



# MINERVA

## PE0803 PCIe 8 Lanes to MiniSAS HD 8X Converter Card

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### Performance & Burn In Test Rev 1.0

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# PE0803 Rev1.0 Converter Card

## 1. Overview

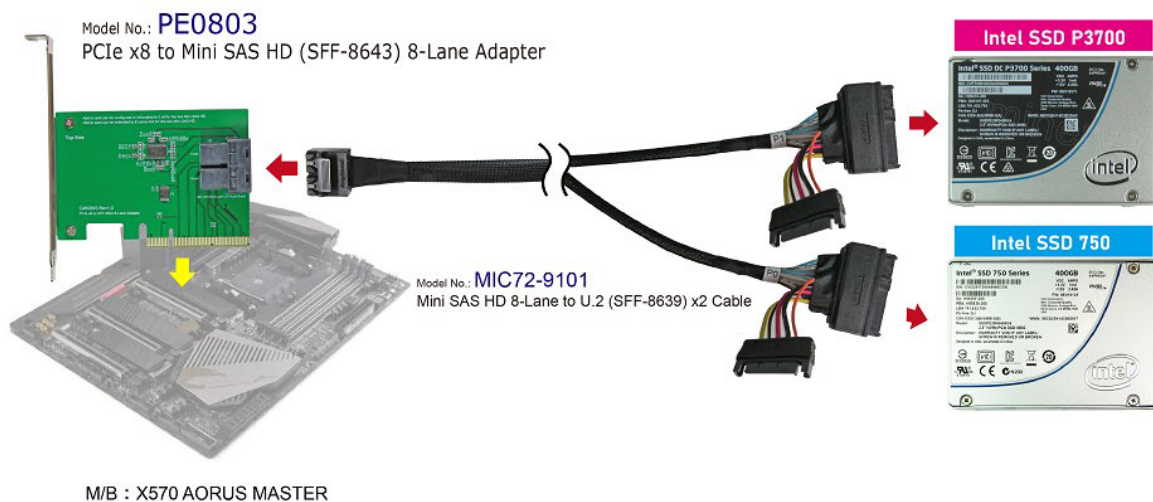
This riser card has built-in SFF-8643 8X connector. It is designed for use by PCIe x8 to configure two x4 bifurcations.

## 2. Tools and Results of Performance Measurement

### 2.1 Test Platform

M/B : GIGABYTE **X570 AORUS MASTER**  
CPU : AMD **Ryzen 7, 3700X 8-Core**  
Memory : Kingston **KVR26N19D8/16, DDR4-2666MHz, 32GB**(16GB DIMM\*2)  
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply  
Adapter: PE0803 PCIe x8 to MINI SAS HD 8X Storage Adapter  
Cable: SFF-8643(MINI SAS HD) 8-Lane to SFF-8639 X2 Cable  
OS : Microsoft **Windows 10 64bit OS**

### 2.2 Test target: PE0803 adapter and U.2 NVMe SSD



### 2.3 Install Hardware

First insert PE0803 riser card into GABYTE **X570 AORUS MASTER** PCIe x16 Slot and, using the MIC72-9101 Cable. Plug INTEL U.2 NVMe SSD.

