



Intel® Core™ i7-10510U Processor

8M Cache, up to 4.90 GHz

- Product Collection [10th Generation Intel® Core™ i7 Processors](#)
- Code Name [Products formerly Comet Lake](#)
- Vertical Segment [Mobile](#)
- Processor Number [i7-10510U](#)
- Status [Launched](#)
- Launch Date [Q3'19](#)
- Lithography [14 nm](#)
- Recommended Customer Price [\\$409.00](#)

CPU Specifications

- Total Cores [4](#)
- Total Threads [8](#)
- Max Turbo Frequency [4.90 GHz](#)
- Processor Base Frequency [1.80 GHz](#)
- Cache [8 MB Intel® Smart Cache](#)
- Bus Speed [4 GT/s](#)
- TDP [15 W](#)
- Configurable TDP-up Base Frequency [2.30 GHz](#)
- Configurable TDP-up [25 W](#)
- Configurable TDP-down Base Frequency [800 MHz](#)
- Configurable TDP-down [10 W](#)

Supplemental Information

- Embedded Options Available [No](#)
- Description [Refer to datasheet for details on TDP spec and LPDDR support differences.](#)
- Datasheet [View now](#)

Memory Specifications

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

Processor Graphics

- Processor Graphics †Intel® UHD Graphics for 10th Gen Intel® Processors
- Graphics Base Frequency300 MHz
- Graphics Max Dynamic Frequency1.15 GHz
- Graphics Video Max Memory32 GB
- Graphics OutputeDP/DP/HDMI/DVI
- Execution Units24
- 4K SupportYes, at 60Hz
- Max Resolution (HDMI)‡4096 x 2304@24Hz
- Max Resolution (DP)‡4096 x 2304@60Hz
- Max Resolution (eDP - Integrated Flat Panel)‡4096 x 2304@60Hz
- DirectX* Support12
- OpenGL* Support4.5
- Intel® Quick Sync VideoYes
- Intel® Clear Video HD TechnologyYes
- Intel® Clear Video TechnologyYes
- # of Displays Supported †3
- Device ID0x9B41/0x9BCC

Expansion Options

- PCI Express Revision3.0
- PCI Express Configurations †1x4, 2x2, 1x2+2x1 and 4x1
- Max # of PCI Express Lanes16

Package Specifications

- Sockets SupportedFCBGA1528
- Max CPU Configuration1
- T_{JUNCTION}100°C
- Package Size46mm x 24mm

Advanced Technologies

- Intel® Optane™ Memory Supported †Yes
- Intel® Speed Shift TechnologyYes
- Intel® Thermal Velocity BoostYes
- Intel® Turbo Boost Technology †2.0
- Intel® Hyper-Threading Technology †Yes
- Intel® Transactional Synchronization ExtensionsNo
- Intel® 64 †Yes
- Instruction Set64-bit
- Instruction Set ExtensionsIntel® SSE4.1, Intel® SSE4.2, Intel® AVX2
- Intel® My WiFi TechnologyYes
- Idle StatesYes
- Enhanced Intel SpeedStep® TechnologyYes
- Thermal Monitoring TechnologiesYes
- Intel® Flex Memory AccessYes
- Intel® Identity Protection Technology †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 **†No**
 - Execute Disable Bit **†Yes**
 - Intel® Boot Guard **Yes**
 - Intel® Stable IT Platform Program (SIPP) **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**
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