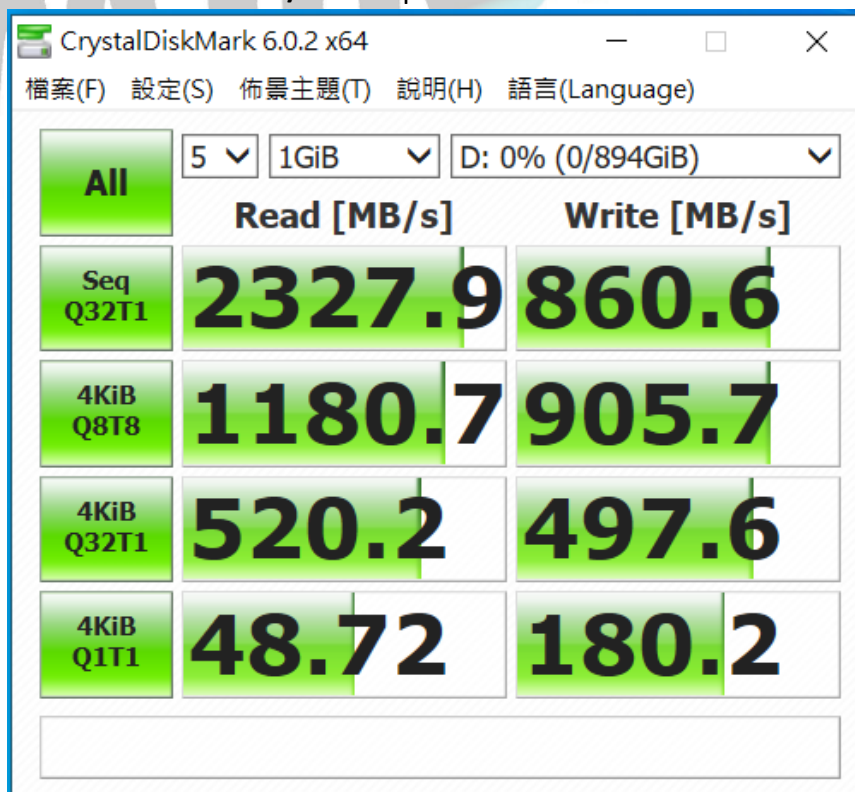
2.5 CrystalDiskMark 6.0.2 x64 performance test