### 2.4 BIOS & Windows 10 OS environment setup

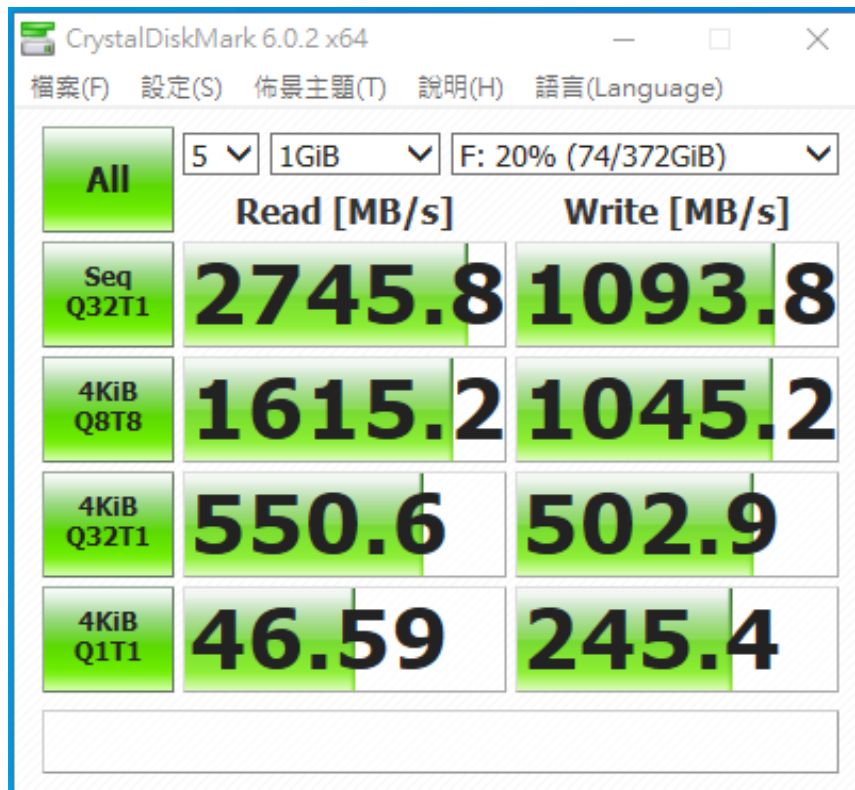
- 2.4.1 Primary M.2 NVMe SSD install Windows 10 OS.
- 2.4.2 U.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.

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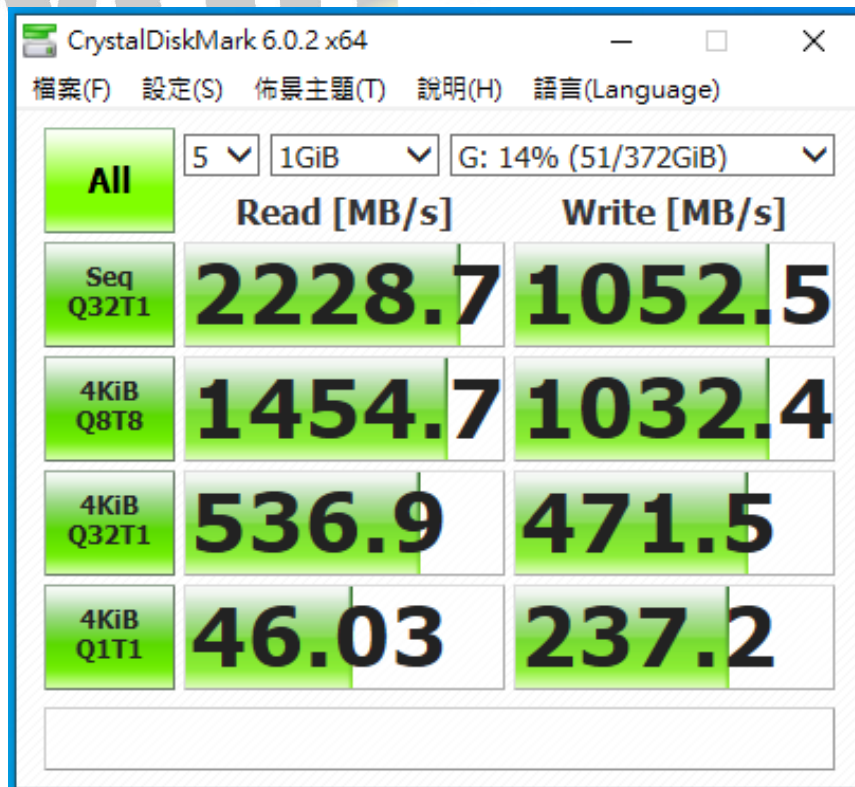
## 2.5 CrystalDiskMark 6.0.2 x64 performance test

