



MINERVA

R2096E SATA 3 to mSATA 2-port & M.2 2-port RAID

RAID 1 Mode 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 Used SATA III / Crucial M550 CT128M550SSD1 2.5" 128GB
 - 2.3 Install Hardware
 - 2.4 BIOS & Windows 8.1 x64 OS environment setup
 - 2.5 CrystalDiskMark 3.0.3 x64 performance test
 - 2.6 AS SSD Benchmark 1.7 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 BurnInTest V8.0 Pro burn in test

4. Summary

R2096E SATA 3 to SATA 2-port & M.2 2-port RAID Card

1. Overview

R2096E RAID card offers SATA 3 interface, built-in 2-port SATA 7-pin connector & 2-port M.2 B key connector, can be combined two SATA SSD into a RAID 0, RAID 1, JBOD mode.

This test report is based **SATA III 128GB SSD x2**, RAID 1 set as a benchmark.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : ASRock **Z97 Extreme 6**

CPU : Intel **i5-4426**, 3.2GHz/ 6M Cache/ LGA1150

Memory : Kingston **KVR16N11S8/4**, DDR3-1600MHz, 8G(4GB DIMM*2)

ATX Power : FSP RAIDER 550, **550W ATX**, 12V V2.2 Power Supply

Graphic : Z97 Chipsets built-in **HD Graphics 4600**

OS : Microsoft **Windows 8.1 64bit OS**

2.2 Test target: R2096E RAID Card and Crucial M550 CT128M550SSD1 2.5" 128GB



R2096E Adapter



CT128M550SSD1 / 128GB x2

2.3 Install Hardware

2.3.1 Use two SATA 7pin cable, connect the two groups 2.5 "SSD to R2096E array card, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). using SATA 7pin signal cable, connect the array card to **SATA III Port of ASRock Z97 Extreme6 M/B**.

2.4 BIOS & Windows 8 OS environment setup

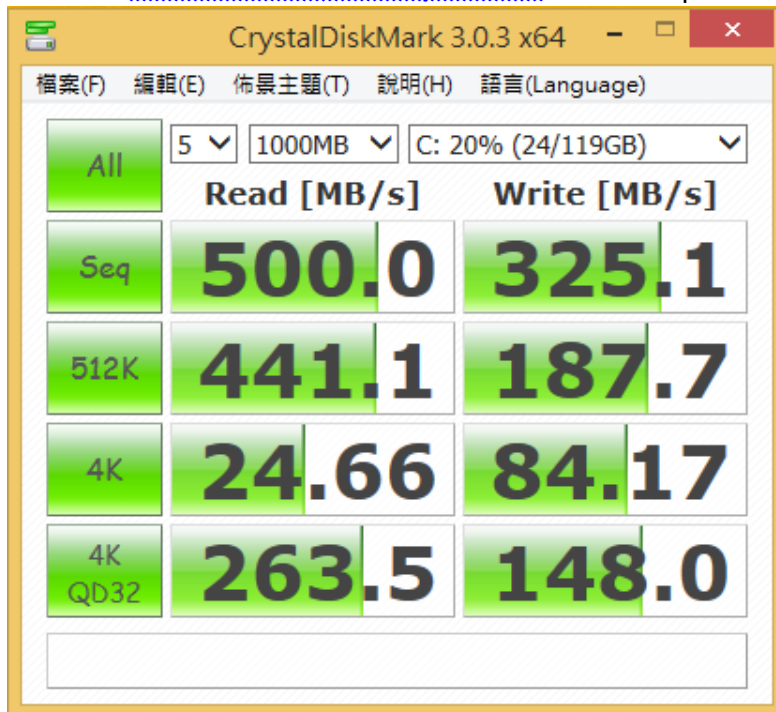
2.4.1 Install Windows 8.1 x64 OS.

