



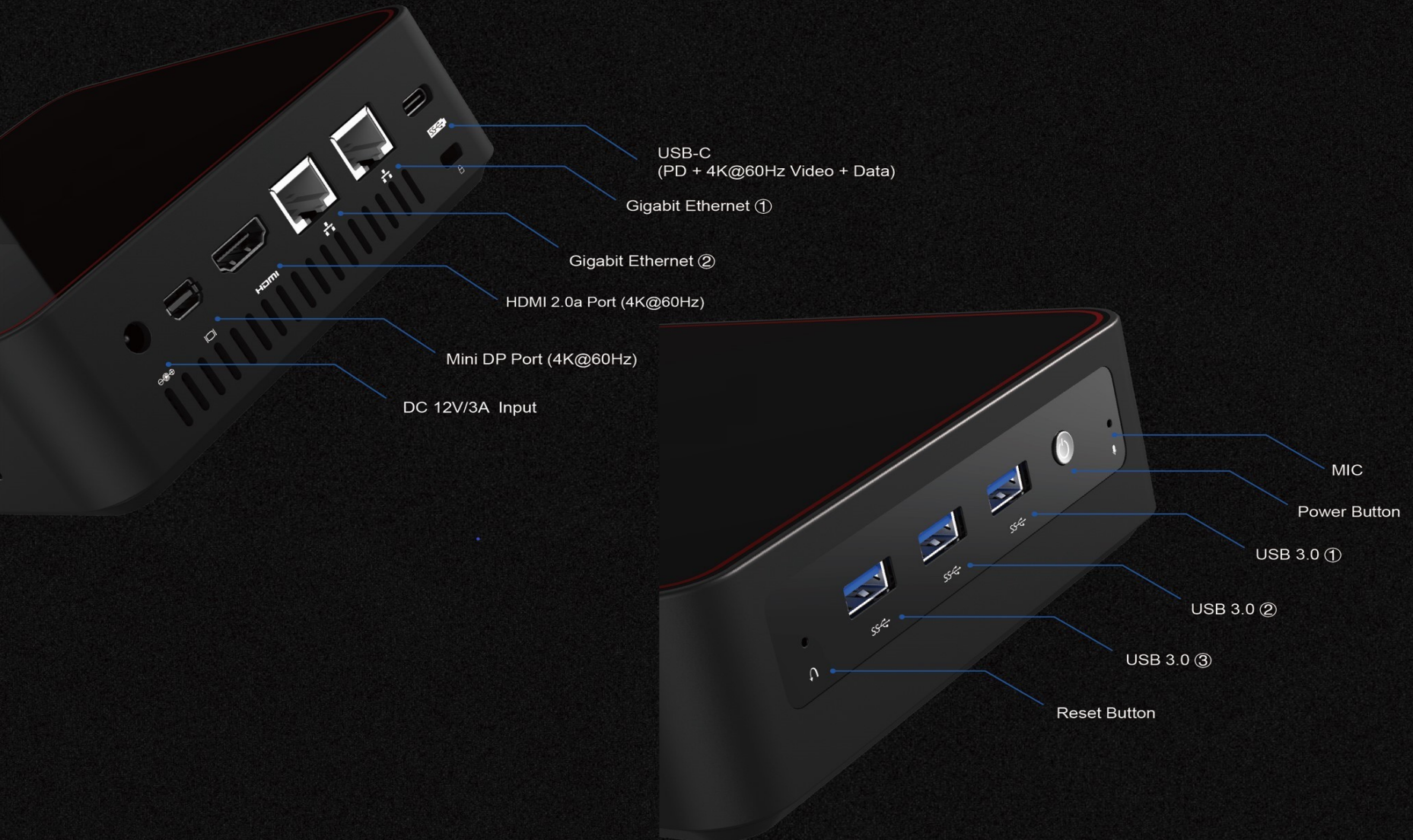
# GK45

Introduction Presentation Rev 1.1,  
August 2019



- ShenZhen Plater Electronics Co., Ltd. and its subsidiary ShenZhen MeiGao Electronics Co., Ltd. are intelligent embedded solutions provider partnering with Intel China, focusing on the development and sales of mini PC. Plater Electronics focuses on the operation and distribution of our own brand products; MeiGao Electronics focuses on designing customized solution, motherboards' research and development, software development as well as the design of the whole unit. Our company has a completed and scientific quality management system, our products are widely used in office field, video playback, private company servers, monitoring, cloud computing, intelligent logistics, smart medical, education, digital signage, financial terminals, commercial POS machines, etc.
- With experienced project management team, Plater quickly got the recognition from big customers in Europe, North&South America, Southeast Asia etc, All Plater product can be passed numbers of international certificates like CE,ROHS,FCC etc.

# Device port distribution



# Small size, beautiful appearance



Measures 137 x 120 x 47 mm  
Weighs less than a kilogram.

Ventilation griddles on the  
sides and bottom



# Intel® Celeron® J4105 Processor



- With Intel® Celeron® J4105 Processor, the GK45 featured quad core four thread and clocked at 1.5GHz
- More CPU specifications, please refer to Intel's official website:  
<https://ark.intel.com/content/www/us/en/ark/products/128989/intel-celeron-j4105-processor-4m-cache-up-to-2-50-ghz.html>

CPU-Z Ver. 1.87.0.x64

**Processor**

Name	Intel Celeron J4105		
Code Name	Gemini Lake	Max TDP	10.0 W
Package	Socket 1090 FCBGA		
Technology	14 nm	Core Voltage	

**Specification** Intel® Celeron® J4105 CPU @ 1.50GHz (ES)

Family	6	Model	A	Stepping	1
Ext. Family	6	Ext. Model	7A	Revision	B0

Instructions: MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, SHA

**Clocks (Core #0)**

Core Speed	1301.39 MHz
Multiplier	x 13.0
Bus Speed	100.11 MHz
Rated FSB	

**Cache**

L1 Data	4 x 24 KBytes	6-way
L1 Inst.	4 x 32 KBytes	8-way
Level 2	4 MBytes	16-way
Level 3		

Selection: Socket #1 Cores: 4 Threads: 4

Intel® Celeron® J4105 Processor  
4M Cache, up to 2.50 GHz

Specifications

- Essentials
- Performance
- Supplemental Information
- Memory Specifications
- Processor Graphics
- Expansion Options
- I/O Specifications
- Package Specifications
- Advanced Technologies
- Security & Reliability

Ordering and Compliance

Downloads and Software

Essentials

Product Collection	Intel® Celeron® Processor J Series
Code Name	Products formerly Gemini Lake
Vertical Segment	Desktop
Processor Number	J4105
Status	Launched
Launch Date	Q4'17
Lithography	14 nm

