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**Code**: **Vendor code**: **EAN code**:

Intel Core i5-9500F Processor (9MB Cache, up to 4.4 GHz) includes Intel Optane Memory

**Intel® Turbo Boost Technology**

Intel® Turbo Boost Technology dynamically increases the processor's frequency as needed by taking advantage of thermal and power headroom to give you a burst of speed when you need it, and increased energy efficiency when you don’t.

**Intel® Virtualization Technology (VT-x)**

Intel® Virtualization Technology (VT-x) allows one hardware platform to function as multiple “virtual” platforms. It offers improved manageability by limiting downtime and maintaining productivity by isolating computing activities into separate partitions.

**Intel® Virtualization Technology for Directed I/O (VT-d)**

Intel® Virtualization Technology for Directed I/O (VT-d) continues from the existing support for IA-32 (VT-x) and Itanium® processor (VT-i) virtualization adding new support for I/O-device virtualization. Intel VT-d can help end users improve security and reliability of the systems and also improve performance of I/O devices in virtualized environments.

**Intel® VT-x with Extended Page Tables (EPT)**

Intel® VT-x with Extended Page Tables (EPT), also known as Second Level Address Translation (SLAT), provides acceleration for memory intensive virtualized applications. Extended Page Tables in Intel® Virtualization Technology platforms reduces the memory and power overhead costs and increases battery life through hardware optimization of page table management.

**Intel® TSX-NI**

Intel® Transactional Synchronization Extensions New Instructions (Intel® TSX-NI) are a set of instructions focused

on multi-threaded performance scaling. This technology helps make parallel operations more efficient via improved control of locks in software.

**Intel® 64**

Intel® 64 architecture delivers 64-bit computing on server, workstation, desktop and mobile platforms when combined with supporting software.[1] Intel 64 architecture improves performance by allowing systems to address more than 4 GB of both virtual and physical memory.

**Instruction Set**

An instruction set refers to the basic set of commands and instructions that a microprocessor understands and can carry out. The value shown represents which Intel's instruction set this processor is compatible with.

**Instruction Set Extensions**

Instruction Set Extensions are additional instructions which can increase performance when the same operations are performed on multiple data objects. These can include SSE (Streaming SIMD Extensions) and AVX (Advanced Vector Extensions).

**Idle States**

Idle States (C-states) are used to save power when the processor is idle. C0 is the operational state, meaning that the CPU is doing useful work. C1 is the first idle state, C2 the second, and so on, where more power saving actions are taken for numerically higher C-states.

**Enhanced Intel SpeedStep® Technology**

Enhanced Intel SpeedStep® Technology is an advanced means of enabling high performance while meeting the power-conservation needs of mobile systems. Conventional Intel SpeedStep® Technology switches both voltage and frequency in tandem between high and low levels in response to processor load. Enhanced Intel SpeedStep® Technology builds upon that architecture using design strategies such as Separation between Voltage and Frequency Changes, and Clock Partitioning and Recovery.

**Thermal Monitoring Technologies**

Thermal Monitoring Technologies protect the processor package and the system from thermal failure through several thermal management features. An on-die Digital Thermal Sensor (DTS) detects the core's temperature, and the thermal management features reduce package power consumption and thereby temperature when required in order to remain within normal operating limits.

**Intel® Identity Protection Technology**

Intel® Identity Protection Technology is a built-in security token technology that helps provide a simple, tamper-resistant method for protecting access to your online customer and business data from threats and fraud. Intel® IPT provides a hardware-based proof of a unique user's PC to websites, financial institutions, and network services; providing verification that it is not malware attempting to login. Intel® IPT can be a key component in two-factor authentication solutions to protect your information at websites and business log-ins.

