MINERVA

USB 3.1 Gen 2 for M.2 NVMe SSD with USB Type-C Enclosure

Performance & Burn In Test Rev. 1.0

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USB 3.1 Gen 2 Type-C for M.2 NVMe SSD Enclosure

1. Overview

U6158F Enclosure, built-in ASMEDIA ASM2362 contoller, provides type-C connector for USB3.1 Gen 2 and M.2 M-key connector for device.

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, **16G**(8GB DIMM*2)
ATX Power :	COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
Graphic :	Z270 Chipsets built-in **HD Graphics 630**
Cable:	USB3.1 type-C to type-C Cable
OS :	Microsoft **Windows 10 64bit OS**

2.2 Test target: U6158F Enclosure & Sumsung SM961 512GB NVMe SSD.

U6158F Adapter

USB 3.1 C to C Cable

Samsung M.2 SM961 512GB SSD

2.3 Install Hardware

Inserts M.2 NVMe SSD into U6158F adapter's M.2 connector, and use the coppers and screws to fix SSDs (please refer to the installation Notes). And then use Type-C to Type-C USB 3.1 cable to connect U6158F Enclosure to type-C port of GIGABYTE **Z270-Gaming 8** MB.

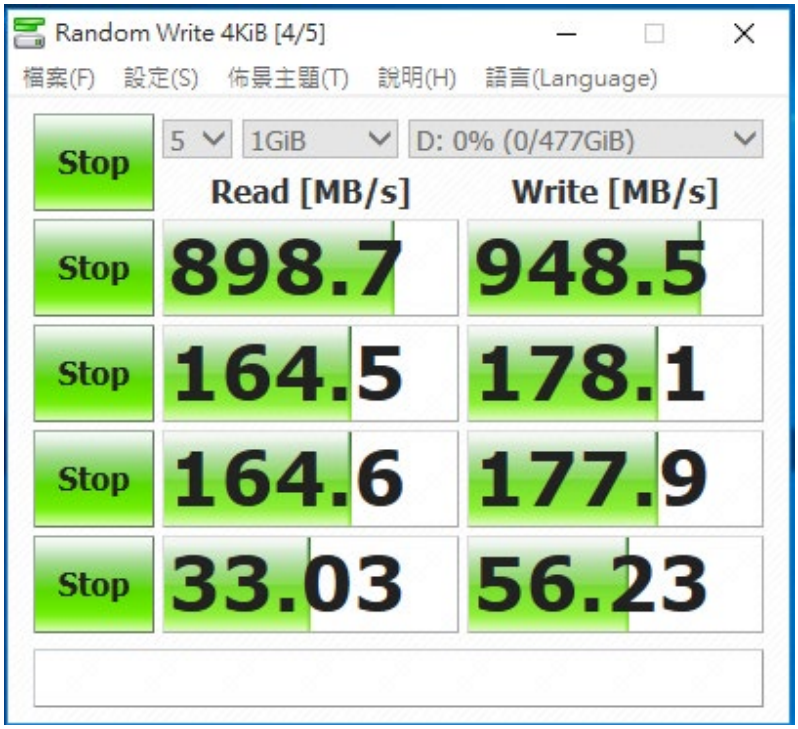
2.4 BIOS & Windows 10 OS environment setup

2.4.1 U6145A formattd NTFS, does't install any program.

2.5 CrystalDiskMark 6.0.0 x64 performance test

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

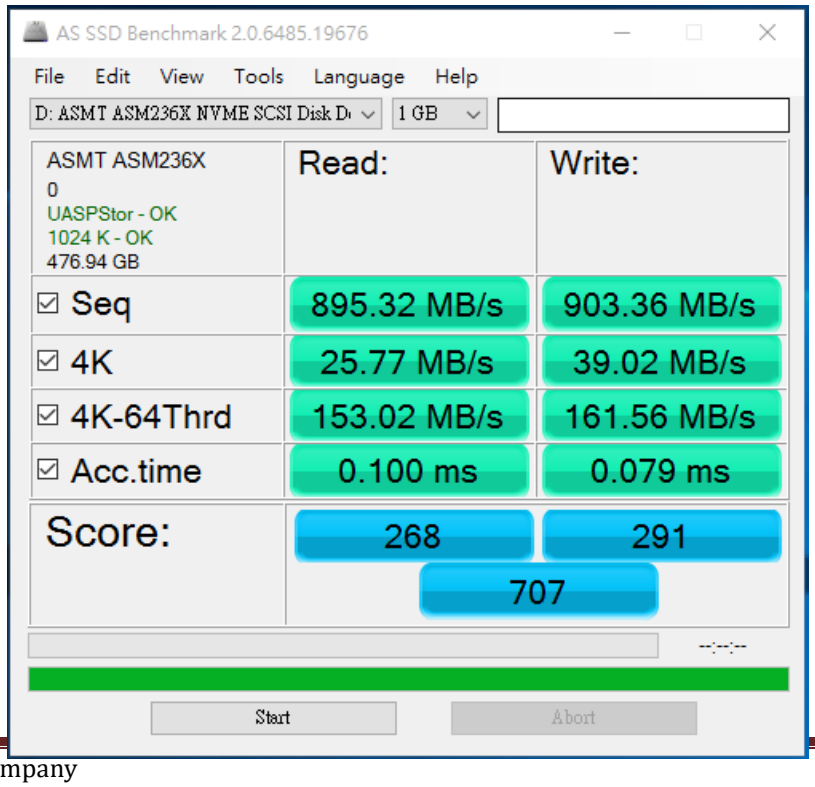
2.5.1 Sumsung SM961 512GB NVMe SSD performance as below:



2.6 AS SSD Benchmark 2.0.6 performance test

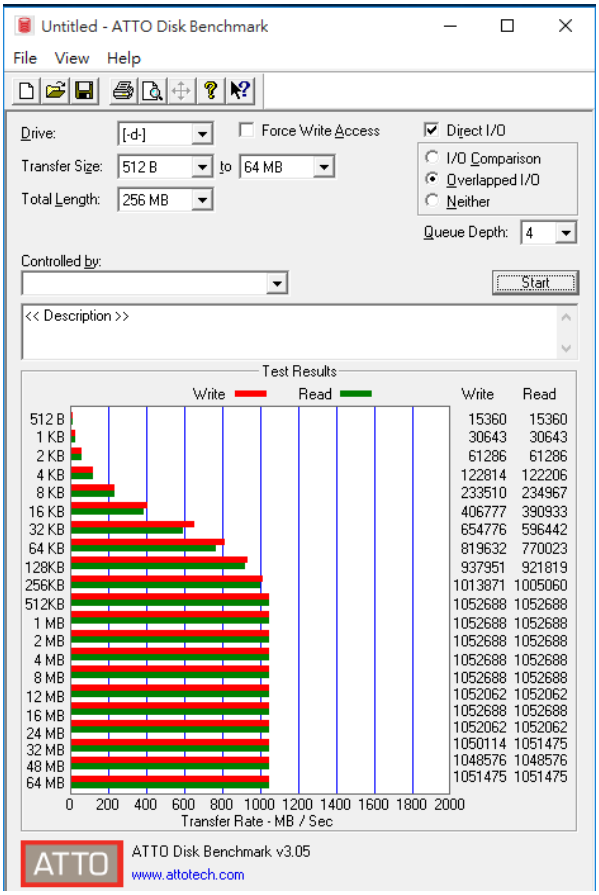
※Benchmark (Read & Write by MB/s, default block size = 16MB)

