



# MINERVA

DP6303 M.2 PCIe 4.0 GF with ReDriver for OCulink 4i Adapter

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## Performance & Burn In Test Rev. 1.0

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# DP6303 M.2 with PCIe 4.0 ReDriver for OCulink 4i Adapter

## 1. Overview

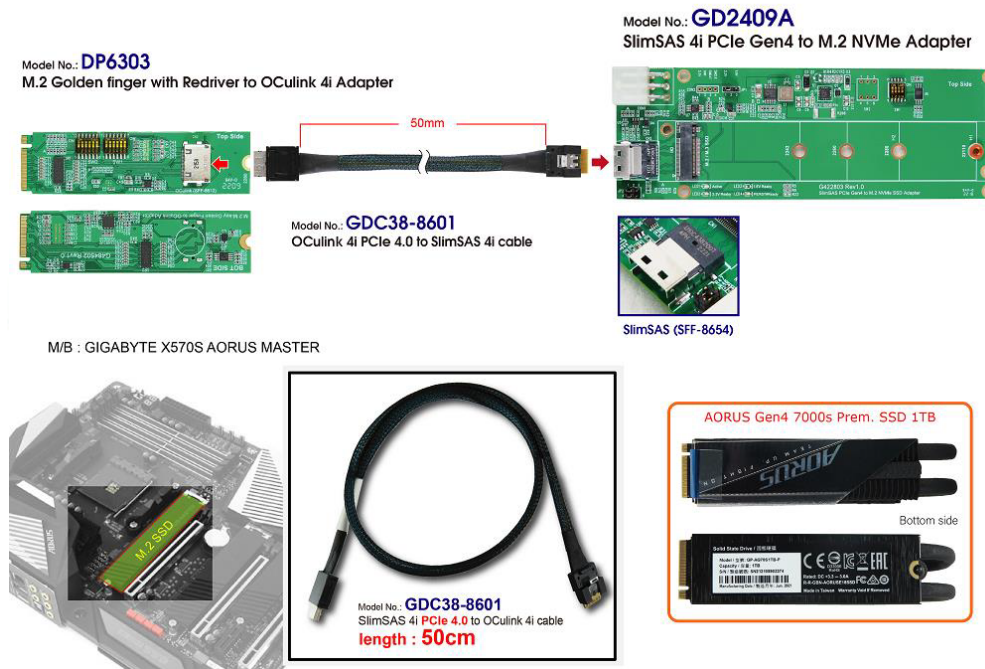
The DP6401 adapter may provide PCIe Gen4, 16GT/s high-speed signals extension to SlimSAS 4i interface connector.

## 2. Tools and Results of Performance Measurement

### 2.1 Test Platform

M/B : GIGABYTE **X570S 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  
AIC: DP6401 M.2 PCIe 4.0 with Redriver to SlimSAS 4i  
Adapter: GD2409A SlimSAS to M.2 PCIe 4.0 Adapter  
Cable: SFF-8611 4i Male to SSF-8654 Male, **50cm** Cable  
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: DP6401 Adapter, GD2409A Adapter and **GIGA M.2 1TB NVMe SSD**



### 2.3 Install Hardware

Inserts M.2 NVMe SSD into GD2409A adapter converter's M.2 connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connects GD2409A converter to DP6303 adapter(M.2 PCIe Gen4 with Redriver to SlimSAS 4i), Using **SFF-8611 4i Male to SFF-8654 Male cable** and plugs DP6303 into M.2 M-key of GIGABYTE **X570S AORUS MASTER**

