



# MINERVA

## GE0246A U.2 PCIe 5.0 for EDSFF (Gen-Z) 1C SSD Adapter

---

### 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 EDSFF 1C SSD
  - 2.3 Install Hardware
  - 2.4 BIOS & Windows 10 OS environment setup
  - 2.5 CrystalDiskMark 8.0 x64 performance test
  - 2.6 AS SSD Benchmark 2.0.7 performance test
  - 2.7 ATTO Disk Benchamrk 4.0.1 performance test
  - 2.8 AnvilBenchmark\_V110\_B337 Benchmark performance test
  
3. Burn In Tests and Results
  - 3.1 BurnInTest v10.2 Pro burn in test
  
4. Summary

# GE0246A Converter Card

## 1. Overview

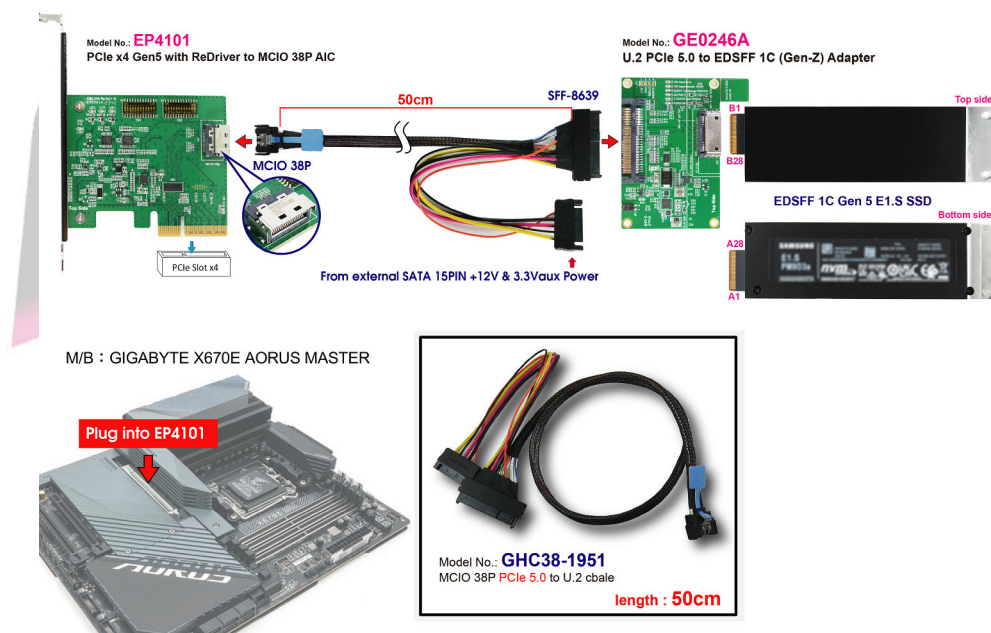
GE0246A Adapter, providing EDSFF 1C connector can be EDSFF 1C NVMe SSD converted into U.2 for PCIe 5.0, 32GT/s 4-Lane interface.

## 2. Tools and Results of Performance Measurement

### 2.1 Test Platform:

M/B : GIGABYTE **X670E AORUS MASTER**  
CPU : AMD **Ryzen 5, 7600X 6-Core**  
Memory : Kingston **KF556C36BBEK2, DDR5-5600MT/s, 64GB**(32GB DIMM\*2)  
ATX Power : Apexgaming AN-550, **550W ATX**, 12V V2.2 Power Supply  
AIC: EP4101 PCIe x4 Gen 5 with Redriver to MCIO 38P ADD-in Card  
Adapter: GE0246A U.2(SFF-8639) PCIe 5.0 to EDSFF(Gen-Z) 1C Adapter  
Cable: MCIO 38P to U.2(SFF-8639) PCIe 5.0, **50cm** Cable  
OS : Microsoft **Windows 11 64bit OS**

### 2.2 Test target: GE0246A Adapter & SAMSUNG PCIe 5.0 E1.S/PM9D3a **15.36TB** SSD



# GE0246A Converter Card

## 2.3 Install Hardware

Inserts EDSFF 1C NVMe SSD into GE0246A adapter converter's EDSFF 1C connector, and then Connects GE0246A converter to EP4101 adapter(PCIe x4 Gen 5 with Redriver to MCIO 38P ADD-in Card), Using MCIO 38P to U.2(SFF-8639) cable and plugs EP4101 into GIGABYTE **X670E AORUS MASTER**

## 2.4 BIOS & Windows 10 OS environment setup

- 2.4.1 Primary SATA SSD installed Windows 10 OS.
- 2.4.2 EDSFF 1C NVMe SSD, formatted to NTFS Mode. Don't install any program.



