



Intel® Core™ i7-6800K Processor

15M Cache, up to 3.60 GHz

Specifications

[Export specifications](#)

Essentials

Product Collection	Intel® Core™ X-series Processors
Code Name	Products formerly Broadwell E
Vertical Segment	Desktop
Processor Number	i7-6800K
Status	Launched
Launch Date	Q2'16
Lithography	14 nm
Recommended Customer Price	\$434.00 - \$441.00

Performance

# of Cores	6
# of Threads	12
Processor Base Frequency	3.40 GHz
Max Turbo Frequency	3.60 GHz
Cache	15 MB
Intel® Turbo Boost Max Technology 3.0 Frequency ‡	3.80 GHz
TDP	140 W

Supplemental Information

Embedded Options Available	No
Conflict Free	Yes
Datasheet	View now
Product Brief	View now

Memory Specifications

Max Memory Size (dependent on memory type)	128 GB
Memory Types	DDR4 2400/2133
Max # of Memory Channels	4
ECC Memory Supported ‡	No

Graphics Specifications

Processor Graphics †	None
----------------------	------

Expansion Options

Scalability	1S Only
PCI Express Revision	3.0
Max # of PCI Express Lanes	28

Package Specifications

Sockets Supported	FCLGA2011-3
Max CPU Configuration	1
Low Halogen Options Available	See MDDS

Advanced Technologies

Intel® Turbo Boost Max Technology 3.0 ‡	Yes
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® 64 †	Yes
Instruction Set	64-bit
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Intel® Smart Response Technology	Yes

Security & Reliability

Intel® AES New Instructions	Yes
-----------------------------	-----

Intel® Trusted Execution Technology ‡	No
Execute Disable Bit ‡	Yes

Compatible Products

Ordering and Compliance

Downloads and Software

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

Intel classifications are for informational purposes only and consist of Export Control Classification Numbers (ECCN) and Harmonized Tariff Schedule (HTS) numbers. Any use made of Intel classifications are without recourse to Intel and shall not be construed as a representation or warranty regarding the proper ECCN or HTS. Your company as an importer and/or exporter is responsible for determining the correct classification of your transaction.

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.

The Recommended Customer Price ("RCP") is pricing guidance for Intel products. Prices are for direct Intel customers, typically represent 1,000-unit 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.