Intel Core i9-13900 processor 36 MB Smart Cache

Brand : Intel

Product family: Core

Product code:
CM8071504820605

Product name : i9-13900

Intel® Core™ i9-13900 Processor (36M Cache, up to 5.60 GHz)
Intel Core i9-13900. Processor family: Intel® Core™ i9, Processor socket: LGA 1700, Processor manufacturer: Intel. Memory channels: Dual-channel, Maximum internal memory supported by processor: 192 GB, Memory types supported by processor: DDR4-SDRAM, DDR5-SDRAM. On-board graphics card model: Intel UHD Graphics 770, On-board graphics card outputs supported: Embedded DisplayPort (eDP) 1.4b, DisplayPort 1.4a, HDMI 2.1, On-board graphics card base frequency: 300 MHz. Market segment: Desktop, Use conditions: PC/Client/Tablet, Workstation, PCI Express slots version: 5.0, 4.0. Intel® Turbo Boost Max Technology 3.0 frequency: 5.5 GHz, Intel® Thermal Velocity Boost Frequency: 5.6 GHz

Processor

Processor manufacturer *	Intel
Processor generation	13th gen Intel® Core™ i9
Processor model *	i9-13900
Processor family *	Intel® Core™ i9
Processor cores *	24
Processor socket *	LGA 1700
Processor threads	32
Processor operating modes *	64-bit
Performance cores	8
Efficient cores	16
Processor boost frequency	5.6 GHz
Performance-core boost frequency	5.2 GHz
Performance-core base frequency	2 GHz
Efficient-core boost frequency	4.2 GHz
Efficient-core base frequency	1.5 GHz
Processor cache	36 MB
Processor cache type	Smart Cache
Box *	✘
Processor base power	65 W
Maximum turbo power	219 W
Bus type	DMI4
Maximum number of DMI lanes	8
Memory bandwidth supported by processor (max)	89.6 GB/s
Processor codename	Raptor Lake
Processor ARK ID	230499

Memory

Maximum internal memory supported by processor	192 GB
Memory types supported by processor	DDR4-SDRAM, DDR5-SDRAM
Memory channels *	Dual-channel
ECC	✔
Memory bandwidth (max)	89.6 GB/s

Graphics

On-board graphics card *	✔
Discrete graphics card *	✘
On-board graphics card model *	Intel UHD Graphics 770
On-board graphics card outputs supported	Embedded DisplayPort (eDP) 1.4b, DisplayPort 1.4a, HDMI 2.1

Features

Commodity Classification Automated Tracking System (CCATS)	740.17B1

Processor special features

Intel® Hyper Threading Technology (Intel® HT Technology)	✔
Intel® Turbo Boost Technology	2.0
Intel® Quick Sync Video Technology	✔
Intel® Clear Video HD Technology (Intel® CVT HD)	✔
Intel® AES New Instructions (Intel® AES-NI)	✔
Enhanced Intel SpeedStep Technology	✔
Intel Trusted Execution Technology	✔
Intel® Speed Shift Technology	✔
Intel® Thermal Velocity Boost	✔
Intel® Adaptive Boost Technology	✔
Intel® Turbo Boost Max Technology 3.0 frequency	5.5 GHz
Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0	✔
Intel® Thermal Velocity Boost Frequency	5.6 GHz
Intel® Control-flow Enforcement Technology (CET)	✔
Intel® Thread Director	✔
Intel VT-x with Extended Page Tables (EPT)	✔
Intel® Secure Key	✔
Intel® Active Management Technology (Intel® AMT)	✔
Intel Stable Image Platform Program (SIPP)	✔
Intel® OS Guard	✔
Intel 64	✔
Intel Virtualization Technology (VT-x)	✔
Intel Virtualization Technology for Directed I/O (VT-d)	✔
Intel Turbo Boost Max Technology 3.0	✔
Intel® Boot Guard	✔

Graphics

On-board graphics card base frequency	300 MHz
On-board graphics card dynamic frequency (max)	1650 MHz
Number of displays supported (on-board graphics)	4
On-board graphics card DirectX version	12.0
On-board graphics card OpenGL version	4.5
On-board graphics card maximum resolution (DisplayPort)	7680 x 4320 pixels
On-board graphics card maximum resolution (eDP - Integrated Flat Panel)	5120 x 3200 pixels
On-board graphics card maximum resolution (HDMI)	4096 x 2160 pixels
On-board graphics card refresh rate at maximum resolution (DisplayPort)	60 Hz
On-board graphics card refresh rate at maximum resolution (eDP - Integrated Flat Panel)	120 Hz
On-board graphics card refresh rate at maximum resolution (HDMI)	60 Hz
On-board graphics card ID	0xA780
Discrete graphics card model *	Not available
Number of execution units	32
Multi-Format Codec Engines	2

Features

Execute Disable Bit	✔
Idle States	✔
Thermal Monitoring Technologies	✔
Market segment	Desktop
Use conditions	PC/Client/Tablet, Workstation
Maximum number of PCI Express lanes	20
PCI Express slots version	5.0, 4.0
PCI Express configurations	1x16+1x4, 2x8+1x4
Supported instruction sets	SSE4.1, SSE4.2, AVX 2.0
Scalability	1S
CPU configuration (max)	1
Embedded options available	✔
Direct Media Interface (DMI) Revision	4.0
Export Control Classification Number (ECCN)	5A992C

Processor special features

Intel® Deep Learning Boost (Intel® DL Boost)	✔
Intel® Volume Management Device (VMD)	✔
Mode-based Execute Control (MBE)	✔
Intel® vPro™ Platform Eligibility	✔
Intel® Standard Manageability (ISM)	✔
Intel® One-Click Recovery	✔
Intel® Remote Platform Erase (RPE)	✔
Intel® Virtualization Technology with Redirect Protection (VT-rp)	✔
Intel vPro® Enterprise Platform Eligibility	✔
Intel® Threat Detection Technology (TDT)	✔
Intel® Hardware Shield Eligibility	✔
Intel® Total Memory Encryption - Multi Key	✔
Intel vPro® Essentials Platform Eligibility	✔

Operational conditions

Tjunction	100 °C

Technical details

Target market	Gaming, Content Creation
OpenCL version	3.0
Launch date	Q1'23
Status	Launched

Logistics data

Harmonized System (HS) code	8542310001

Packaging data

Package type	Retail box

Weight & dimensions

Processor package size	45 x 37.5 mm

Other features

L2 cache	32768 KB
Maximum internal memory	192 GB
Graphics output	eDP 1.4b, DP 1.4a, HDMI 2.1

8592978422387