MINISFORUM

GN31

Introduction Presentation

Rev 1.0, May 2019

About MinisForum

- Founded in 2015, MinisForum is a group of electronics enthusiasts and computer engineers, aiming to become one of the leading computer companies in the world.

- To achieve this goal, MinisForum has been designing and developing interesting products, delivering them to cusumers at a reasonable price, providing consumers with unparalleled satisfaction and reliability through these products.

- GN31 MINI PC with Intel Celeron J3160(1.6GHz) is designed and released by MinisForum, targeting the use of small business, industrial automatic control, home theater and living room. It's very low power consumption and a great savings on electric bill.

Features fo GN31

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- Small size, beautiful appearance
- TDP Unlocker
- Superb heatpipe cooling system
- Equipped with PCI-E M.2 2280 SSD for faster and more stable storage.
- HDMI / VGA output display
- Input/Output strong scalability

Small size, beautiful appearance

Measures 120 x 120 x 36 mm
Weighs less than a kilogram.

Ventilation gridlles on the sides and bottom

TDP Unlocker

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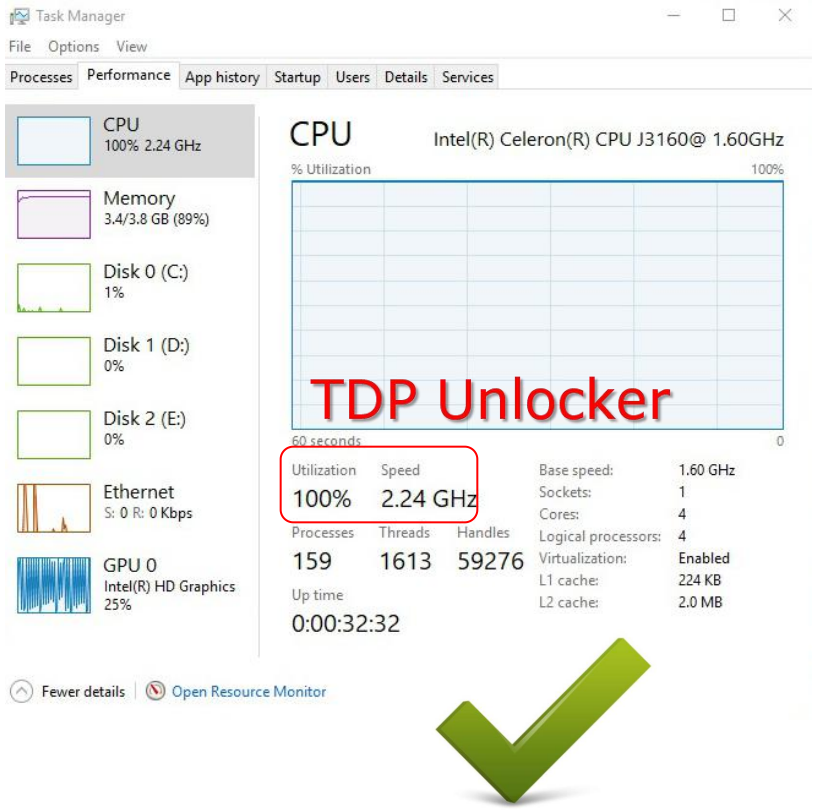
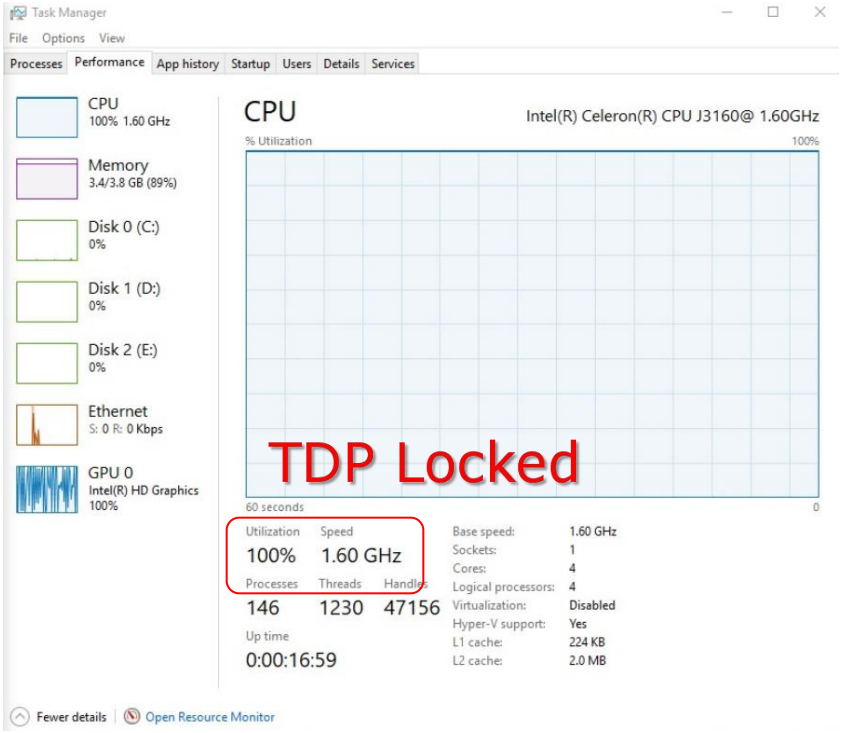
- 6W TDP limits the performance of Intel Celeron J3160 processors
- Frequencies (CPU/GPU) drop whenever TDP reaches 6W
- TDP unlocker increases the TDP threshold
- TDP unlocker enhances system performances by avoiding under-clocking instead of over-clocking, thus 100% safe
- Performance can be +60% better than competitions with the same processor which
- Pre-requiste :GOOD COOLING is required to handle the extra power
- Minisform team designed a cooling system to solve this problem.

(Please refer to page 8-9 for system operating temperature test results.)