## Eisen aan de omgeving

| | |
|---|---|
| Tjunction | 100 °C |

## Energie

| | |
|---|---|
| Thermal Design Power (TDP) | 65 W |

## Geheugen

| | |
|---|---|
| ECC | Nee |
| Geheugen kanaal | Dual |
| Geheugentypen ondersteund door processor | DDR4-SDRAM |
| Klokgeheugen-snelheden ondersteund door processor | 2666 MHz |
| Maximaal intern geheugen ondersteund door processor | 128 GB |

## Gewicht en omvang

| | |
|---|---|
| Verpakkingsgrootte processor | 37.5 x 37.5 mm |

## Grafisch

| | |
|---|---|
| Aparte grafische adapter | Nee |
| Discreet grafische adapter model | Niet beschikbaar |
| Discreet grafische adapter model | Niet beschikbaar |
| Ingebouwde grafische adapter | Nee |

## Kenmerken

| | |
|---|---|
| Code geharmoniseerd systeem (HS) | 8542310001 |
| CPU configuratie (max) | 1 |
| Execute Disable Bit | Ja |
| Idle States | Ja |
| Ingebouwde opties beschikbaar | Nee |
| Intel® Optane™-geheugenmodule inbegrepen | Ja |
| Maximaal aantal PCI Express-lijnen | 16 |
| Ondersteunde instructie sets | AVX 2.0,SSE4.1,SSE4.2 |
| PCI Express CEM revisie | 3.0 |
| PCI Express configuraties | 1x8+2x4,1x16,2x8 |
| PCI Express slots versie | 3.0 |
| Schaalbaarheid | 1S |
| Thermal Monitoring Technologies | Ja |
| Thermal solution specificatie | PCG 2015C |

## Processor

| | |
|---|---|
| Aantal processorkernen | 6 |
| ARK ID processor | 190890 |
| Box | Ja |
| Component voor | PC |
| Frequentie van processor | 3 GHz |

| | |
|---|---|
| Geheugenbandbreedte ondersteund door de processor ( max) | 41,6 GB/s |
| Generatie | 9th Generation |
| Inclusief koeler | Ja |
| Maximale turbofrequentie van processor | 4,4 GHz |
| Processor aantal threads | 6 |
| Processor cache | 9 MB |
| Processor cache type | Smart Cache |
| Processor lithografie | 14 nm |
| Processor operating modes | 64-bit |
| Processor socket | LGA 1151 (Socket H4) |
| Processorfamilie | Intel® 9ste generatie Core™ i5 |
| Processormodel | i5-9500F |
| Processorserie | 9th Generation Intel Core i5 Processors |
| Systeembus | 8 GT/s |

## Processor speciale functies

| | |
|---|---|
| Enhanced Intel SpeedStep Technology | Ja |
| Intel® 64 | Ja |
| Intel® AES New Instructions (Intel® AES-NI) | Ja |
| Intel® Boot Guard | Ja |
| Intel® Hyper Threading Technology (Intel® HT Technology) | Nee |
| Intel® Identity Protection Technology (Intel® IPT) | Ja |
| Intel® Memory Protection Extensions (Intel® MPX) | Ja |
| Intel® Optane™ Memory Ready | Ja |
| Intel® OS Guard | Ja |
| Intel® Secure Key | Ja |
| Intel® Software Guard Extensions (Intel® SGX) | Ja |
| Intel® Stable Image Platform Program (SIPP) | Nee |
| Intel® Trusted Execution Technology | Nee |
| Intel® TSX-NI | Ja |
| Intel® Turbo Boost Technology | 2.0 |
| Intel® Virtualization Technology (VT-x) | Ja |
| Intel® Virtualization Technology for Directed I/O (VT-d) | Ja |
| Intel® vPro™ Platform Eligibility | Nee |
| Intel® VT-x with Extended Page Tables (EPT) | Ja |

## Technische details

| | |
|---|---|
| Bussnelheid | 8 GT/s |
| Lanceringsdatum | Q2'19 |
| Maximaal geheugen | 128 GB |
| Producttype | Processor |
| Status | Launched |