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

2.5.1 **U.2 NVMe Intel P3700/400GB** performance as below:



2.5.2 **U.2 NVMe Intel 750/400GB** performance as below:

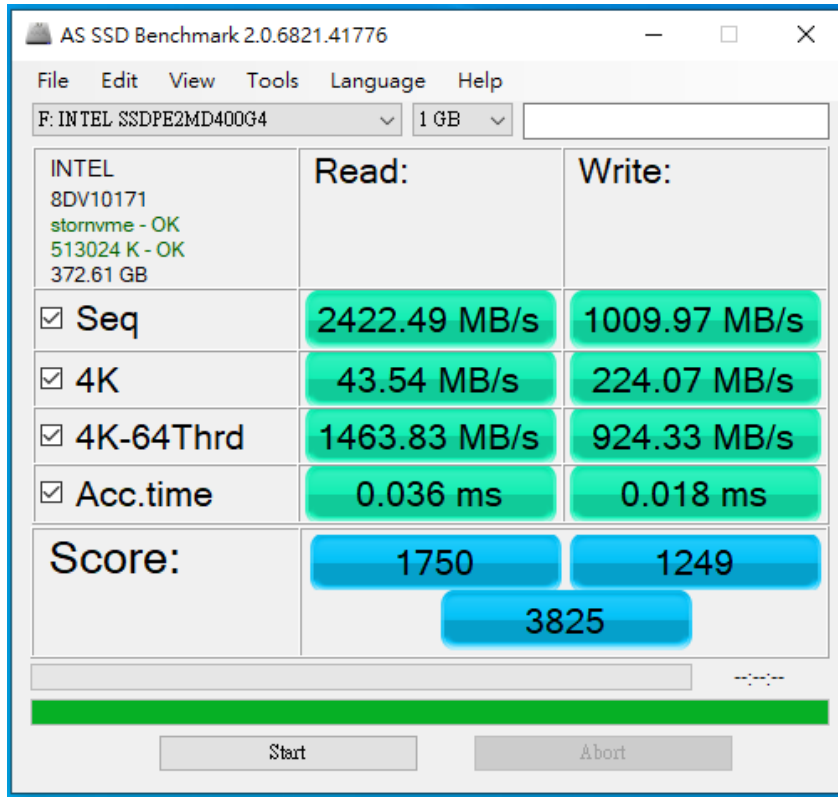


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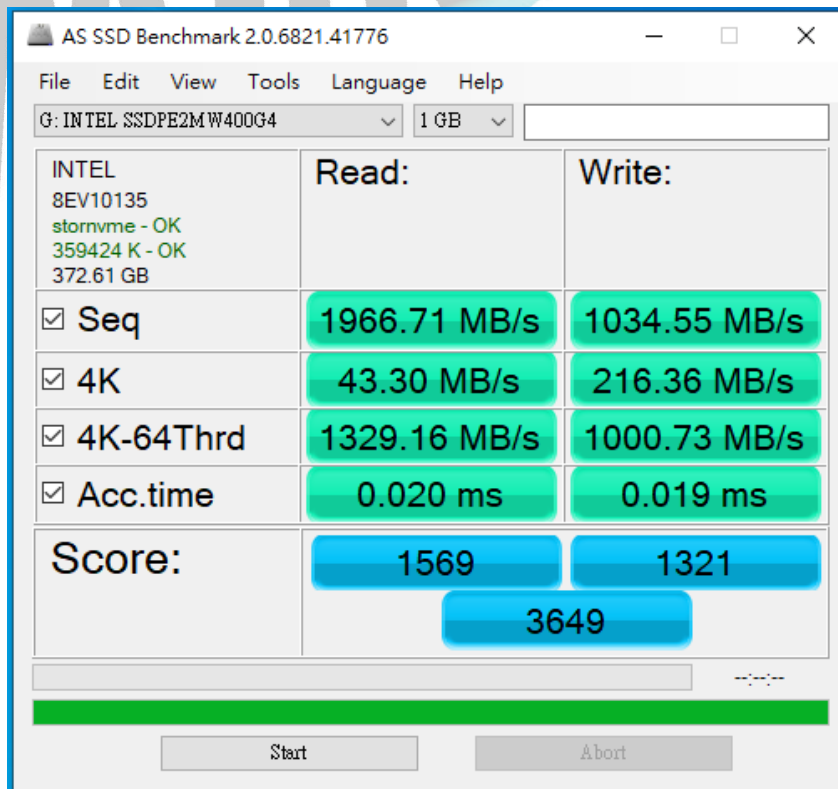
## 2.6 AS SSD Benchmark 2.0.6 performance test

