

MINIS FORUM



H31G

**Introduction Presentation
Rev 1.1, August 2020**

- MINISFORUM was born among a group of computer engineers who are passionate about advanced technology and design. Since its inception in 2012, MINISFORUM has been committed to innovation and production of outstanding products.
- Through these products, we can provide consumers with unparalleled satisfaction and reliability.
- We listen to every user's constructive opinions and understand customer needs. On this basis, a large number of innovations have been carried out, and innovative ideas have been injected into every product of the company. Through these products, people really benefit from the convenience of daily life.
- Each of our products is carefully crafted, when we choose materials, we pursue excellent quality. Pursue the ultimate perfection of product design. We do not simply stack hardware, but do a lot of optimization and integration to achieve the best performance of the product.
- In August 2020, MinisForum designed and released EliteMiniPC H31G that supports Intel® 9th/8th Gen desktop Processor (Max.TDP 65W) and NVIDIA GTX1050Ti. It provides advanced desktop PC functions with an ultra-compact and space-saving design, suitable for Small businesses, industrial automation, offices and home theaters and living rooms can also be used to play medium and large games.

Specifications

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MINISFORUM EliteMini H31G

Processor	Intel® 9th/8th Gen desktop Processor (Max.TDP 65W)
GPU	NVIDIA GeForce GTX1050Ti 4GB GDDR5
Memory	SODIMM slots×2 DDR4 2666MHz
Storage	
Storage Expansion	1×M.2 2280 PCIe SSD Slot (PCIe 4X supported , up to 2TB) 1×2.5 inch SATA HDD 1×M.2 2242 SATA SSD Slot (6.0Gb/s) 1×TF Card Slot
Wireless Connectivity	M.2 2230 WIFI Support (Intel® WIFI6 AX200, BT5.1 pre-install)
Video Output	① HDMI(4K@60Hz)
Audio Output	HDMI , Mini DisplayPort , 3.5mm Audio Jack , LINE IN , HP OUT
Peripherals Interface	RJ45 Gigabit Ethernet Port×1 , USB 3.0 Port×4 , TF Card Slot×1 , MIC×1
Power	DC 19V/7.8A (adapter included)
System	Windows 10
Launch Date	July-20
Product Dimension	154×153×62mm
Package Dimension	192×192×160mm
Net Weight	1083g
Gross Weight	

- Small size, beautiful appearance (Page 5)
- International brand equipment installed (Page 6~10)
- With super cooling system (Page 11~12)
- Hardware test score(Page 13~20)
- Comprehensive stability test (Page 21~24)
- The Game FPS Testing-1080P (Page 25~26)
- Input/Output strong scalability (Page 27)
- Bios can adjust CPU FAN speed

Small size, beautiful appearance

MINISFORUM

Measures 154×153×62mm
Weights only 1.08 kg.



Metal frame design




CPU specifications


Intel® 9th/8th Gen desktop Processor (Max.TDP 65W) supported

This report tested i5-9500F and i7-9700F.

CPU-Z Ver. 1.91.0.x64

CPU				Caches	Mainboard	Memory	SPD	Graphics	Bench	About
Processor										
Name	Intel Core i5 9500									
Code Name	Coffee Lake	Max TDP	65.0 W							
Package	Socket 1151 LGA									
Technology	14 nm	Core Voltage	1.264 V							
Specification										
Intel® Core™ i5-9500F CPU @ 3.00GHz										
Family	6	Model	E	Stepping	A					
Ext. Family	6	Ext. Model	9E	Revision	U0					
Instructions	MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, AVX, AVX2, FMA3, TSX									
Clocks (Core #0)					Cache					
Core Speed	4187.69 MHz				L1 Data	6 x 32 KBytes	8-way			
Multiplier	x 42.0 (8 - 44)				L1 Inst.	6 x 32 KBytes	8-way			
Bus Speed	99.71 MHz				Level 2	6 x 256 KBytes	4-way			
Rated FSB					Level 3	9 MBytes	12-way			
Selection <input type="text" value="Socket #1"/> Cores <input type="text" value="6"/> Threads <input type="text" value="6"/>										
CPU-Z Ver. 1.91.0.x64 Tools Validate Close										

CPU-Z Ver. 1.91.0.x64

CPU				Caches	Mainboard	Memory	SPD	Graphics	Bench	About
Processor										
Name	Intel Core i7									
Code Name	Coffee Lake	Max TDP	65.0 W							
Package	Socket 1151 LGA									
Technology	14 nm	Core Voltage	0.328 V							
Specification										
Intel® Core™ i7-9700F CPU @ 3.00GHz										
Family	6	Model	E	Stepping	D					
Ext. Family	6	Ext. Model	9E	Revision	R0					
Instructions	MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, AVX, AVX2, FMA3, TSX									
Clocks (Core #0)					Cache					
Core Speed	4289.51 MHz				L1 Data	8 x 32 KBytes	8-way			
Multiplier	x 43.0 (8 - 47)				L1 Inst.	8 x 32 KBytes	8-way			
Bus Speed	99.76 MHz				Level 2	8 x 256 KBytes	4-way			
Rated FSB					Level 3	12 MBytes	12-way			
Selection <input type="text" value="Socket #1"/> Cores <input type="text" value="8"/> Threads <input type="text" value="8"/>										
CPU-Z Ver. 1.91.0.x64 Tools Validate Close										

For more CPU specifications, please visit the official Intel website: <https://www.intel.com/>

Graphics specifications

GTX1050Ti has 4GB of video memory, and is positioned to play games with medium special effects.