TDP Unlocker

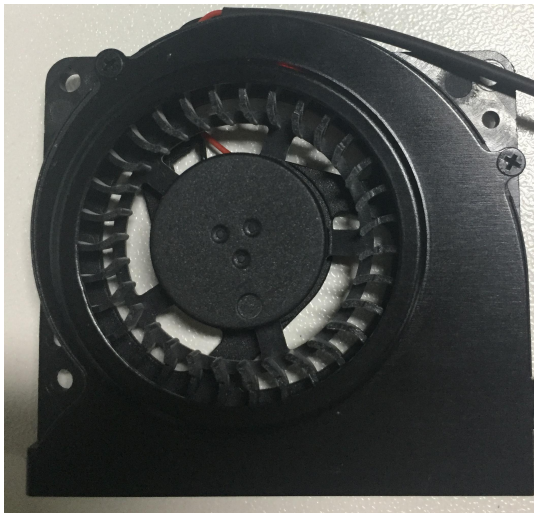
- TDP Locked CPU max speed 1.6GHz
- TDP Unlocker CPU max speed 2.24GHz





Superb heatpipe cooling system

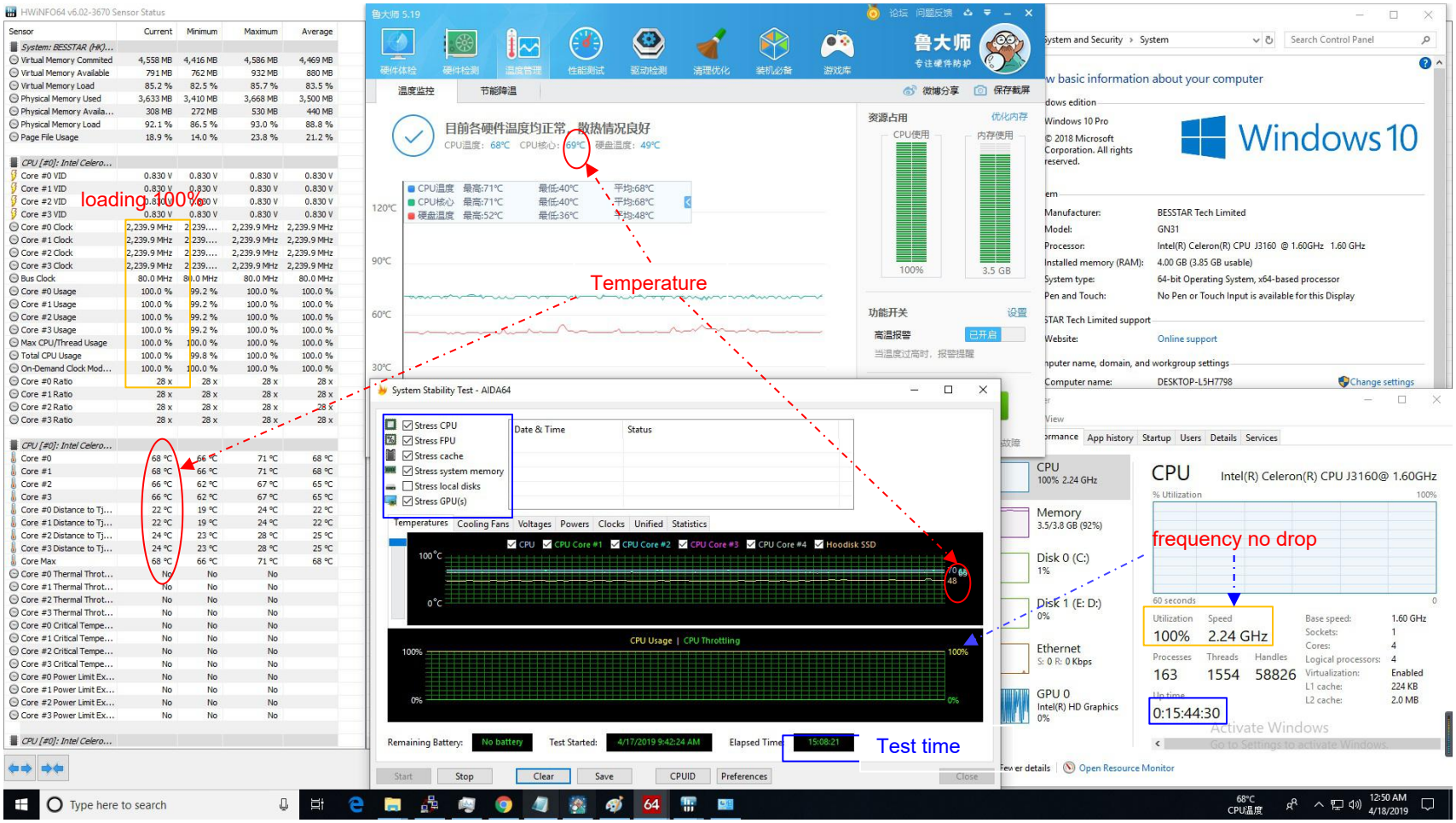
- Extreme silent operation at 100% CPU load
- Effectively dissipates heat out of the casing
- Design ready to handle 9W TDP CPU
- Heat sink with Centrifugal(Blower) Fan



Superb heatpipe cooling system

- AIDA64 test : Stress CPU/GPU/Mem..... load 100% monitoring for 15 hours, temperature is maintained at about 70 degrees.

In this case the frequency (CPU / GPU) still performs best, no drop.



Superb heatpipe cooling system

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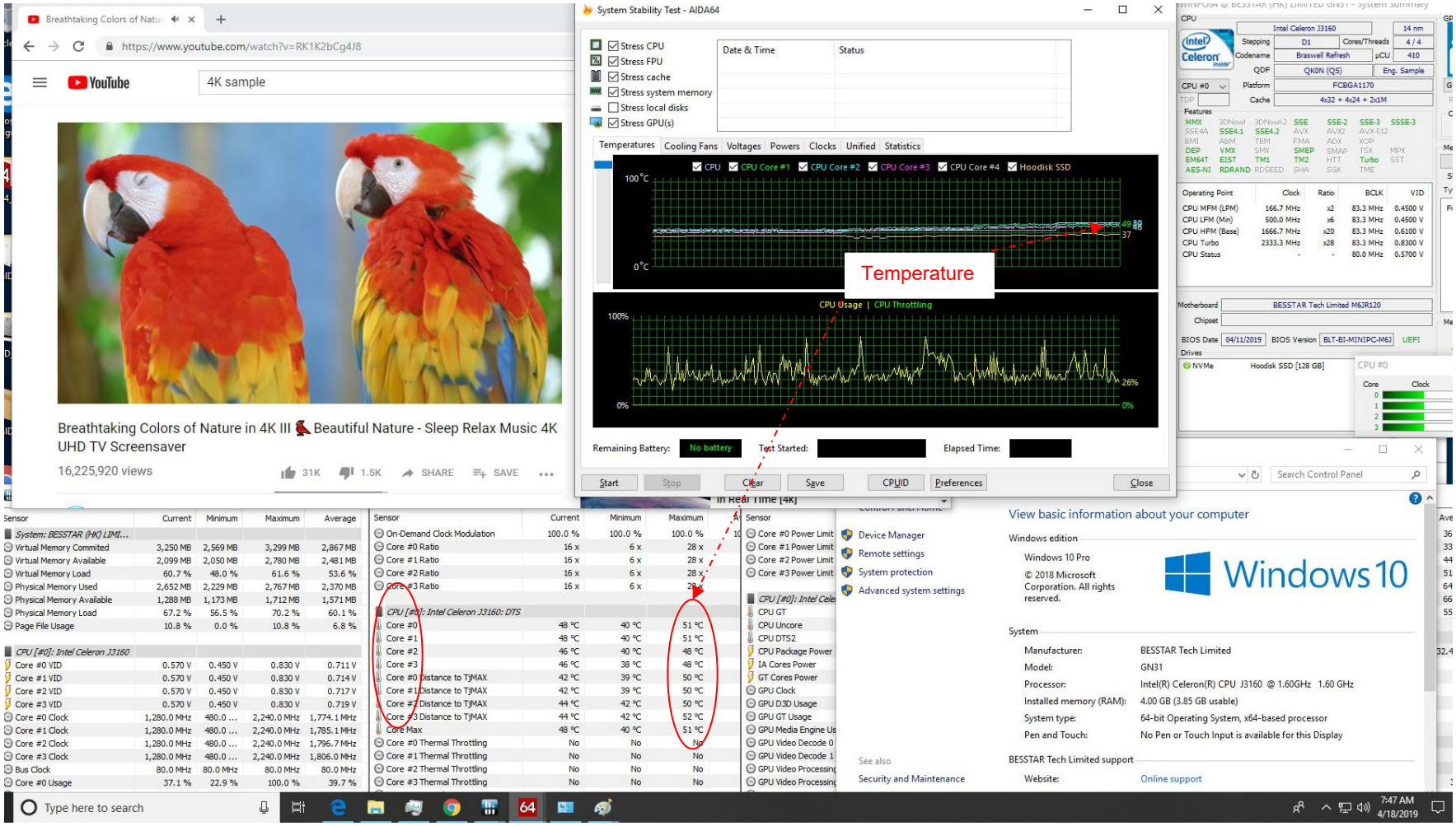
Online 4K video play CPU temperature is about 50 degrees