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

2.5.1 Samsung M.3 NF1 NVMe / 4TGB performance as below:



2.5.2 LITEON M.2 NVMe / 960GB performance as below:

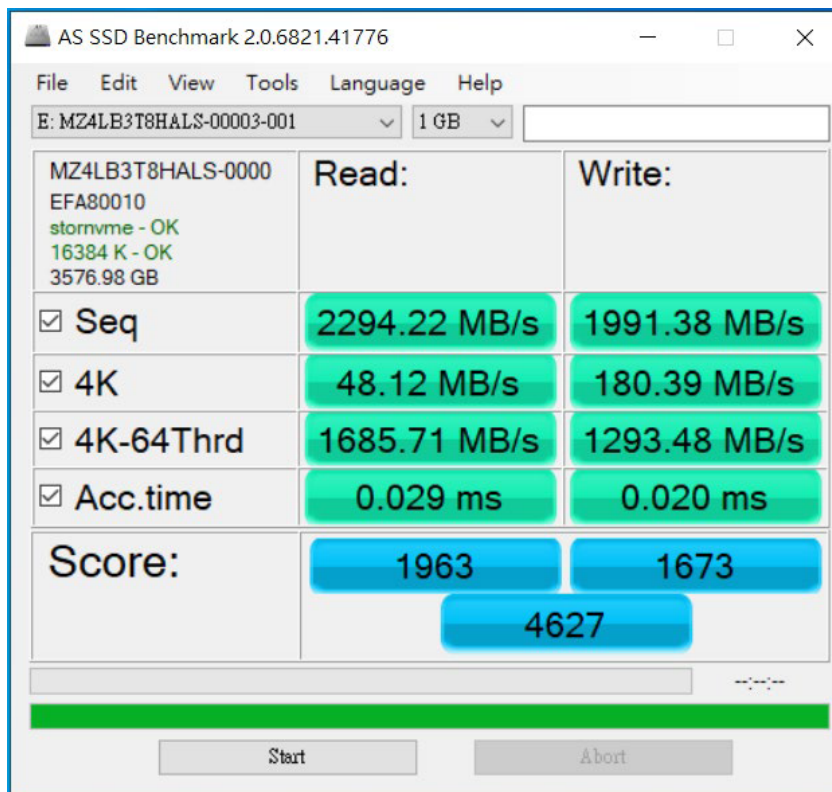


PE0804 Rev1.0 Converter Card

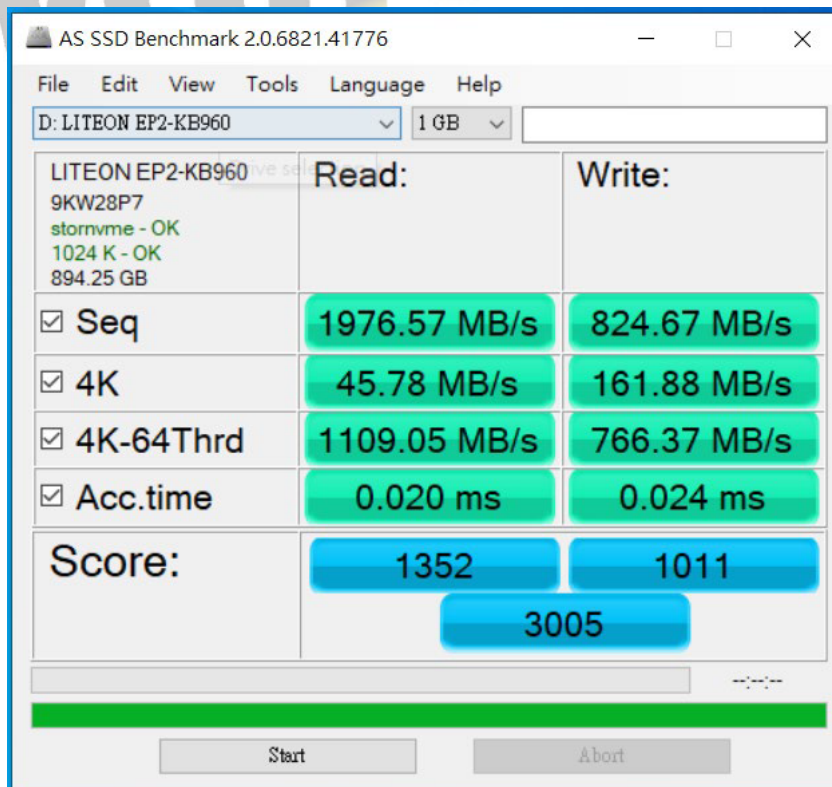
2.6 AS SSD Benchmark 2.0.6 performance test