### 2.4 BIOS & Windows 10 OS environment setup

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

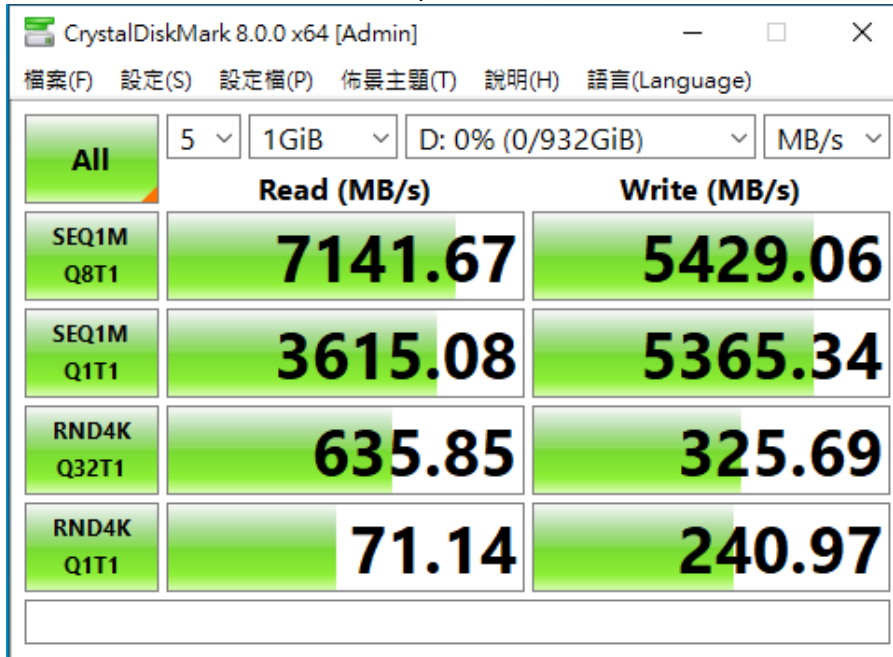


# DP6303 M.2 with PCIe 4.0 ReDriver for OCulink 4i Adapter

## 2.5 CrystalDiskMark 8.0 x64 performance test

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

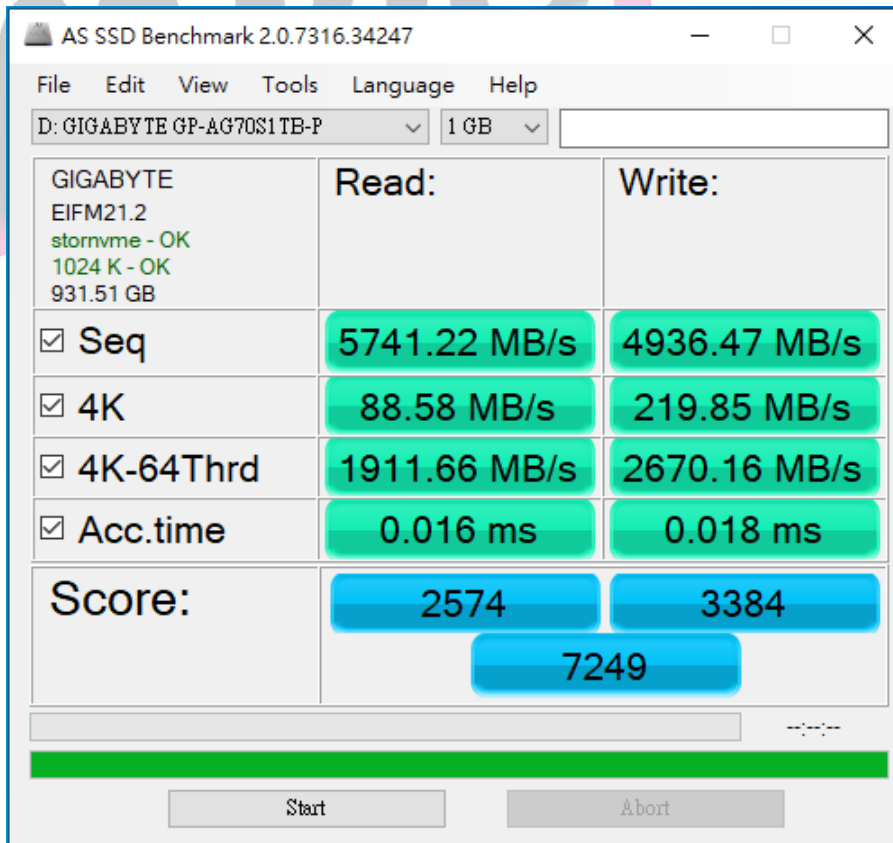
2.5.1 GIGA M.2 NVMe SSD / 1TB performance as below:



## 2.6 AS SSD Benchmark 2.0.7 performance test

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

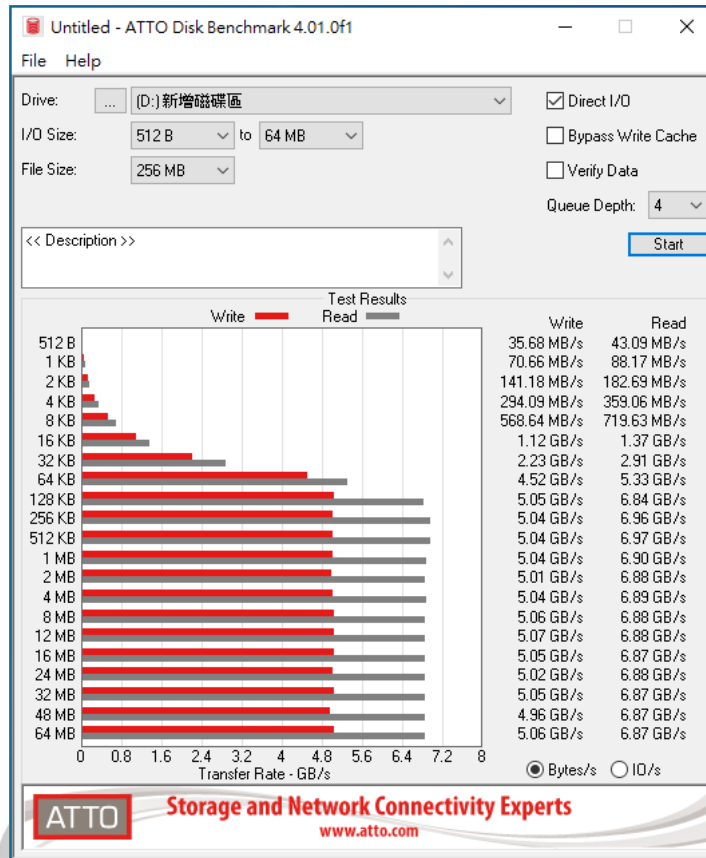
2.6.1 GIGA M.2 NVMe SSD / 1TB performance as below:



# DP6303 M.2 with PCIe 4.0 ReDriver for OCulink 4i Adapter

## 2.7 ATTO Disk Benchmark 4.01 performance test

### 2.7.1 GIGA M.2 NVMe SSD / 1TB performance as below:



## 2.8 AnvilBenchmark\_V110\_B337

### 2.8.1 GIGA M.2 NVMe SSD / 1TB performance as below:



# DP6303 M.2 with PCIe 4.0 ReDriver for OCulink 4i Adapter

## 3. Burn In Tests and Results

### 3.1 BurnInTest v10.2 Pro for GIGA M.2 NVMe SSD / 1TB

#### 3.1.1 System Information as below:

**System summary**  
Windows 10 Enterprise Edition build 19045 (64-bit),  
1 x AMD Ryzen 7 3700X 8-Core Processor [3604.9 MHz],  
32GB RAM,  
NVIDIA GeForce 210,  
119GB SSD, 932GB SSD,

**General**  
System Name: DESKTOP-GC5P1VR  
Motherboard Manufacturer: Gigabyte Technology Co., Ltd.  
Motherboard Model: X570S AORUS MASTER  
Motherboard Version: x.x  
Motherboard Serial Number: Default string  
BIOS Manufacturer: American Megatrends International, LLC.  
BIOS Version: F1  
BIOS Release Date: 05/05/2021  
BIOS Serial Number: Default string  
TPM: Not found

**CPU**  
CPU manufacturer: AuthenticAMD [Online CPU comparison](#)  
CPU Type: AMD Ryzen 7 3700X 8-Core Processor  
CPUID: Family 17, Model 71, Stepping 0  
Physical CPUs: 1  
Cores per CPU: 8  
Threads per CPU: 16  
P-Cores per CPU: 8  
E-Cores per CPU: N/A  
Hyperthreading: Not capable  
CPU features: MMX SSE SSE2 SSE3 SSE4.1 SSE4.2 SSE4a AVX AVX2 FMA3 DEP PAE AMD64 AES Turbo core  
Clock frequencies:  
Measured CPU speed: 3604.9 MHz [Turbo core: 4382.1MHz]  
Multiplier: x36.0 [Turbo core: x43.8]  
Reference Clock: 100.1 MHz  
Cache per CPU package:  
L1 Instruction Cache: 8 x 32 KB  
L1 Data Cache: 8 x 32 KB  
L2 Cache: 8 x 512 KB  
L3 Cache: 32 MB  
Voltage: 1.10 V

