

## Intel Core i9-14900K processor 36 MB Smart Cache

Brand: Intel Product family: Core Product code: CM8071505094017

Product name: i9-14900K

Intel® Core ™ i9 processor 14900K (36M Cache, up to 6.00 GHz) FC-LGA16A, Tray
Intel Core i9-14900K. 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: Workstation, PC/Client/Tablet, PCI Express slots version: 4.0,
5.0. Intel® Turbo Boost Max Technology 3.0 frequency: 5.8 GHz, Intel® Thermal Velocity Boost
Frequency: 6 GHz





Processor manufacturer*   Intel   Maximum number of PCI Express lanes   Processor generation   Intel Core i9-14xxx   Processor generation   Intel Core i9-14xxx   Processor family*   Intel® Core "i9   PCI Express configurations   x16+1x4, 2x8+1x4   PCI Express or family*   Intel® Core "i9   PCI Express configuration   x16+1x4, 2x8+1x4   PCI Express family*   Intel® Core "i9   PCI Express configuration   x16+1x4, 2x8+1x4   PCI Express family*   Intel® Core "i9   PCI Express configuration   PCG 2020   X16+1x4, 2x8+1x4   PCF   PCCESSOR family*   Intel® Core "i9   PCI Express configuration   PCG 2020   PCI Express family*   Intel® Core "i9   PCI Express configuration   PCG 2020   PCI Express family*   Intel® Core "i9   PCI Express configuration   PCG 2020   PCI Express family*   Intel® Core "i9   PCCESSOR				
Processor generation   Intel Core i9-14xxx   Janes   J	Processor		Features	
Processor model*   9-14900K   PCI Express slots version   4.0,5.0     Processor model*   9-14900K   PCI Express softs version   1.16-1.14, 2.84-1.14     Processor scores*   24   Supported instruction sets   AVX 2.0, SSE4.1, SSE4.2     Processor socket*   LGA 1700   Scalability   15     Processor socket*   LGA 1700   Scalability   16     Processor socket*   LGA 1700   Scalability   15     Processor socket*   LGA 1700   Scalability   LGA 1700     Processor boost frequency   6 GHz   Embedded options available   X     Processor boost frequency   6 GHz   Embedded options available   X     Processor boost frequency   6 GHz   Embedded options available   X     Processor boost frequency   6 GHz   Embedded options available   X     Processor boost frequency   5 GHz   Embedded options available   X     Processor coche   Processor frequency   2 GHz   Export Control Classification   2 Commodity Clas	Processor manufacturer *	Intel	· .	20
PCI Express configurations 1x16+1x4, 2x8+1x4 Processor family* Intel® Core** j9 Supported Instruction sets AVX 2.0, SSE4.1, SSE4.2 Processor socket * LGA 1700 Scalability 15 Processor socket * LGA 1700 Embedded options available Processor threads 32 CPU configuration (max) 1 Processor threads 32 CPU configuration (max) 1 Processor operating modes * 64-bit Embedded options available PCG 2020A Processor operating modes * 64-bit Embedded options available PCG 2020A Processor operating modes * 66-bit Embedded options available PCG 2020A Processor boost frequency 8 B Thermal solution specification PCG 2020A Processor boost frequency 5.6 GHz Export Control Classification Number (ECCN) Performance-core boost frequency 4.4 GHz Export Control Classification Number (ECCN) Performance-core boost frequency 2.4 GHz Commodity Classification Automated Tracking System 740.17B1 Efficient-core boost frequency 2.4 GHz (CCATS) Processor cache 36 MB Processor special features Processor cache type Smart Cache Intel® Hyper Threading Technology (Intel® Hyper Threading Technology 1 (Intel® Turbo Boost Technology 2.0 (Intel® Turbo Boost Technology 2.0 (Intel® Culck Sync Video Technology 2.0 (Intel® Culck Sync Video Technology 3.0 (Intel® Culck Sync Video Technology 4.0 (Intel® Culck Sync Vid	Processor generation	Intel Core i9-14xxx		40.50