# GE0246A Converter Card

## 2.5 CrystalDiskMark 8.0 x64 performance test

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

2.5.1 SAMSUNG PCIe 5.0 E1.S/PM9D3a 15.36TB SSD performance as below:

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	11713.14	6934.09
SEQ1M Q1T1	3589.26	6039.25
RND4K Q32T1	875.80	764.42
RND4K Q1T1	57.76	303.17

## 2.6 AS SSD Benchmark 2.0.7 performance test

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

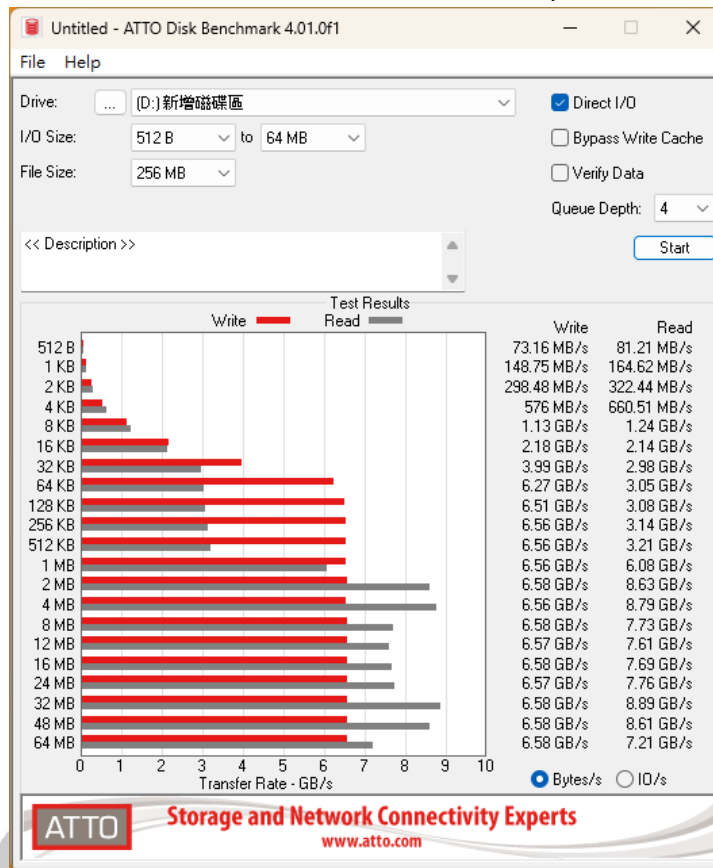
2.6.1 SAMSUNG PCIe 5.0 E1.S/PM9D3a 15.36TB SSD performance as below:

	Read:	Write:
Seq	8752.50 MB/s	6283.36 MB/s
4K	54.16 MB/s	276.32 MB/s
4K-64Thrd	2867.55 MB/s	3783.65 MB/s
Acc.time	0.014 ms	0.014 ms
Score:	3797	4688
	10287	

