



# Intel® Core™ i7-10810U Processor

12M Cache, up to 4.90 GHz

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## Essentials Export specifications

Product Collection	10th Generation Intel® Core™ i7 Processors
Code Name	Products formerly Comet Lake
Vertical Segment	Mobile
Processor Number <sup>?</sup>	i7-10810U
Status	Launched
Launch Date <sup>?</sup>	Q2'20
Lithography <sup>?</sup>	14 nm

### CPU Specifications

# of Cores <sup>?</sup>	6
# of Threads <sup>?</sup>	12
Processor Base Frequency <sup>?</sup>	1.10 GHz
Max Turbo Frequency <sup>?</sup>	4.90 GHz
Cache <sup>?</sup>	12 MB Intel® Smart Cache
Bus Speed <sup>?</sup>	4 GT/s
TDP <sup>?</sup>	15 W
Configurable TDP-up Frequency <sup>?</sup>	1.60 GHz
Configurable TDP-up <sup>?</sup>	25 W
Configurable TDP-down Frequency <sup>?</sup>	800 MHz
Configurable TDP-down <sup>?</sup>	12.5 W

### Supplemental Information

Embedded Options Available <sup>?</sup>	No
Description	Refer to datasheet for details on TDP spec and LPDDR support differences.
Datasheet	<a href="#">View now</a>

### Memory Specifications

Max Memory Size (dependent on memory type) <sup>?</sup>	64 GB
Memory Types <sup>?</sup>	DDR4-2666, LPDDR3-2133, LPDDR4-2933
Max # of Memory Channels <sup>?</sup>	2
Max Memory Bandwidth <sup>?</sup>	45.8 GB/s
ECC Memory Supported† <sup>?</sup>	No

### Processor Graphics

Processor Graphics † <sup>?</sup>	Intel® UHD Graphics for 10th Gen Intel® Processors
Graphics Base Frequency <sup>?</sup>	300 MHz
Graphics Max Dynamic Frequency <sup>?</sup>	1.15 GHz
Graphics Video Max Memory <sup>?</sup>	32 GB
Graphics Output <sup>?</sup>	eDP/DP/HDMI/DVI
Execution Units <sup>?</sup>	24
4K Support <sup>?</sup>	Yes, at 60Hz
Max Resolution (HDMI)‡ <sup>?</sup>	4096 x 2304@24Hz
Max Resolution (DP)‡ <sup>?</sup>	4096 x 2304@60Hz
Max Resolution (eDP - Integrated Flat Panel)‡ <sup>?</sup>	4096 x 2304@60Hz
DirectX® Support <sup>?</sup>	12
OpenGL® Support <sup>?</sup>	4.5
Intel® Quick Sync Video <sup>?</sup>	Yes
Intel® Clear Video HD Technology <sup>?</sup>	Yes
Intel® Clear Video Technology <sup>?</sup>	Yes
# of Displays Supported†	3
Device ID	0x9BCA,0x9BCC

### Expansion Options

PCI Express Revision <sup>?</sup>	3.0
PCI Express Configurations † <sup>?</sup>	1x4, 2x2, 1x2+2x1 and 4x1
Max # of PCI Express Lanes <sup>?</sup>	16

### Package Specifications

Sockets Supported <sup>?</sup>	FCBGA1528
Max CPU Configuration	1
T <sub>JUNCTION</sub> <sup>?</sup>	100°C
Package Size	46mm x 24mm

### Advanced Technologies

Intel® Optane™ Memory Supported† <sup>?</sup>	Yes
Intel® Speed Shift Technology <sup>?</sup>	Yes
Intel® Thermal Velocity Boost <sup>?</sup>	Yes
Intel® Turbo Boost Technology † <sup>?</sup>	2.0
Intel vPro® Platform Eligibility† <sup>?</sup>	Yes
Intel® Hyper-Threading Technology † <sup>?</sup>	Yes
Intel® Virtualization Technology (VT-x) † <sup>?</sup>	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) † <sup>?</sup>	Yes
Intel® VT-x with Extended Page Tables (EPT) † <sup>?</sup>	Yes
Intel® Transactional Synchronization Extensions <sup>?</sup>	No
Intel® 64 † <sup>?</sup>	Yes
Instruction Set <sup>?</sup>	64-bit
Instruction Set Extensions <sup>?</sup>	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2
Intel® My WiFi Technology <sup>?</sup>	Yes
Idle States <sup>?</sup>	Yes
Enhanced Intel SpeedStep® Technology <sup>?</sup>	Yes
Thermal Monitoring Technologies <sup>?</sup>	Yes
Intel® Flex Memory Access <sup>?</sup>	Yes
Intel® Identity Protection Technology † <sup>?</sup>	Yes
Intel® Stable Image Platform Program (SIPP) <sup>?</sup>	Yes

### Security & Reliability

Intel® AES New Instructions <sup>?</sup>	Yes
Secure Key <sup>?</sup>	Yes
Intel® Software Guard Extensions (Intel® SGX) <sup>?</sup>	Yes with Intel® ME
Intel® Memory Protection Extensions (Intel® MPX) <sup>?</sup>	Yes
Intel® OS Guard	Yes
Intel® Trusted Execution Technology † <sup>?</sup>	Yes
Intel® Boot Guard <sup>?</sup>	Yes

### Ordering and spec information

#### Intel® Core™ i7-10810U Processor (12M Cache, up to 4.90 GHz) FC-BGA14F, Tray

MM#	999LH2
Spec Code	SRGP1
Ordering Code	FJ8070104276809
Shipping Media	TRAY <sup>?</sup>
Stepping	A0

#### Intel® Core™ i7-10810U Processor (12M Cache, up to 4.90 GHz) FC-BGA14F, Tray

MM#	999X7L
Spec Code	SRJ7Q
Ordering Code	FJ8070104499800
Shipping Media	TRAY <sup>?</sup>
Stepping	K1

### Trade compliance information

ECCN	5A992CN3
CCATS	G158870
US HTS	8542310001

### PCN/MDDS Information

<b>SRJ7Q</b>	
999X7L	<b>MDDS</b>

### More support options for Intel® Core™ i7-10810U Processor (12M Cache, up to 4.90 GHz)

- [Product Support](#)
- [Downloads and Software](#)
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Refer to Datasheet for formal definitions of product properties and features.

† 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 Intel 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.

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/](http://www.intel.com/technology/turboboost/) for more information.

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

\*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.

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.

Check <http://ipt.intel.com/> for systems that support Intel® Identity Protection Technology (Intel® IPT).

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

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.