**Memory**  
Total Physical Memory: 32706MB  
Available Physical Memory: 29717MB  
Memory devices:  
Slot 1: 16GB DDR4 SDRAM PC4-21300  
Kingston 9905701-098.A00G, serial#: 0xB4B50AE5, wk/yr: 26/2019  
1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.)  
Slot 2: 16GB DDR4 SDRAM PC4-21300  
Kingston 9905701-098.A00G, serial#: 0xD9B50CE9, wk/yr: 26/2019  
1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.)  
Slot 3: Not populated  
Slot 4: Not populated  
Virtual memory: C:\pagefile.sys (allocated base size 4864MB)

**Graphics**  
NVIDIA GeForce 210  
Chip Type: 0xA65  
DAC Type: Integrated RAMDAC  
Memory: 512MB  
BIOS: 70.18.64.00.05  
Driver provider: NVIDIA  
Driver version: 341.95  
Driver date: 1-29-2016  
Monitor 1: 1920x1080x32 60Hz 96 DPI (Primary monitor)

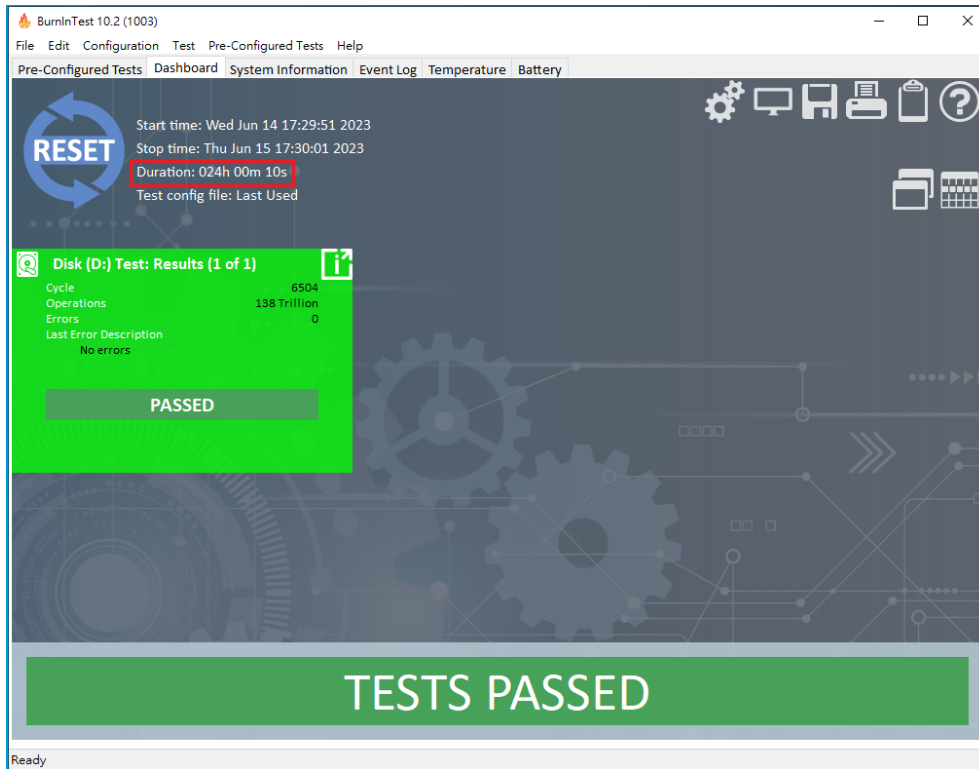
**Disk volumes**  
C: Local Drive, \\?\Volume{871086e8-0000-0000-0000-501f00000000}\, NTFS, (118.20GB total, 60.14GB free)  
D: Local Drive, \\?\Volume{27af9fa4-0000-0000-0000-100000000000}\, 新增磁碟區, NTFS, (931.51GB total, 931.38GB free)

**Disk drives**  
磁碟機: Model: LITEONIT LGT-128M6G Serial: S0C41196Z1ZSCR001341 (Disk: 0, SSD, Size: 119.24GB, Interface: SATA, Volumes: C)  
磁碟機: Model: GIGABYTE GP-AG70S1TB-P Serial: SN212108901364 (Disk: 1, SSD, Size: 931.51GB, Interface: NVMe, Volumes: D)

**Optical drives**

# DP6303 M.2 with PCIe 4.0 ReDriver for OCulink 4i Adapter

## 3.1.2 24-hour Burn-in test **PASSED**



## 4. Summary

- 4.1 M.2 NVMe SSD is PCIe Gen4 16GT/s, 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 DP6401 adapter I/O performance is based on M.2 NVMe SSD.
- 4.3 GD2409A adapter I/O performance is based on M.2 NVMe SSD.