R2096E SATA 3 to SATA 2-port & M.2 2-port RAID Card

2.5 CrystalDiskMark 3.0.3 x64 performance test

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

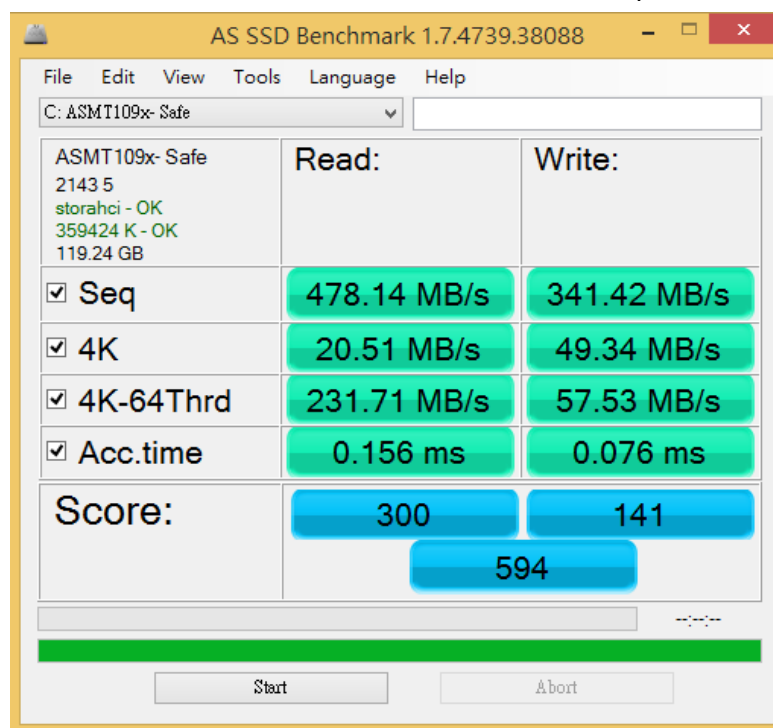
2.5.1 Used [Crucial CT128M550SSD1/128GBx2](#) in **RAID 1** performance as below:



2.6 AS SSD Benchmark 1.7 performance test

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

2.6.1 Used [Crucial CT128M550SSD1/128GBx2](#) in **RAID 1** performance as below:

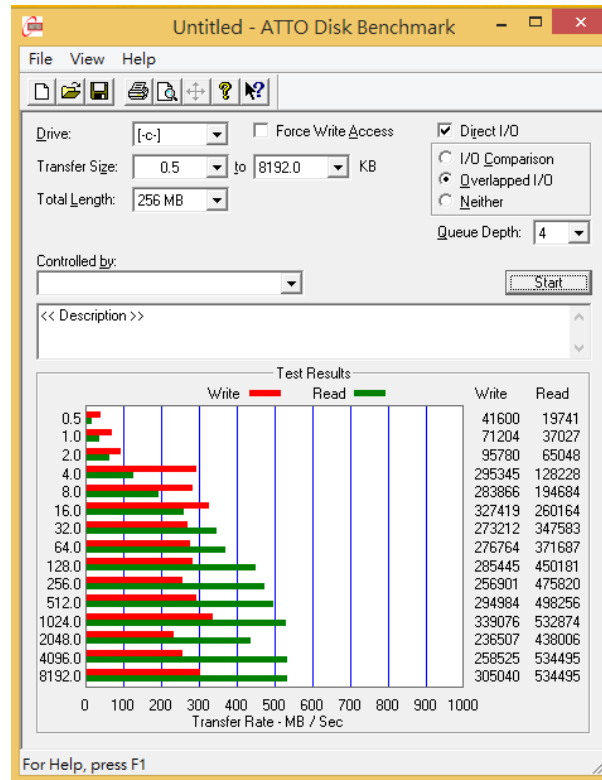


R2096E SATA 3 to SATA 2-port & M.2 2-port RAID Card

2.7 ATTO Disk Benchmark performance test

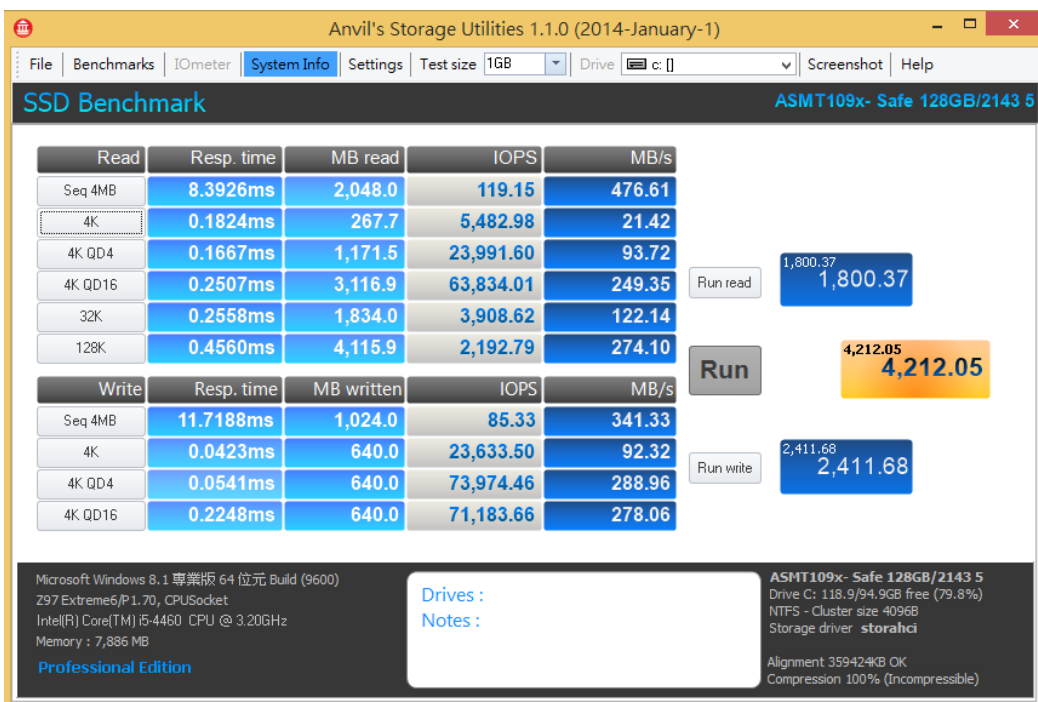
※Benchmark (Sequential Read / default block size = 8MB)