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

2.6.1 **U.2 NVMe Intel P3700/400GB** performance as below:



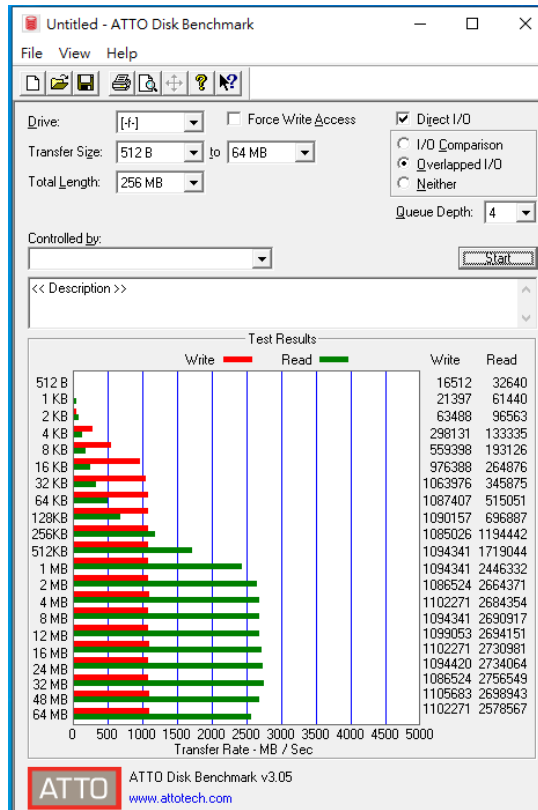
2.6.2 **U.2 NVMe Intel 750/400GB** performance as below:



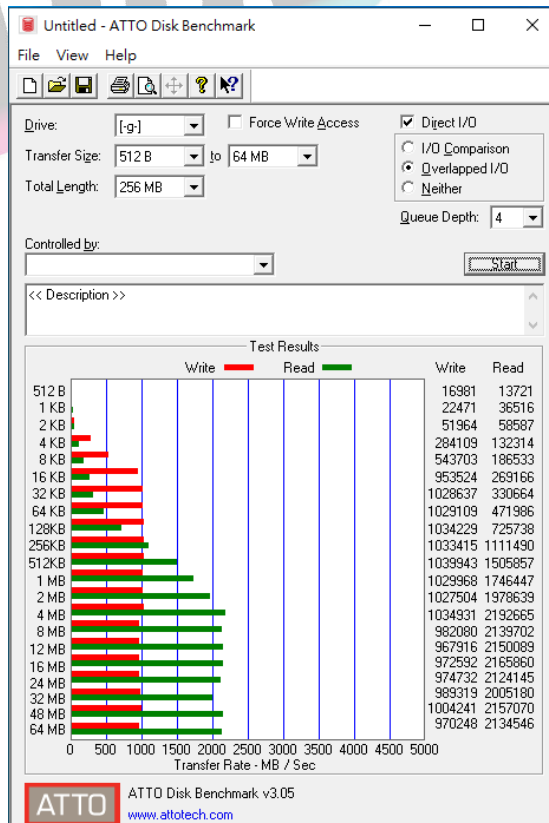
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## 2.7 ATTO Disk Benchmark 3.0.5 performance test