Processor John Marker Code 19 Processor Cores* 24 Processor Cores* 24 Processor Socket* LGA 1700 Scalability 15 Processor threads 32 Processor threads 32 Processor operating modes * 64-bit Embedded options available Refrormance Cores 8 Performance Cores 8 Performance Cores 16 Performance Cores 16 Processor boost frequency 6 Performance-Core boost frequency 5 Performance-Core boost frequency 7 Performance-Core boost frequency 8 Performance-Core boost frequency 9 Processor cache 9 Processor cache 12 Processor Description 12 Processor Description 12 Processor Cache 12 Processor Cache 12 Processor Description 12 Processor Cache 12 Processor Description 12 Processor Codename 15 Processor Codename 16 Processor Codename 16 Processor ARK ID 16 Processor Description 16 Processor Description 16 Processor Description 16 Processor Description 17 Processor Descriptio			·	•
Processor socket * LGA 1700 Scalability 15  Processor operating modes * 64-bit Embedded options available * Reprocessor operating modes * 64-bit Embedded options available * Reprocessor operating modes * 64-bit Embedded options available * Reprocessor operating modes * 64-bit Embedded options available * Reprocessor operating modes * 64-bit Embedded Options available * Reprocessor operating modes * 66-bit Embedded Options available * Reprocessor operating modes * 66-bit Embedded Options available * Reprocessor operating modes *	Processor family *	Intel® Core™ i9	·	
Processor shaked Processor threads 32 CPU configuration (max) 1 Processor paperating modes * 64-bit Embedded options available X Performance cores 8 Thermal solution specification PCG 2020A Processor operating modes * 64-bit Embedded options available X Performance cores 8 Processor shaped frequency 6 GHz Activities Processor boost frequency 5.6 GHz Activities Performance-core base frequency 5.6 GHz Activities Performance-core base frequency 4.4 GHz Commodity (Lassification Number (ECCN) Processor cache 2.4 GHz Commodity (Lassification Automated Tracking System 740.17B1 (CCATS) Processor cache 36 MB Processor special features Processor cache 36 MB Processor special features Processor cache 36 MB Processor special features Processor cache 1ype Smart Cache Intel® Hyper Threading Technology (Intel® HT Technology) Processor cache 253 W Intel® Quick Sync Video Technology 4 Maximum turbo power 253 W Intel® Quick Sync Video Technology 4 Maximum number of DMI lanes 8 Memory bandwidth supported by processor (max) Pr	Processor cores *	24	• •	
Processor operating modes * 64-bit	Processor socket *	LGA 1700	•	
Friction of Cores of Section Operating motors of Cores of Section of Secti		32	=	
Efficient cores  16 Processor boost frequency Performance-core base frequency Performance-core boost frequency Performance-core base frequency Performance-core b	Processor operating modes *	64-bit	'	
Revision 4.0  Revision 4.0  Revision 4.0  Revision 4.0  Revision 4.0  Revision 5A992C  Reformance-core boost frequency 5.6 GHz	Performance cores	8	·	PCG 2020A
Processor boost frequency Performance-core boost frequency Sefficient-core boost frequency Sefficient-core boost frequency Sefficient-core base frequency Sefficient-core sefficient-seffici	Efficient cores	16		4.0