# GE0246A Converter Card

## 2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 SAMSUNG PCIe 5.0 E1.S/PM9D3a 15.36TB SSD performance as below:



## 2.8 AnvilBenchmark\_V110\_B337

2.8.1 SAMSUNG PCIe 5.0 E1.S/PM9D3a 15.36TB SSD performance as below:

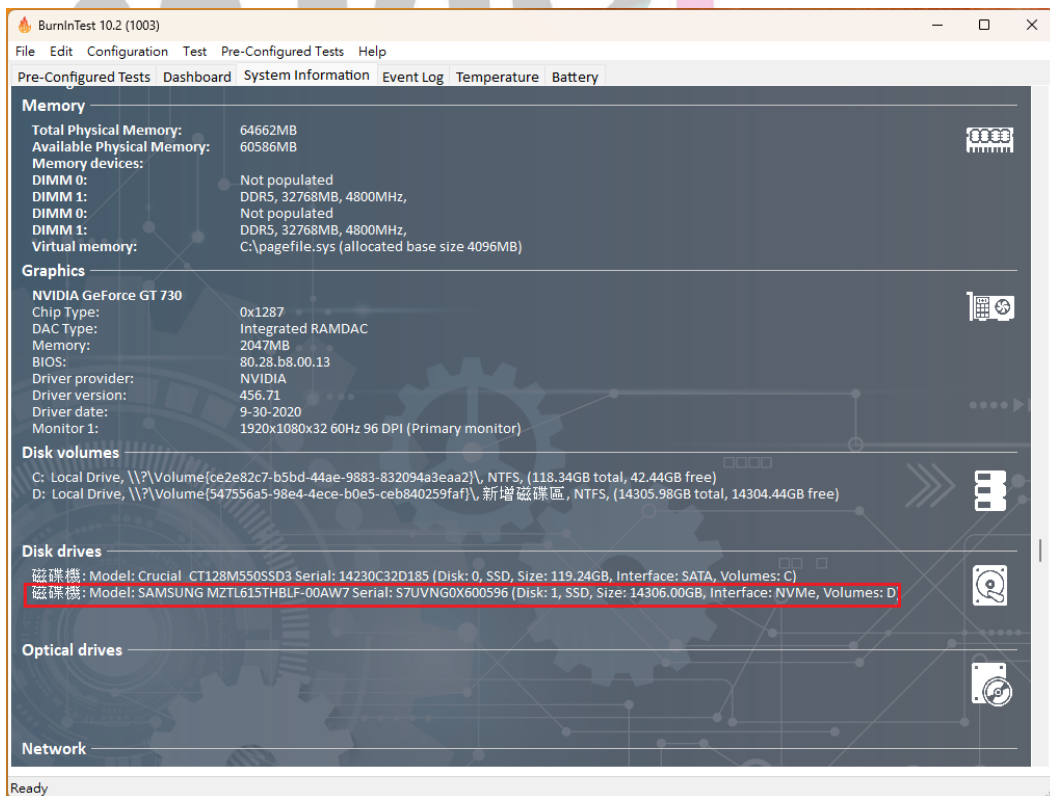
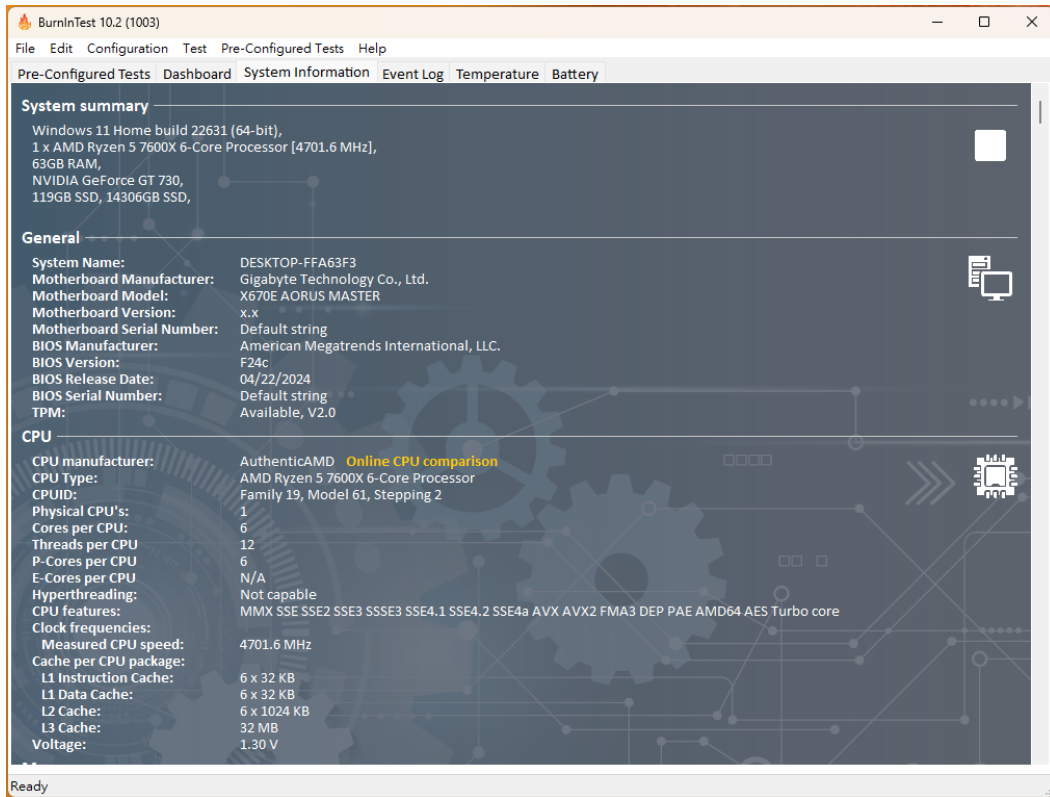


