

11/2/2023 0:00

Intel® Core™ i7-13700K Processor (30M Cache- up to 5.40 GHz)

Essentials

Product Collection

Code Name

Vertical Segment

Processor Number

Lithography

Recommended Customer Price

Use Conditions

13th Generation Intel® Core™ i7 Processors

Products formerly Raptor Lake

Desktop

i7-13700K

Intel 7

\$409.00-\$419.00

PC/Client/Tablet | Workstation

CPU Specifications

Total Cores

16

of Performance-cores

8

of Efficient-cores

8

Total Threads

24

Max Turbo Frequency

5.40 GHz

Intel® Turbo Boost Max Technology 3.0 Frequency ‡

5.40 GHz

Performance-core Max Turbo Frequency

5.30 GHz

Efficient-core Max Turbo Frequency

4.20 GHz

Performance-core Base Frequency

3.40 GHz

Efficient-core Base Frequency

2.50 GHz

Cache

30 MB Intel® Smart Cache

Total L2 Cache

24 MB

Processor Base Power

125 W

Maximum Turbo Power

253 W

Supplemental Information

Marketing Status

Launched

Launch Date

Q4'22

Embedded Options Available

No

Datasheet

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Memory Specifications

Max Memory Size (dependent on memory type)	192 GB
Memory Types	Up to DDR5 5600 MT/s Up to DDR4 3200 MT/s
Max # of Memory Channels	2
Max Memory Bandwidth	89.6 GB/s
ECC Memory Supported ‡	Yes

GPU Specifications

Processor Graphics ‡	Intel® UHD Graphics 770
Graphics Base Frequency	300 MHz
Graphics Max Dynamic Frequency	1.60 GHz
Graphics Output	eDP 1.4b DP 1.4a HDMI 2.1
Execution Units	32
Max Resolution (HDMI)‡	4096 x 2160 @ 60Hz
Max Resolution (DP)‡	7680 x 4320 @ 60Hz
Max Resolution (eDP - Integrated Flat Panel)‡	5120 x 3200 @ 120Hz
DirectX* Support	12
OpenGL* Support	4.5
OpenCL* Support	3
Multi-Format Codec Engines	2
Intel® Quick Sync Video	Yes
Intel® Clear Video HD Technology	Yes
# of Displays Supported ‡	4
Device ID	0xA780

Expansion Options

Direct Media Interface (DMI) Revision	4
Max # of DMI Lanes	8
Scalability	1S Only
PCI Express Revision	5.0 and 4.0
PCI Express Configurations ‡	Up to 1x16+4 2x8+4
Max # of PCI Express Lanes	20

Package Specifications

Sockets Supported	FCLGA1700
Max CPU Configuration	1
Thermal Solution Specification	PCG 2020A
TJUNCTION	100°C
Package Size	45.0 mm x 37.5 mm

Advanced Technologies

Intel® Gaussian & Neural Accelerator	3
Intel® Thread Director	Yes
Intel® Deep Learning Boost (Intel® DL Boost) on CPU	Yes
Intel® Speed Shift Technology	Yes
Intel® Turbo Boost Max Technology 3.0 ‡	Yes
Intel® Turbo Boost Technology ‡	2
Intel® Hyper-Threading Technology ‡	Yes
Intel® 64 ‡	Yes
Instruction Set	64-bit
Instruction Set Extensions	Intel® SSE4.1 Intel® SSE4.2 Intel® AVX2
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Thermal Monitoring Technologies	Yes
Intel® Volume Management Device (VMD)	Yes

Security & Reliability

Intel vPro® Eligibility ‡	Intel vPro® Enterprise Intel vPro® Essentials Intel vPro® Platform
Intel® Threat Detection Technology (TDT)	Yes
Intel® Active Management Technology (AMT) ‡	Yes
Intel® Standard Manageability (ISM) ‡	Yes
Intel® Remote Platform Erase (RPE) ‡	Yes
Intel® One-Click Recovery ‡	Yes
Intel® Hardware Shield Eligibility ‡	Yes
Intel® Control-Flow Enforcement Technology	Yes
Intel® Total Memory Encryption - Multi Key	Yes
Intel® AES New Instructions	Yes

Secure Key	Yes
Intel® OS Guard	Yes
Intel® Trusted Execution Technology ‡	Yes
Execute Disable Bit ‡	Yes
Intel® Boot Guard	Yes
Mode-based Execute Control (MBEC)	Yes
Intel® Stable IT Platform Program (SIPP)	Yes
Intel® Virtualization Technology with Redirect Protection (VT-rp) ‡	Yes
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