### 2.7.1 U.2 NVMe Intel P3700/400GB performance as below:



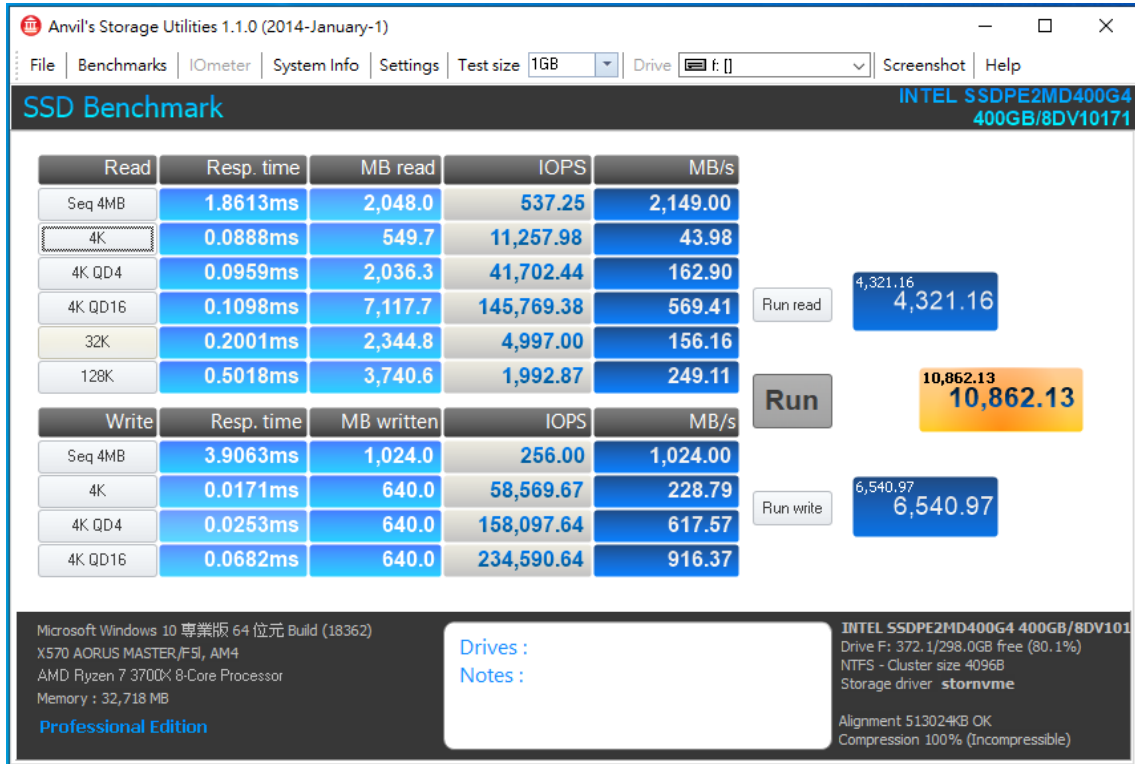
### 2.7.2 U.2 NVMe Intel 750/400GB performance as below:



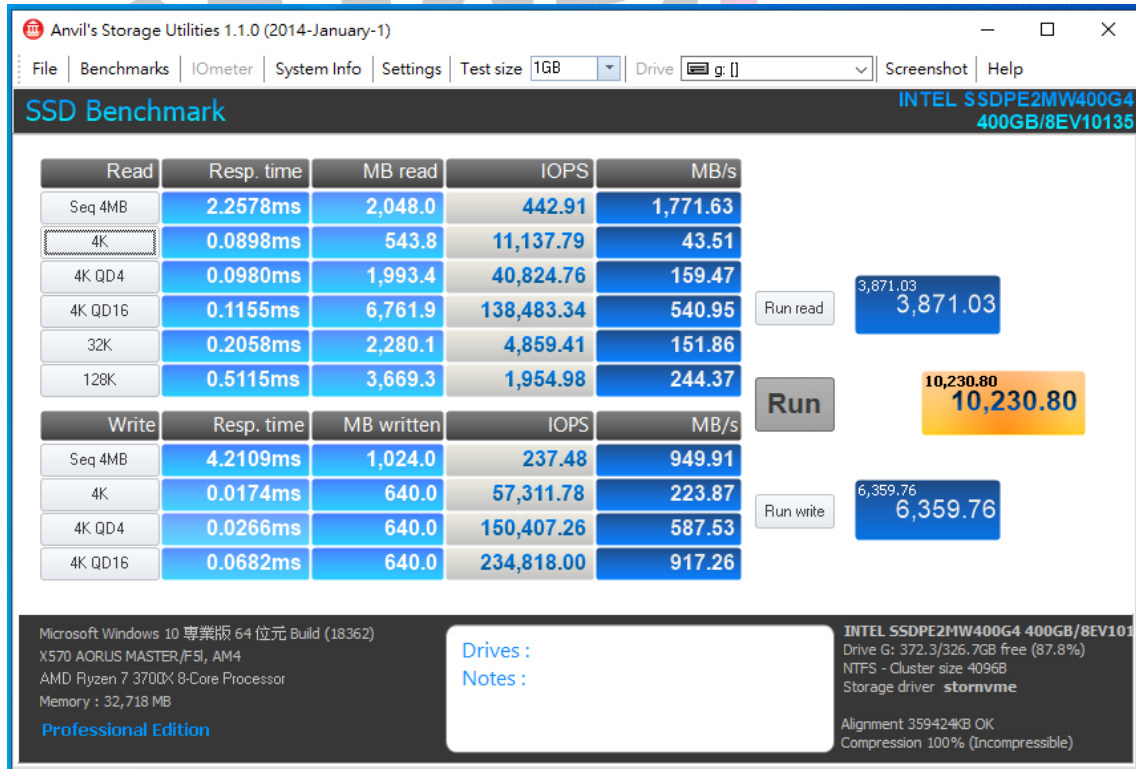
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## 2.8 AnvilBenchmark\_V110\_B337

### 2.8.1 U.2 NVMe Intel P3700/400GB performance as below:



### 2.8.2 U.2 NVMe Intel 750/400GB performance as below:



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## 3. Burn In Tests and Results

### 3.1 BurnInTest v8.1 Pro

#### 3.1.1 system information as below:

**System summary**  
Windows 10 Professional Edition build 18362 (64-bit),  
1 x AMD Ryzen 7 3700X 8-Core Processor [3600.8 MHz],  
32GB RAM,  
NVIDIA GeForce 210,  
119GB SSD, 2 x 373GB HDD,

**General**  
System Name: PERRY-PC  
Motherboard Manufacturer: Gigabyte Technology Co., Ltd.  
Motherboard Model: X570 AORUS MASTER  
Motherboard Version: x.x  
Motherboard Serial Number: Default string  
BIOS Manufacturer: American Megatrends Inc.  
BIOS Version: F31  
BIOS Release Date: 09/02/2019  
BIOS Serial Number: Default string

**CPU**  
CPU manufacturer: AuthenticAMD [Online CPU comparison](#)  
CPU Type: AMD Ryzen 7 3700X 8-Core Processor  
CPUID: Family 17, Model 71, Stepping 0  
Physical CPU's: 1  
Cores per CPU: 8  
Hyperthreading: Not capable  
CPU features: MMX SSE SSE2 SSE3 SSE3 SSE4.1 SSE4.2 SSE4a DEP PAE AMD64 AES Turbo core  
Clock frequencies:  
Measured CPU speed: 3600.8 Mhz  
Cache per CPU package:  
L1 Instruction Cache: 16 x 32 KB  
L1 Data Cache: 16 x 32 KB  
L2 Cache: 16 x 512 KB  
L3 Cache: 32 MB