The screenshot shows the 'Graphics Card' tab in TechPowerUp GPU-Z 2.33.0. The interface includes a 'Lookup' button and the NVIDIA logo. The following table summarizes the key specifications displayed:

Category	Value
Name	NVIDIA GeForce GTX 1050 Ti
GPU	GP107
Revision	A1
Technology	14 nm
Die Size	132 mm ²
Release Date	Oct 25, 2016
Transistors	3300M
Subvendor	NVIDIA
Device ID	10DE 1C82 - 10DE 1676
ROPs/TMUs	32 / 48
Bus Interface	PCIe x16 3.0 @ x8 1.1
Shaders	768 Unified
DirectX Support	12 (12_1)
Pixel Fillrate	44.5 GPixel/s
Texture Fillrate	66.8 GTexel/s
Memory Type	GDDR5 (Hynix)
Bus Width	128 bit
Memory Size	4096 MB
Bandwidth	112.1 GB/s
Driver Version	26.21.14.3200 (NVIDIA 432.00) DCH / Win10 64
Driver Date	Jul 24, 2019
Digital Signature	WHQL
GPU Clock	1291 MHz
Memory	1752 MHz
Boost	1392 MHz
Default Clock	1291 MHz
Memory	1752 MHz
Boost	1392 MHz
NVIDIA SLI	Not supported by GPU
Computing	<input checked="" type="checkbox"/> OpenCL <input checked="" type="checkbox"/> CUDA <input checked="" type="checkbox"/> DirectCompute <input checked="" type="checkbox"/> DirectML
Technologies	<input checked="" type="checkbox"/> Vulkan <input type="checkbox"/> Ray Tracing <input type="checkbox"/> PhysX <input checked="" type="checkbox"/> OpenGL 4.6

The screenshot shows the 'Sensors' tab in TechPowerUp GPU-Z 2.33.0. It displays various real-time metrics with corresponding red progress bars. The following table summarizes the key sensor data:

Metric	Value
GPU Clock	1733.5 MHz
Memory Clock	1752.0 MHz
GPU Temperature	61.0 °C
Fan Speed (%)	32 %
Memory Used	240 MB
GPU Load	96 %
Memory Controller Load	65 %
Video Engine Load	0 %
Bus Interface Load	26 %
Board Power Draw	53.9 W
PCIe Slot Power	50.1 W
PCIe Slot Voltage	2.4 V
Power Consumption (%)	0.0 % TDP
PerfCap Reason	VRel
GPU Voltage	1.0430 V

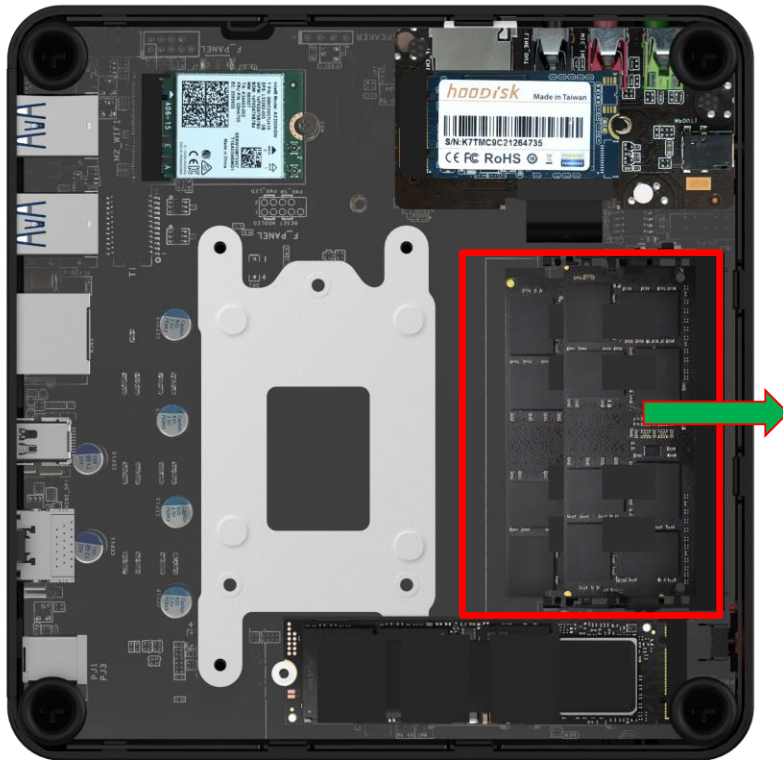
For more GPU specifications, please visit the official Intel website:

<https://www.geforce.com/hardware/desktop-gpus/geforce-gtx-1050-ti/specifications>



Memory Module Specifications

Kingston DDR4 Inside



8GB 1G x 64-Bit DDR4-2400 CL17 1Rx8 260-Pin SODIMM (CBD24D4S7S8K1A-8)

Description

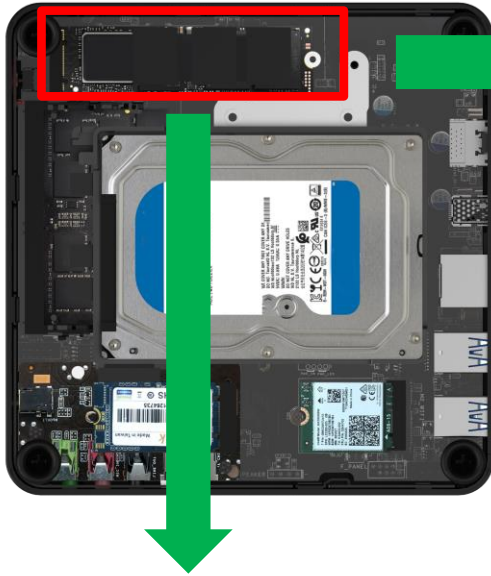
This document describes Kingston's 1G x 64-bit (8GB) DDR4-2400 CL17 SDRAM (Synchronous DRAM) 1Rx8, memory module, based on eight 1G x 8-bit SDRAMs. This 260-pin SODIMM uses gold contact fingers and requires +1.2V. The electrical and mechanical specifications are as follows:

Feature

- Power Supply: VDD = 1.2V
- VDDQ = 1.2V
- VPP = 2.5V
- VDDSPD = 2.20V to 3.60V
- Functionality and operations comply with the DDR4 SDRAM datasheet
- 16 internal banks (x4, x8): 4 groups of 4 banks each
- 8 internal banks (x16): 2 groups of 4 banks each
- Bank Grouping is applied, and CAS to CAS latency (tCCD_L, tCCD_S) for the banks in the same or different bank group accesses are available
- Data transfer rates: PC4-2400, PC4-2133, PC4-1866, PC4-1600
- Bi-Directional Differential Data Strobe
- 8 bit pre-fetch
- Burst Length (BL) switch on-the-fly BL8 or BC4(Burst Chop)
- On-Die Termination (ODT)
- Per DRAM Addressability is supported
- Internal Vref DQ level generation is available
- Write CRC is supported at all speed grades
- DBI (Data Bus Inversion) is supported(x8)
- CA parity (Command/Address Parity) mode is supported
- RoHS Compliant and Halogen-Free
- Gold Finger Plating Au 0.076um (Min)
- Operating Temperature 0° C to +85° C