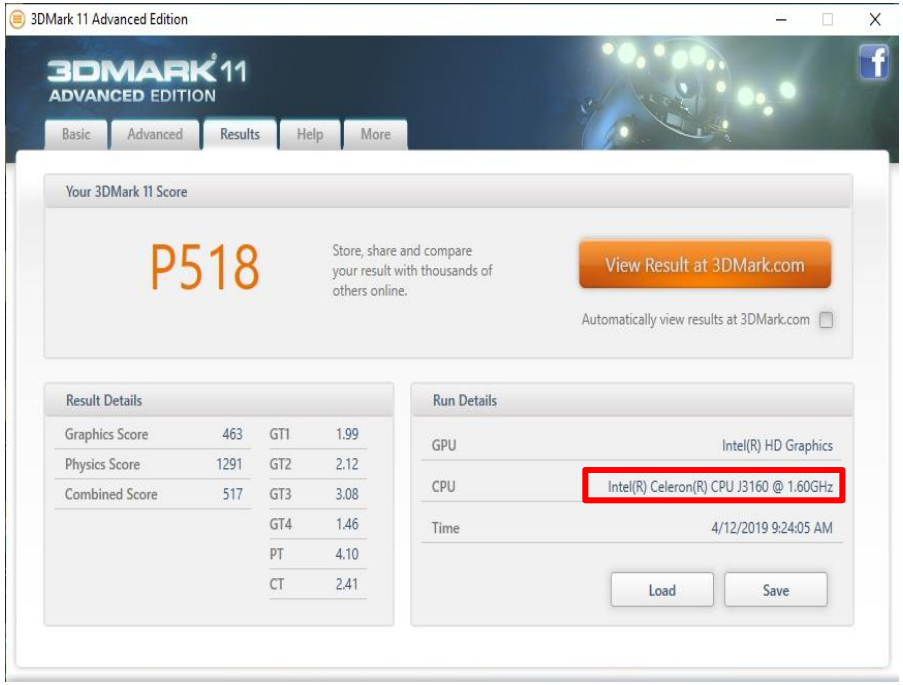
Superb heatpipe cooling system

- The noise in the free air is about 40 dba.
  Noise meter test vents,show : "40.7" dba
  The quiet voice does not feel the presence of a fan.

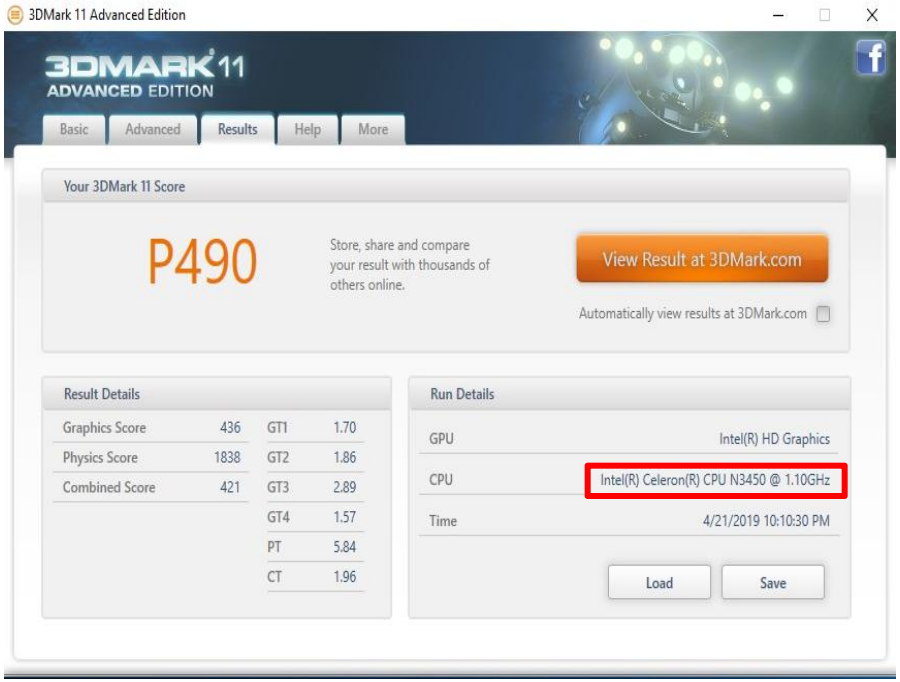
CPU Performance

- 3DMARK11 overall performance test results;

Intel Celeron J3160（P518）Better than Intel Celeron N3450(P490)



GN31 @Intel Celeron J3160



Intel Celeron N3450

CPU Performance

- Ludashi v5.19 overall performance test result;
  J3160（53944）than N3450(34987) 1.5 times.