Performance-core bosot frequency Performance-core base frequency Performance-core base frequency 2.4 GHz Commodity Classification Automated Tracking System 740.17B1  Efficient-core base frequency 2.4 GHz At GHz Automated Tracking System 740.17B1  Processor cache 36 MB Processor special features  Processor cache type Smart Cache Intel® Hyper Threading Technology (Intel® HT Technology) (Intel® HT Technology)  Processor base power 125 W Intel® Turbo Boost Technology 2.0  Maximum turbo power 253 W Intel® CUST VIDE Turbo Boost Technology 4  Maximum number of DMI lanes 8 Intel® CLear Video HD Technology (Intel® CVT HD)  Memory bandwidth supported by processor (max) 189.6 GB/s AES-NI) Intel® CECA VIDE Thermal Velocity Boost Perchology 189.6 GB/s AES-NI) Intel® Capta Shift Technology 189.6 GB/s AES-NI Intel® Speed Shift Technology 189.6 GB/s AES-NI Intel® Speed Shift Technology 189.6 GB/s AES-NI Intel® Captasian & Neural 189.6 GB/s AES-NI Intel® Captasian & Neural 189.6 GB/s AES-NI Intel® Gaussian & Neural 189.6 GB/s AES-NI Intel® Gaussian & Neural 189.6 GB/s AES-NI Intel® Control-flow Enforcement 189.6 GB/s AES-NI Intel® Control-flow Enforce	Processor boost frequency	6 GHz		
Efficient-core boost frequency  Efficient-core base frequency  2.4 GHz  Automated Tracking System  740.17B1  740.17B	Performance-core boost frequency	5.6 GHz	•	5A992C
Efficient-core base frequency Processor cache Processor cache Processor cache Processor cache type Smart Cache Smart Cache Intel® Hyper Threading Technology (Intel® HT Technology) Processor base power 125 W Intel® Turbo Boost Technology 2.0 Maximum turbo power Stepping B0 Intel® Quick Sync Video Technology (Intel® CVT HD) Maximum number of DMI lanes Memory bandwidth supported by processor (max) Processor Cache Processor ARK ID Processor ARK ID  Maximum internal memory supported by processor  Memory bandwidth supported by processor  Memory by supported by processor  Memory by supported by processor  Memory by supported by processor  Memory types supported by processor  Memory bandwidth (max)  DDR4-SDRAM, DDR5-SDRAM Memory bandwidth (max)  DDR4-SDRAM, DDR5-SDRAM Memory bandwidth (max)  Dual-channel  Accelerator (Intel® GAA) 3.0  Accelerator (Intel® GAA) 3.0  Accelerator (Intel® GAA) 3.0  Accelerator (Intel® GAA) 3.0  Intel® Thermal Velocity Boost Intel® Thermal Velocity Boost Intel® Thermal Velocity Boost Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0  Accelerator (Intel® GNA) 3.0  Intel® Thermal Velocity Boost Frequency Intel® Control-flow Enforcement Technology (CET)  On-board graphics card *  Non-board graphics card soutputs Supported  Non-board graphics card base	Performance-core base frequency	3.2 GHz	Commodity Classification	
Processor cache Processor cache Processor cache type Box *    Intel® Hyper Threading Technology (Intel® Hyper Threading Technology (Intel® Hyper Threading Technology)   Intel® Charlos Boost Technology (Intel® Hyper Threading Technology (Intel® Hyper Threading Technology (Intel® Threading Technology)   Intel® Charlos Boost Technology (Intel® Charlos Charlos Turbo Boost Technology (Intel® Charlos Charlos Technology (Intel® Charlos Charlos Technology (Intel® Charlos Charlos Technology (Intel® Charlos Charlos Technology (Intel® Speed Shift Technology (Intel® Speed Shift Technology (Intel® Thermal Velocity Boost (Intel® Thermal Velocity Boost (Intel® Thermal Velocity Boost (Intel® Gaussian & Neural Accelerator (Intel® Charlos Gaussian &	Efficient-core boost frequency	4.4 GHz		740.17B1
Processor cache type Box * X	Efficient-core base frequency	2.4 GHz	(CCATS)	
Box *	Processor cache	36 MB	Processor special features	
Processor base power  125 W Intel® Turbo Boost Technology  Intel® Clear Video HD Technology  Intel® Clear Video HD Technology  Intel® Clear Video HD Technology  (Intel® AES New Instructions	Processor cache type	Smart Cache	Intel® Hyper Threading Technology	/
