



Intel® Core™ i7-8700K Processor

12M Cache, up to 4.70 GHz

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Essentials

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Product Collection	8th Generation Intel® Core™ i7 Processors
Code Name	Products formerly Coffee Lake
Vertical Segment	Desktop
Processor Number	i7-8700K
Status	Launched
Launch Date ?	Q4'17
Lithography ?	14 nm
Recommended Customer Price ?	-

Performance

# of Cores ?	6
# of Threads ?	12
Processor Base Frequency ?	3.70 GHz
Max Turbo Frequency ?	4.70 GHz
Cache ?	12 MB SmartCache
Bus Speed ?	8 GT/s DMI3
TDP ?	95 W

Supplemental Information













Embedded Options Available ?	No
Datasheet	View now

Memory Specifications




Max Memory Size (dependent on memory type) ?	64 GB
Memory Types ?	DDR4-2666
Max # of Memory Channels ?	2
Max Memory Bandwidth ?	41.6 GB/s
ECC Memory Supported † ?	No

Processor Graphics

Processor Graphics † ?	Intel® UHD Graphics 630
Graphics Base Frequency ?	350 MHz

Graphics Max Dynamic Frequency 	1.20 GHz
Graphics Video Max Memory 	64 GB
4K Support 	Yes, at 60Hz
Max Resolution (HDMI 1.4)‡ 	4096x2304@24Hz
Max Resolution (DP)‡ 	4096x2304@60Hz
Max Resolution (eDP - Integrated Flat Panel)‡ 	4096x2304@60Hz
DirectX* Support 	12
OpenGL* Support 	4.5
Intel® Quick Sync Video 	Yes
Intel® InTru™ 3D Technology 	Yes
Intel® Clear Video HD Technology 	Yes
Intel® Clear Video Technology 	Yes
# of Displays Supported †	3
Device ID	0x3E92












Expansion Options






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

Package Specifications








Sockets Supported 	FCLGA1151
Max CPU Configuration	1
Thermal Solution Specification 	PCG 2015D (130W)
T _{JUNCTION} 	100°C
Package Size	37.5mm x 37.5mm
Low Halogen Options Available	See MDDS

Advanced Technologies

Intel® Optane™ Memory Supported † 	Yes
Intel® Turbo Boost Technology † 	2.0
Intel® vPro™ Technology † 	Yes
Intel® Hyper-Threading Technology † 	Yes
Intel® Virtualization Technology (VT-x) ‡ 	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡ 	Yes
Intel® VT-x with Extended Page Tables (EPT) ‡ 	Yes
Intel® TSX-NI 	Yes
Intel® 64 ‡ 	Yes
Instruction Set 	64-bit
Instruction Set Extensions 	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2

Idle States 	Yes
Enhanced Intel SpeedStep® Technology 	Yes
Thermal Monitoring Technologies 	Yes
Intel® Identity Protection Technology ‡ 	Yes
Intel® Stable Image Platform Program (SIPP) 	Yes

Security & Reliability

Intel® AES New Instructions 	Yes
Secure Key 	Yes
Intel® Software Guard Extensions (Intel® SGX) 	Yes
Intel® Memory Protection Extensions (Intel® MPX) 	Yes
Intel® OS Guard	Yes
Intel® Trusted Execution Technology ‡ 	Yes
Execute Disable Bit ‡ 	Yes
Intel® Boot Guard 	Yes

More support options for Intel® Core™ i7-8700K Processor (12M Cache, up to 4.70 GHz)



Product Support



Downloads and Software



Support Community



Warranty and Replacement



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Refer to Datasheet for formal definitions of product properties and features.

"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

‡ 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.

See <http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading> for more information including details on which processors support Intel® HT Technology.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

purchase quantities, and are subject to change without notice. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply. If sold in bulk, price represents individual unit. Listing of these RCP does not constitute a formal pricing offer from Intel. Please work with your appropriate Intel representative to obtain a formal price quotation.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

Low Halogen: Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

For benchmarking data see <http://www.intel.com/performance>.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See <http://www.intel.com/content/www/us/en/processors/processor-numbers.html> for details.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.



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