GN31 @Intel Celeron J3160

Intel Celeron N3450

CPU Performance

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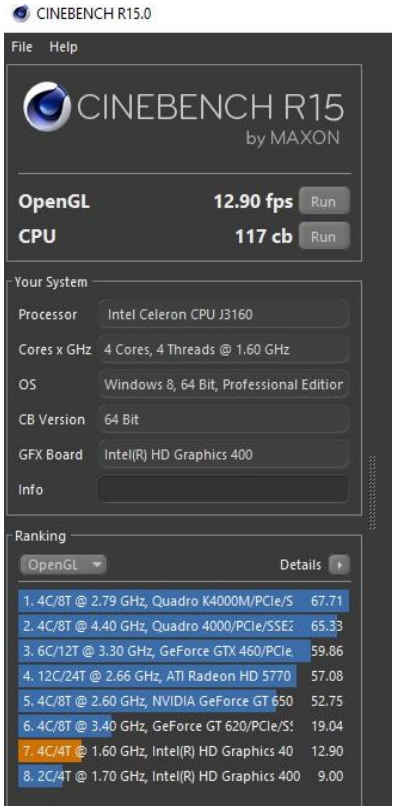
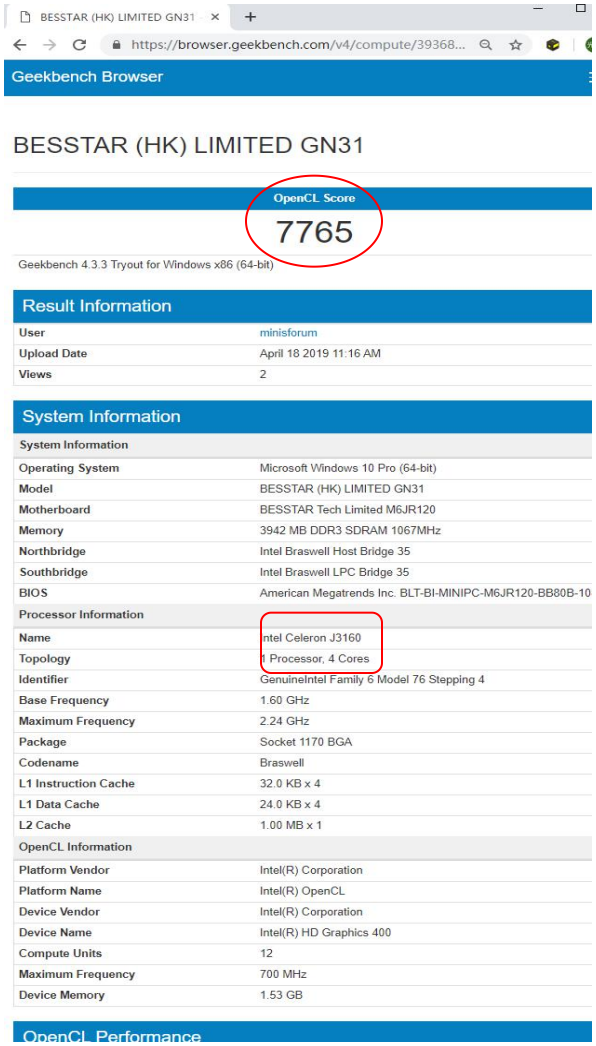
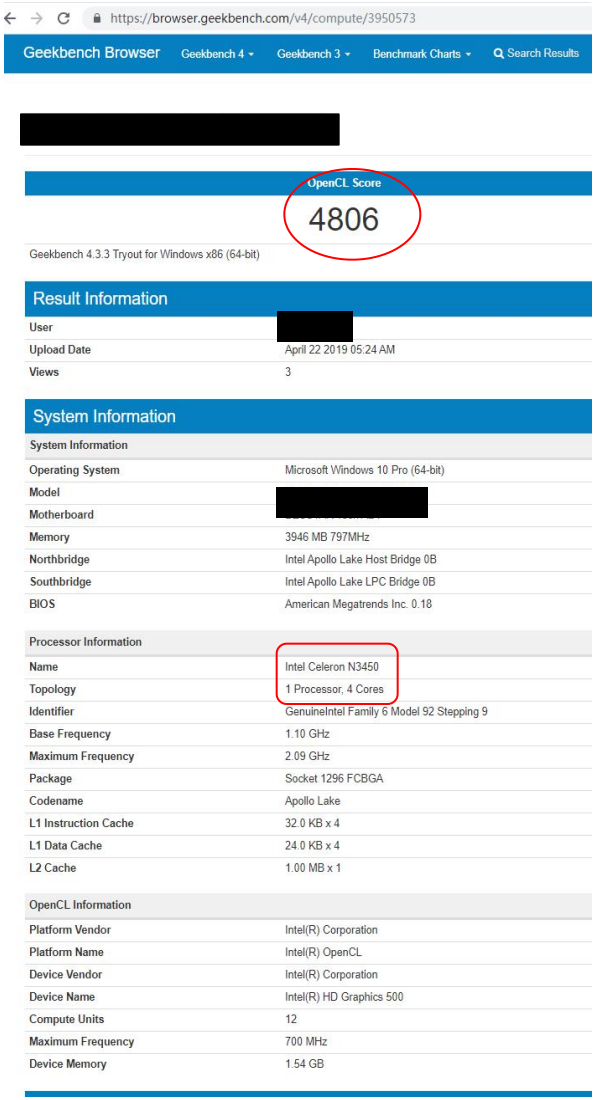
CINEBENCH R15