Maximum turbo power 253 W Intel® Quick Sync Video Technology  Stepping B0 Intel® Clear Video HD Technology  Maximum number of DMI lanes 8 Intel® Clear Video HD Technology  Memory bandwidth supported by  Processor (max) 89.6 GB/s Intel® AES New Instructions (Intel® AES New Intel® AES New Instructions (Intel® AES New Intel® AES Nex	Box *	×	(Intel® HT Technology)	*
Stepping B0 Intel® Clear Video HD Technology (Intel® CVT HD)  Maximum number of DMI lanes 8  Memory bandwidth supported by processor (max)  Processor codename Raptor Lake 236773  Processor ARK ID 236773  Memory  Maximum internal memory supported by processor  Maximum internal memory supported by processor  Memory DDR4-SDRAM, DDR5-SDRAM processor  Memory types supported by processor  Memory types supported by processor  Memory channels *  ECC / Intel® Chart (Intel® GNA) 3.0  Memory bandwidth (max)  Memory channels *  Memory bandwidth (max)  Memory bandwidth (max)  Memory bandwidth (max)  Memory bandwidth (max)  Memory channels *  Memory bandwidth (max)  Memory bandwidth (max)  Memory bandwidth (max)  Memory bandwidth (max)  Memory channel  Memory channels *  Memory bandwidth (max)  Memory channels *  Memory channels *  Memory channel  Accelerator (Intel® GNA) 3.0  Metal® Gaussian & Neural  Accelerator (Intel® GNA) 3.0  Metal® Control-flow Enforcement  Technology (CET)  Memory bandwidth (Memory bandwidth (Memor	Processor base power	125 W	Intel® Turbo Boost Technology	2.0
Maximum number of DMI lanes 8 (Intel® CVT HD)  Memory bandwidth supported by processor (max)  Processor codename Raptor Lake Enhanced Intel SpeedStep Technology Processor ARK ID 236773  Memory Intel® AES New Instructions (Intel® AES-NI)  Memory Intel® Speed Shift Technology Intel® Thermal Velocity Boost Intel® Turbo Boost Max Technology Intel® Turbo Boost Max Technology Intel® Turbo Boost Max Technology Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0  Memory bandwidth (max) 89.6 GB/s  Memory bandwidth (ma	Maximum turbo power	253 W	Intel® Quick Sync Video Technology	✓
Memory bandwidth supported by processor (max)  Processor codename Processor ARK ID  Memory  Memory  Memory  Memory  Memory  Maximum internal memory supported by processor  Maximum internal memory supported by processor  Memory types supported by processor  Memory types supported by processor  Memory channels *  ECC  Memory bandwidth (max)	Stepping	В0	9,	✓
Processor (max) Processor (max) Processor codename Processor codename Raptor Lake Processor ARK ID  Memory  Memory  Maximum internal memory supported by processor  Memory types supported by processor  Memory bypes supported by processor  Memory types supported by processor  Memory bypes supported by processor  Memory channels *  Dual-channel  Accelerator (Intel® GAN) 3.0  ECC  Memory bandwidth (max)  89.6 GB/s   Memory bandwidth (max)  89.6 GB/s  Memory bandwidth (max)  89.6 GB/s  Memory bandwidth (max)  Memory bandwidth (max)  89.6 GB/s  Memory bandwidth (max)  Memory bandwidth (ma		8	,	