Performance

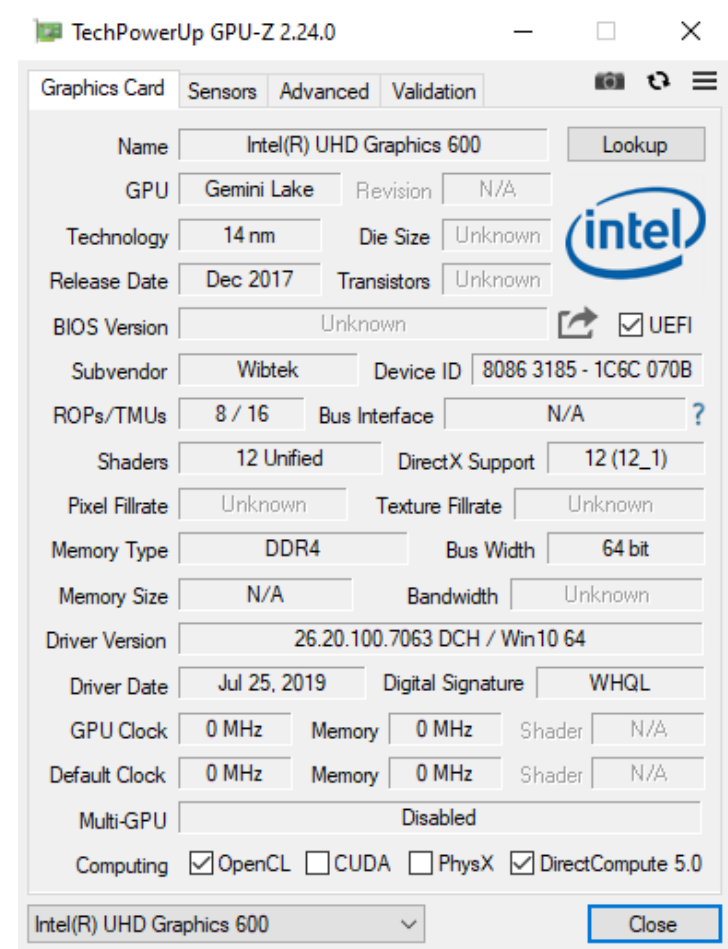
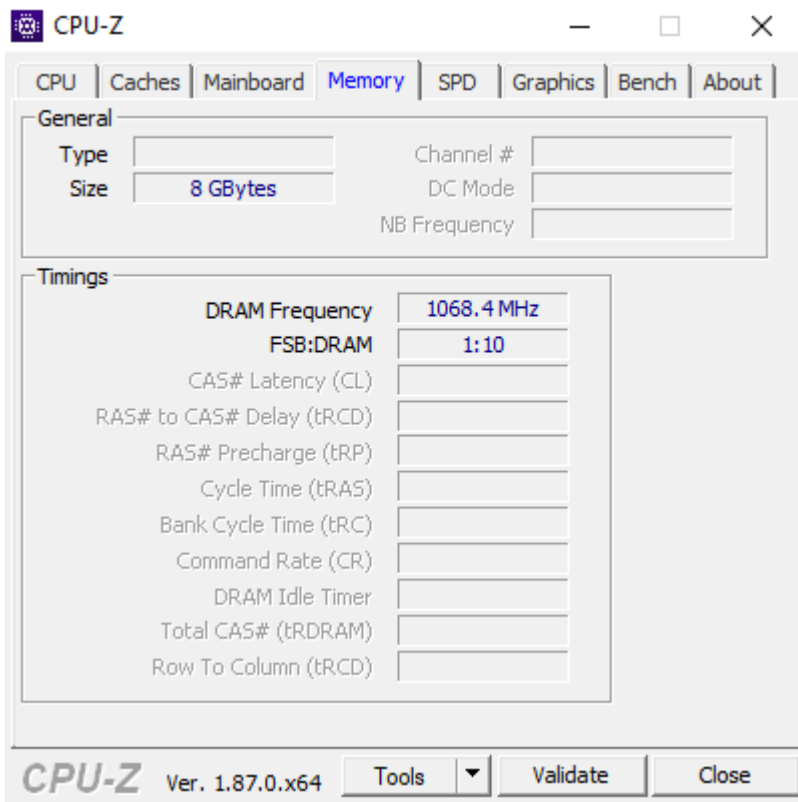
# of Cores	4
# of Threads	4
Processor Base Frequency	1.50 GHz
Burst Frequency	2.50 GHz
Cache	4 MB
TDP	10 W



# Memory and GPU



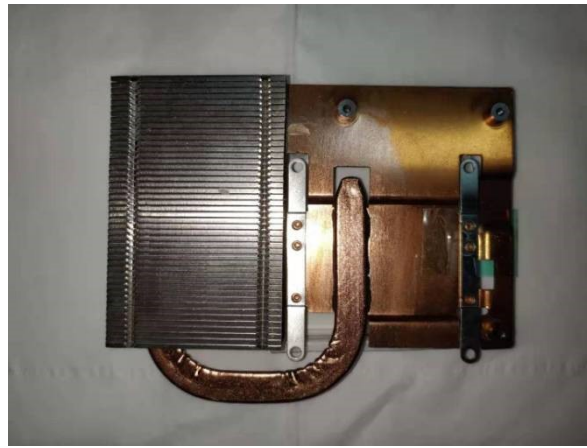
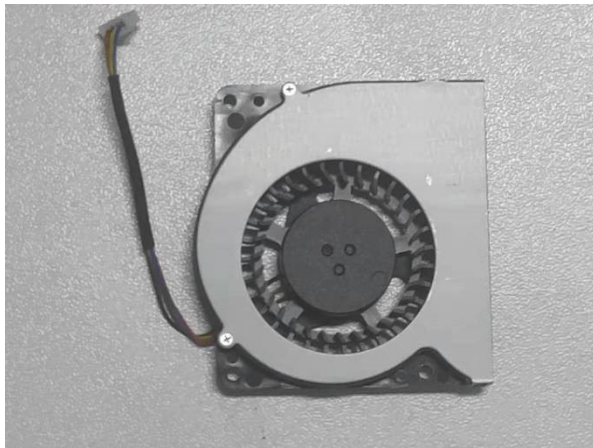
- Equipped with LPDDR4 8GB Memory, the DDR frequency up to 2133 MHz.
- With Intel® UHD Graphics 600, the Graphics maximum frequency up to 750 MHz.



# Superb heatpipe cooling system



- Extremely silent operation at 100% CPU load
- Effectively dissipate heat out of the casing
- Design ready to handle 18W TDP CPU
- Heat sink with Centrifugal(Blower) Fan



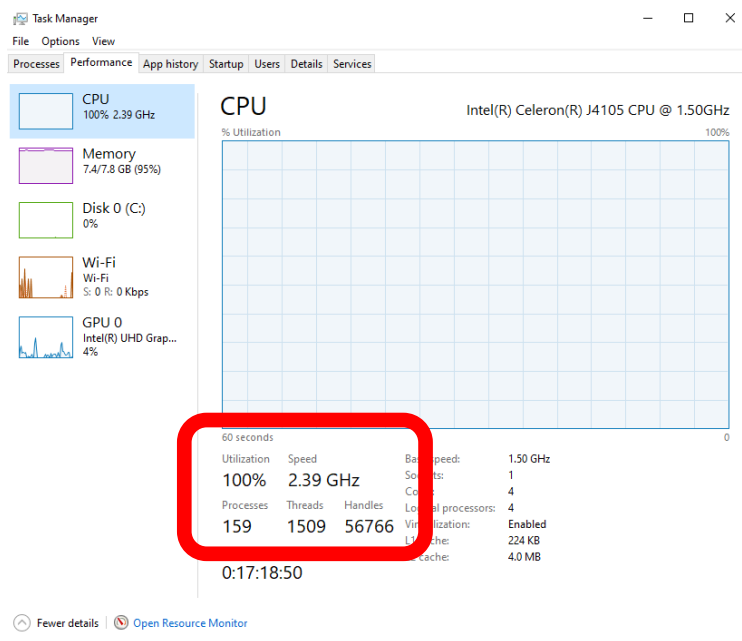


- 10W TDP limits the performance of Intel® Celeron® J4105
- Frequencies (CPU/GPU) drop whenever TDP reaches 10W
- TDP unlocker increases the TDP threshold
- TDP unlocker enhances system performances by avoiding under- clocking instead of over-clocking, thus 100% safe
- Performance can be increased by 60% compared to competition with the same processor.
- Pre-requisite :GOOD COOLING is required to handle the extra power
- Plater team designed a cooling system to solve this problem.

