

INTEL Core i7-12700F box



DESCRIPTION

Intel® Deep Learning Boost (Intel® DL Boost)

A new set of embedded processor technologies designed to accelerate AI deep learning use cases. It extends Intel AVX-512 with a new Vector Neural Network Instruction (VNNI) that significantly increases deep learning inference performance over previous generations.

Intel® Optane Memory Supported

Intel® Optane memory is a revolutionary new class of non-volatile memory that sits in between system memory and storage to accelerate system performance and responsiveness. When combined with the Intel® Rapid Storage Technology Driver, it seamlessly manages multiple tiers of storage while presenting one virtual drive to the OS, ensuring that data frequently used resides on the fastest tier of storage. Intel® Optane memory requires specific hardware and software configuration.

Intel® Speed Shift Technology

Intel® Speed Shift Technology uses hardware-controlled P-states to deliver dramatically quicker responsiveness with single-threaded, transient (short duration) workloads, such as web browsing, by allowing the processor to more quickly select its best operating frequency and voltage for optimal performance and power efficiency.

Intel® Turbo Boost Max Technology 3.0

Intel® Turbo Boost Max Technology 3.0 identifies the best performing core(s) on a processor and provides increased performance on those cores through increasing frequency as needed by taking advantage of power and thermal headroom.

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® Hyper-Threading Technology

Intel® Hyper-Threading Technology (Intel® HT Technology) delivers two processing threads per physical core. Highly threaded applications can get more work done in parallel, completing tasks sooner.

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.

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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® 64

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

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

TECHNICAL CHARACTERISTICS

Brand : INTEL
Part number : BX8071512700F
Caractéristiques spéciales du processeur :
Intel® Turbo Boost Max Technology 3:0 frequency : 4.9 GHz
Intel® Control-flow Enforcement Technology (CET) : Y
Intel® Boot Guard : Y
Intel® Deep Learning Boost (Intel® DL Boost) : Y
Intel® Optane Memory Ready : Y
Intel® Volume Management Device (VMD) : Y
Conditions environnementales :
Tjunction : 100 °C
Box : Y
Bus type : DMI4
Commodity Classification Automated Tracking System (CCATS) : G167599
CPU configuration (max) : 1

Direct Media Interface (DMI) Revision : 4.0
Discrete graphics card : N
Discrete graphics card model : Not available
Efficient cores : 4
Efficient-core base frequency : 1.6 GHz
Efficient-core boost frequency : 3.6 GHz
Embedded options available : N
Enhanced Intel SpeedStep Technology : Y
Execute Disable Bit : Y
Export Control Classification Number (ECCN) : 5A992CN3
Harmonized System (HS) code : 85423119
Idle States : Y
Intel 64 : Y
Intel Turbo Boost Max Technology 3.0 : Y
Intel Virtualization Technology (VT-x) : Y
Intel Virtualization Technology for Directed I/O (VT-d) : Y
Intel VT-x with Extended Page Tables (EPT) : Y
Intel® AES New Instructions (Intel® AES-NI) : Y
Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0 : Y
Intel® Hyper Threading Technology (Intel® HT Technology) : Y
Intel® OS Guard : Y
Intel® Secure Key : Y
Intel® Speed Shift Technology : Y
Intel® Standard Manageability (ISM) : Y
Intel® Thread Director : Y
Intel® Turbo Boost Technology : 2.0
Launch date : Q1'22
Market segment : Desktop
Maximum internal memory : 128 GB
Maximum internal memory supported by processor : 128 GB
Maximum number of DMI lanes : 8
Maximum number of PCI Express lanes : 20
Maximum turbo power : 180 W
Memory bandwidth (max) : 76.8 GB/s
Memory bandwidth supported by processor (max) : 76.8 GB/s
Memory channels : Dual-channel
Memory types supported by processor : DDR4-SDRAM, DDR5-SDRAM
Mode-based Execute Control (MBE) : Y
On-board graphics card : N
On-board graphics card model : Not available
Package type : Retail box
PCI Express configurations : 1x16+1x4, 2x8+1x4
PCI Express slots version : 5.0, 4.0
Performance cores : 8
Performance-core base frequency : 2.1 GHz
Performance-core boost frequency : 4.8 GHz
Processor base power : 65 W
Processor boost frequency : 4.9 GHz
Processor cache : 25 MB
Processor cache type : Smart Cache
Processor codename : Alder Lake
Processor cores : 12
Processor family : Intel® Core i7

Processor generation : 12th gen Intel® Core i7
Processor manufacturer : Intel
Processor model : i7-12700F
Processor operating modes : 64-bit
Processor package size : 45 x 37.5 mm
Processor socket : LGA 1700
Processor threads : 20
Scalability : 1S
Status : Launched
Supported instruction sets : SSE4.1, SSE4.2, AVX 2.0
Target market : Gaming, Content Creation
Thermal Monitoring Technologies : Y
Use conditions : PC/Client/Tablet