



# MINERVA

## BU285F U.2(SFF-8639) to M.2 NVMe converter Card

---

### Performance & Burn In Test Rev. 2.0

#### Table of Contents

---

##### 1. Overview

##### 2. Performance Measurement Tools and Results

2.1 Test Platform

2.2 Test target and Used M.2 NGFF SSD

2.3 Install Hardware

2.4 BIOS & Windows 10 OS environment setup

2.5 CrystalDiskMark 5.2.1 x64 performance test

2.6 AS SSD Benchmark 1.9 performance test

2.7 ATTO Disk Benchmark 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

# BU285F/Rev2.0 Converter Card

---

## 1. Overview

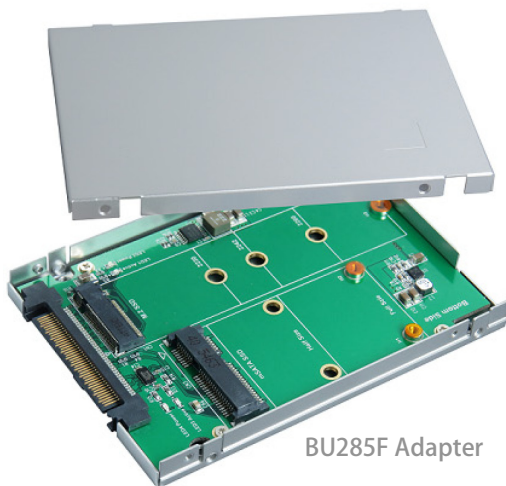
The BU285F adapter, built-in SFF-8639 connector, provides a port **M.2 M-key** connector, a port **Mini PCIe** connector. First M.2 NVMe SSD inserts M.2 M-key connector, use U.2 to SFF-8643 cable, connected to the PCI-e to Mini SAS HD(SFF-8643) adapter, then M.2 NVMe(PCI-e) SSD can be work.

## 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**, **16GB**(8GB DIMM\*2)  
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply  
Graphic : Z170 Chipsets built-in **HD Graphics 530**  
Adapter: PE0404 PCIe to SFF-8643 Mini SAS HD Adapter  
CABLE: Amphenol U.2(SFF-8639) to SFF-8643 Mini SAS HD Cable  
OS : Microsoft **Windows 10 64bit OS**

### 2.2 Test target: BU285F adapter and Samsung SM961 512GB NVMe SSD



BU285F Adapter



Samsung SM961 512GB M.2 SSD

### 2.3 Install Hardware

Inserts M.2 NVMe(PCIe Interface)SSD into BU285F converter's M.2 M-key connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes).  
Connects BU285F converter to PE0404 adapter(PCI-e to Mini SAS HD SFF-8643) and Plugs PE0404 into **PCI-e slot of Z170X UD5 TH**.

### 2.4 BIOS & Windows 8.1 OS environment setup

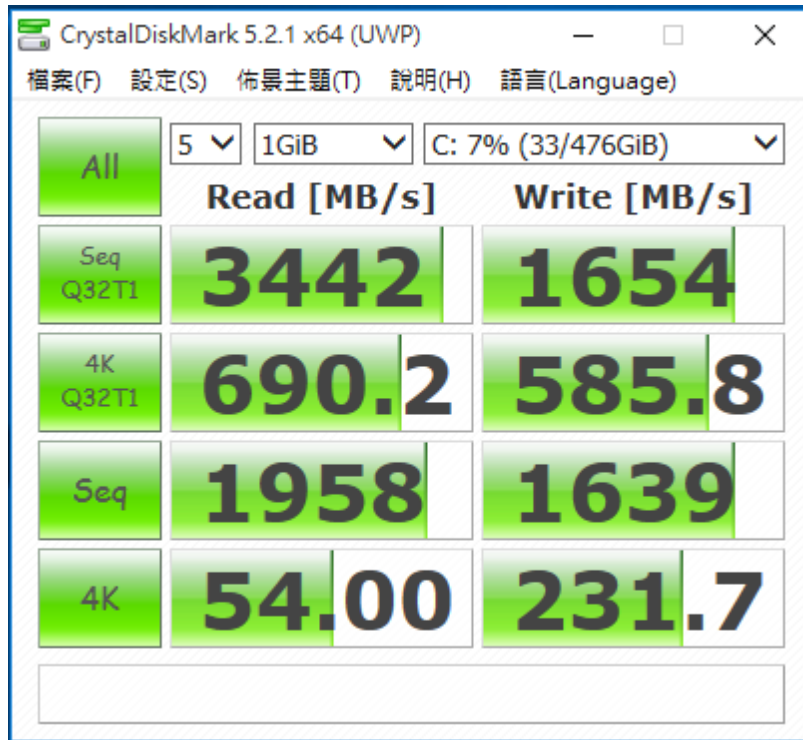
2.4.1 Install Windows 10 64bit OS into BU285F. Don't install any Application program.