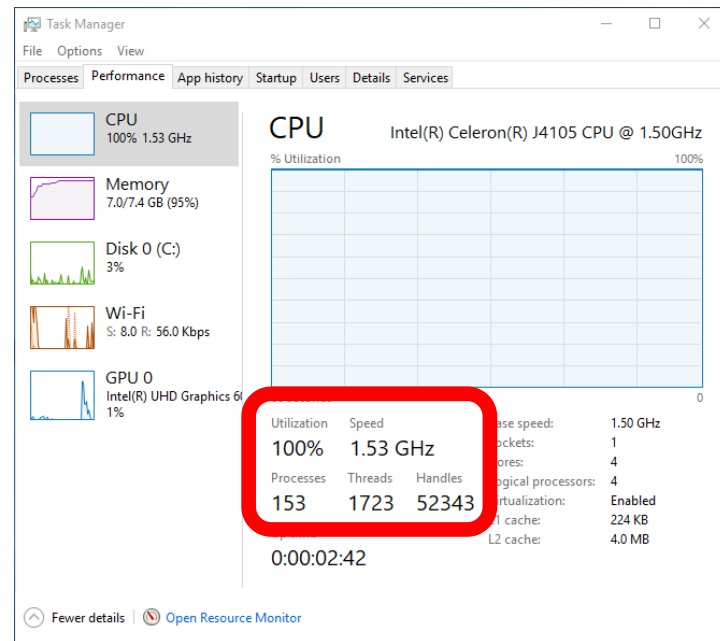




## Break through the restriction TDP Unlocker



with fan and TDP UNLOCKER



without fan and TDP LOCKER

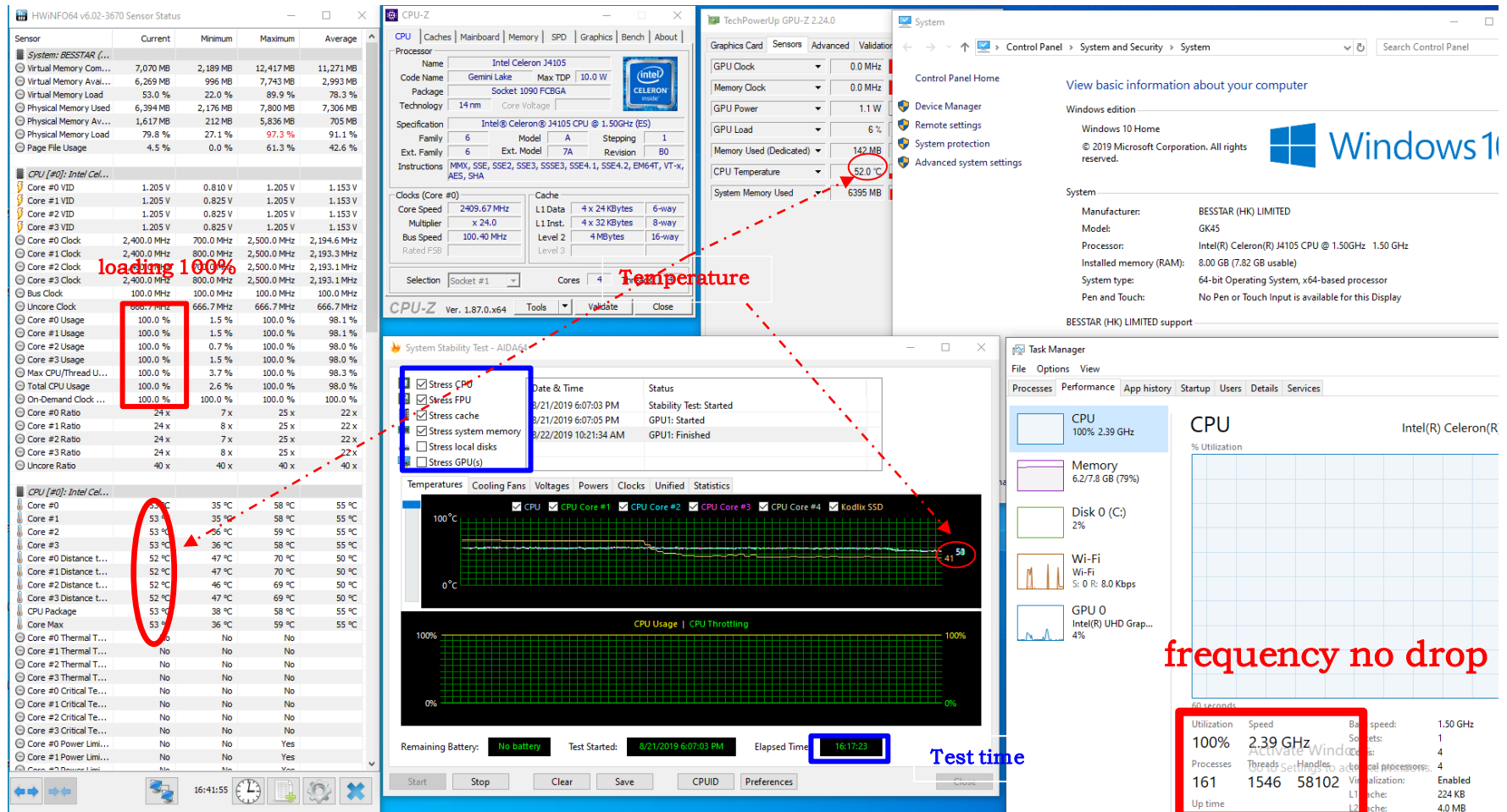
If there is no fan and TDP UNLOCKER, the CPU would drop to 1.5GHz in a few seconds.



# Superb cooling system

- AIDA64 test : Stress CPU/Mem..... load 100% monitoring for 19 hours, temperature is maintained at about 52 °C.

In this case the frequency CPU still performs best, no drop.



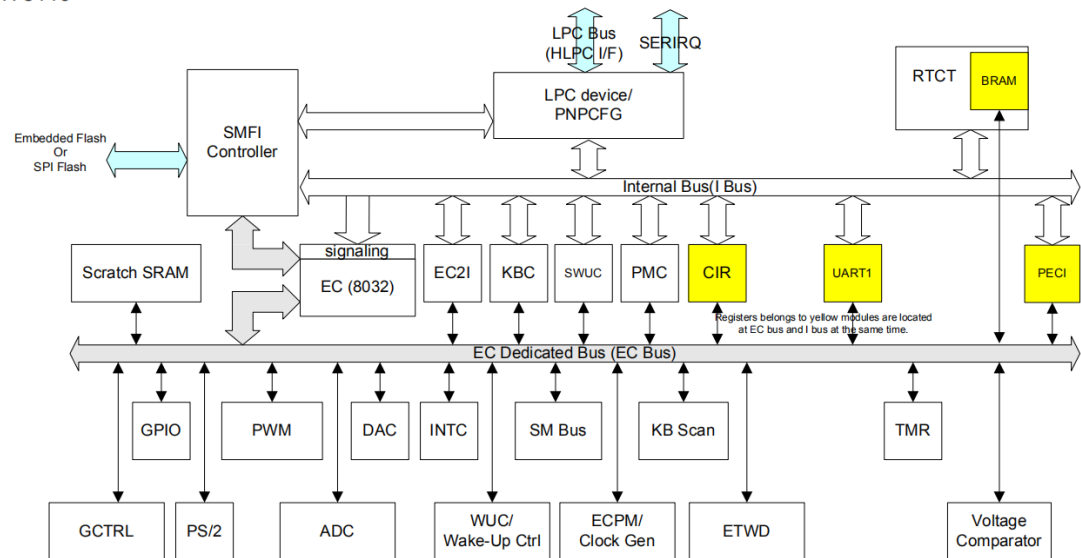
# Low noise equipment



- Our engineers use the IT8110E Chip to control the fan, which makes the fan smarter and the Mini PC more powerful.
- When the CPU is lower than 40 °C, the fan will not rotate, 40-50 °C for 1700 rpm, 50-60 °C for 3000 rpm, above 60°C for 4000 rpm



IT8110



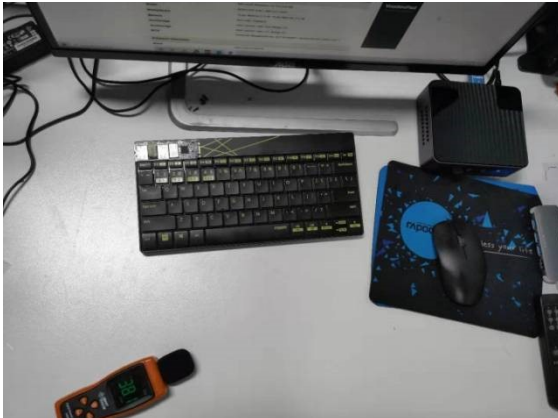
# Low noise equipment



- The noise in free air is about 38.0 dba when Indoor temperature is 22°C.
- The noise in standby mode is 38.6dB.
- CPU full load noise 48.0dB. Still relatively quiet.

