



# MINERVA

USB 3.1 Gen 2 for mSATA SSD, M.2 SSD & CFast Card with Micro-B

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## Performance & Burn In Test Rev. 1.0

### Table of Contents

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1. Overview
  
2. Performance Measurement Tools and Results
  - 2.1 Test Platform
  - 2.2 Test target and use mSATA SSD
  - 2.3 Install Hardware
  - 2.4 BIOS & Windows 10 OS environment setup
  - 2.5 CrystalDiskMark 5.1.2 x64 performance test
  - 2.6 AS SSD Benchmark 1.9 performance test
  - 2.7 ATTO Disk Benchamrk 2.47 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

# USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

## 1. Overview

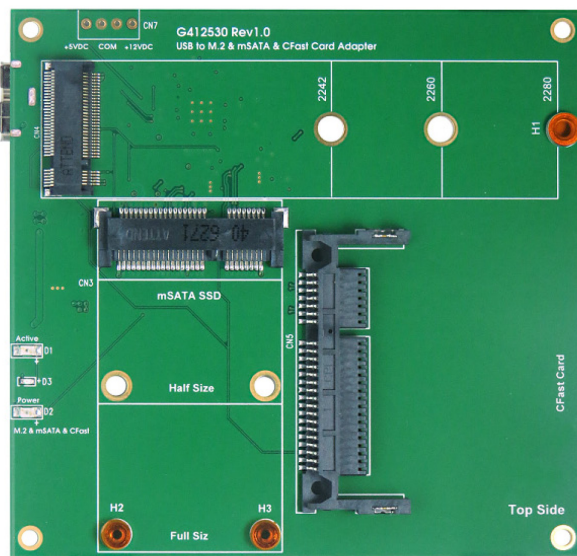
U4345A adapter, built-in USB3.1 Micro-B connectors, provides one CFast connector, one M.2 B-key connector and one Mini PCI-e connector. First inserts mSATA SSD into Mini PCI-e connector, using USB A-type to Micro-B cable to connect to the host USB 3.1 A-port, mSATA SSD can work.

## 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**, 8G(8GB DIMM\*2)  
ATX Power : FSP RAIDER 550, **550W ATX**, 12V V2.2 Power Supply  
Graphic : Z170 Chipsets built-in **HD Graphics 530**  
Adapter: USB 3.1+Micro-B to mSATA, M.2, CFast adapter  
CABLE: A-type to micro-B USB 3.1 cable  
OS : Microsoft **Windows 10 64bit OS**

### 2.2 Test target: U4345A adapter and mSATA SSD(LITE-ON [S930/256GB](#))



LITE-ON S930 mSATA SSD

U4345A Adapter

### 2.3 Install Hardware

Inserts mSATA SSD into U4345A adapter's Mini PCI-e connector, and use the coppers and screws to fix SSDs (please refer to the installation Notes). Then this adapter through USB cable to connect to USB3.1 port of GIGABYTE **Z170X UD5 TH**.

### 2.4 BIOS & Windows 10 OS environment setup

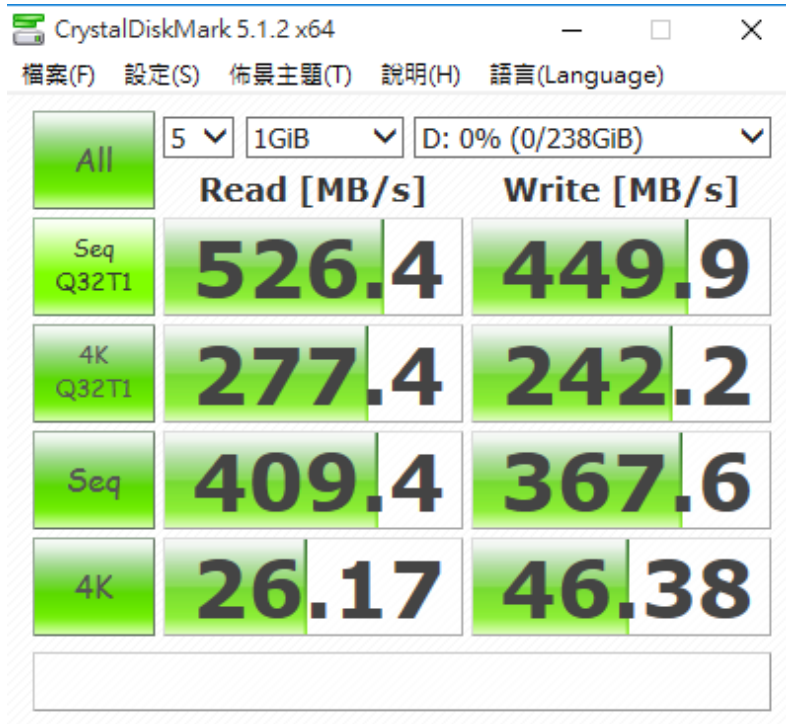
#### 2.4.1 U4345A adapter formatted NTFS.

# USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

## 2.5 CrystalDiskMark 5.1.2 x64 performance test

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

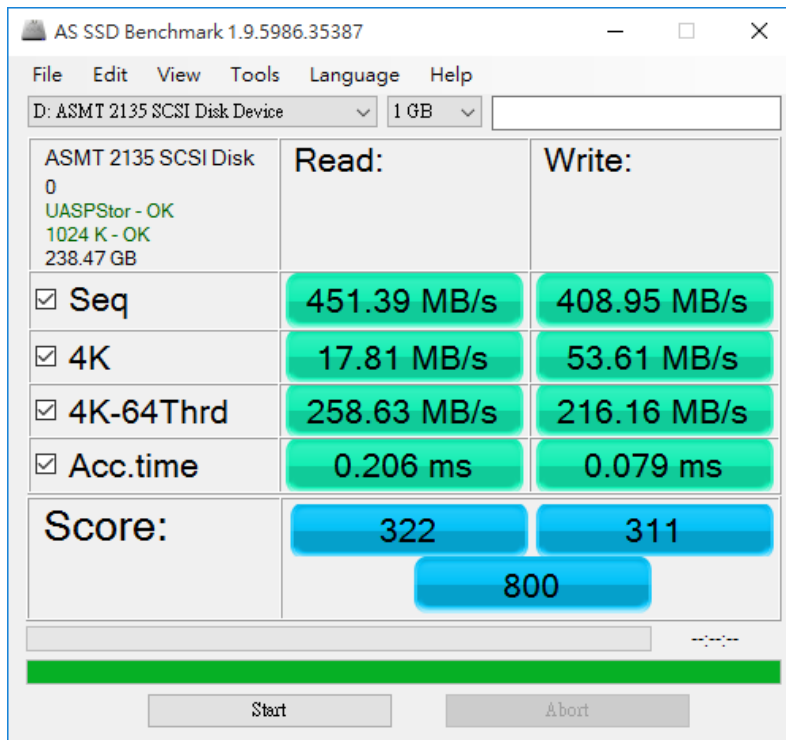
2.5.1 show mSATA SSD(LITE-ON [S930/256GB](#)) performance as below:



## 2.6 AS SSD Benchmark 1.9 performance test

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

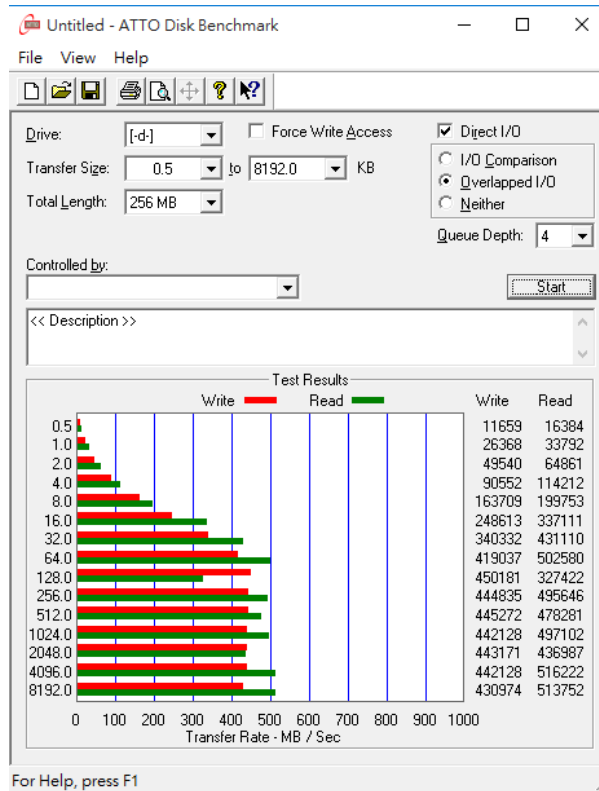
2.6.1 show mSATA SSD(LITE-ON [S930/256GB](#)) performance as below:



# USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

## 2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 show mSATA SSD(LITE-ON S930/256GB) performance as below:



## 2.8 AnvilBenchmark\_V110\_B337

2.8.1 show mSATA SSD(LITE-ON S930/256GB) performance as below:

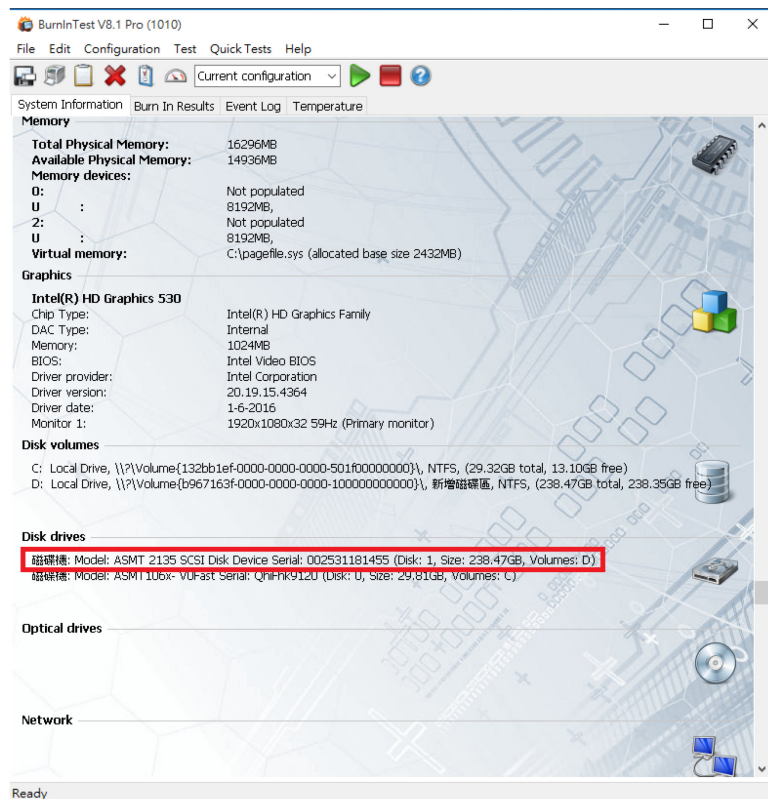
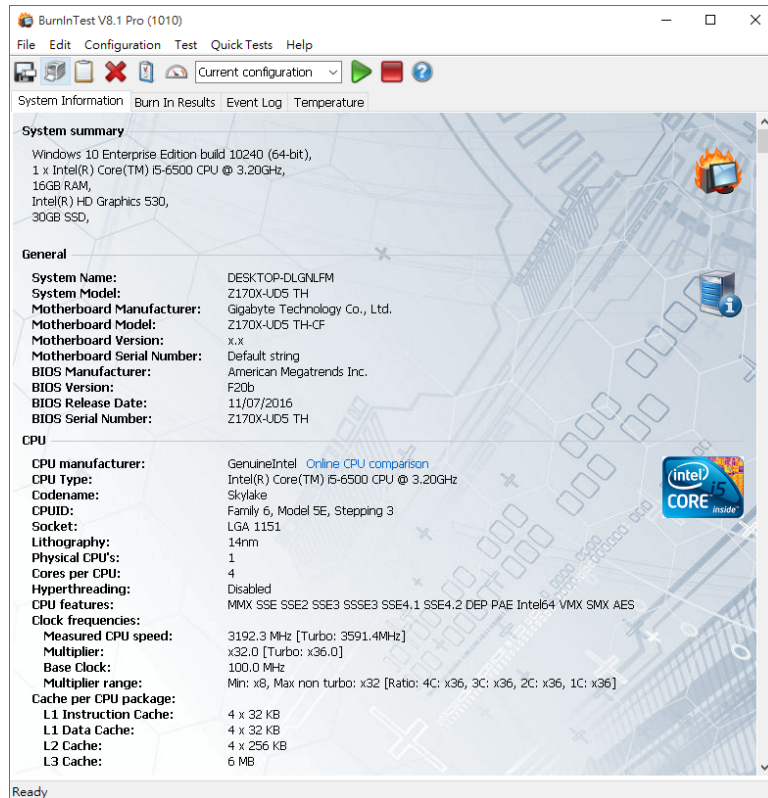


# USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

## 3. Burn In Tests and Results

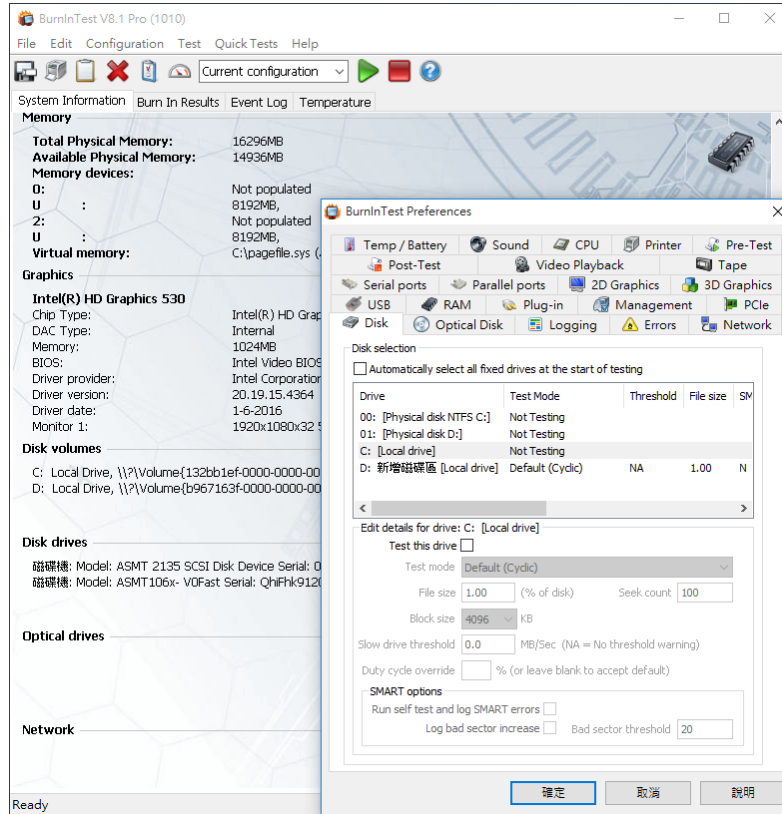
### 3.1 BurnInTest v8.1 Pro

3.1.1 **system information** for mSATA SSD(LITE-ON S930/256GB) as below:

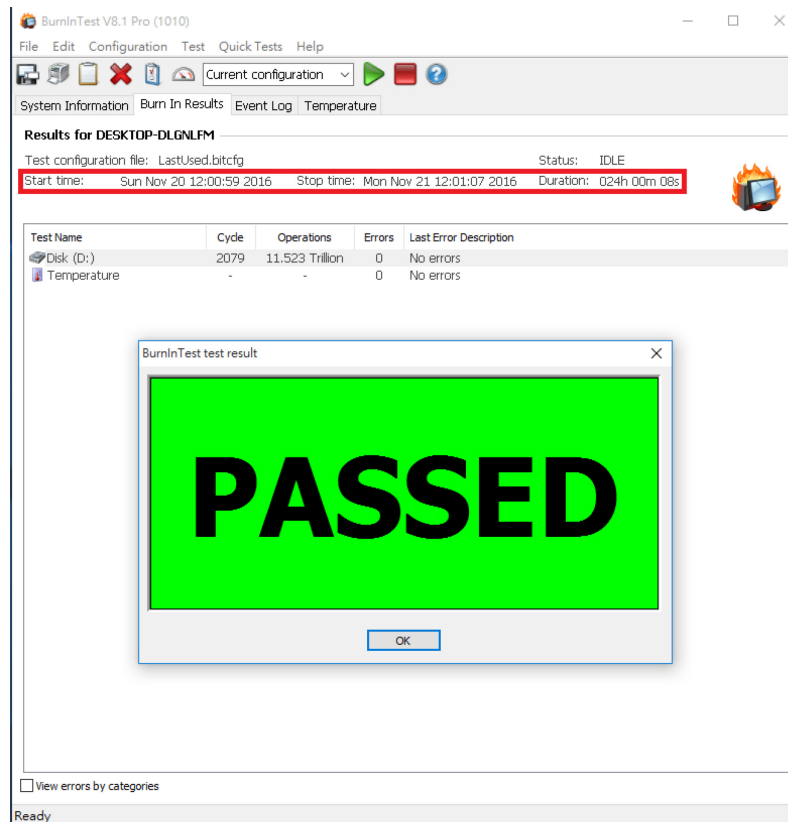


# USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

## 3.2.2 show Disk test mode( 10 ways cycle test)



## 3.1.3 show 24-hour Burn-in test PASSED



# USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

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## 4. Summary

- 4.1 USB 3.1 is 10Gbps Interface.
- 4.2 SATA III is 6Gbps Interface.
- 4.3 mSATA SSD is SATA III Interface, I/O speed, max. to 600MB/s.
- 4.4 U4345A enclosure I/O performance is based on mSATA SSD.