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

2.6.1 Samsung M.3 NF1 NVMe / 4TGB performance as below:



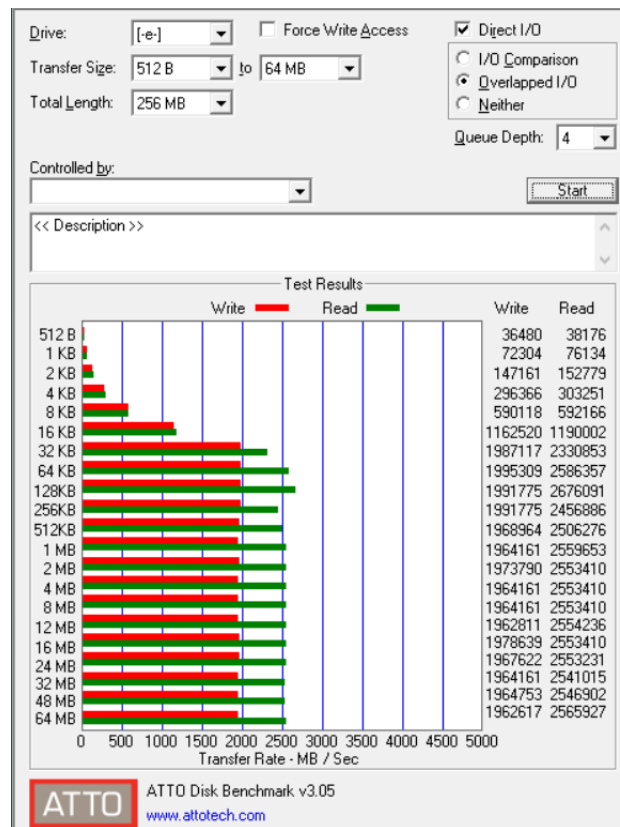
2.6.2 LITEON M.2 NVMe / 960GB performance as below:



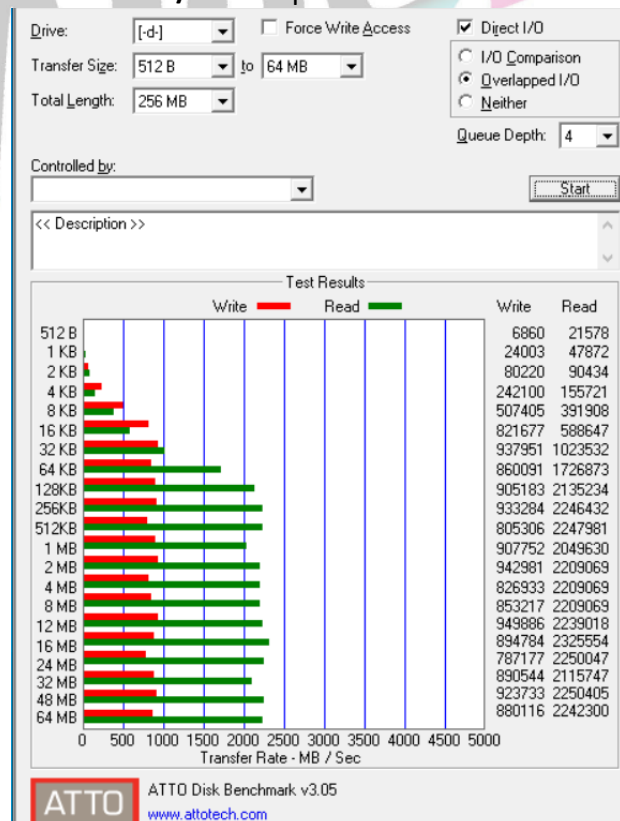
PE0804 Rev1.0 Converter Card

2.7 ATTO Disk Benchmark 3.0.5 performance test

2.7.1 Samsung M.3 NF1 NVMe / 4TGB performance as below:



2.7.2 LITEON M.2 NVMe / 960GB performance as below:



PE0804 Rev1.0 Converter Card

2.8 AnvilBenchmark_V110_B337

2.8.1 Samsung M.3 NF1 NVMe / 4TGB performance as below:



2.8.2 LITEON M.2 NVMe / 960GB performance as below:

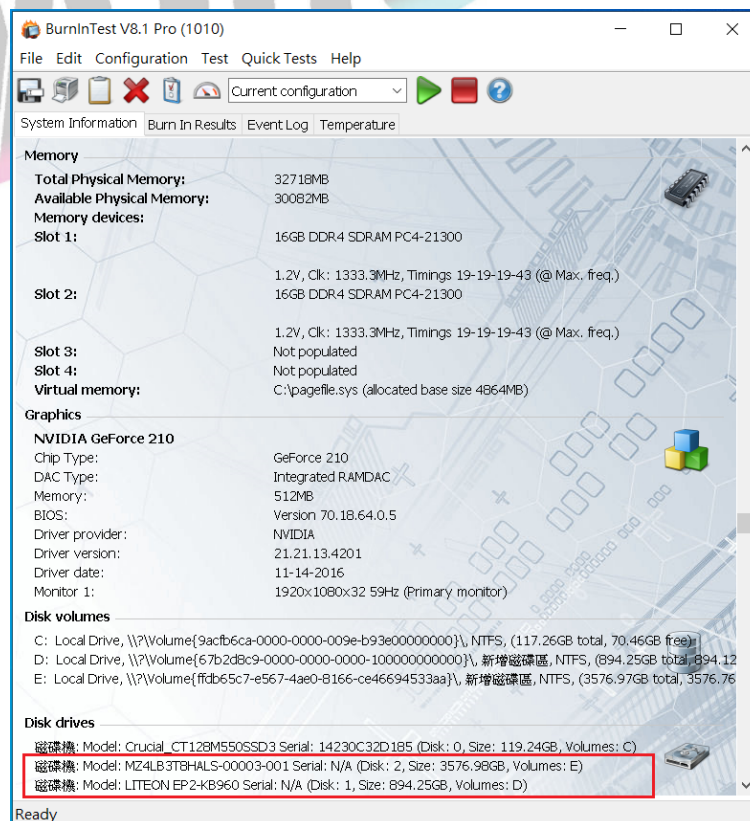
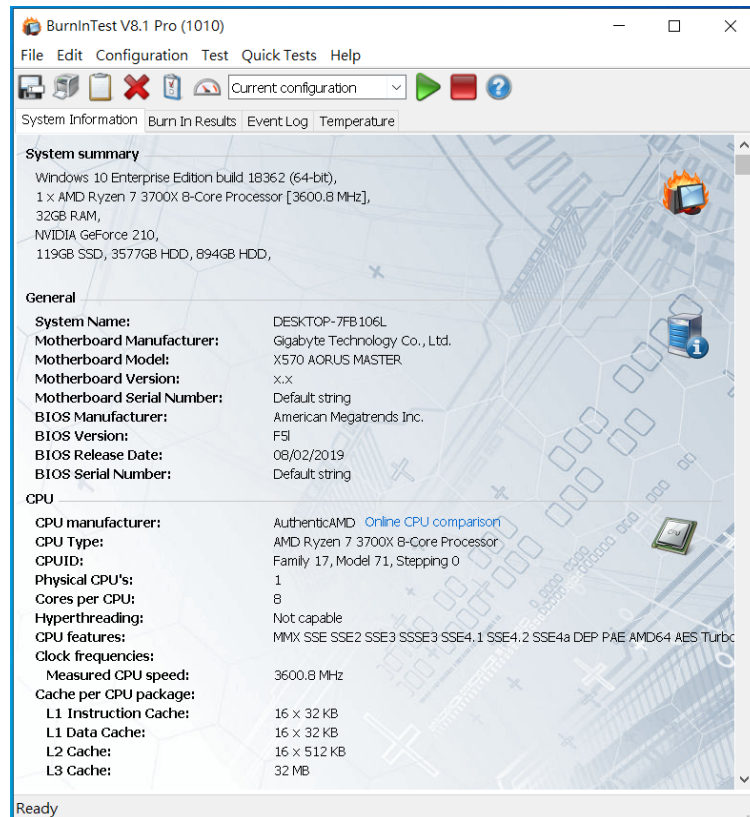