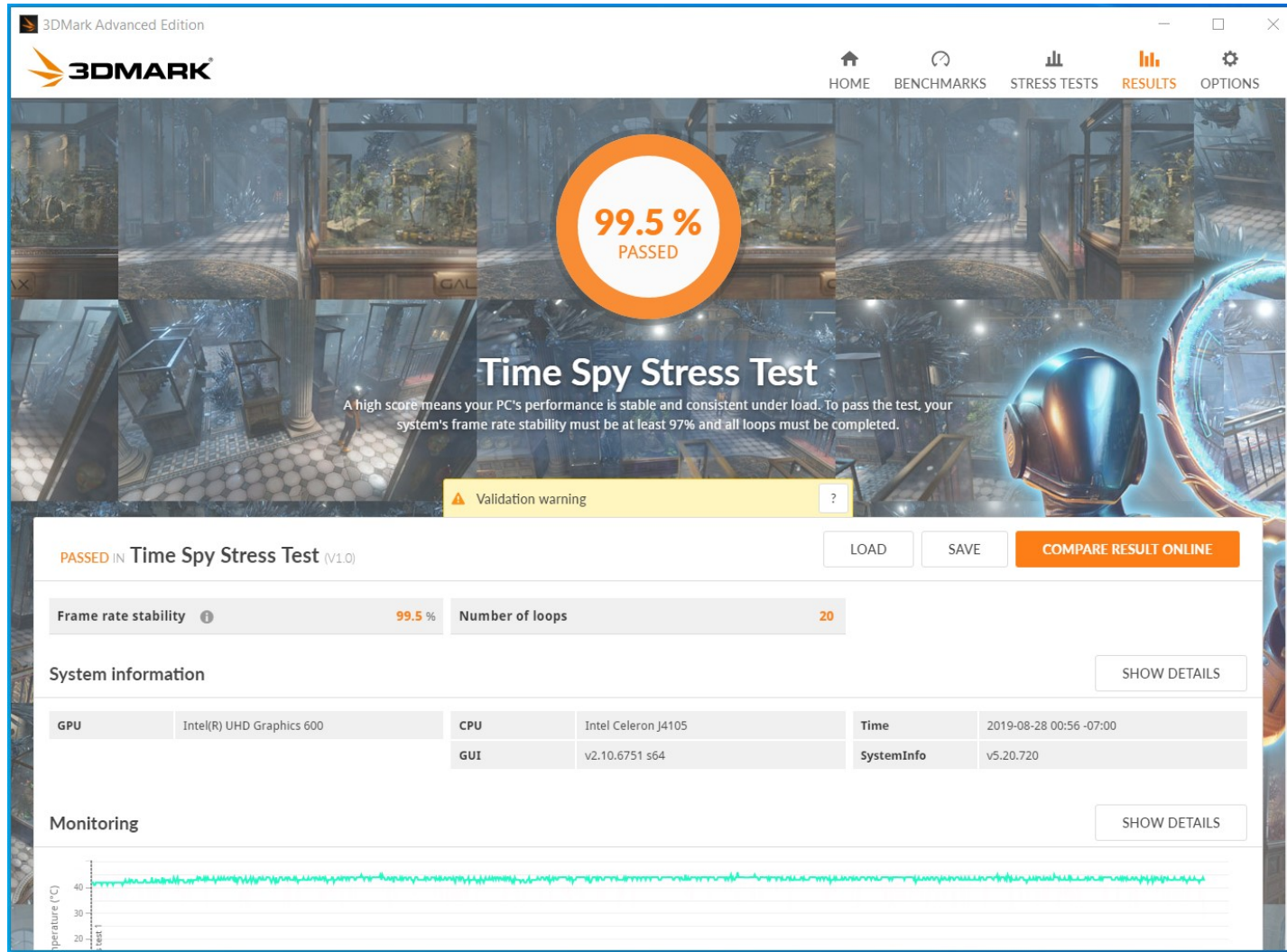


- In standby mode, the noise at 30cm from the machine is 38.1 dB.
- When the CPU is fully loaded, it has 46.3dB of noise at 30cm from the machine.





# 3DMARK stress test passed



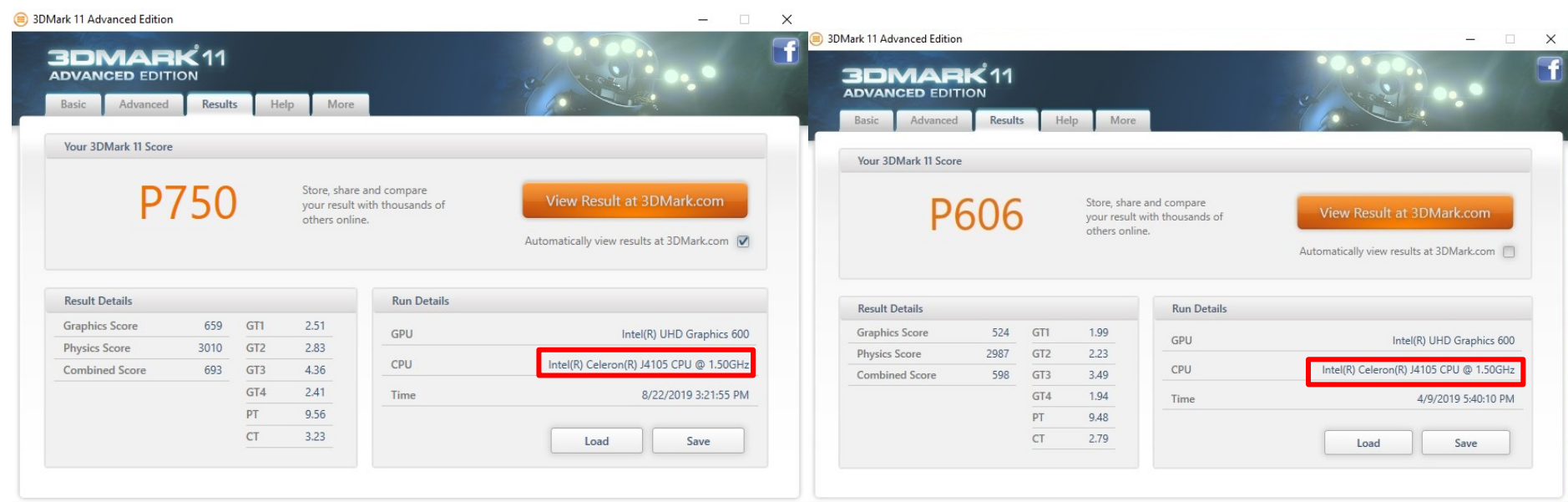
Very few mini PCs could pass this stress test.



# CPU Performance



- Plater engineers add functionality and optimize CPU performance to make the device more powerful.
- 3DMARK11 overall performance test results;



Plater GK45

Other fanless mini pc



## Geekbench Single-Core and Multi-Core performance test results

### BESSTAR (HK) LIMITED GK45

Single-Core Score	Multi-Core Score
1837	5514

Geekbench 4.3.3 Tryout for Windows x86 (64-bit)

#### Result Information

User	minisforum
Upload Date	August 23 2019 02:18 AM
Views	5

#### System Information

System Information	
Operating System	Microsoft Windows 10 Pro (64-bit)
Model	BESSTAR (HK) LIMITED GK45
Motherboard	To be filled by O.E.M. To be filled by O.E.M.
Memory	8014 MB 1068MHz
Northbridge	Intel Gemini Lake Host Bridge 03
Southbridge	Intel Gemini Lake LPC Bridge 03
BIOS	American Megatrends Inc. BLT-BI-MINIPC-M1902GR110-GD60A-102-C

Plater GK45

 J4105


Single-Core Score	Multi-Core Score
1679	4811

Geekbench 4.3.2 Tryout for Windows x86 (64-bit)

#### Result Information

Upload Date	August 08 2019 07:31 PM
Views	2

#### System Information

System Information	
Operating System	Microsoft Windows 10 Famille (64-bit)
Model	
Motherboard	Default string Default string
Memory	3922 MB -1MHz
Northbridge	Intel ID31F0 03
Southbridge	Intel ID31E8 03
BIOS	American Megatrends Inc. 0.08

Other fanless mini pc

# CPU Performance



- PCMark 8 Home conventional 3.0 scored 2015

PCMark 8 Professional Edition



WELCOME BENCHMARK TUNING RESULTS LOG HELP

Results 8/23/2019 10:47:29 AM

Load

Save

Export

Export PDF

Result details >

View result online >

## Home conventional 3.0

Common home computing tests

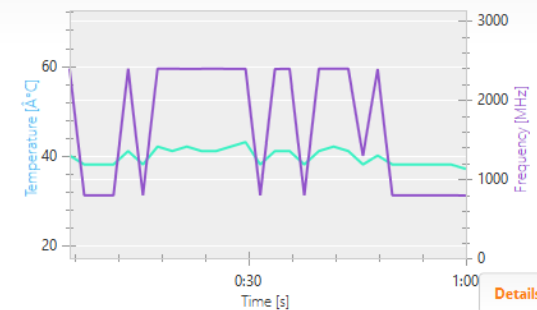


Your Home conventional 3.0 score

2015

Web Browsing - JunglePin	0.403 s
Web Browsing - Amazonia	0.152 s
Writing	6.99 s
Photo Editing v2	0.917 s
Video Chat v2 / Video Chat playback 1 v2	30.0 fps
Video Chat v2 / Video Chat encoding v2	136.7 ms
Casual Gaming	18.8 fps
Benchmark duration	35min 47s