**Memory**  
Total Physical Memory: 32718MB  
Available Physical Memory: 29988MB  
Memory devices:  
Slot 1: 16GB DDR4 SDRAM PC4-21300  
Slot 2: 1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.)  
16GB DDR4 SDRAM PC4-21300  
Slot 3: 1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.)  
Not populated  
Slot 4: Not populated  
Virtual memory: F:\pagefile.sys (allocated base size 32768MB)

**Graphics**  
NVIDIA GeForce 210  
Chip Type: GeForce 210  
DAC Type: Integrated RAMDAC  
Memory: 512MB  
BIOS: Version 70.18.64.0.5  
Driver provider: NVIDIA  
Driver version: 9.18.13.4195  
Driver date: 1-29-2016  
Monitor 1: 1920x1080x32 60Hz (Primary monitor)

**Disk volumes**  
C: Local Drive, \\?\Volume{a6e75956-0000-0000-0000-100000000000}\, System Drive, NTFS, (118.19GB total, 45.27GB free)  
D: Local Drive, \\?\Volume{ca2ba9d3-0000-0000-0000-100000000000}\, 系統保留, NTFS, (0.49GB total, 0.13GB free)  
E: Local Drive, \\?\Volume{34b189c5-0000-0000-0000-100000000000}\, 系統保留, NTFS, (0.34GB total, 0.05GB free)  
F: Local Drive, \\?\Volume{ca2ba9d3-0000-0000-0000-501000000000}\, NTFS, (372.12GB total, 298.00GB free)  
G: Local Drive, \\?\Volume{34b189c5-0000-0000-0000-f01500000000}\, NTFS, (372.27GB total, 326.69GB free)

**Disk drives**  
磁碟機: Model: Crucial\_CT128M550SSD3 Serial: 14230C32D185 (Disk: 0, Size: 119.24GB, Volumes: C)  
磁碟機: Model: INTEL\_SSDPE2M400G4 Serial: N/A (Disk: 1, Size: 372.61GB, Volumes: D F)  
磁碟機: Model: INTEL\_SSDPE2M400G4 Serial: N/A (Disk: 2, Size: 372.61GB, Volumes: E G)