International brand equipment installed

M.2 2280 PCIE SSD Inside



Product Overview

- **Capacities**
 - 512GB
- **Form Factor**
 - M.2 2280-S2-M
- **PCIe Interface**
 - PCIe Gen 3 x 4
- **Compliance**
 - NVMe 1.3
 - PCI Express Base 3.1
- **Flash Interface**
 - Transfer rate up to 800MT/s
 - Up to 4pcs of BGA132 flash
- **Performance¹**
 - Read: up to 2500 MB/s
 - Write: up to 2100 MB/s
- **Reliability**
 - Mean Time Between Failure (MTBF)
1,500,000 hours
 - Uncorrectable Bit Error Rate (UBER)
< 1 sector per 10¹⁶ bits read
- **Advanced Flash Management**
 - Static and Dynamic Wear Leveling
 - Bad Block Management
 - TRIM
 - SMART
 - Over-Provision
 - Firmware Update
- **Power Management**
 - Support APST
 - Support ASPM
 - Support L1.2
- **Power Consumption²**
 - Idle < 70 mW
 - L1.2 < 2 mW
- **Temperature Range³**
 - Operation: 0°C ~ 70°C
 - Storage: -40°C ~ 85°C
- **RoHS-Compliant**
- **Features Support List:**
 - End to end data path protection
 - Thermal throttling
 - SmartZIP™
 - SmartRefresh™
 - Drive log
 - Support HMB (Host Memory Buffer)
 - Support of TCG OPAL⁴
 - Support of TCG Pyrite

CrystalDiskMark 7.0.0 x64 [ADMIN]

File Settings Profile Theme Help Language

All | 1 | 1GiB | F: 23% (27/118GiB) | MB/s

	Read [MB/s]	Write [MB/s]
SEQ1M Q8T1	1726.72	607.53
SEQ1M Q1T1	1380.37	607.22
RND4K Q32T16	517.72	544.52
RND4K Q1T1	22.40	56.13

NOTES:

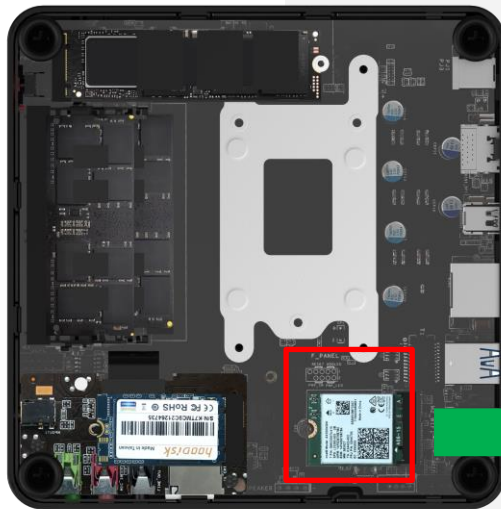
1. Refer to Chapter 2 for more details
2. Refer to Chapter 4, Section 4.2 Power Consumption for more details.
3. The operation temperature means the case temperature, in which can be decided via the S.M.A.R.T.
4. Supported by a separate firmware version. Further information available upon request.

International brand equipment installed

With the right solution from Intel, your Wi-Fi performs just as remarkably as you do—easily keeping pace with your entertainment, business, and super-connected lifestyle. For instance, a PC equipped with Gigabit Wi-Fi achieves speeds up to 1733Mbps.¹ That's nearly twice as fast as 802.11ac 2x2 with speeds of 867Mbps, allowing you to download an HD movie in less than a minute.^{1 2 3} At Intel, we've been creating technology to improve life at home, work, and on-the-go since the very beginning. Innovation is what we do.

Find your system now

Intel Wi-Fi6 AX200 Inside



Wi-Fi That Smashes Through the Gigabit Barrier

Experience faster Wi-Fi with Intel® Wireless-AC 2X2 160 MHz (1733 Mbps) inside your devices, featuring smooth gaming and 4K UHD video streaming, faster file transfers and backups, and two antennas for reliable connections throughout your home.¹

View the infographic

Data comes from intel : <https://www.intel.com/content/www/us/en/products/docs/wireless-products/get-wi-fi-smart.html>

With super cooling system

- Double turbo fan, under 100% CPU load, low noise college operation.
- The large air outlet allows the machine to fully dissipate heat and exert higher performance.
- Design ready to handle 65W TDP CPU