CPU Temperature GPU Temperature CPU Clock



## Details

View raw SystemInfo

View raw result

Name			
Description			
CPU	Intel Celeron J4105	Drive	(C:) Kodlix SSD
GPU	Intel(R) UHD Graphics 600 (26.20.100.7063)	Drive	(D:) VendorCo ProductCode USB Device
		Memory	0MB
OpenCL	----		

Home conventional 3.0 score: 2015

Benchmark information

System information

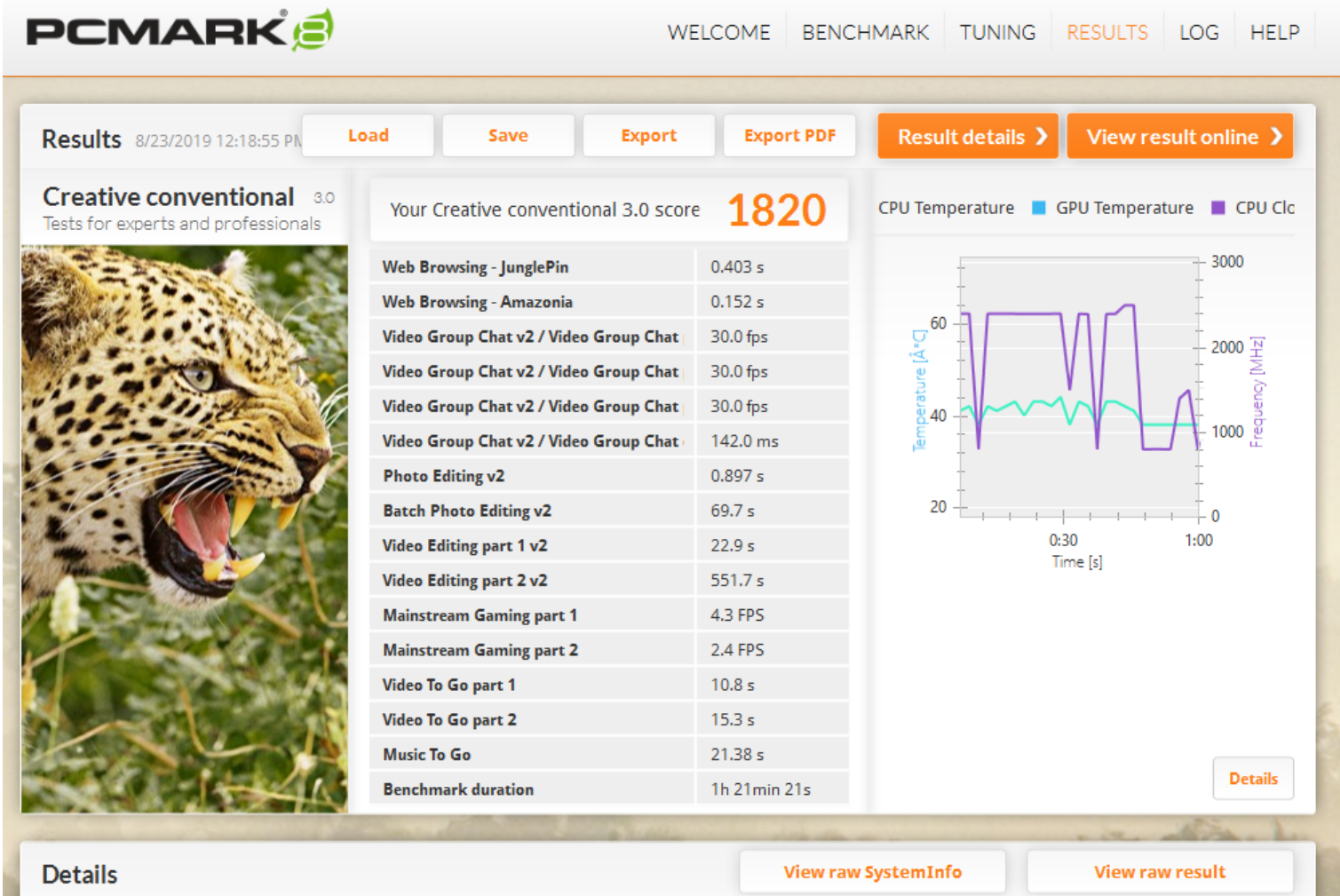
File: C:\Users\Administrator\Documents\PCMark 8\Log\20190823\_101126\result.pcmak-8-result

# CPU Performance



- PCMark 8 Creative conventional 3.0 scored 1820

PCMark 8 Professional Edition

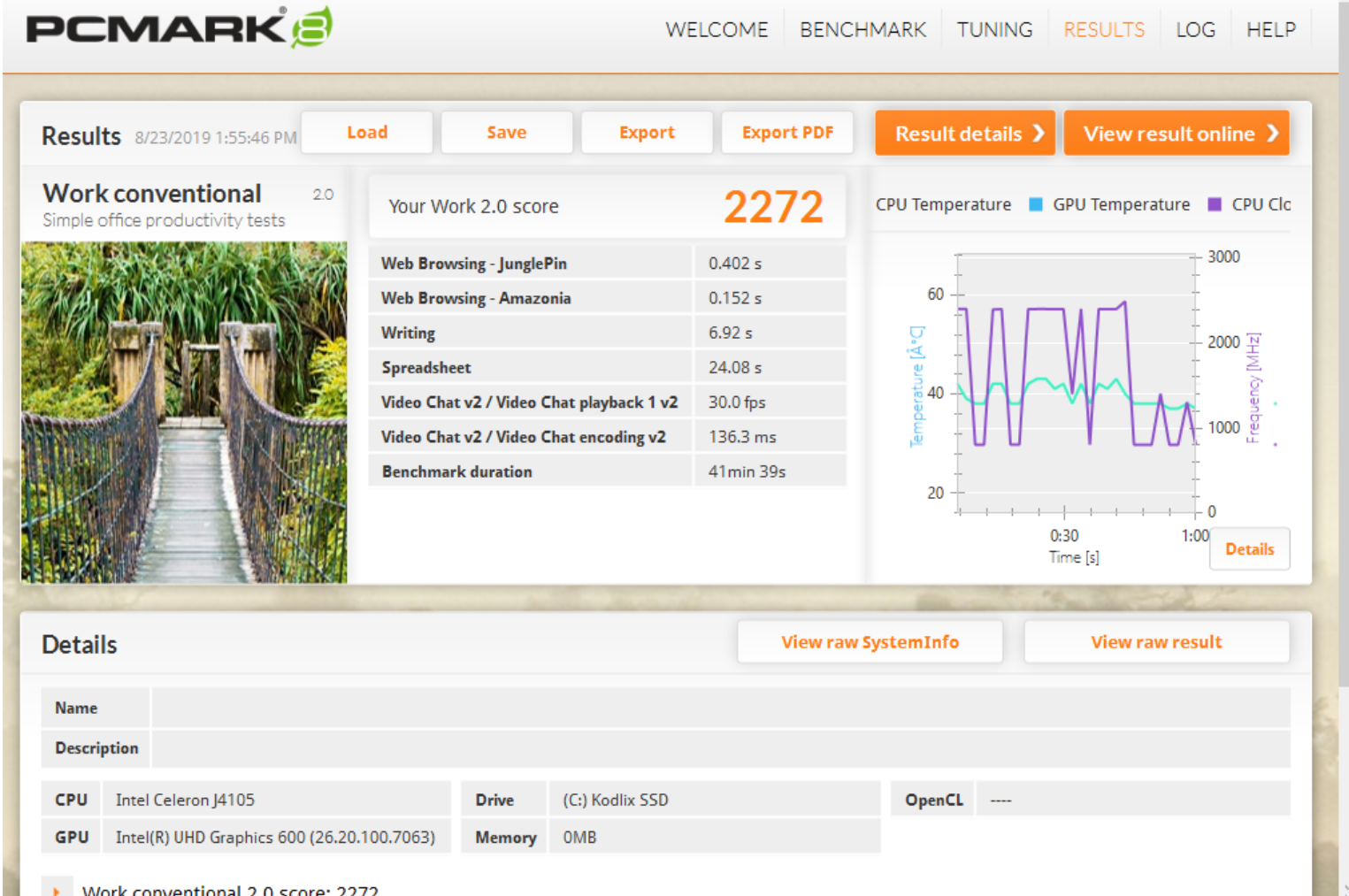


# CPU Performance



- PCMark 8 Work conventional 3.0 scored 2272.

