



MINERVA

U4355F USB 3.1 for M.2, mSATA, CFast Card Enclosure

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 SATA SSD

2.3 Install Hardware

2.4 BIOS & Windows 10 OS environment setup

2.5 CrystalDiskMark 6.0 x64 performance test

2.6 AS SSD Benchmark 1.9 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 BurnInTest v8.1 Pro burn in test

4. Summary

U4355F USB 3.1 Gen2 10Gbps Enclosure

1. Overview

U4355F Enclosure , providing M.2 B-key, Mini PCI-e connector and CFast connector can be M.2 SATA SSD, mSATA SSD, or CFast Card converted into USB 3.1 GEN 2.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : GIGABYTE **Z170X UD5 TH**
CPU : Intel **i5-6500**, 3.2GHz/ 6M Cache/ LGA1150
Memory : Kingston **KVR21N15D8/8**, **DDR4-2133MHz**, **16GB**(8GB DIMM*2)
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
Graphic : Z170 Chipsets built-in **HD Graphics 530**
Cable: type-C to Micro-B USB 3.1 Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: U4355F Enclosure with M.2 SATA **512GB**



U4355F Adapter



type C to micro B Cable



Samsung PM871a M.2 SSD

2.3 Install Hardware

Insert M.2 SATA SSD, or mSATA , or CFast Card into U4355F converter's M.2 B-key, or mini PCIe, or CFast connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Then connect U4355F Enclosure to **type-C** port of GIGABYTE **Z170X UD5 TH**

2.4 BIOS & Windows 10 OS environment setup

2.4.1 Primary SSD Drive installs win10 64bit OS

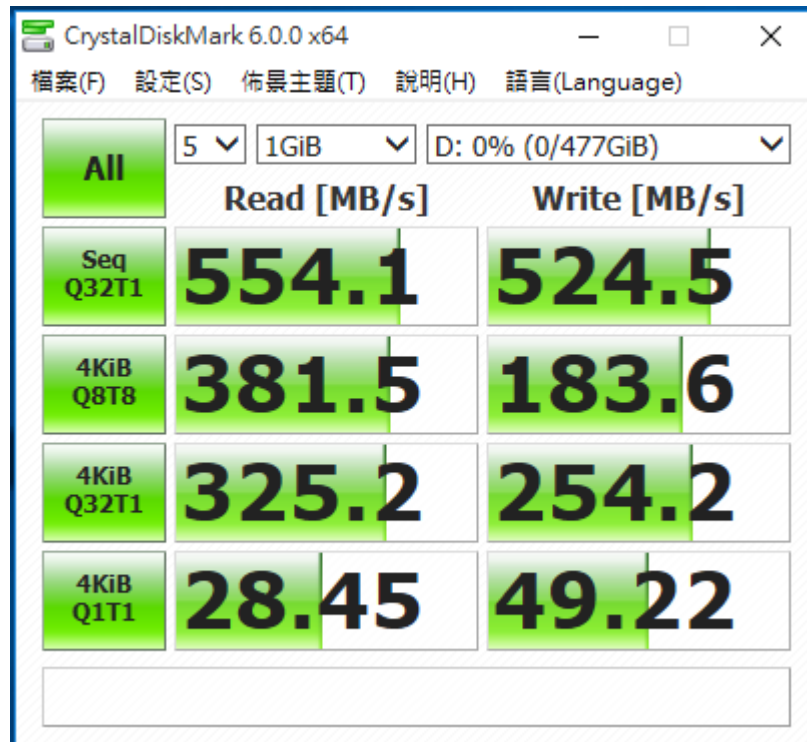
2.4.2 U4355F Enclosure is formatted to NTFS Mode. Don't install any program.