Processor ARK ID  236773  Technology Intel® Speed Shift Technology Intel® Thermal Velocity Boost  Maximum internal memory supported by processor  Memory types supported by processor  Memory types supported by processor  Memory channels *  ECC  Memory bandwidth (max)  Benefics  Graphics  Graphics  On-board graphics card *  On-board graphics card outputs supported  Data Channel  Technology Intel® Speed Shift Technology Intel® Thermal Velocity Boost Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0  Intel® Thermal Velocity Boost Frequency Intel® Control-flow Enforcement Technology  Intel® Control-flow Enforcement Technology  Intel® Turbo Boost Max Technology 3.0 frequency Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0  Intel® Thermal Velocity Boost Frequency Intel® Control-flow Enforcement Technology (CET)  Intel® Thermal Velocity Boost Intel® Control-flow Enforcement Technology (CET)  Intel® Thermal Velocity Boost Intel® Control-flow Enforcement Technology (CET)  Intel® Thermal Velocity Boost Intel® Control-flow Enforcement Technology (CET)  Intel® Control-flow Enforcement Technology (CET)  Intel® Thermal Velocity Boost Intel® Control-flow Enforcement Technology (CET)  Intel® Control-flow Enforcement Technology (CET)  Intel® Thermal Velocity Boost Thermal Ve		89.6 GB/s	AES-NI)	1
Intel® Speed Shift Technology   Memory   Intel® Speed Shift Technology   Intel® Speed Shift Technology   Maximum internal memory   Supported by processor   192 GB   Intel® Adaptive Boost Technology   Intel® Turbo Boost Max Technology   Supported by processor   DDR4-SDRAM, DDR5-SDRAM   Intel® Gaussian & Neural   Accelerator (Intel® GNA) 3.0   Frequency   Intel® Thermal Velocity Boost   Frequency   Intel® Control-flow Enforcement   Memory bandwidth (max)   89.6 GB/s   Intel® Control-flow Enforcement   Memory Graphics   Intel® Thread Director   Memory Bandwidth (max)   Intel® Thread Director   Memory Graphics card *   Intel UHD Graphics 770   Intel® Thread Director   Memory Graphics card model *   Intel UHD Graphics 770   Intel® Secure Key   Intel® Secure Key   Memory Graphics card base   Intel General Feet Feet Feet Feet Feet Feet Feet Fee	Processor codename	Raptor Lake		✓
Memory  Maximum internal memory supported by processor  Memory types supported by processor  Memory types supported by processor  Memory types supported by processor  Memory channels *  Dual-channel  ECC  Memory bandwidth (max)  89.6 GB/s  Graphics  On-board graphics card *  On-board graphics card outputs  Supported  On-board graphics card outputs  Supported  DisplayPort 1.4a, HDMI 2.1  Intel ® Turbo Boost Max Technology  1.1tel ® Gaussian & Neural  Accelerator (Intel ® GNA) 3.0  Frequency  Intel ® Thermal Velocity Boost  Intel ® Control-flow Enforcement  Technology (CET)  Intel ® Control-flow Enforcement  Technology (CET)  V  Intel ® Thread Director  Intel ® Control-flow Enforcement  Technology (CET)  V  Intel ® Thread Director  V  Intel ® Secure Key  Intel ® Secure Key  Intel ® Secure Key  Intel ® OS Guard  V  Intel ® OS Guard  V  Intel ® OS Guard	Processor ARK ID	236773	•	1
Maximum internal memory supported by processor  Memory types supported by processor  Memory channels * Dual-channel  ECC	Memory			•
supported by processor  Memory types supported by processor  Memory types supported by processor  Memory channels *  Dual-channel  Memory bandwidth (max)  Becc  Memory bandwidth (max)  B	-		·	
processor    Intel® Gaussian & Neural   Accelerator (Intel® GNA) 3.0     ECC	supported by processor		Intel® Turbo Boost Max Technology	•
Memory channels * Dual-channel Accelerator (Intel® GNA) 3.0  ECC  Memory bandwidth (max) 89.6 GB/s  Graphics  On-board graphics card *  On-board graphics card model *  On-board graphics card outputs supported  On-board graphics card base  On-board graphics card base  Memory bandwidth (max) Accelerator (Intel® GNA) 3.0  Intel® Thermal Velocity Boost Frequency  Intel® Control-flow Enforcement Technology (CET)  Intel® Thread Director  Intel VT-x with Extended Page Tables (EPT)  Intel® Secure Key  Intel® OS Guard  Intel® OS Guard  Intel 64		DDR4-SDRAM, DDR5-SDRAM	• •	