2.6.1 Sumsung SM961 512GB NVMe SSD performance as below:



2.7 ATTO Disk Benchamrk 3.0.5 performance test

2.7.1 Sumsung SM961 512GB NVMe SSD performance as below:



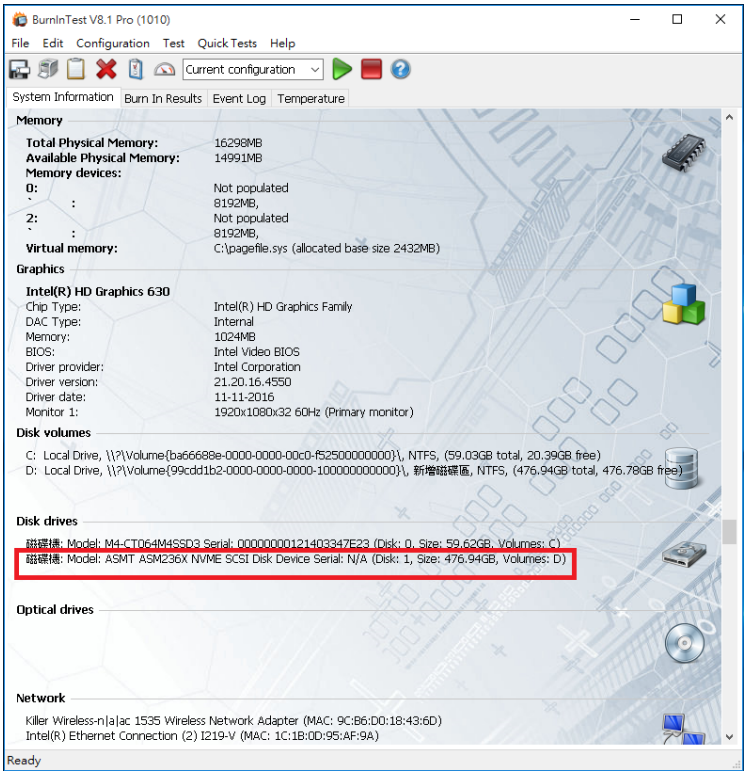
2.8 AnvilBenchmark_V110_B337

2.8.1 Sumsung SM961 512GB NVMe SSD performance as below:

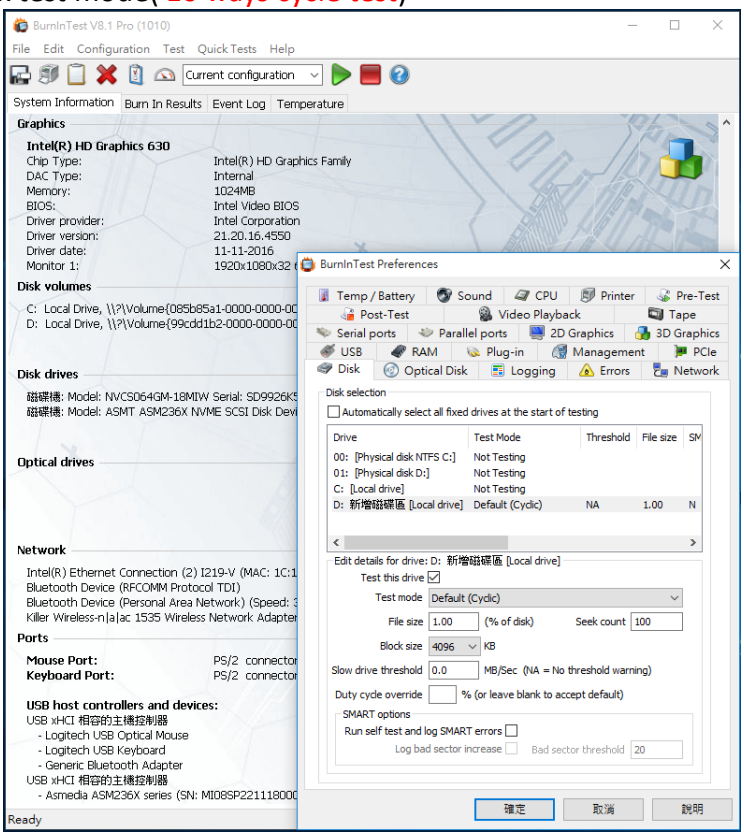
3. Burn In Tests and Results

3.1 BurnInTest v8.1 Pro

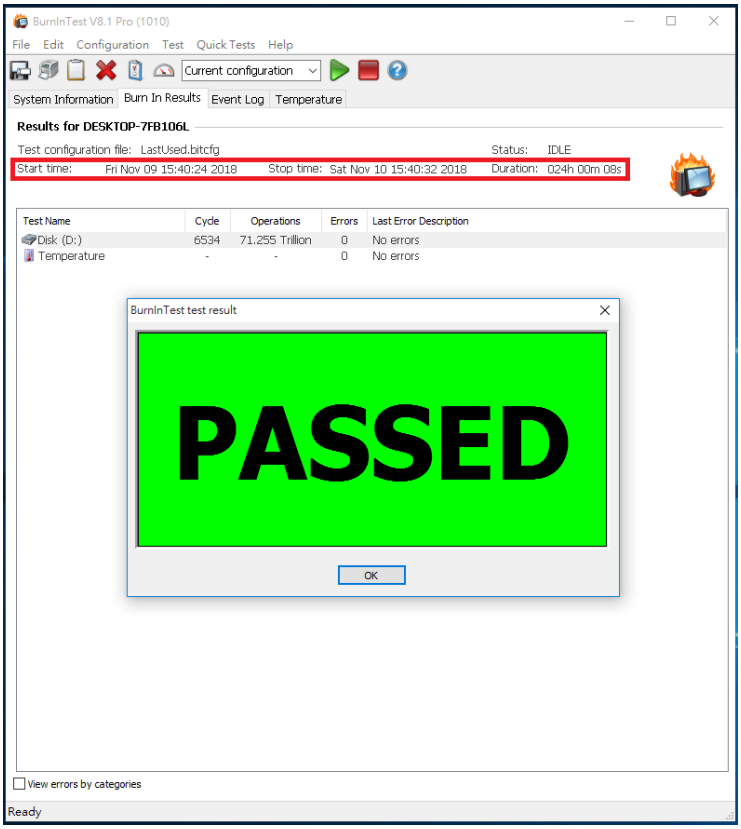
3.1.1 **system information** for Sumsung SM961 **512GB** NVMe SSD as below:



3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test for Sumsung SM961 512GB NVMe SSD PASSED



4. Summary

4.1 USB 3.1 Gen 2 is 10Gbps Interface.

4.2 PCIe is 32Gbps Interface.

4.3 M.2 SSD NVMe is PCIe Interface, I/O speed, max. to 32Gbps.

4.4 U6148F adapter I/O performance is based on USB 3.1 Gen 2.