PCMark 8 Professional Edition

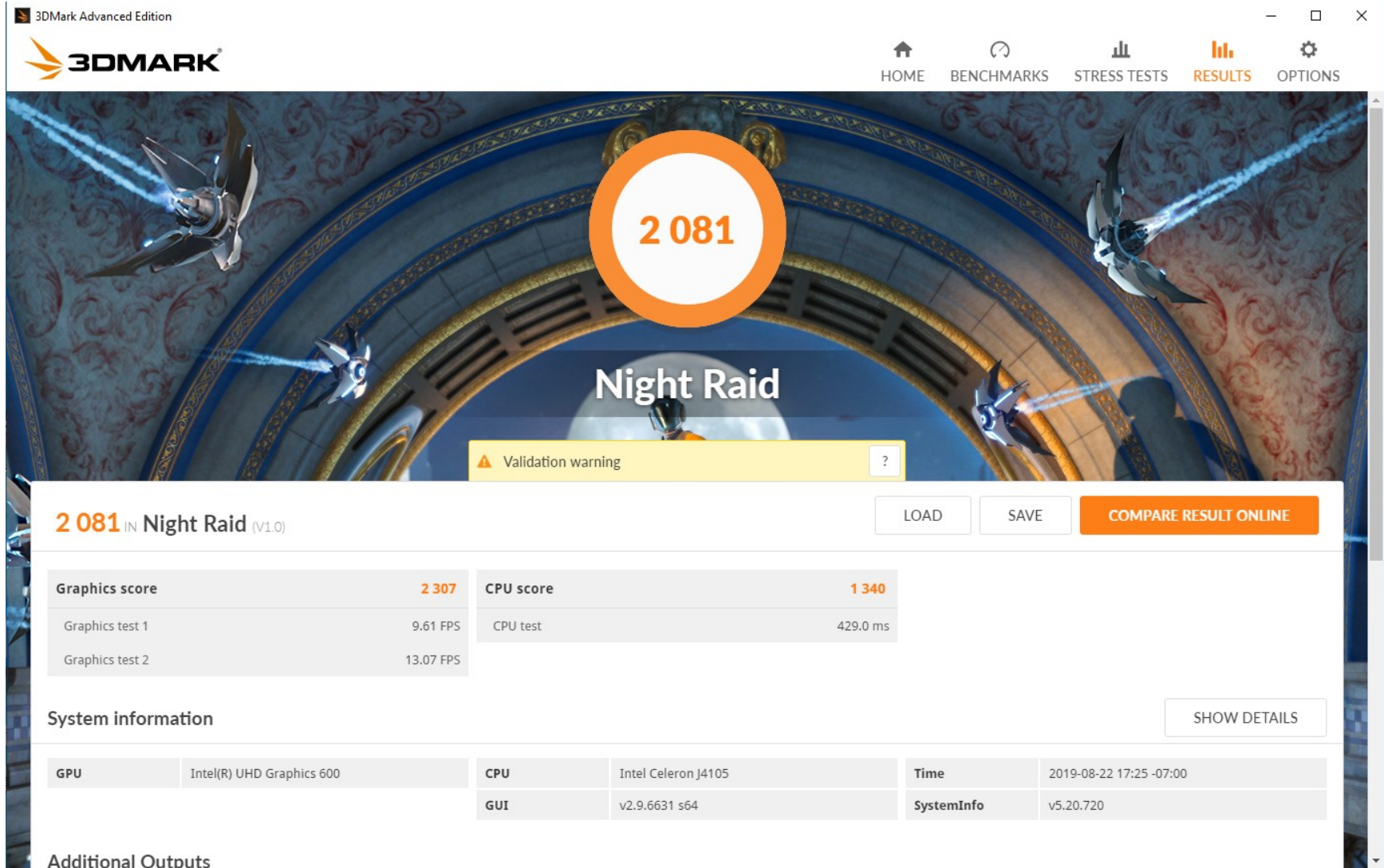




# GPU Performance



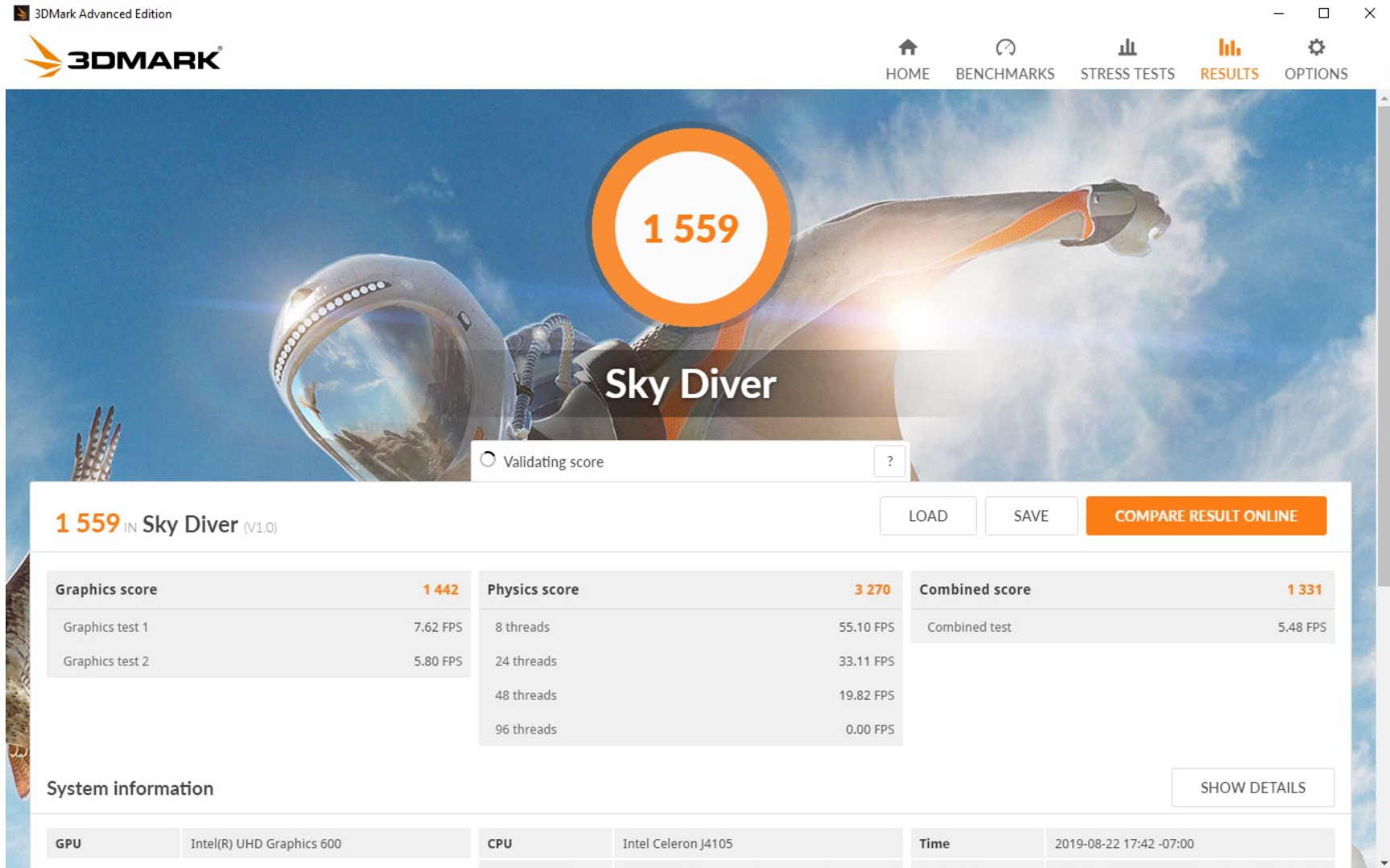
- 3DMARK Night Raid scored 2081. Graphics card score 2307