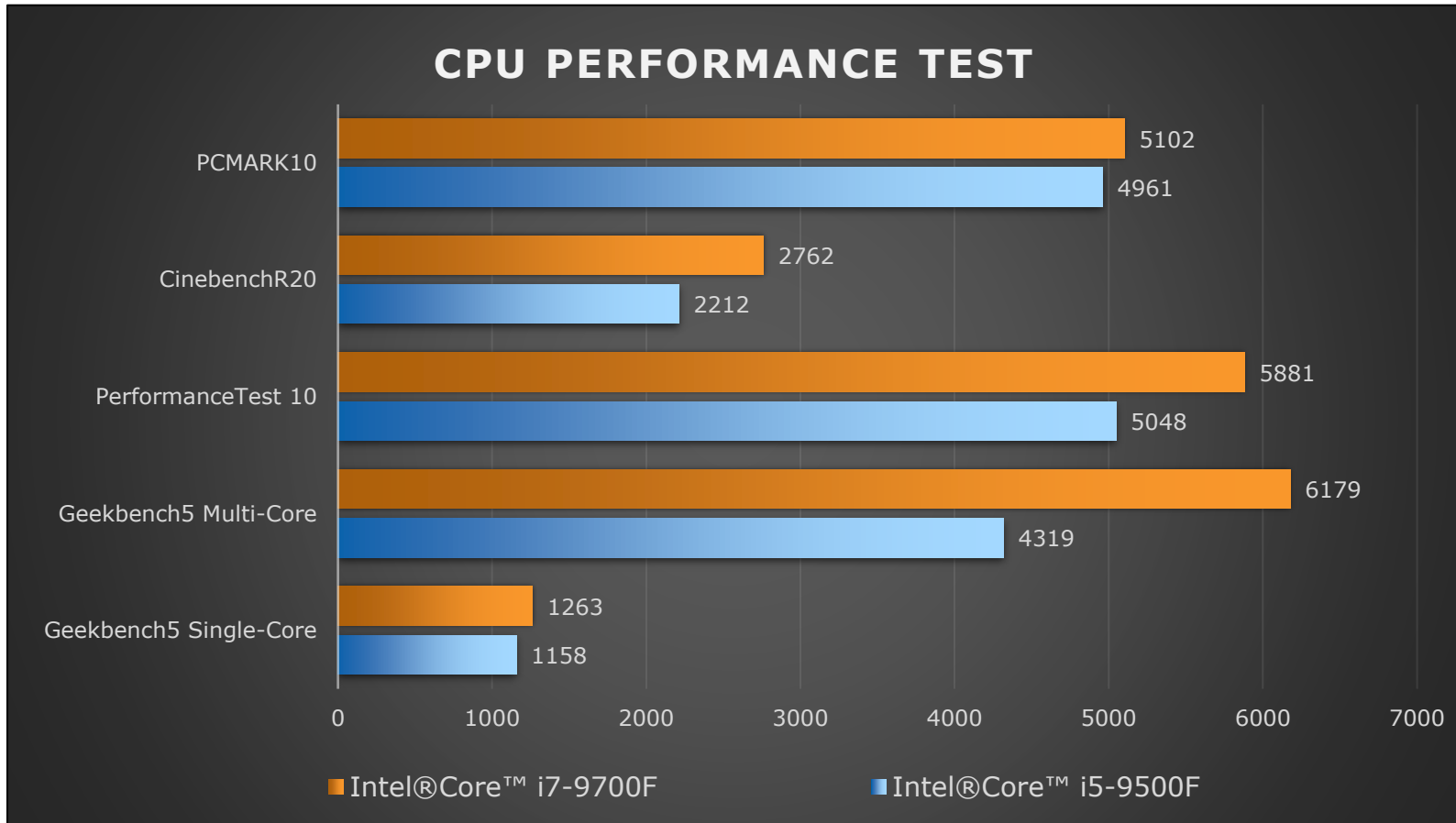


With super cooling system

- powerMAX and AIDA64 test : Stress CPU/GPU/Mem..... load 100% monitoring for 15 hours, temperature is maintained at about 65 degrees.
- In this case, the CPU frequency can still reach all core 3.0GHz And remain stable.
- CPU loading is 100%, fan speed is still at 3300 RPM.
- This temperature is a pleasant surprise for the mini volume H31G.

The image displays two software windows. The left window is powerMAX, showing a 3D scene with a checkered sphere and a fur sphere. It displays system statistics: GPU 99%, CPU 100%, RAM 15655 MB, and OGL 19 FPS. The bottom part of the window shows Task Manager's Performance tab for the CPU, indicating 100% utilization at 2.99 GHz. The right window is CPUID HWMonitor, showing a detailed view of system sensors. It lists temperatures for various components, including the Intel Core i7 processor (cores 85°C to 81°C) and the NVIDIA GeForce GTX 1050 Ti GPU (82°C). It also shows fan speeds (3292 RPM) and system memory utilization (95%).

Sensor	Value	Min	Max
DESKTOP-H00M0AS			
BESSTAR TECH LIMITED H31G			
Temperatures			
Fans			
CPUFANIN	3292 RPM	3206 RPM	3300 RPM
Utilization			
System Memory	95 %	95 %	95 %
Intel Core i7			
Temperatures			
Package	85 °C (184 °F)	81 °C (177 °F)	85 °C (184 °F)
Core #0	81 °C (177 °F)	80 °C (175 °F)	85 °C (184 °F)
Core #1	83 °C (181 °F)	79 °C (174 °F)	84 °C (183 °F)
Core #2	85 °C (184 °F)	79 °C (174 °F)	85 °C (184 °F)
Core #3	83 °C (181 °F)	78 °C (172 °F)	84 °C (183 °F)
Core #4	83 °C (181 °F)	79 °C (174 °F)	84 °C (183 °F)
Core #5	81 °C (177 °F)	77 °C (170 °F)	82 °C (179 °F)
Core #6	81 °C (177 °F)	76 °C (168 °F)	81 °C (177 °F)
Core #7	81 °C (177 °F)	75 °C (166 °F)	81 °C (177 °F)
Powers			
Package	40.14 W	39.57 W	40.83 W
IA Cores	38.33 W	37.76 W	39.03 W
Uncore	1.81 W	1.71 W	1.92 W
DRAM	2.71 W	2.52 W	3.03 W
Utilization			
Processor	100 %	100 %	100 %
CPU #0	100 %	100 %	100 %
CPU #1	100 %	100 %	100 %
CPU #2	100 %	100 %	100 %
CPU #3	100 %	100 %	100 %
CPU #4	100 %	100 %	100 %
CPU #5	100 %	100 %	100 %
CPU #6	100 %	100 %	100 %
CPU #7	100 %	100 %	100 %
Clocks			
Core #0	2993 MHz	2990 MHz	2995 MHz
Core #1	2993 MHz	2990 MHz	2995 MHz
Core #2	2993 MHz	2990 MHz	2995 MHz
Core #3	2993 MHz	2990 MHz	2995 MHz
Core #4	2993 MHz	2990 MHz	2995 MHz
Core #5	2993 MHz	2990 MHz	2995 MHz
Core #6	2993 MHz	2990 MHz	2995 MHz
Core #7	2993 MHz	2990 MHz	2995 MHz
Samsung SSD 860 EVO 2TB			
minisforum			
NVIDIA GeForce GTX 1050 Ti			
Temperatures			
GPU	0.881 V	0.813 V	0.894 V
GPU	82 °C (179 °F)	81 °C (177 °F)	82 °C (179 °F)
Fans PWM			
EXNDIUMININ	87 %	87 %	87 %



- The following results were tested using Geekbench5.