# GE0246A Converter Card

## 3. Burn In Tests and Results

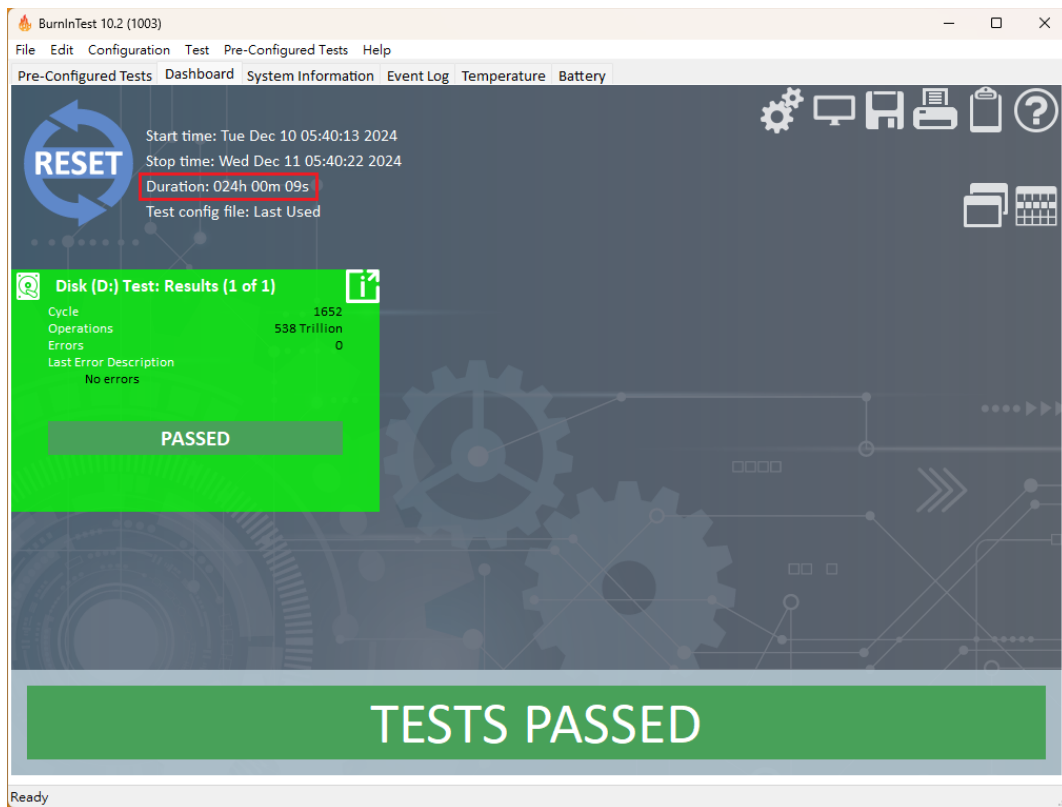
### 3.1 BurnInTest v10 Pro for SAMSUNG PCIe 5.0 E1.S/PM9D3a 15.36TB SSD

#### 3.1.1 System Information as below:



# GE0246A Converter Card

## 3.1.2 24-hour Burn-in test **PASSED**



## 4. Summary

- 4.1 EDSFF 1C NVMe SSD is PCIe Gen 5, 32GT/s, 4 Lanes Interface, I/O speed, max. to 128Gbps.
- 4.2 GE0246A adapter I/O performance is based on EDSFF 1C NVMe SSD.