2.7.1 Used [Crucial CT128M550SSD1/128GBx2](#) in RAID 1 performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Used [Crucial CT128M550SSD1/128GBx2](#) in RAID 1 performance as below:

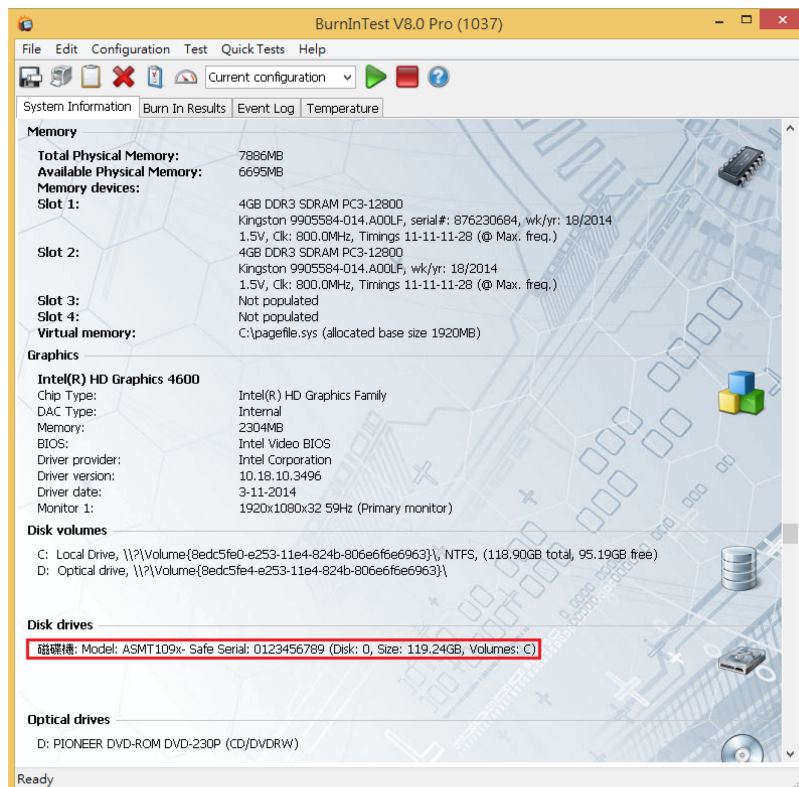
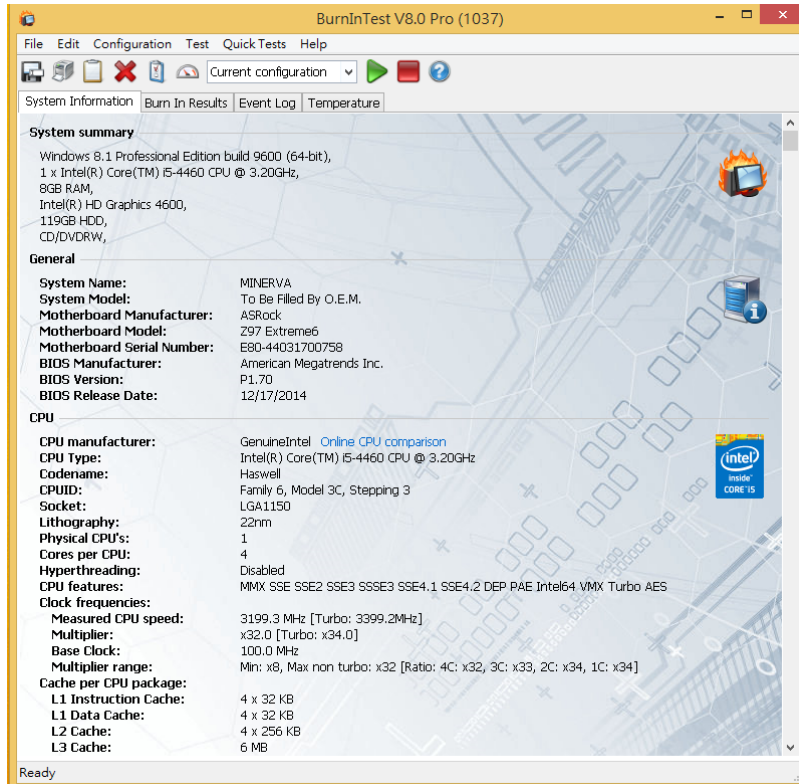