Memory bandwidth (max)  89.6 GB/s  Frequency  Intel® Control-flow Enforcement Technology (CET)  On-board graphics card *  On-board graphics card *  On-board graphics card model *  Intel UHD Graphics 770  On-board graphics card outputs supported  On-board graphics card base  300 MHz  Frequency  Intel® Control-flow Enforcement Technology (CET)  Intel® Thread Director  Intel VT-x with Extended Page Tables (EPT)  Intel® Secure Key Intel® OS Guard	Memory channels *	Dual-channel		✓
Intel® Control-flow Enforcement Technology (CET)  On-board graphics card *  Discrete graphics card *  On-board graphics card *  Intel UHD Graphics 770  On-board graphics card outputs supported  On-board graphics card outputs approved  DisplayPort 1.4a, HDMI 2.1  On-board graphics card base  On-board graphics card base  On-board graphics card base  Intel® Control-flow Enforcement Technology (CET)  Intel® Thread Director  Intel VT-x with Extended Page Tables (EPT)  Intel® Secure Key  Intel® OS Guard  Intel® OS Guard  Intel® OS Guard		<b>√</b> 89 6 GR/s	•	6 GHz
On-board graphics card *		03.0 GB/3		✓
Discrete graphics card *  On-board graphics card model *  On-board graphics card outputs supported  On-board graphics card base  Intel UHD Graphics 770  Intel WT-x with Extended Page Tables (EPT)  Intel® Secure Key Intel® OS Guard  Intel® OS Guard  Intel 64	On-board graphics card *	✓		✓
On-board graphics card outputs supported DisplayPort 1.4a, HDMI 2.1 Intel® Secure Key  On-board graphics card base 300 MHz Intel® OS Guard  Intel 64	Discrete graphics card *		5	<b>√</b>
supported DisplayPort 1.4a, HDMI 2.1 Intel® OS Guard  On-board graphics card base 300 MHz Intel® OS Guard	<b>5</b> 1	'		✓
On-board graphics card base 300 MHz Intel 64 ✓	9 1		•	✓
• •	On-board graphics card base	•		1

Graphics		Processor special features	
On-board graphics card dynamic frequency (max)	1650 MHz	Intel Virtualization Technology (VT-x)	✓
Number of displays supported (on- board graphics)	4	Intel Virtualization Technology for Directed I/O (VT-d)	1
On-board graphics card DirectX version	12.0	Intel Turbo Boost Max Technology 3.0	1
On-board graphics card OpenGL version	4.5	Intel® Boot Guard	✓
On-board graphics card maximum resolution (DisplayPort)	7680 x 4320 pixels	Intel® Deep Learning Boost (Intel® DL Boost)	1
On-board graphics card maximum		Intel® Volume Management Device (VMD)	✓
resolution (eDP - Integrated Flat Panel)	5120 x 3200 pixels	Mode-based Execute Control (MBE)	✓
On-board graphics card maximum	4096 x 2160 pixels	Intel® Standard Manageability (ISM)	✓
resolution (HDMI)		Operational conditions	
On-board graphics card refresh rate at maximum resolution (DisplayPort)	60 Hz	Tjunction	100 °C
		Technical details	
On-board graphics card refresh rate at maximum resolution (eDP - Integrated Flat Panel)	120 Hz	OpenCL version	3.0
		Launch date	Q4'23
On-board graphics card refresh rate	60 Hz	Status	Launched
at maximum resolution (HDMI)	0xA780	Logistics data	
On-board graphics card ID  Discrete graphics card model *	Not available	Harmonized System (HS) code	8542310001
Number of execution units	32	Weight & dimensions	
Multi-Format Codec Engines	2	Processor package size	45 x 37.5 mm
Features		Other features	
Execute Disable Bit	✓	L2 cache	32768 KB
Idle States	✓	Maximum internal memory	192 GB
Thermal Monitoring Technologies	<b>√</b>	Graphics output	eDP 1.4b, DP 1.4a, HDMI 2.1
Market segment	Desktop		
Use conditions	Workstation, PC/Client/Tablet		



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