PE0804 Rev1.0 Converter Card

3. Burn In Tests and Results

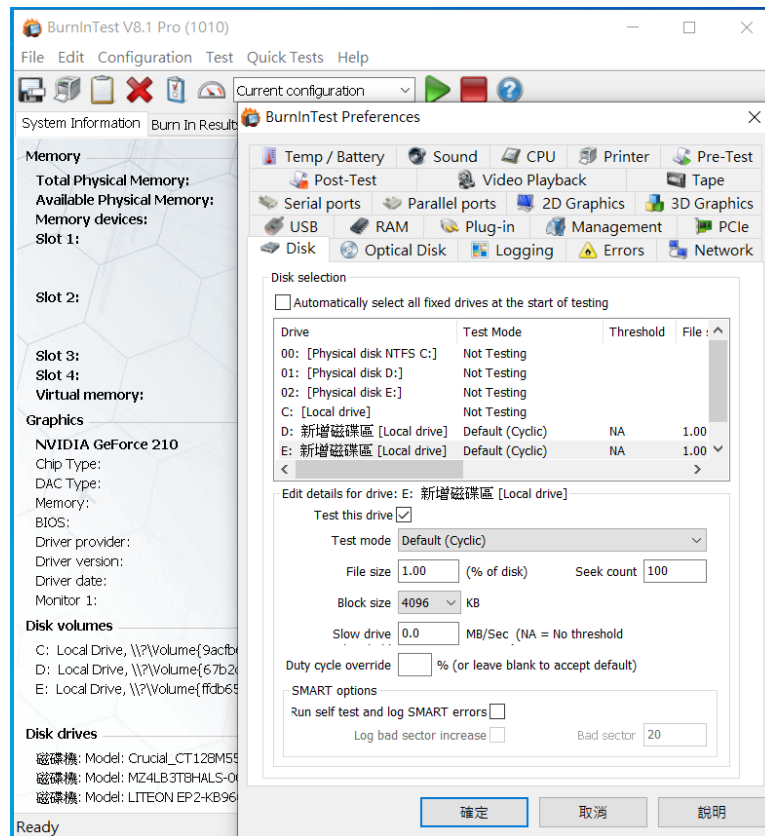
3.1 BurnInTest v8.1 Pro

3.1.1 system information as below:

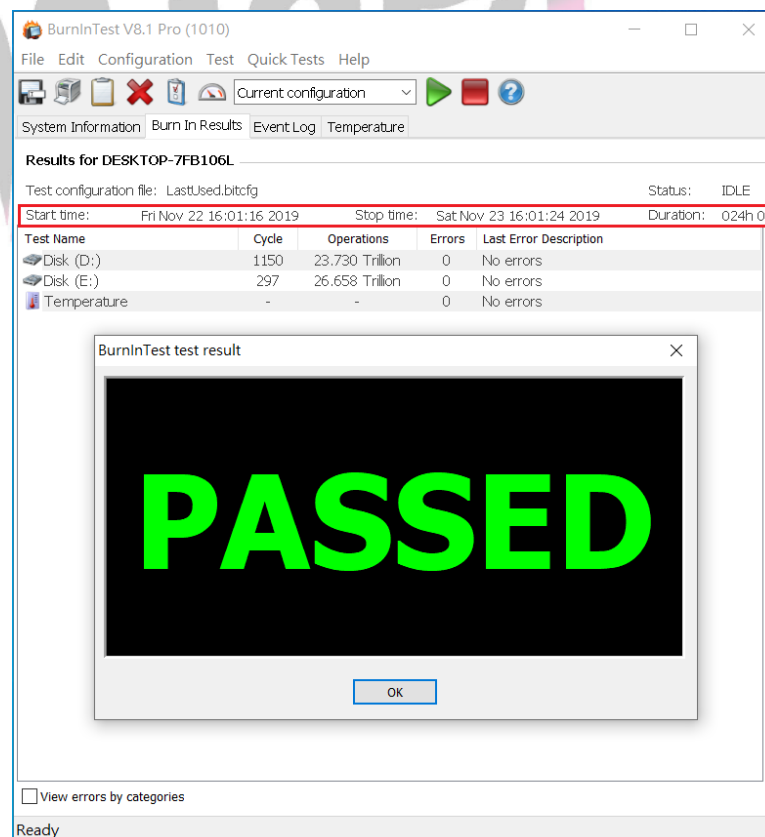


PE0804 Rev1.0 Converter Card

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 & M.2 NVMe SSD is PCI-e Gen 3 / 4 Lane Interface, I/O speed, max. to 32Gbps.
- 4.2 PE0804 adapter I/O performance is based on M.3 or M.2 NVMe SSD.