CPU:117cb Open GL:12.90 fps



OpenGL performance J3160 than N3450 1.8 times

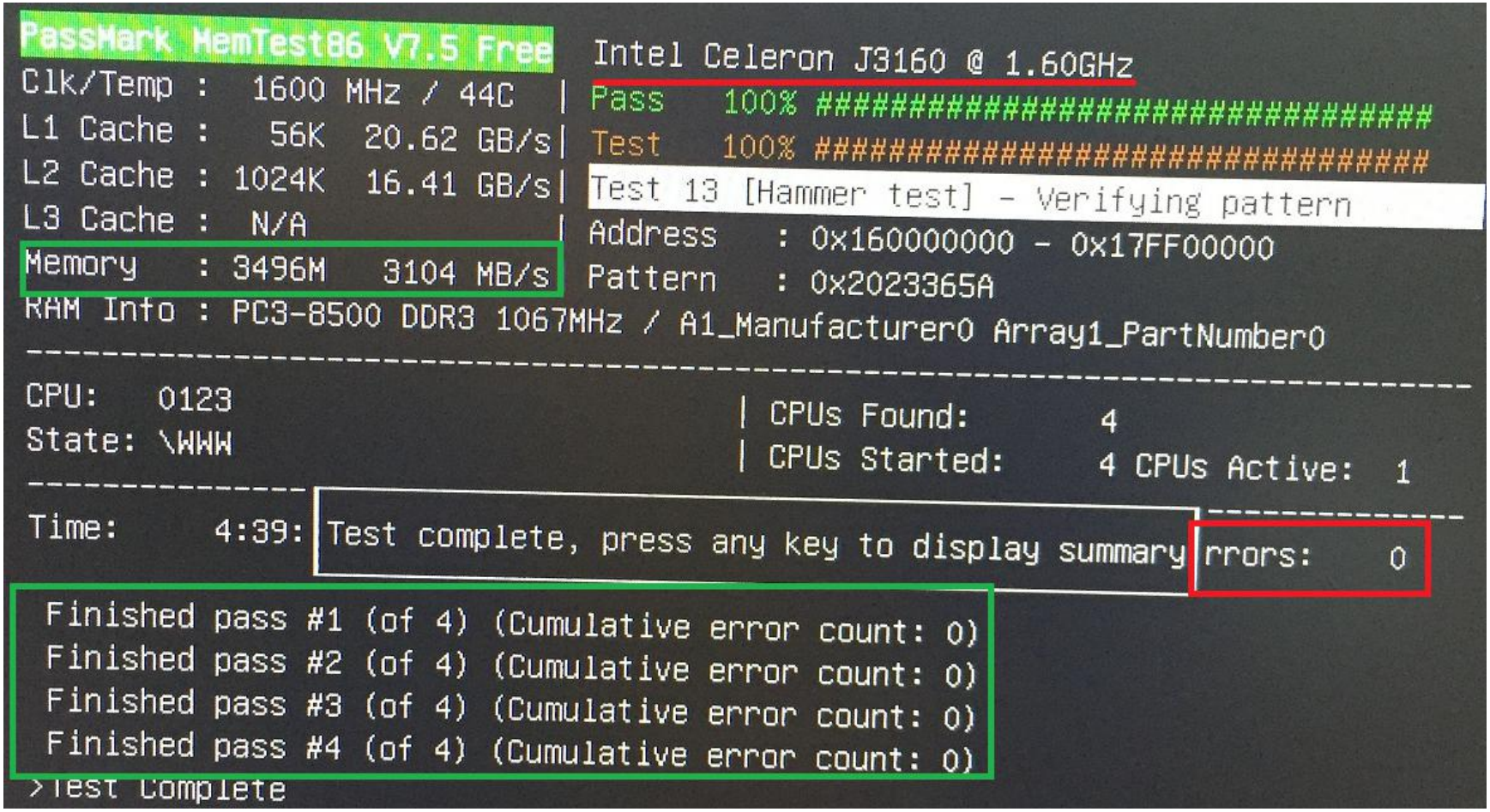




Memory Test

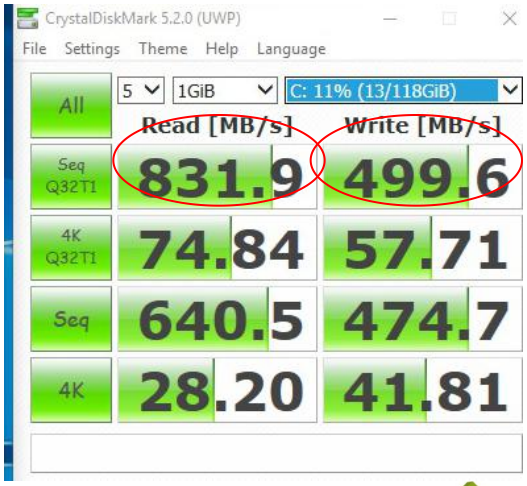
PassMark MemTest86 v7.5 test memory Address (Write/Read)

→All passed, NO error.

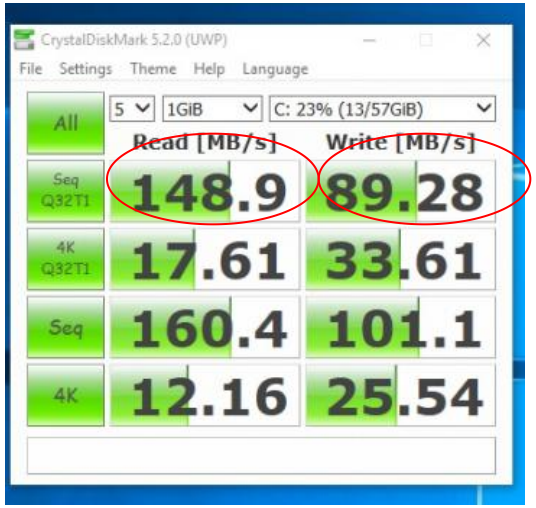


M.2 2280(NVME) 128G Test

- CrytalDiskMark5.2.0 test Result:
  NVMe M.2 2280 128G than EMMC5.1 64G 5.6 times
- The computer starts up only 14 seconds, no need to wait patiently



Intel Celeron J3160
NVME M.2 2280 128G



Intel Celeron J3160
EMMC5.1 64G

Burn in Test(PASSED)