R2096E SATA 3 to SATA 2-port & M.2 2-port RAID Card

3. Burn In Tests and Results

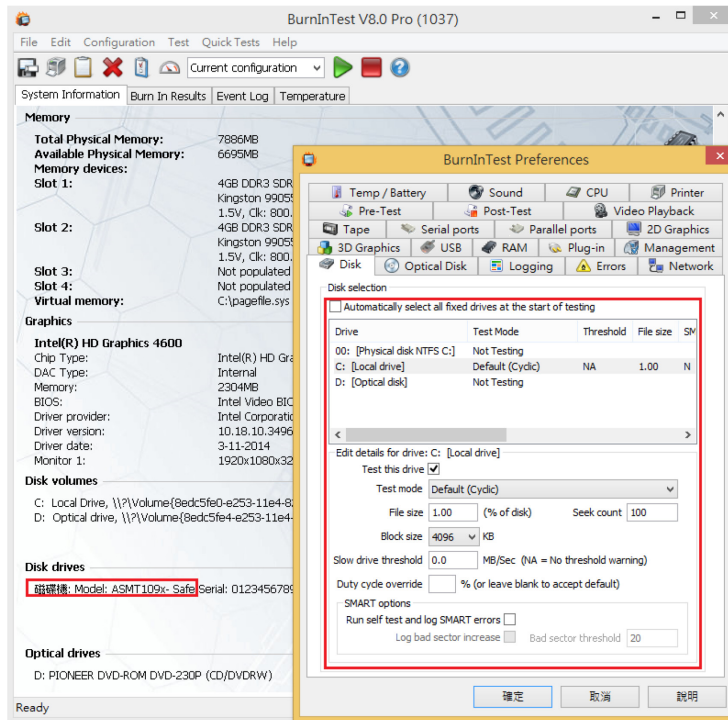
3.1 BurnInTest v8.0 Pro

3.1.1 system information for [Crucial CT128M550SSD1/128GBx2](#) in RAID 1 as below:

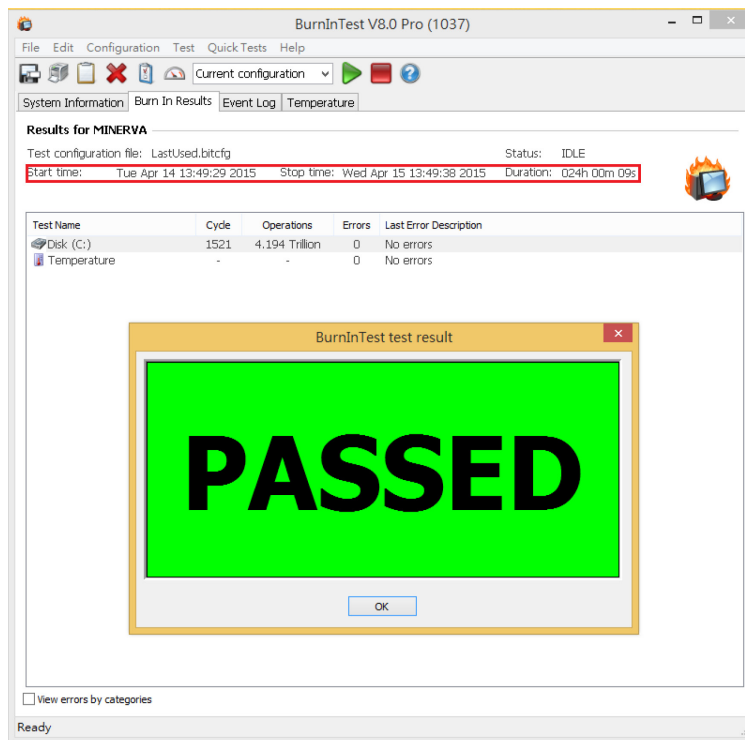


R2096E SATA 3 to SATA 2-port & M.2 2-port RAID Card

3.1.2 show [2.5" SSD/128GBx2](#) in RAID 0 test mode(default cyclic -- 10 ways cycle test)



3.1.3 show [Crucial CT128M550SSD1/128GBx2](#) in RAID 1 24-hour Burn-in test PASSED



4. Summary

- 4.1 R2096E is SATA III Interface, I/O speed, max. to 600MB/s.
- 4.2 R2096E adapter I/O performance is based on SATA III 2.5" SSD.