INTEL® CORE™ i7-8700K PROCESSOR

(12M Cache, up to 4.70 GHz)

8.8

☐ Add to Compare

From $379.⁹⁹

Technical Specifications

Technical Specifications

Essentials

Processor Number	i7-8700K
Lithography	14 nm
Launch Date	Q4'17
Status	Launched
Vertical Segment	Desktop

Performance

TDP	95.0 W
Processor Base Frequency	3.70 GHz
# of Cores	6
Bus Speed	8 GT/s DMI3
Max Turbo Frequency	4.70 GHz
# of Threads	12
Cache	12 MB

USA (English) 🌐   👤

Supplemental Information

Conflict Free	Yes
Embedded Options Available	No

Memory Specifications

Memory Types	DDR4-2666
Max Memory Size (dependent on memory type)	64 GB
ECC Memory Supported ‡	No
Max # of Memory Channels	2

Graphics Specifications

Device ID	0x3E92
Max Resolution (HDMI 1.4)‡	4096x2304@24Hz
Graphics Video Max Memory	64 GB
Graphics Max Dynamic Frequency	1.20 GHz
Intel® Clear Video Technology	Yes

Max Resolution (eDP - Integrated Flat Panel)‡	4096x2304@60Hz
Graphics Base Frequency	350.0 MHz
OpenGL* Support	4.5
Max Resolution (DP)‡	4096x2304@60Hz
Intel® Clear Video HD Technology	Yes
DirectX* Support	12
Execution Units	24
# of Displays Supported ‡	3
Intel® Quick Sync Video	Yes
Intel® InTru™ 3D Technology	Yes
4K Support	Yes, at 60Hz

Expansion Options

PCI Express Configurations ‡	Up to 1x16 or 2x8 or 1x8+2x4
Scalability	1S Only
Max # of PCI Express Lanes	16
PCI Express Revision	3.0

Package Specifications

Thermal Solution Specification	PCG 2015C (130W)
$T_{JUNCTION}$	100°C
Max CPU Configuration	1
Sockets Supported	FCLGA1151

Low Halogen Options Available	No
Package Size	37.5mm x 37.5mm

Advanced Technologies

Intel® Virtualization Technology for Directed I/O (VT-d) [‡]	Yes
	Intel® Hyper-Threading Technology [‡]
Yes	
Intel® Virtualization Technology (VT-x) [‡]	Yes
Instruction Set	64-bit
Intel® TSX-NI	Yes
Intel® Turbo Boost Technology [‡]	2.0
Intel® 64 [‡]	Yes
Intel® Identity Protection Technology [‡]	Yes
Thermal Monitoring Technologies	Yes
Intel® VT-x with Extended Page Tables (EPT) [‡]	Yes
Intel® Optane™ Memory Supported [‡]	Yes
Instruction Set Extensions	SSE4.1/4.2, AVX2
Enhanced Intel SpeedStep® Technology	Yes
Intel® vPro Technology [‡]	Yes
Intel® Stable Image Platform Program (SIPP)	Yes
Idle States	Yes

Security & Reliability

Intel® AES New Instructions	Yes
Execute Disable Bit ‡	Yes
OS Guard	Yes
Intel® Software Guard Extensions (Intel® SGX)	Yes
Intel® Device Protection Technology with Boot Guard	Yes

Secure Key

Yes

| Trusted Execution Technology ‡ | Yes |
| Intel® Memory Protection Extensions (Intel® MPX) | Yes |

Expert Review (15)

Expert Review (15)

Overall Review Score

8.8 The overall review score is calculated from averaging this product's international review scores.

12/02/2017 **Summary**

Since November of 2008, when Intel launched their first Core I7 processor, the i7 920, Intel's consumer platform has been topped out at 4 cores and 8 threads. In 2010, the enthusiast platform was given the luxury of their first hex, or 6 core processor, i...

Link to full review on modders-inc.com

10/06/2017 **Summary**

For the first time in Intel history, Coffee Lake brings more than four physical cores to end-user consumer computing. Regardless of whether or not you want to consider this a reaction to AMD's Ryzen Coffee Lake manages to combine high clock speeds with mo...