Geekbench Browser Geekbench 5 ▾ Geekbench 4 ▾ Benchmark Charts ▾ 🔍 Search

BESSTAR TECH LIMITED H31G

Geekbench 5 Score

1158 Single-Core Score	4319 Multi-Core Score
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Geekbench 5.2.3 Tryout for Windows x86 (64-bit)

Result Information

User	minisforum
Upload Date	September 27th 2020, 10:34am
Views	3

System Information

System Information	
Operating System	Microsoft Windows 10 Home (64-bit)
Model	BESSTAR TECH LIMITED H31G
Motherboard	BESSTAR TECH LIMITED H31G

Processor Information

Name	Intel Core i5-9500F
Topology	1 Processor, 6 Cores
Identifier	GenuineIntel Family 6 Model 158 Stepping 10
Base Frequency	2.99 GHz
Maximum Frequency	4.39 GHz
Package	Socket 1151 LGA
Codename	Coffee Lake

H31G(i5-9500F)

Geekbench Browser Geekbench 5 ▾ Geekbench 4 ▾ Benchmark Charts ▾ 🔍 Search

BESSTAR TECH LIMITED H31G

Geekbench 5 Score

1263 Single-Core Score	6179 Multi-Core Score
---------------------------	--------------------------

Geekbench 5.2.3 Tryout for Windows x86 (64-bit)

Result Information

User	minisforum
Upload Date	September 24th 2020, 4:09pm
Views	3

System Information

System Information	
Operating System	Microsoft Windows 10 Home (64-bit)
Model	BESSTAR TECH LIMITED H31G
Motherboard	BESSTAR TECH LIMITED H31G

Processor Information

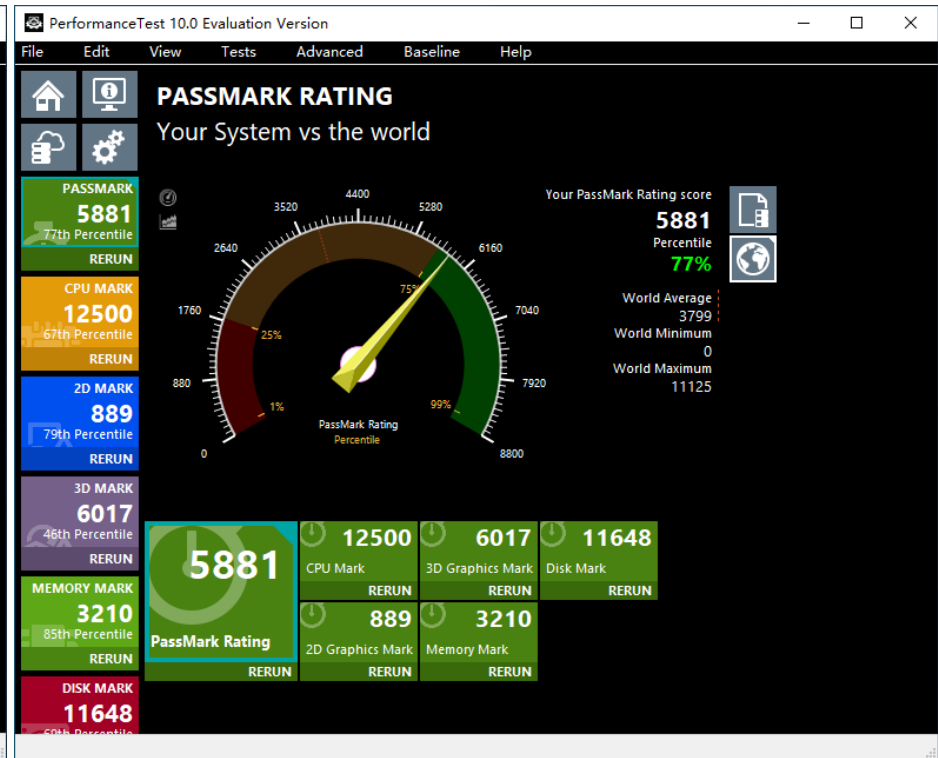
Name	Intel Core i7-9700F
Topology	1 Processor, 8 Cores
Identifier	GenuineIntel Family 6 Model 158 Stepping 13
Base Frequency	2.99 GHz
Maximum Frequency	4.69 GHz
Package	Socket 1151 LGA
Codename	Coffee Lake

H31G(i7-9700F)

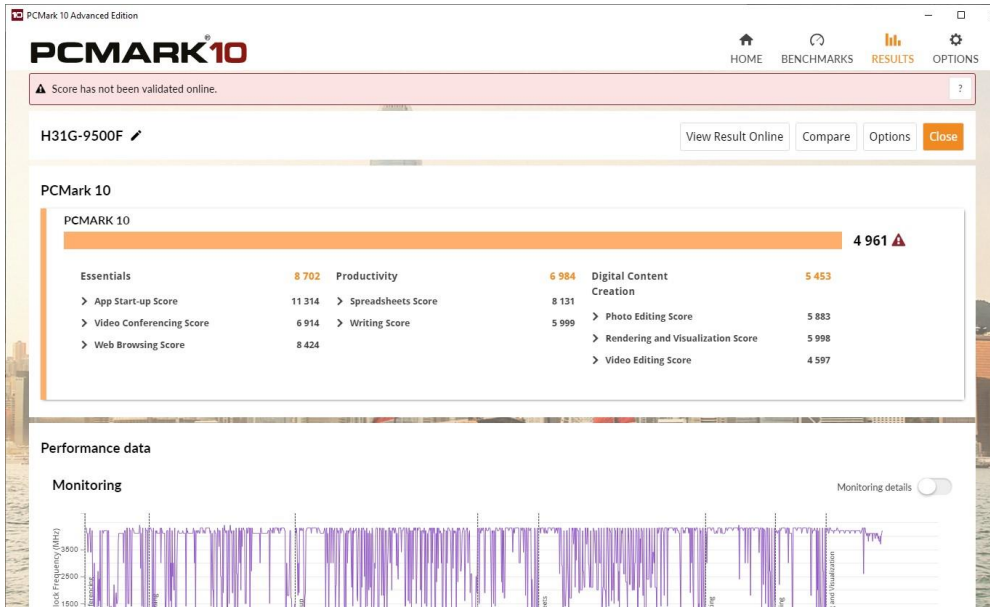
PerformanceTest 10



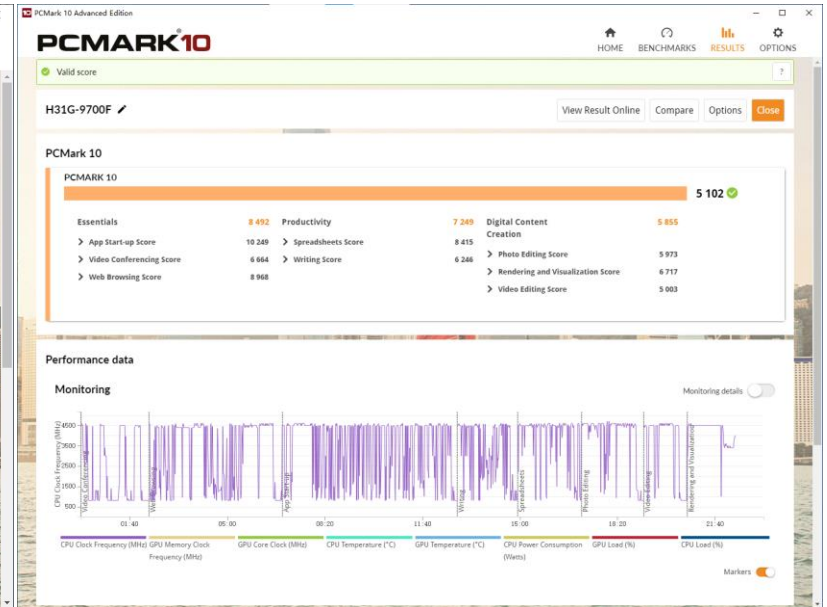
H31G(i5-9500F)