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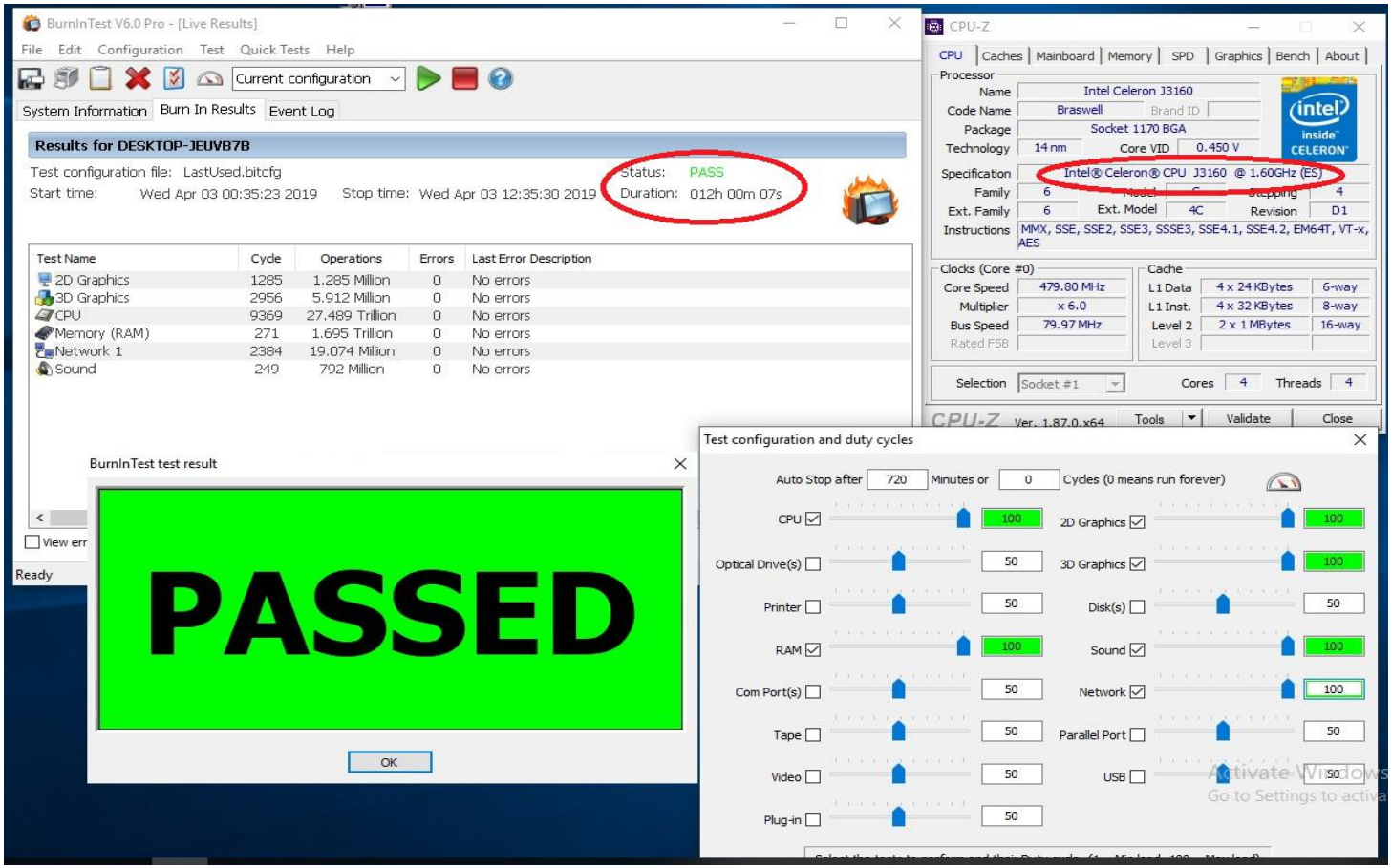
Setting parameters:

Test time:720minute (12H)

Test Item: 2D/3D Graphics ;CPU;Memory(RAM);Network ;Sound

Test loading:100%