# BU285F/Rev2.0 Converter Card

## 2.5 CrystalDiskMark 5.2.1 x64 performance test

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

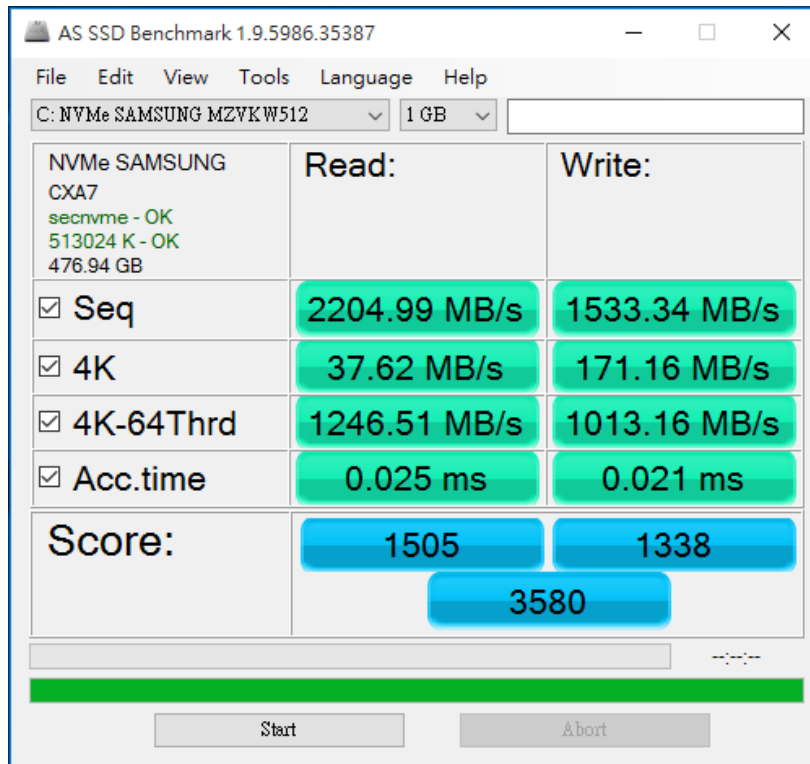
2.5.1 show [Samsung SM961 M.2\(NVMe\)/512GB](#) performance as below:



## 2.6 AS SSD Benchmark 1.9 performance test

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

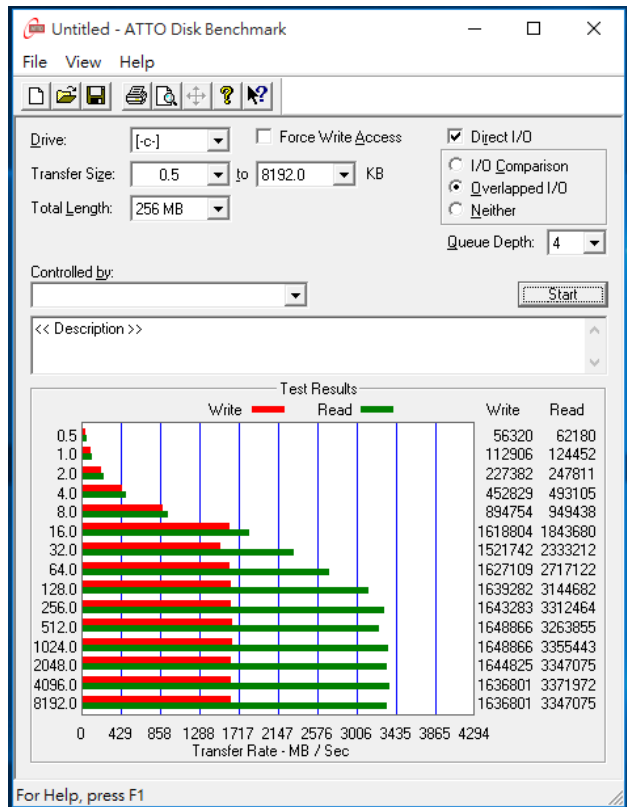
2.6.1 show [Samsung SM961 M.2\(NVMe\)/512GB](#) performance as below:



# BU285F/Rev2.0 Converter Card

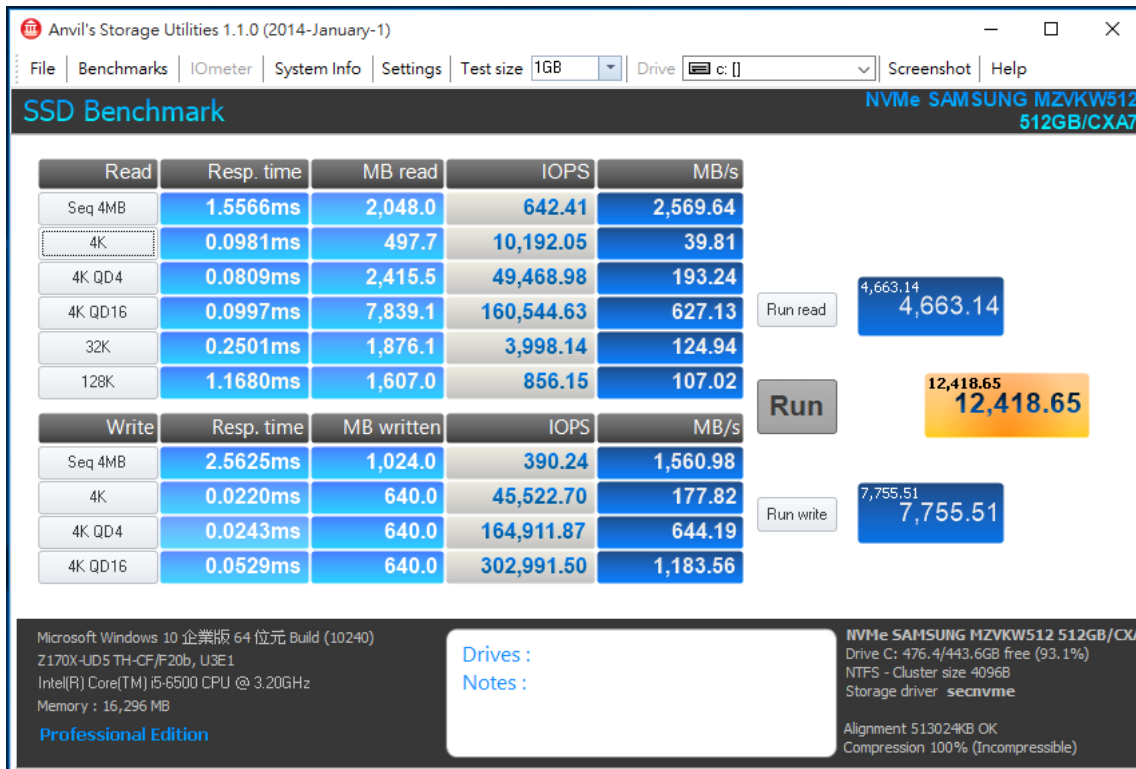
## 2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 show [Samsung SM961 M.2\(NVMe\)/512GB](#) performance as below:



## 2.8 AnvilBenchmark\_V110\_B337

2.8.1 show [Samsung SM961 M.2\(NVMe\)/512GB](#) performance as below:

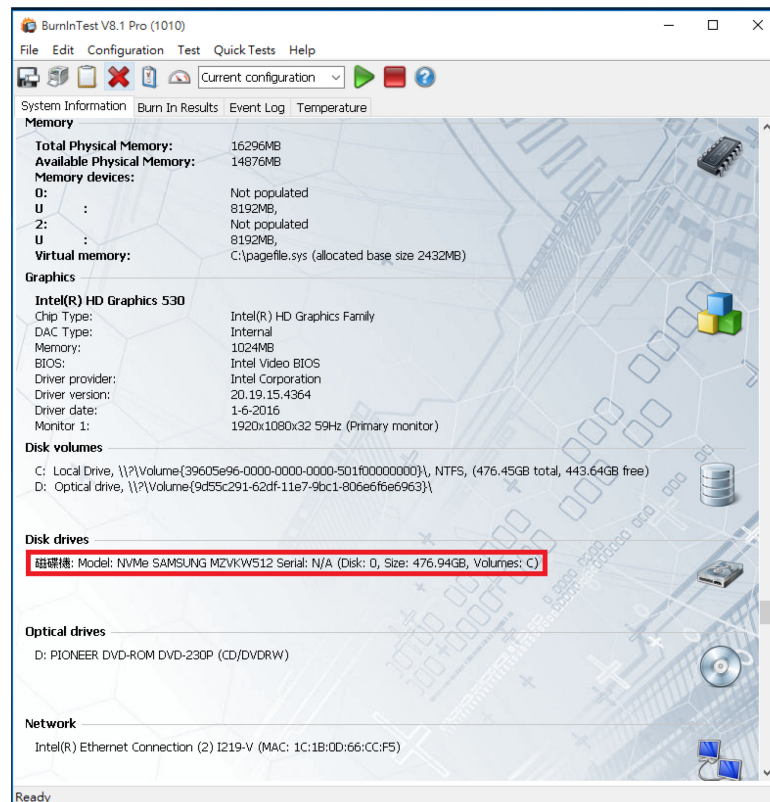
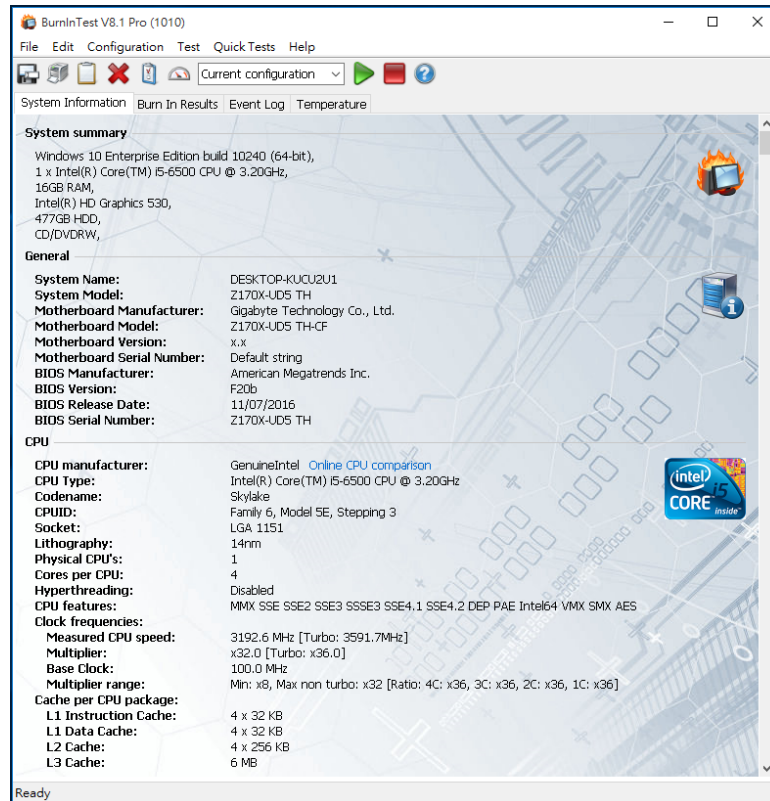