H31G(i7-9700F)



H31G(i5-9500F)=4961



H31G(i7-9700F)=5102

Time Spy Stress Tset

The screenshot displays the 3DMark Advanced Edition interface for the Time Spy Stress Test. A large orange circle in the center of the game scene indicates a 99.4% pass rate. Below this, the text 'Time Spy Stress Test' is shown, along with a note: 'A system must achieve frame rate stability of at least 97% to pass the test.' A green checkmark and the text 'Valid score' are visible. The interface includes navigation tabs for HOME, BENCHMARKS, STRESS TESTS, RESULTS, and OPTIONS. Below the main display, there are buttons for 'LOAD', 'SAVE', and 'COMPARE RESULT ONLINE'. The results section shows 'PASSED IN Time Spy Stress Test (v1.2)'. Key performance metrics are listed: Frame rate stability at 99.4% and Number of loops at 20. The 'Settings used' and 'System information' sections are also visible, with 'SHOW DETAILS' buttons. The system information table lists the GPU as NVIDIA GeForce GTX 1050 Ti, CPU as Intel Core i5-9500F, GUI as v2.13.7009 s64, Time as 2020-09-25 02:10 -07:00, and SystemInfo as v5.31.859. A 'Monitoring' section at the bottom shows a line graph of frame rate (FPS) over time, fluctuating between approximately 12 and 20 FPS.

3DMark Advanced Edition

3DMARK

HOME BENCHMARKS STRESS TESTS RESULTS OPTIONS

99.4 % PASSED

Time Spy Stress Test

A system must achieve frame rate stability of at least 97% to pass the test.

Valid score

PASSED IN Time Spy Stress Test (v1.2)

LOAD SAVE COMPARE RESULT ONLINE

Frame rate stability 99.4 % Number of loops 20

Settings used SHOW DETAILS

System information SHOW DETAILS

GPU	NVIDIA GeForce GTX 1050 Ti	CPU	Intel Core i5-9500F	Time	2020-09-25 02:10 -07:00
		GUI	v2.13.7009 s64	SystemInfo	v5.31.859

Monitoring SHOW DETAILS

Frame rate (FPS)

CINEBENCH R20.0

File Help

CINEBENCH
Release 20

CPU 2212 cb Run

Your System

Processor Intel Core i5-9500F CPU
Cores x GHz 6 Cores @ 3 GHz
OS Windows 10, 64 Bit, Core (build 18363)
GFX Board GeForce GTX 1050 Ti/PCIe/SSE2
Info

Ranking

1. 48C/96T @ 2.7 GHz, Intel Xeon Platinum 8168 CPU	16536
2. 60C/120T @ 2.8 GHz, Intel Xeon CPU E7-4890 v2	12986
3. 16C/32T @ 3.4 GHz, AMD Ryzen Threadripper 1950X	6670
4. 8C/16T @ 3.4 GHz, AMD Ryzen 7 1700X Eight-Core Pr	3455
5. 12C/24T @ 2.7 GHz, Intel Xeon CPU E5-2697 v2	3225
6. 12C/24T @ 2.66 GHz, Intel Xeon CPU X5650	2705
7. 4C/8T @ 4.2 GHz, Intel Core i7-7700K CPU	2420
8. 6C @ 3 GHz, Intel Core i5-9500F CPU	2212
9. 4C/8T @ 2.6 GHz, Intel Core i7-6700HQ CPU	1647
10. 4C/8T @ 2.3 GHz, Intel Core i7-4850HQ CPU	1509
11. 4C @ 3.3 GHz, Intel Core i5-3550 CPU	1059
12. 2C/4T @ 2.3 GHz, Intel Core i5-5300U CPU	541

■ Your Score ■ Identical System

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3D FOR THE REAL WORLD

i5-9500F 2212cb

CINEBENCH R20.0

File Help

CINEBENCH
Release 20

CPU 2762 cb Run

Your System

Processor Intel Core i7-9700F CPU
Cores x GHz 8 Cores @ 3 GHz
OS Windows 10, 64 Bit, Core (build 19041)
GFX Board GeForce GTX 1050 Ti/PCIe/SSE2
Info

Ranking

1. 48C/96T @ 2.7 GHz, Intel Xeon Platinum 8168 CPU	16536
2. 60C/120T @ 2.8 GHz, Intel Xeon CPU E7-4890 v2	12986
3. 16C/32T @ 3.4 GHz, AMD Ryzen Threadripper 1950X	6670
4. 8C/16T @ 3.4 GHz, AMD Ryzen 7 1700X Eight-Core I	3455
5. 12C/24T @ 2.7 GHz, Intel Xeon CPU E5-2697 v2	3225
6. 8C @ 3 GHz, Intel Core i7-9700F CPU	2762
7. 12C/24T @ 2.66 GHz, Intel Xeon CPU X5650	2705
8. 4C/8T @ 4.2 GHz, Intel Core i7-7700K CPU	2420
9. 4C/8T @ 2.6 GHz, Intel Core i7-6700HQ CPU	1647
10. 4C/8T @ 2.3 GHz, Intel Core i7-4850HQ CPU	1509
11. 4C @ 3.3 GHz, Intel Core i5-3550 CPU	1059
12. 2C/4T @ 2.3 GHz, Intel Core i5-5300U CPU	541

■ Your Score ■ Identical System

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3D FOR THE REAL WORLD

i7-9700F 2762cb

CPU Performance

Ludashi overall performance test result:
Intel® i7-9700F & GTX1050Ti (240985)
i5-5257U(80627).



H31G



i5-5257U

GPU Performance

- 3DMARK11 overall performance test results;

The image displays two side-by-side screenshots of the 3DMark 11 Advanced Edition results interface. Both screenshots show the same hardware configuration: NVIDIA GeForce GTX 1050 Ti GPU and Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz. The left screenshot shows a score of X3501, while the right screenshot shows a score of P9627. The right screenshot also includes a timestamp of 9/24/2020 5:06:05 PM.