Windows Reboot cycle test

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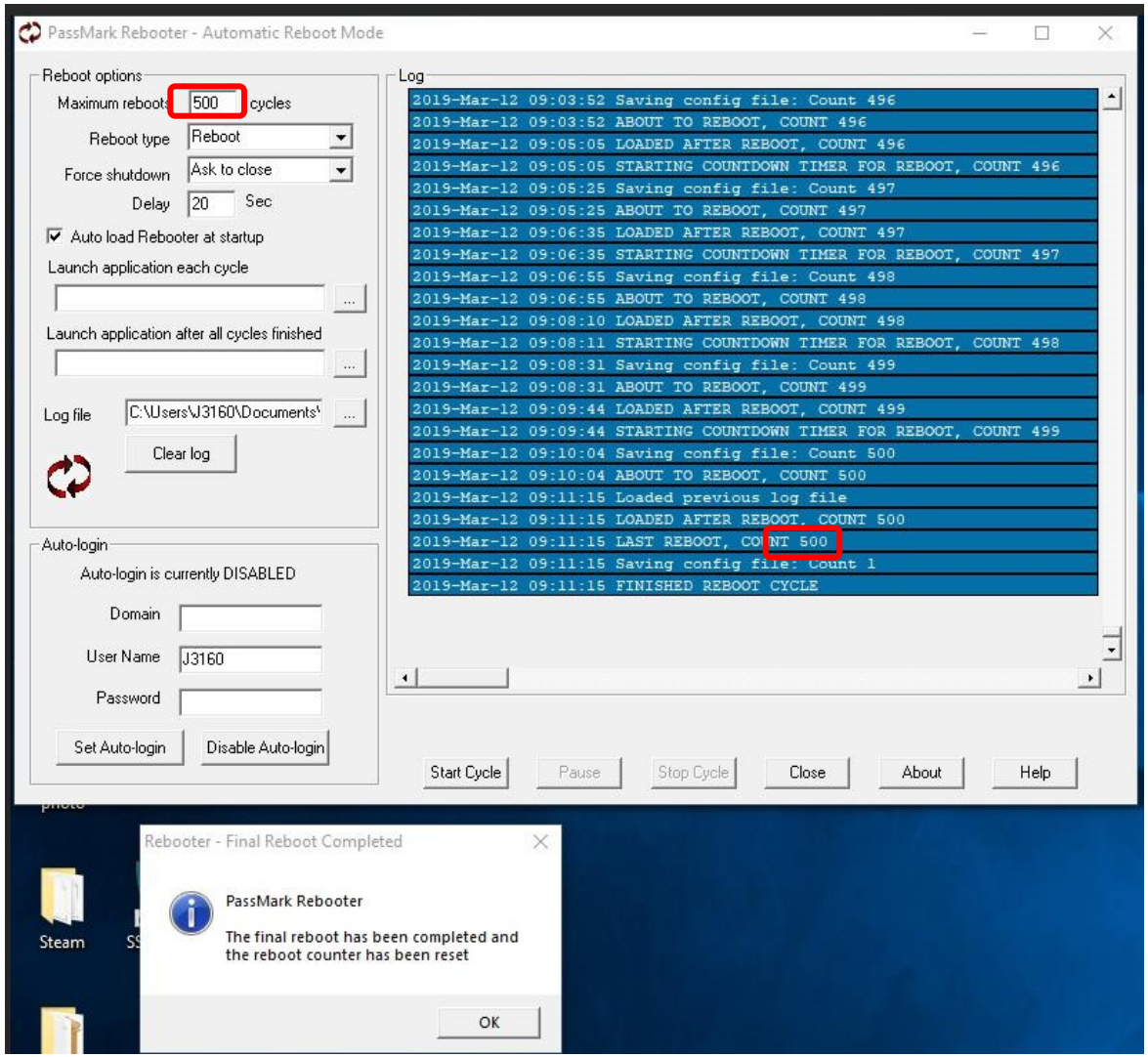
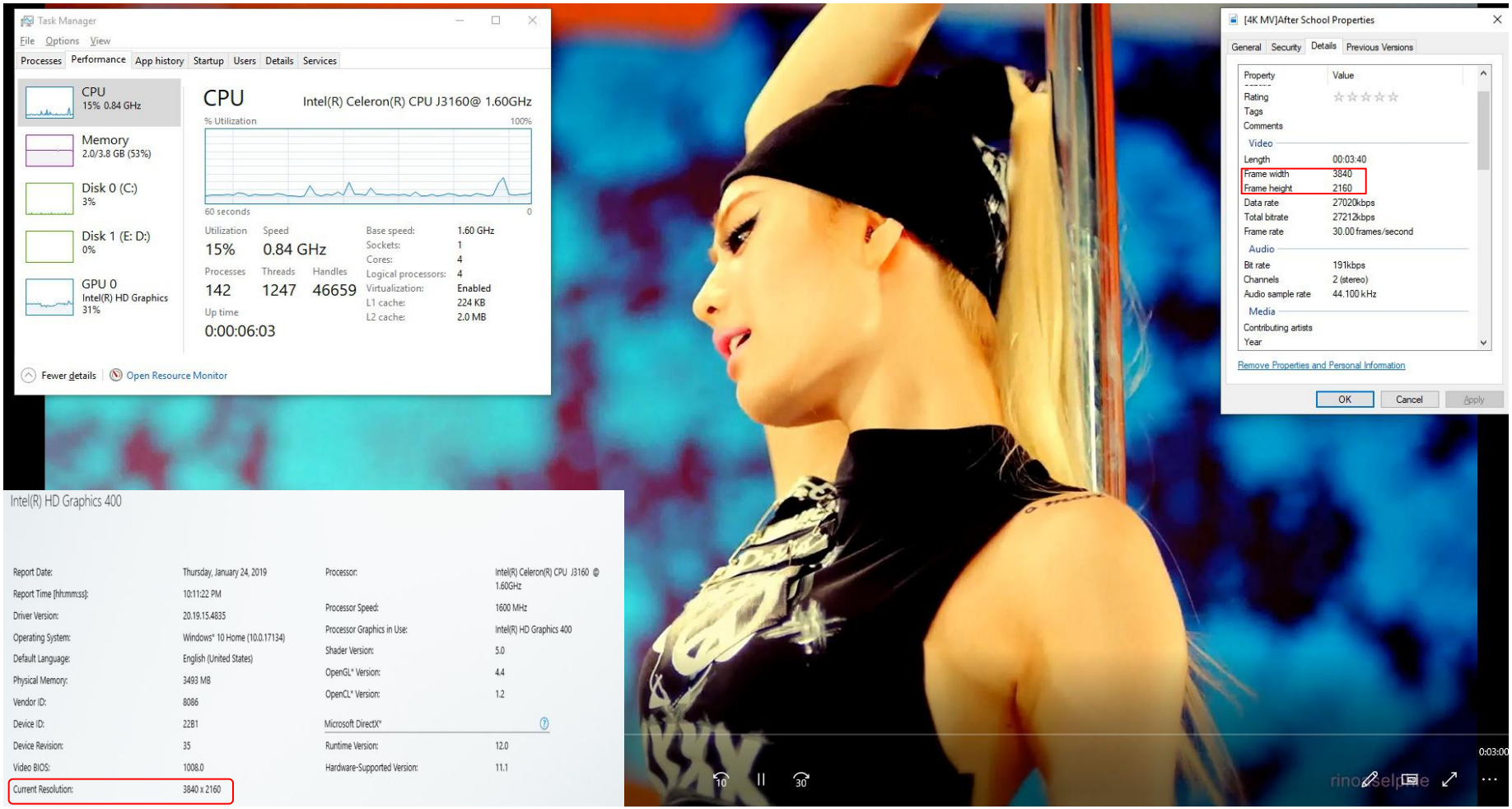
Windows reboot 500 cycles test passed