Link to full review on notebookcheck.net

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Features and Performance

Features and Performance

Get Unprecedented Power and Responsiveness

Now everyday computer tasks can happen faster. Edit photos and videos seamlessly. Move between programs and windows quickly. Multi-task easily. Better still, all that performance comes with up to 10 hours of battery life[1] [2], so you can take your computer wherever you go without worrying about cords and plug points.

Make Your Computer an Entertainment Center

Get an amazing entertainment hub—stream 4K UHD videos, power virtual reality, and play the most demanding games. With 4x more pixels on screen than traditional HD, you can enjoy sharp, lifelike visuals, complex shading, and fast frame rates—all with virtually no stuttering, buffering, or lags. And be ready for revolutionary immersive experiences yet to come.

Easy to Use, Hard to Break Into

Built-in security[3] adds a critical layer of protection to make password logins, browsing, and online payments safe[3] and simple. You can log on with a look, your voice, or your fingerprint for rock-solid security[3] that's fast and hassle free. Store passwords, personal information, and auto-fill information with one master password. Plus touch screen, voice commands, and stylus options offer natural and intuitive interactions.

RelatedTechnologies

Related Technologies

Thunderbolt™ 3 Technology

Remove the burden of multiple cables and get one compact port that does it all - power your PC, transfer data, and connect with dual 4K UHD displays.

Learn about Thunderbolt™ 3 technology

Intel® Graphics Technology

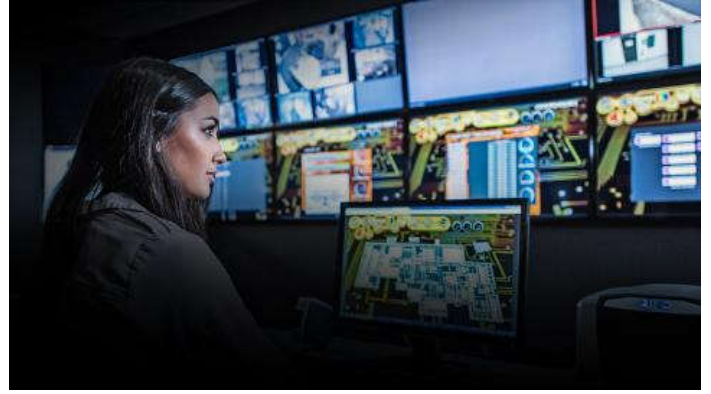Immerse yourself in vivid entertainment with the brilliance of Intel® Graphics Technology.

Discover Intel® Graphics Technology

Intel® Online Connect

With Intel® Online Connect, security is built-in 7th Generation Intel® Core™ processors and above, which adds a layer of protection to make browsing and online payments safe[4] and simple.

Explore Intel® Online Connect

Intel® Optane™ Technology

Eliminating bottlenecks requires better storage memory that is fast, inexpensive, and non-volatile. With Intel® Optane™ technology, you can unleash the power of your processor instead of it working at a fraction of it.

Unleash the power of your processor

Technical Documents

Technical Documents

Datasheets

8th Gen Intel® processor family for S platforms datasheet, vol. 1

8th Gen Intel® processor family for S platforms datasheet, vol. 2

Specification Updates

8th Gen Intel® processor families specification update

Product Brief

8th Gen Intel® Core™ processors desktop product brief

Support

Support

Product support   Find all the latest software and

drivers

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other technical documents

Interpret Intel® processor numbers

Product and Performance Information

This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers
this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory,
BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality,
performance, and other benefits of this feature may vary depending on system configuration.

[1] Software and workloads used in performance tests may have been optimized for performance only on Intel® microprocessors.
Performance tests, such as SYSmark* and MobileMark*, are measured using specific computer systems, components, software,
operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and
performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when
combined with other products. For more complete information about performance and benchmark results, visit
http://www.intel.com/benchmarks.

[2] As measured on Windows* 10 1080p 24fps 10bit HEVC Local Video Playback on Intel® Core™ i7-8550U processor, PL1=15W TDP,
4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel® 600p SSD, Intel® UHD Graphics 620, OS: Windows* 10, Battery
Size: 40WHr, Screen: 25x14 12", Windows* 10 Power Slider – Better Performance.

[3] Intel® technologies may require enabled hardware, specific software, or services activation. Check with your system manufacturer or
retailer.

[4] Intel® technologies' features and benefits depend on system configuration and may require enabled hardware, software or service
activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your
system manufacturer or retailer or learn more at http://www.intel.com.

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