Result Details			
Graphics Score	3164	GT1	16.42
Physics Score	12580	GT2	15.60
Combined Score	4026	GT3	16.78
		GT4	9.43
		PT	39.94
		CT	18.73

Run Details	
GPU	NVIDIA GeForce GTX 1050 Ti
CPU	Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz
Time	9/24/2020 4:43:03 PM

Result Details			
Graphics Score	9312	GT1	43.64
Physics Score	12636	GT2	43.13
Combined Score	8728	GT3	59.88
		GT4	27.78
		PT	40.12
		CT	40.60

Run Details	
GPU	NVIDIA GeForce GTX 1050 Ti
CPU	Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz
Time	9/24/2020 5:06:05 PM

GTX1050Ti

Memory Test

PassMark MemTest86 v7.5 test memory Address (Write/Read)
→ All passed, NO error.

```
PassMark MemTest86 V7.5 Free Intel Pentium Gold G5420 @ 3.80GHz
Clk/Temp : 3831 MHz / 36C | Pass 100% #####
L1 Cache : 64K 87.00 GB/s | Test 100% #####
L2 Cache : 256K 33.83 GB/s | Test 13 [Hammer test] - Verifying pattern
L3 Cache : 4096K 15.84 GB/s | Address : 0x42000000 - 0x43EF0000
Memory : 15.4G 7639 MB/s | Pattern : 0x1E42FFB8
RAM Info : PC4-19200 DDR4 2400MHZ / 17-17-17-39 / Kingston CBD24D4S7S8K1A-8
-----
CPU: 0123 | CPUs Found: 4
State: -DWD | CPUs Started: 2 CPUs Active: 2
-----
Time: 8:43: Test complete, press any key to display summary errors: 0

Finished pass #1 (of 4) (Cumulative error count: 0)
Finished pass #2 (of 4) (Cumulative error count: 0)
Finished pass #3 (of 4) (Cumulative error count: 0)
Finished pass #4 (of 4) (Cumulative error count: 0)
>Test Complete

(ESC)/(c)onfiguration
```

SSD & HDD Test

- CrystalDiskMark7.0.0 test Result:
 - M.2 2280 PCIe 128G (PCIe x4 Read:1726MB/s Write:607MB/s)
 - M.2 2280 SATA 128G (SATA3.0 Read:445MB/s Write:457MB/s)
 - 2.5 inch 2TB HDD (SATA3.0 6Gb/s Read:559MB/s Write:513MB/s)
- The computer starts up only 10 seconds, no need to wait patiently

All	1	1GiB	F: 23% (27/118GiB)	MB/s
	Read [MB/s]		Write [MB/s]	
SEQ1M Q8T1	1726.72	607.53		
SEQ1M Q1T1	1380.37	607.22		
RND4K Q32T16	517.72	544.52		
RND4K Q1T1	22.40	56.13		

M.2 2280 PCIe 128G

All	1	1GiB	G: 92% (109/119GiB)	MB/s
	Read [MB/s]		Write [MB/s]	
SEQ1M Q8T1	445.54	457.47		
SEQ1M Q1T1	448.62	400.05		
RND4K Q32T16	236.04	159.15		
RND4K Q1T1	29.16	91.95		

M.2 2242 SATA 128G

All	1	1GiB	D: 84% (1350/1607GiB)	MB/s
	Read [MB/s]		Write [MB/s]	
SEQ1M Q8T1	559.22	513.85		
SEQ1M Q1T1	500.54	461.23		
RND4K Q32T16	380.20	320.02		
RND4K Q1T1	46.28	107.87		

2.5 inch 2TB HDD

Burn in Test(PASSED)

Setting parameters:

Test time:720minute (12H)

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

Test loading:100%

Results for DESKTOP-RR15SGM

Test configuration file: LastUsed.bitcfg Status: IDLE

Start time: Sun Jun 28 03:52:28 2020 Stop time: Sun Jun 28 15:52:36 2020 Duration: 012h 00m 08s

Test Name	Cycle	Operations	Errors	Last Error Description
2D Graphics	3501	945480	0	No errors
3D Graphics	153	4.601 Million	0	No errors
CPU	2752	110 Trillion	0	No errors
GPGPU	1437	1.7 Quadrillion	0	No errors
Memory (RAM)	852	9.301 Trillion	0	No errors
Network 1	445	17.801 Million	0	No errors
Sound	230	769 Million	0	No errors

BurnInTest test result

PASSED

OK

Windows Reboot cycle test

Windows reboot 500 cycles test passed

The screenshot displays the PassMark Rebooter application interface. On the left, the 'Reboot options' section is configured with 'Maximum reboots' set to 500 cycles, 'Reboot type' set to 'Reboot', and 'Force shutdown' set to 'Ask to close'. A 'Delay' of 20 seconds is specified. The 'Auto load Rebooter at startup' checkbox is checked. Below this, there are fields for 'Launch application each cycle' and 'Launch application after all cycles finished', both currently empty. The 'Log file' is set to 'C:\Users\myf\Documents\Pe...', and a 'Clear log' button is visible. The 'Auto-login' section shows 'Auto-login is currently DISABLED' with fields for 'Domain', 'User Name' (myf), and 'Password', along with 'Set Auto-login' and 'Disable Auto-login' buttons.

The central 'Log' window displays the following text:

```
2020-7月-22 23:19:06 Saving config file: Count 496
2020-7月-22 23:19:06 ABOUT TO REBOOT, COUNT 496
2020-7月-22 23:20:21 LOADED AFTER REBOOT, COUNT 496
2020-7月-22 23:20:21 STARTING COUNTDOWN TIMER FOR REBOOT, COUNT 496
2020-7月-22 23:20:41 Saving config file: Count 497
2020-7月-22 23:20:41 ABOUT TO REBOOT, COUNT 497
2020-7月-22 23:21:56 LOADED AFTER REBOOT, COUNT 497
2020-7月-22 23:21:56 STARTING COUNTDOWN TIMER FOR REBOOT, COUNT 497
2020-7月-22 23:22:17 Saving config file: Count 498
2020-7月-22 23:22:17 ABOUT TO REBOOT, COUNT 498
2020-7月-22 23:23:31 LOADED AFTER REBOOT, COUNT 498
2020-7月-22 23:23:31 STARTING COUNTDOWN TIMER FOR REBOOT, COUNT 498
2020-7月-22 23:23:51 Saving config file: Count 499
2020-7月-22 23:23:51 ABOUT TO REBOOT, COUNT 499
2020-7月-22 23:25:08 LOADED AFTER REBOOT, COUNT 499
2020-7月-22 23:25:08 STARTING COUNTDOWN TIMER FOR REBOOT, COUNT 499
2020-7月-22 23:25:28 Saving config file: Count 500
2020-7月-22 23:25:28 ABOUT TO REBOOT, COUNT 500
2020-7月-22 23:26:43 Loaded previous log file
2020-7月-22 23:26:43 LOADED AFTER REBOOT, COUNT 500
2020-7月-22 23:26:43 LAST REBOOT, COUNT 500
2020-7月-22 23:26:43 Saving config file: Count 1
2020-7月-22 23:26:43 FINISHED REBOOT CYCLE
```