# GPU Performance



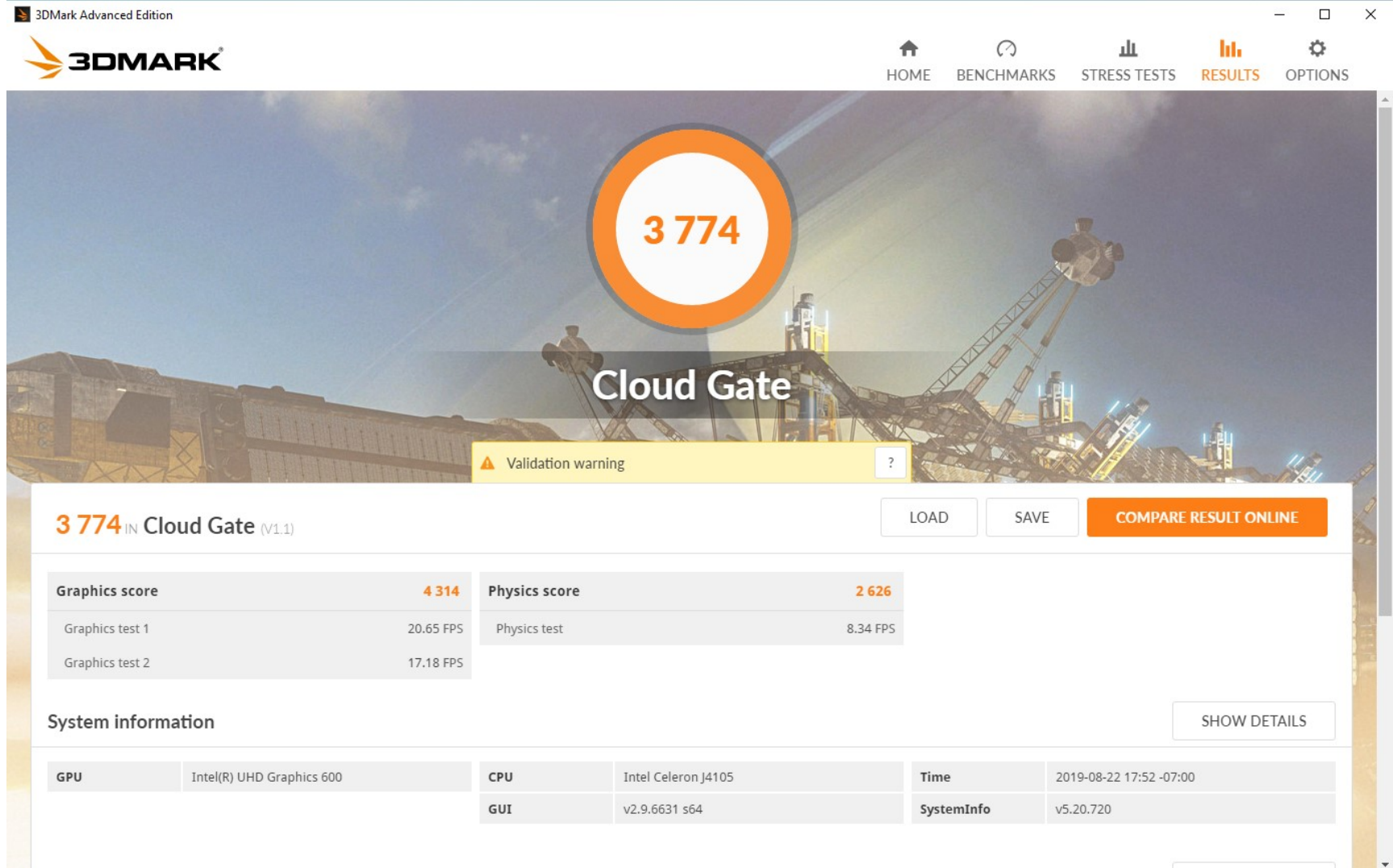
- 3DMARK Sky Diver scored 1559. Graphics card score 1442



# GPU Performance

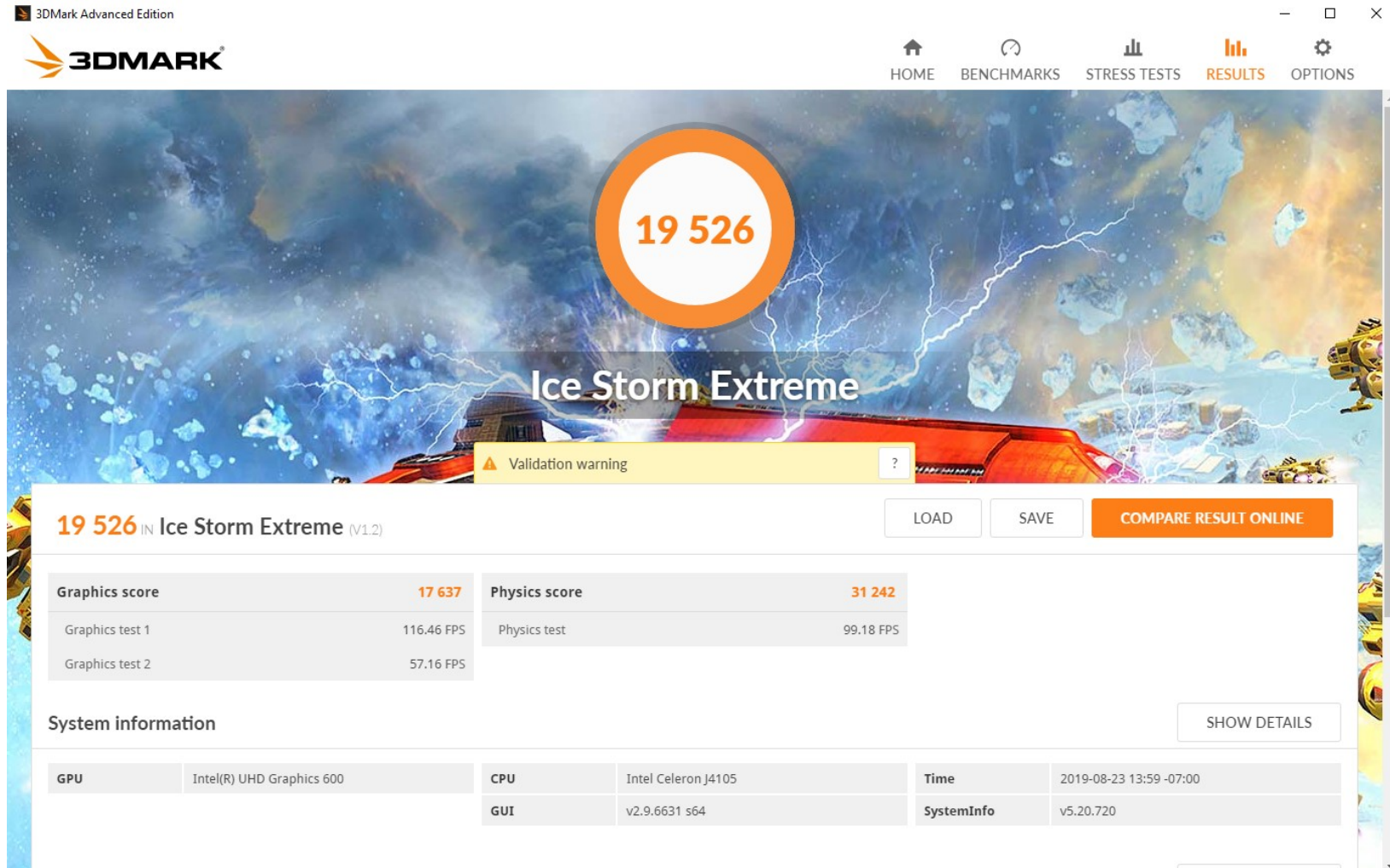


- 3DMARK Cloud Gate scored 3774. Graphics card score 4314





- 3DMARK Ice Storm Extreme scored 19526. Graphics card score 17637



# Burn in Test(PASSED)



Setting parameters:

Test time: 890 minute

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

Test loading: 100%

BurnInTest V7.1 Pro

File Edit Configuration Test Quick Tests Help

System Information Burn In Results Event Log Temperature

Results for WIN-IPPKU21DKM3

Test configuration file: LastUsed.bitcfg Status: IDLE

Start time: Wed Aug 21 18:07:44 2019 Stop time: Thu Aug 22 08:57:51 2019 Duration: 014h 50m 07s

Test Name	Cycle	Operations	Errors	Last Error Description
2D Graphics	7862	2.131 Million	0	No errors
3D Graphics	230	6.913 Million	0	No errors
CPU	3459	45.491 Trillion	0	No errors
Disk (C:)	1145	3.114 Trillion	0	No errors
Memory (RAM)	533	5.104 Trillion	0	No errors
Network 1	602	24.083 Million	0	No errors
Sound	279	934 Million	0	No errors

☐ View errors by categories

Ready

BurnInTest test result

**PASSED**

OK



# HDMI / MINI DP / USB-C output display



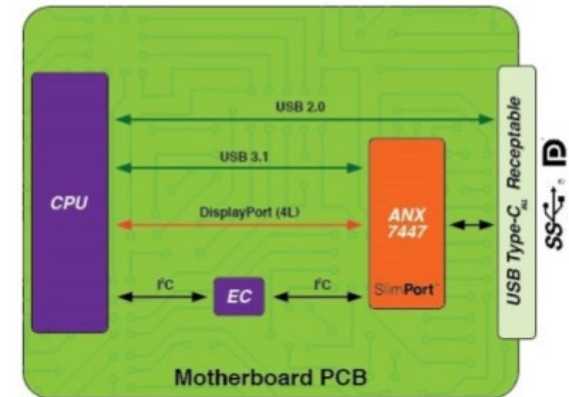
- Support multi-tasking operation, you can work while watching the home theater.
- Also, if your monitor's interface can support reverse power, you don't need to use a power adapter.



# Full-featured USB-C port



- The USB-C port uses the ANX7447 chip. The ANX7447 chip is integrated with the USB-C port, this enables faster PD firmware updates (PDFU) and provides an efficient exchange of security certificates, while allowing a PC accessory to change modes from sourcing to sinking power quickly, preventing data corruption during an unforeseen power source disconnect.
- USB-C port supports data transfer, Display and power, etc., USB 3.1 up to Gen 2 10Gbps and DisplayPort 1.4 at up to HBR3 8.1Gbps.

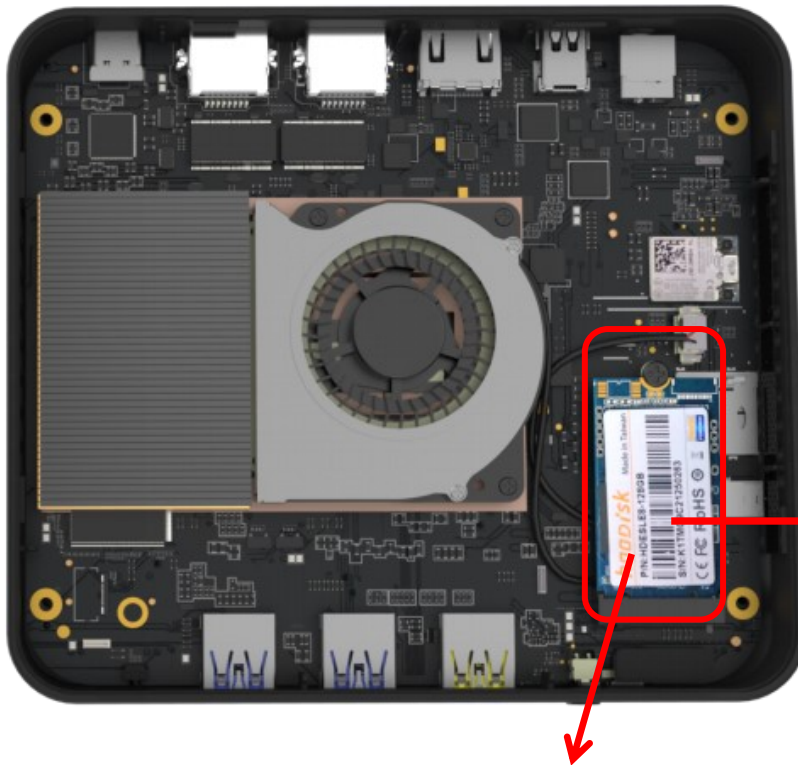


# Easy DIY Upgradability



## Easy DIY Upgradability

- DIY M.2 2242 PCIe SSD (Support up to 1TB, PCIe2.0\*2 10Gb/S)



M.2 2242 PCIe SSD

Standard SSD  
read and write  
speed test

CrystalDiskMark 5.2.0 (UWP)

File Settings Theme Help Language

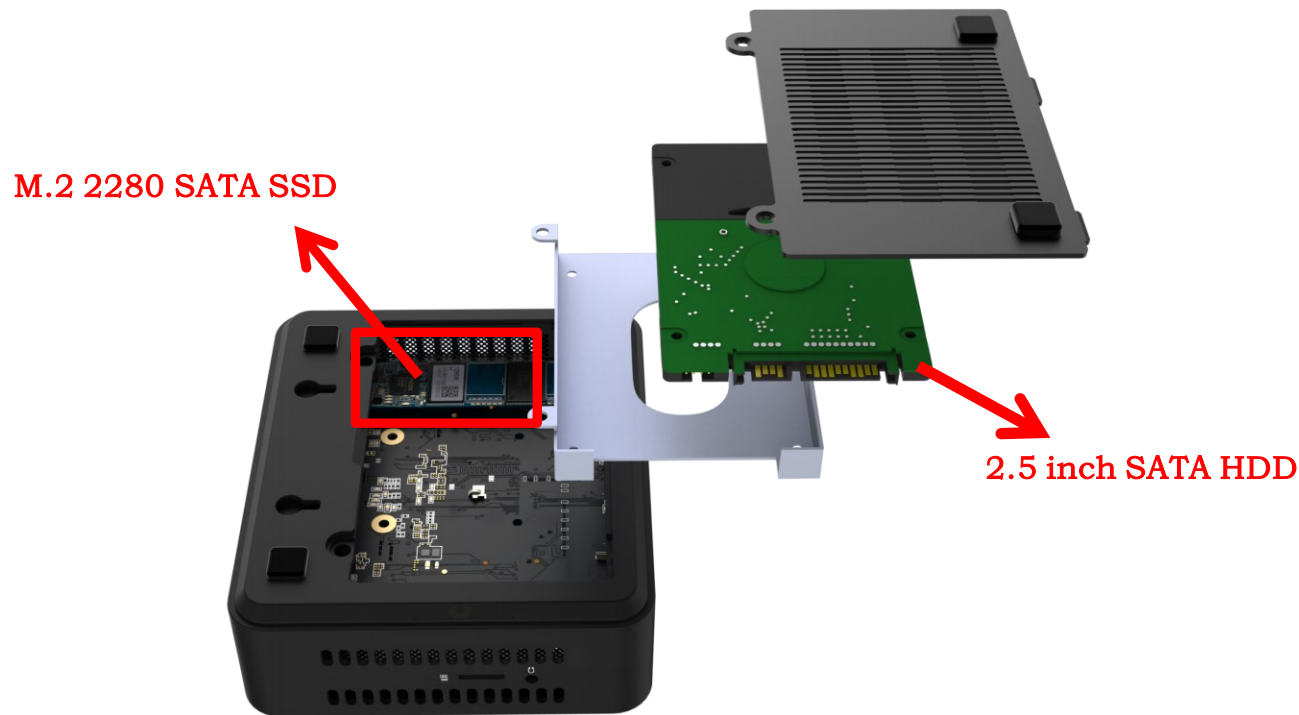
All 5 1GiB C: 39% (46/118GiB)

	Read [MB/s]	Write [MB/s]
Seq Q32T1	899.4	499.5
4K Q32T1	178.4	165.6
Seq	552.2	397.6
4K	24.70	45.49

# Easy DIY Upgradability



- DIY M.2 2280 SATA SSD (Support up to 1TB, SATA3.0 6Gb/S)
- DIY 2.5 inch SATA HDD (Support up to 2TB, SATA3.0 6Gb/S)





Thank you!