

## Essentials

Product Collection	<a href="#">9th Generation Intel® Core™ i7 Processors</a>
Code Name	<a href="#">Products formerly Coffee Lake</a>
Vertical Segment	Desktop
Processor Number	i7-9700K
Status	Launched
Launch Date	Q4'18
Lithography	14 nm
Included Items	Please note: The boxed product does not include a fan or heat sink
Use Conditions	PC/Client/Tablet

## Performance

# of Cores	8
# of Threads	8
Processor Base Frequency	3.60 GHz
Max Turbo Frequency	4.90 GHz
Cache	12 MB SmartCache

Bus Speed	8 GT/s DMI3
TDP	95 W

## Supplemental Information

Embedded Options Available	No
Datasheet	<a href="#">View now</a>

## Memory Specifications

Max Memory Size (dependent on memory type)	128 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	0x3E98

## 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 <sub>JUNCTION</sub>	100°C
Package Size	37.5mm x 37.5mm

## Advanced Technologies

Intel® Optane™ Memory Supported †	Yes
Intel® Turbo Boost Technology †	2.0
Intel® vPro™ Platform Eligibility †	Yes
Intel® Hyper-Threading Technology †	No
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 with Intel® ME
Intel® Memory Protection Extensions (Intel® MPX)	Yes
Intel® OS Guard	Yes
Intel® Trusted Execution Technology †	Yes
Execute Disable Bit †	Yes
Intel® Boot Guard	Yes