At the bottom of the application window, there are buttons for 'Start Cycle', 'Pause', 'Stop Cycle', 'Close', 'About', and 'Help'.

On the right side, a blue background features a white dialog box titled 'Rebooter - Final Reboot Completed'. The dialog contains an information icon and the text: 'PassMark Rebooter. The final reboot has been completed and the reboot counter has been reset'.

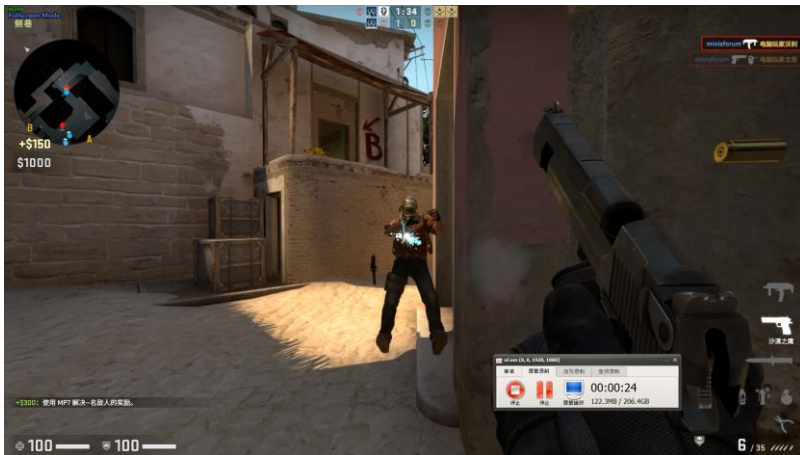
The Game FPS Testing-1080P (I)



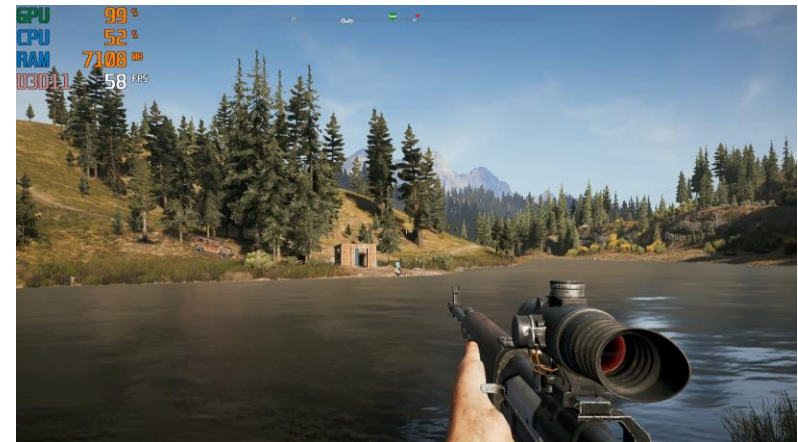
PUBG 55-63 FPS



Call.of.Duty.Modern.Warfare.2.Remastered 111FPS

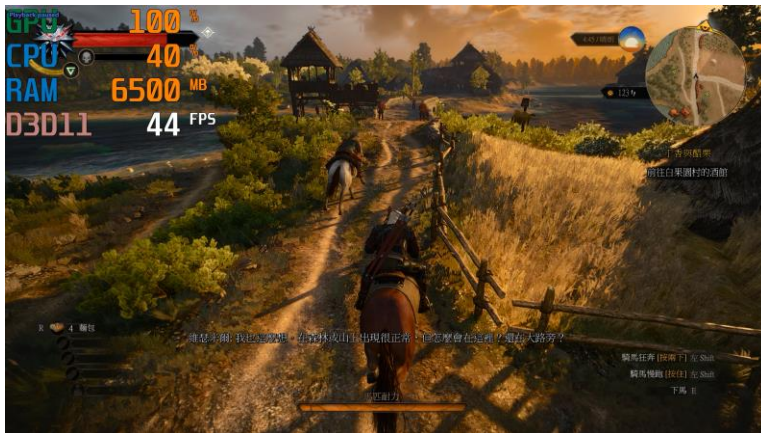


CS GO 188-216 FPS



FAR CRY 5 50-58FPS

The Game FPS Testing-1080P (II)



The Witcher 3 Wild Hunt 38-44FPS



JustCause 4 37-45FPS

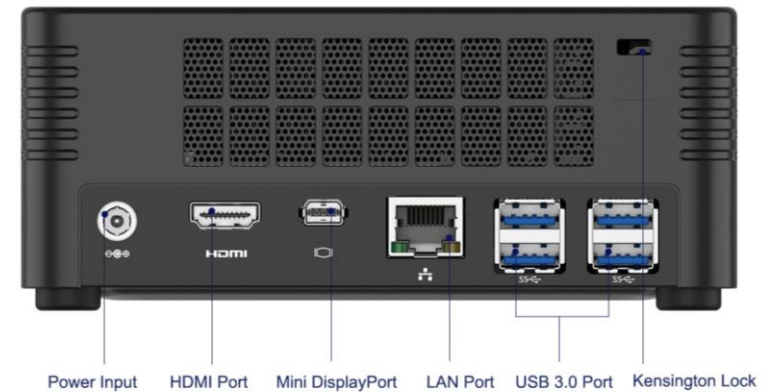


GAT5 55-60 FPS



Watch_Dogs 2 38-43FPS

- With 4*USB 3.0 Ports (Gen 1 , 5V/2A up and down)
- With 1*LAN Ports
- 3.5mm Audio Jack , LINE IN , HP OUT



Thank you!