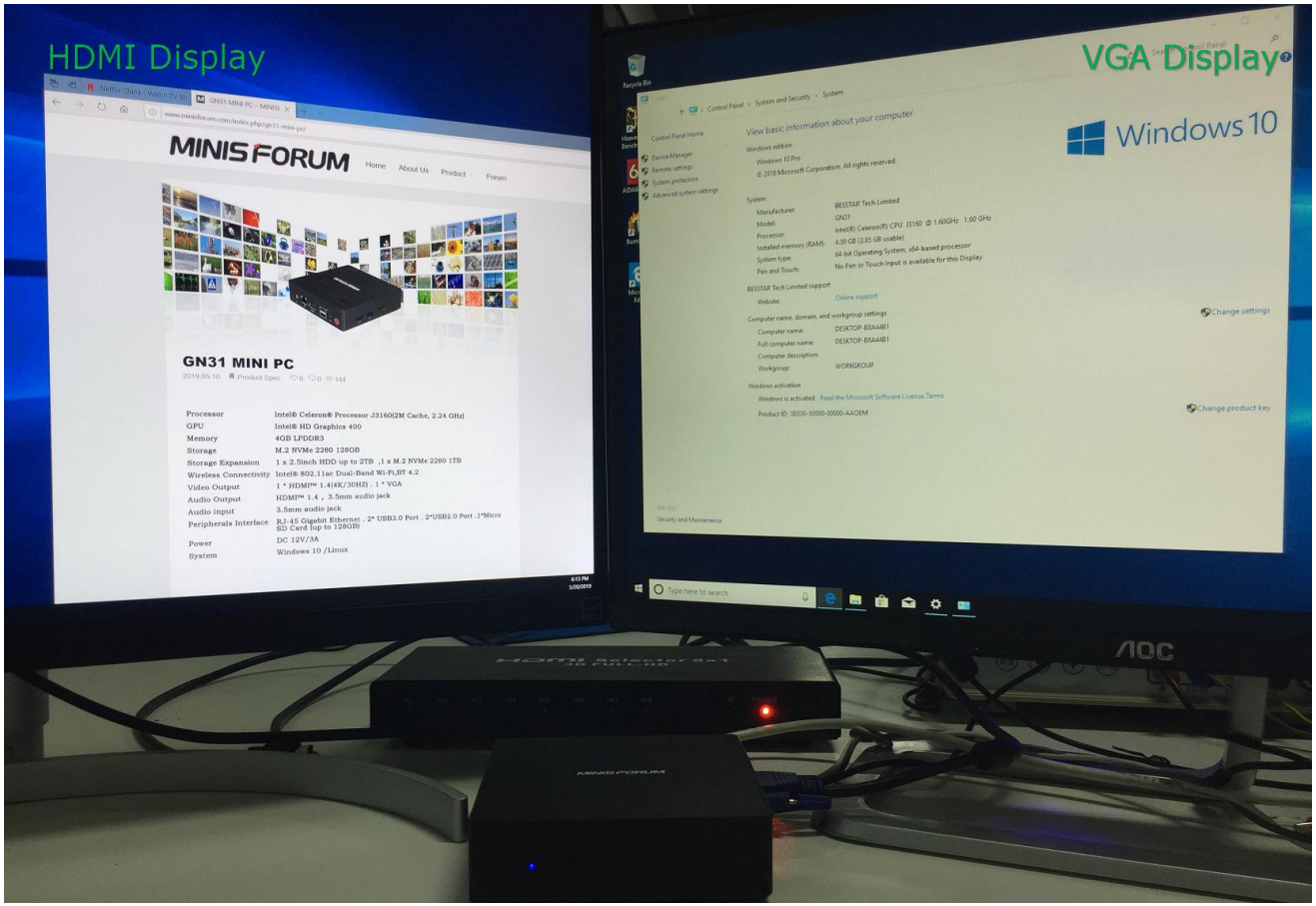
HDMI / VGA output display

- Smooth 4K test video playback, support 4K@30Hz



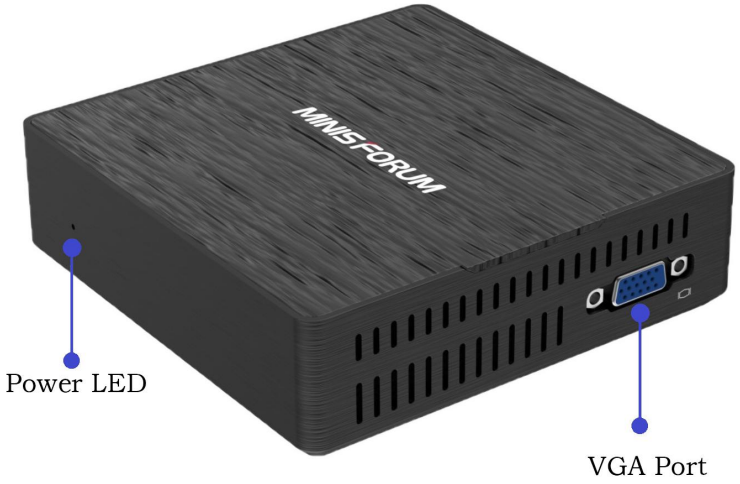
HDMI / VGA output display

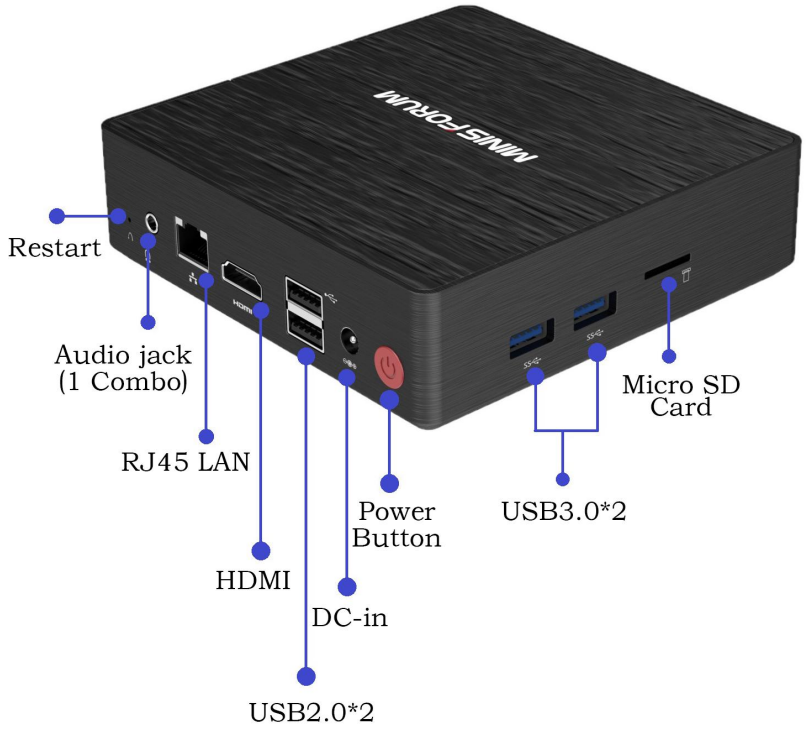
- Support multi-tasking operation, you can work while watching the home theater.
- The price of one GN31 is equivalent to the function of two MINI PCs.



Input/Output Strong Scalability

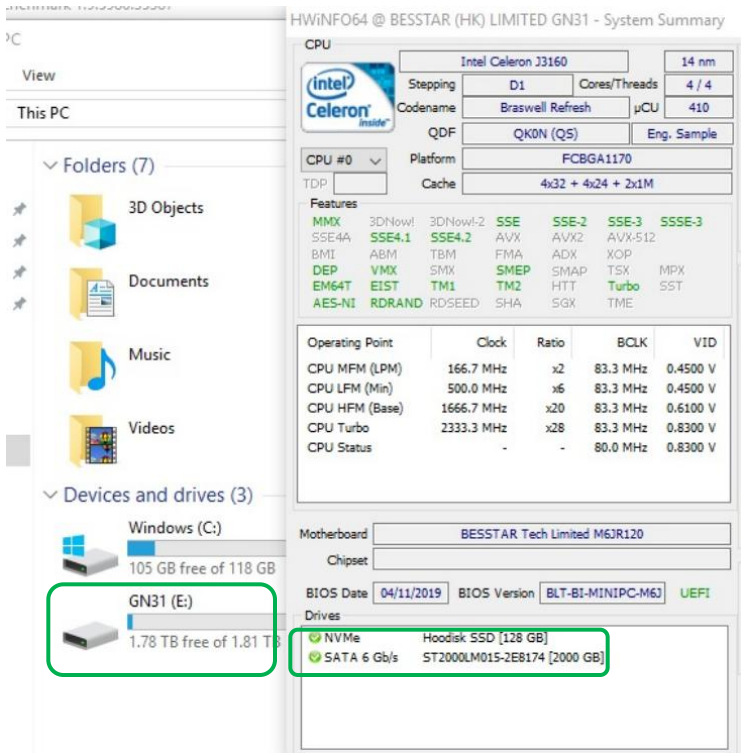
- With 2*USB 3.0 Ports (Left and Right)
- With 2*USB 2.0 Ports (Up and Down)
- With 1*TF Slot (Micro-SD Slot)





- Easy DIY Upgradability
- DIY 2.5 inch HDD (Supports up to 2TB, SATA3.0 6Gb/S)
- DIY NVME M.2 2280 (Support up to 512GB, PCIe3.0 x2 16Gb/S)

(Note: 2TB and 512GB are our test capacity and can actually support larger than this.)



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Thank you !