U4355F USB 3.1 Gen2 10Gbps Enclosure

2.5 CrystalDiskMark 6.0 x64 performance test

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

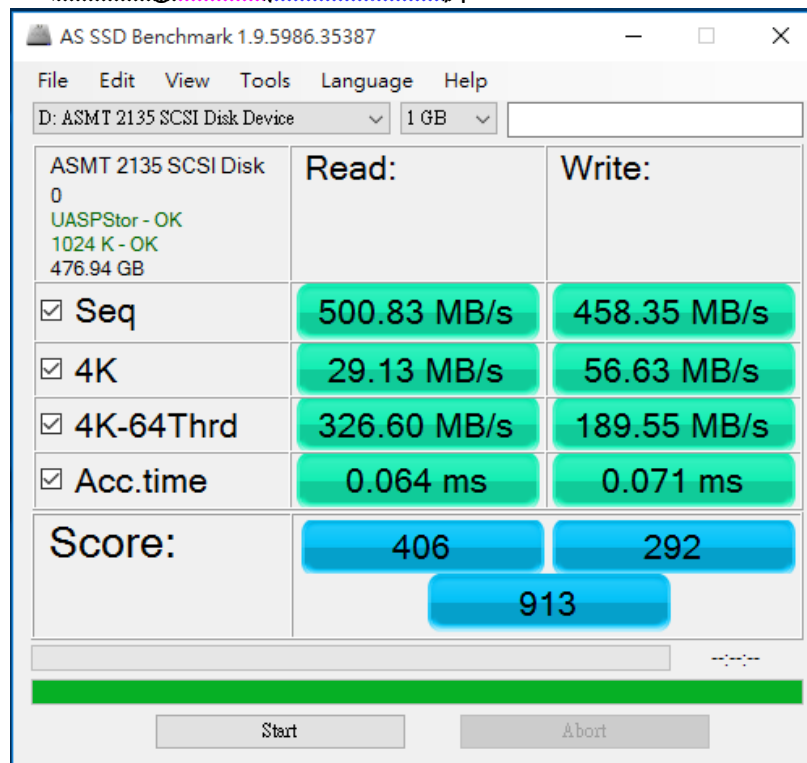
2.5.1 show Samsung **512GB(PM871a M.2)** performance as below:



2.6 AS SSD Benchmark 1.9 performance test

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

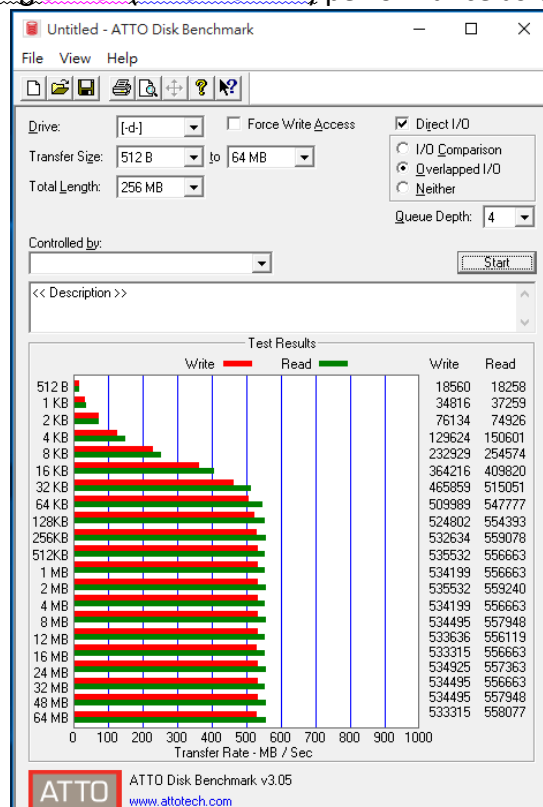
2.6.1 show Samsung **512GB(PM871a M.2)** performance as below:



U4355F USB 3.1 Gen2 10Gbps Enclosure

2.7 ATTO Disk Benchmark 3.05 performance test

2.7.1 show Samsung 512GB (PM871a M.2) performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 show Samsung 512GB (PM871a M.2) performance as below:

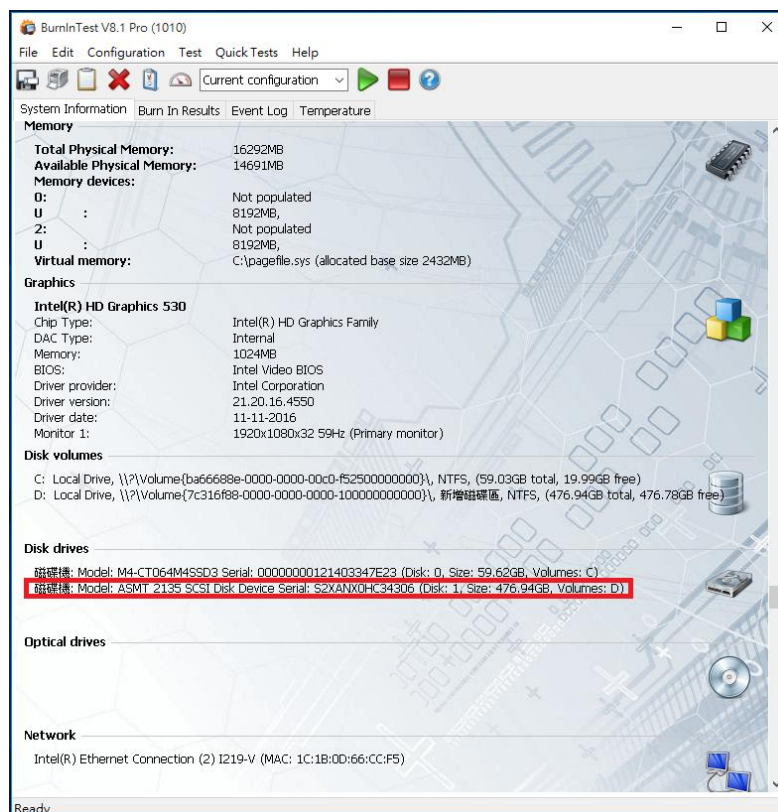
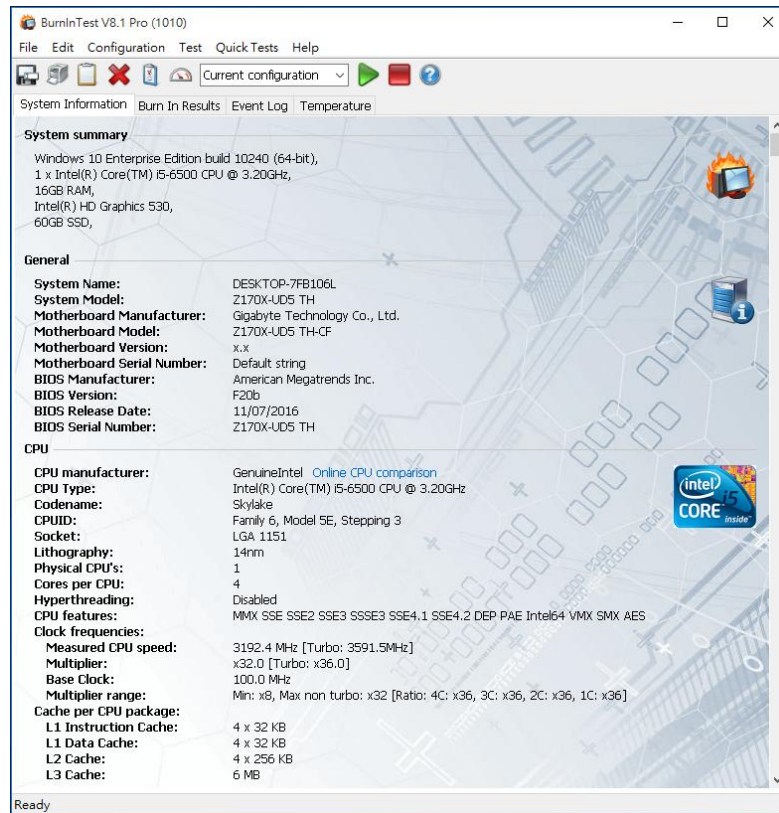