# BU285F/Rev2.0 Converter Card

## 3. Burn In Tests and Results

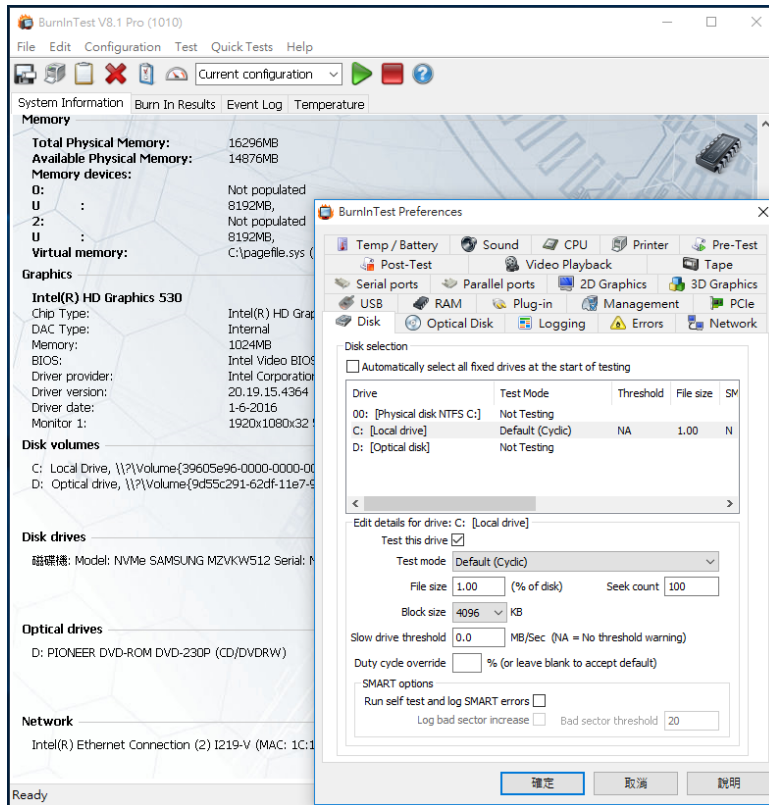
### 3.1 BurnInTest v8.1 Pro for [Samsung SM961 M.2\(NVMe\)](#)/[512GB](#) SSD

#### 3.1.1 system information as below:

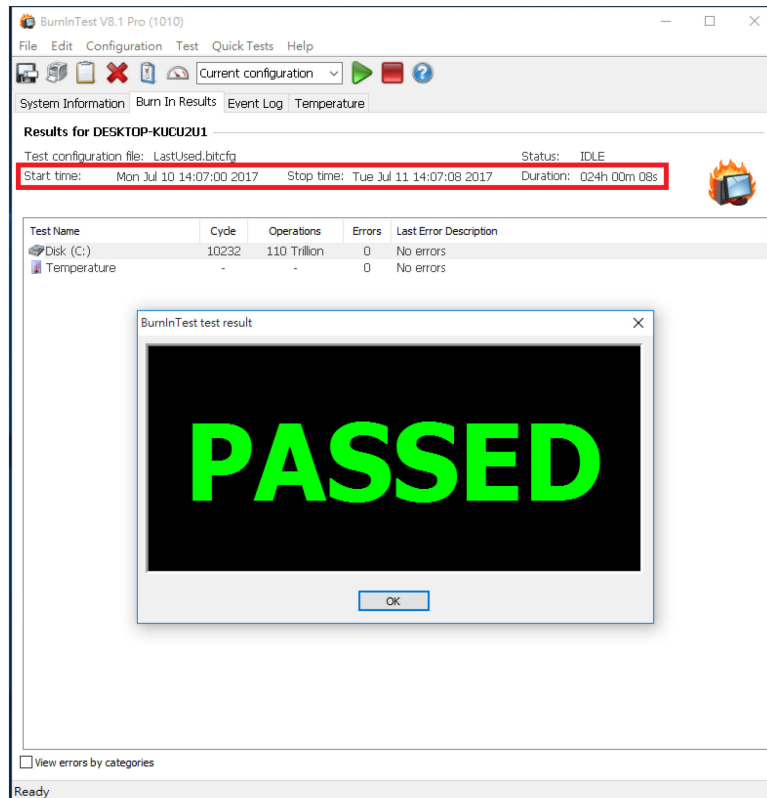


# BU285F/Rev2.0 Converter Card

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



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



# BU285F/Rev2.0 Converter Card

---

## 4. Summary

- 4.1 M.2 NVMe SSD is PCI-e Gen 3 / 4 Lane Interface, I/O speed, max. to 4GB/s.
- 4.2 BU285F adapter I/O performance is based on M.2 NVMe SSD.