Intel® Core™ i7-6700K Processor (8M Cache, up to 4.20 GHz)

Specifications

Essentials

Status	Launched
Launch Date	Q3'15
Processor Number	i7-6700K
Intel® Smart Cache	8 MB
DMI3	8 GT/s
Instruction Set	64-bit
Instruction Set Extensions	SSE4.1/4.2, AVX 2.0
Embedded Options Available	No
Lithography	14 nm
Scalability	1S Only
Thermal Solution Specification	PCG 2015D (130W)
Recommended Customer Price	BOX : $350.00 TRAY: $339.00
Datasheet	Link
Product Brief	Link

Performance

# of Cores	4
# of Threads	8
Processor Base Frequency	4 GHz
Max Turbo Frequency	4.2 GHz
TDP	91 W

Memory Specifications

Max Memory Size (dependent on memory type)	64 GB
Memory Types	DDR4-1866/2133, DDR3L-1333/1600 @ 1.35V
Max # of Memory Channels	2
Max Memory Bandwidth	34.1 GB/s
ECC Memory Supported ‡	No

Graphics Specifications

Processor Graphics ‡	Intel® HD Graphics 530
Graphics Base Frequency	350 MHz
Graphics Max Dynamic Frequency	1.15 GHz
Graphics Video Max Memory	1.7 GB
Graphics Output	eDP/DP/HDMI/DVI
4K Support	Yes, at 60Hz
Max Resolution (Intel® WiDi)‡	1080p
Max Resolution (HDMI 1.4)‡	4096x2304@24Hz
Max Resolution (DP)‡	4096x2304@60Hz
Max Resolution (eDP - Integrated Flat Panel)‡	4096x2304@60Hz
Max Resolution (VGA)‡	N/A
DirectX* Support	12
OpenGL* Support	4.4
Intel® Quick Sync Video	Yes
Intel® InTru™ 3D Technology	Yes

Intel® Insider™	Yes
Intel® Wireless Display	Yes
Intel® Clear Video HD Technology	Yes
Intel® Clear Video Technology	Yes
# of Displays Supported ‡	3
Device ID	0x1912

– Expansion Options

PCI Express Revision	3.0
PCI Express Configurations ‡	Up to 1x16, 2x8, 1x8+2x4
Max # of PCI Express Lanes	16

– Package Specifications

Max CPU Configuration	1
Package Size	37.5mm x 37.5mm
Graphics and IMC Lithography	14 nm
Sockets Supported	FCLGA1151
Low Halogen Options Available	See MDDS

– Advanced Technologies

Intel® Turbo Boost Technology ‡	2.0
Intel® vPro Technology ‡	No
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
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Thermal Monitoring Technologies	Yes
Intel® Identity Protection Technology ‡	Yes
Intel® Stable Image Platform Program (SIPP)	No
Intel® Small Business Advantage	Yes

– Intel® Data Protection Technology

Intel® AES New Instructions	Yes
Secure Key	Yes

– Intel® Platform Protection Technology

OS Guard	Yes
Trusted Execution Technology ‡	No
Execute Disable Bit ‡	Yes

Compatible Products

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– Chipsets

Compare Compare All +	Product Name	Status	Embedded Options Available	TDP	Recommended Customer Price
	Intel® H170 Chipset (Intel® GL82H170 PCH)	Announced	No	6 W	N/A
		Announced	Yes	6 W	N/A

Compare Compare All +	Product Name	Status	Embedded Options Available	TDP	Recommended Customer Price
	Intel® H110 Chipset (Intel® GL82H110 PCH)				
	Intel® Z170 Chipset (Intel® GL82Z170 PCH)	Launched	No	6 W	T&R : $47.00
	Intel® Q170 Chipset (Intel® GL82Q170 PCH)	Announced	Yes	6 W	N/A
	Intel® Q150 Chipset (Intel® GL82Q150 PCH)	Announced	No	6 W	N/A
	Intel® B150 Chipset (Intel® GL82B150 PCH)	Announced	No	6 W	N/A

Ordering and Spec Information

Trade Compliance Information

ECCN	CCATS
5A992C	G077159

Ordering and Spec Information

Spec Code	Ordering Code	Step	US HTS	RCP
Boxed Intel® Core™ i7-6700K Processor (8M Cache, up to 4.20 GHz) FC-LGA14C				
SR2BR	BX80662I76700K	R0	8542310000	$350.00
Intel® Core™ i7-6700K Processor (8M Cache, up to 4.20 GHz) FC-LGA14C, Tray				
SR2BR	CM8066201919901	R0	8542310000-HYBRD	$339.00

Download Drivers

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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.

"Conflict free" and "conflict-free" means "DRC conflict free", which is defined by the U.S. Securities and Exchange Commission rules to mean products that do not contain conflict minerals (tin, tantalum, tungsten and/or gold) that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries. Intel also uses the term "conflict-free" in a broader sense to refer to suppliers, supply chains, smelters and refiners whose sources of conflict minerals do not finance conflict in the DRC or adjoining countries. Intel processors manufactured before January 1, 2013 are not confirmed conflict free. The conflict free designation refers only to product manufactured after that date. For Intel Boxed Processors, the conflict free designation refers to the processor only, not to any additional included accessories, such as heatsinks/coolers.

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.

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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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