U4355F USB 3.1 Gen2 10Gbps Enclosure

3. Burn In Tests and Results

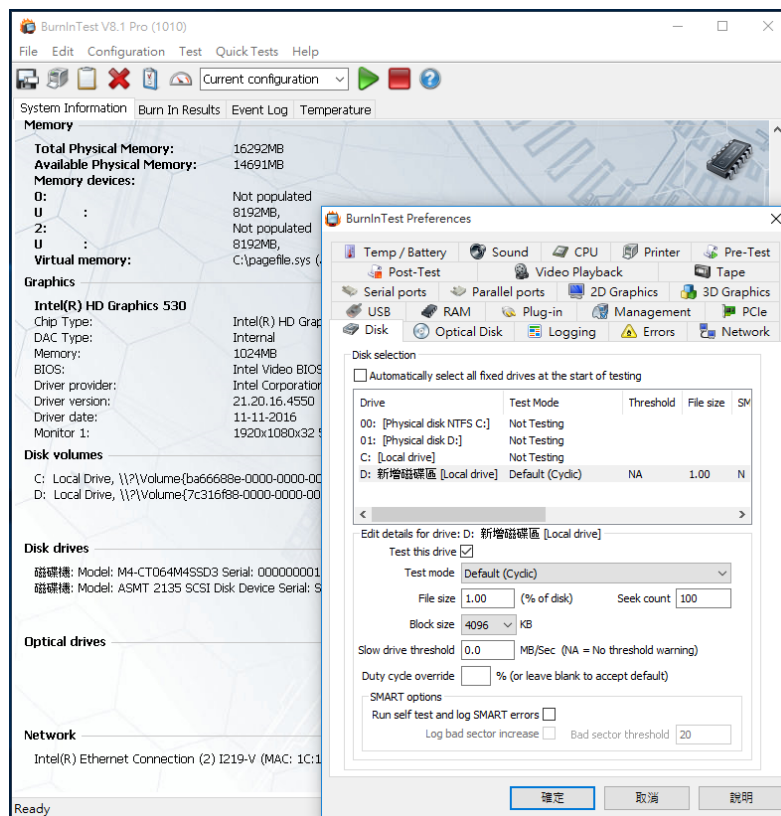
3.1 BurnInTest v8.1 Pro

3.1.1 system information for **M.2 SATA 512GB** as below:

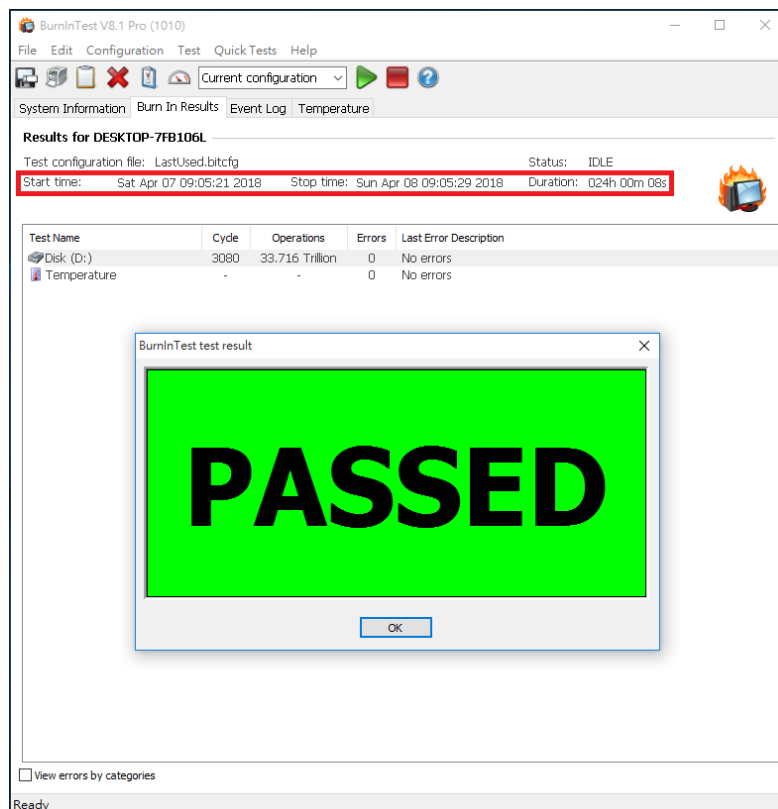


U4355F USB 3.1 Gen2 10Gbps Enclosure

3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



U4355F USB 3.1 Gen2 10Gbps Enclosusre

4. Summary

- 4.1 M.2 SATA SSD is SATA 3 Interface, I/O speed, max. to 6Gbps.
- 4.2 USB3.1 GEN2 is 10Gbps
- 4.3 U4355F Enclosure I/O performance is based on M.2 SATA SSD Card.