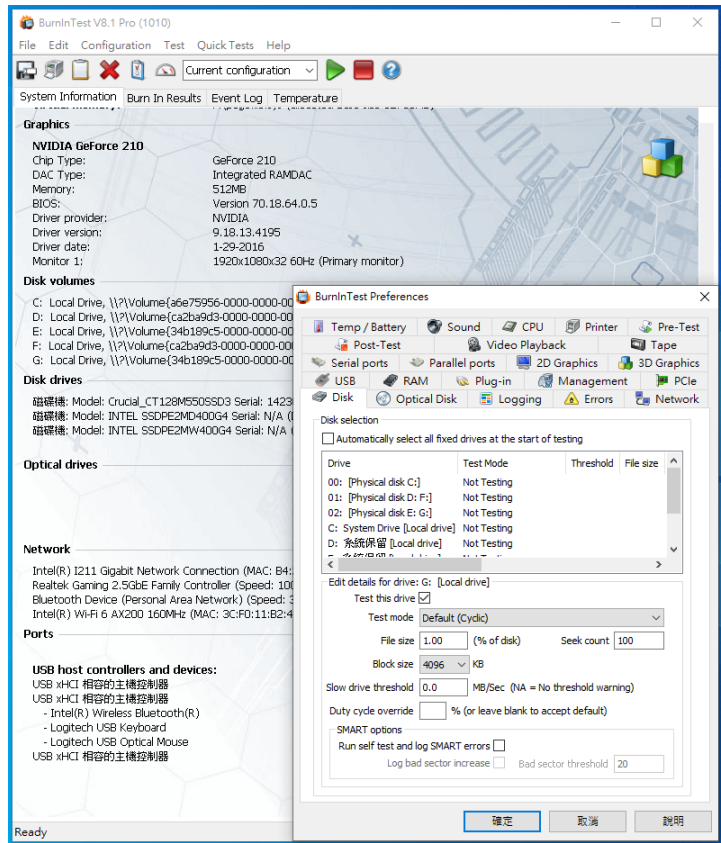
**Optical drives**

**Network**  
Intel(R) I211 Gigabit Network Connection (MAC: B4:2E:99:3C:AA:D6)  
Realtek Gaming 2.5GbE Family Controller (Speed: 100Mb/s) (MAC: B4:2E:99:3C:AA:D8)  
Bluetooth Device (Personal Area Network) (Speed: 3Mb/s) (MAC: 3C:FD:11:B2:48:6D)  
Intel(R) Wi-Fi 6 AX200 160MHz (MAC: 3C:FD:11:B2:48:69)

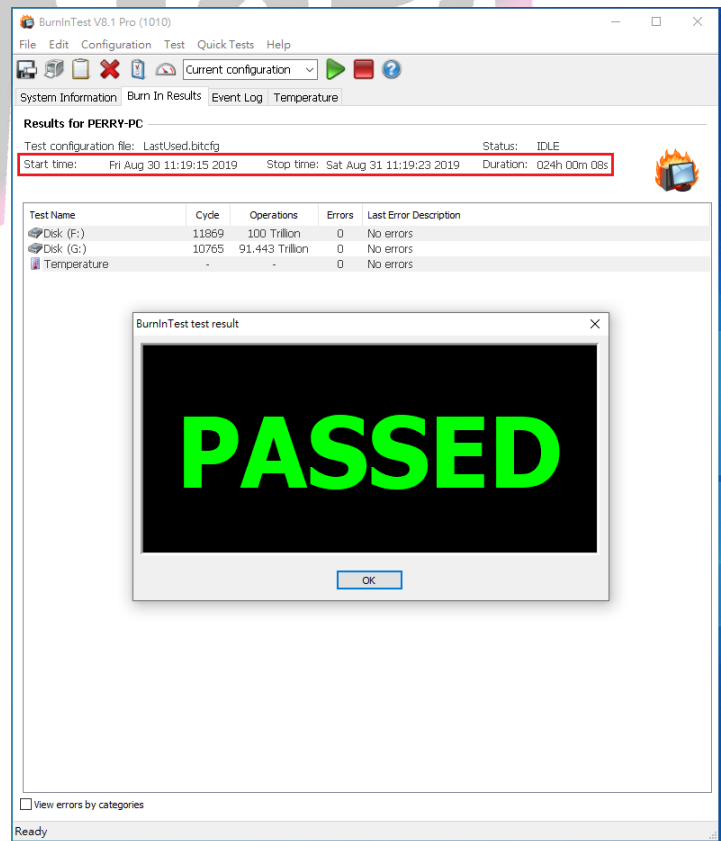
**Ports**  
USB host controllers and devices:  
USB xHCI 相容的主機控制器  
USB xHCI 相容的主機控制器  
- Intel(R) Wireless Bluetooth(R)  
- Logitech USB Keyboard  
- Logitech USB Optical Mouse  
USB xHCI 相容的主機控制器

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



## 3.1.3 24-hour Burn-in test PASSED





### 4. Summary

- 4.1 U.2 NVMe SSD is PCI-e Gen 3 / 4 Lane Interface, I/O speed, max. to 32Gbps.
- 4.2 PE0803 adapter I/O performance is based on U.2 NVMe SSD.

