

# AMD Ryzen™ 9 7950X

## GENERAL SPECIFICATIONS

## General Specifications

### CONNECTIVITY

**Platform:** Desktop

### GRAPHICS CAPABILITIES

**Market Segment:** Enthusiast Desktop

### PRODUCT IDS

**Product Family:** AMD Ryzen™ Processors

### KEY FEATURES

**Product Line:** AMD Ryzen™ 9 Processors

**AMD PRO Technologies:** No

**Consumer Use:** Yes

**Regional Availability:** Global

**Former Codename:** "Raphael AM5"

**Architecture:** "Zen 4"

**# of CPU Cores:** 16

**Multithreading (SMT):** Yes

<b># of Threads:</b>	32
<b>Max. Boost Clock<sup>i</sup>:</b>	Up to 5.7GHz
<b>Base Clock:</b>	4.5GHz
<b>L1 Cache:</b>	1MB
<b>L2 Cache:</b>	16MB
<b>L3 Cache:</b>	64MB
<b>Default TDP:</b>	170W
<b>Processor Technology for CPU Cores:</b>	TSMC 5nm FinFET
<b>Processor Technology for I/O Die:</b>	TSMC 6nm FinFET
<b>CPU Compute Die (CCD) Size:</b>	71mm <sup>2</sup>
<b>I/O Die (IOD) Size:</b>	122mm <sup>2</sup>
<b>Package Die Count:</b>	3
<b>Unlocked for Overclocking<sup>i</sup>:</b>	Yes
<b>AMD EXPO™ Memory Overclocking Technology:</b>	Yes
<b>Precision Boost Overdrive:</b>	Yes
<b>Curve Optimizer Voltage Offsets:</b>	Yes
<b>AMD Ryzen™ Master Support:</b>	Yes

<b>CPU Socket:</b>	AM5
<b>Supporting Chipsets:</b>	A620 X670E X670 B650E B650
<b>CPU Boost Technology:</b>	Precision Boost 2
<b>Instruction Set:</b>	x86-64
<b>Supported Extensions:</b>	AES, AMD-V, AVX, AVX2, AVX512, FMA3, MMX(+), SHA, SSE, SSE2, SSE3, SSE4.1, SSE4.2, SSE4A, SSSE3, x86-64
<b>Thermal Solution (PIB):</b>	Not included
<b>Recommended Cooler:</b>	Liquid cooler recommended for optimal performance
<b>Max. Operating Temperature (Tjmax):</b>	95°C
<b>Launch Date:</b>	9/27/2022
<b>*OS Support:</b>	Windows 11 - 64-Bit Edition Windows 10 - 64-Bit Edition RHEL x86 64-Bit Ubuntu x86 64-Bit *Operating System (OS) support will vary by manufacturer.

## Connectivity

<b>USB Type-C® Support:</b>	Yes	
<b>Native USB 3.2 Gen 2 (10Gbps) Ports:</b>	4	
<b>Native USB 3.2 Gen 1 (5Gbps) Ports:</b>	0	
<b>Native USB 2.0 (480Mbps) Ports:</b>	1	
<b>Native SATA Ports:</b>	0	
<b>PCI Express® Version:</b>	PCIe® 5.0	
<b>Native PCIe® Lanes (Total/Usable):</b>	28 / 24	
<b>Additional Usable PCIe Lanes from Motherboard:</b>	<b>AMD X670E</b>	12x Gen4
	<b>AMD X670</b>	12x Gen4
	<b>AMD B650E</b>	8x Gen4
	<b>AMD B650</b>	8x Gen4
<b>NVMe Support:</b>	Boot, RAID0, RAID1, RAID10	
<b>System Memory Type:</b>	DDR5	
<b>Memory Channels:</b>	2	
<b>Max. Memory:</b>	128GB	
<b>System Memory Subtype:</b>	UDIMM	
<b>Max Memory Speed:</b>	<b>2x1R</b>	DDR5-5200
	<b>2x2R</b>	DDR5-5200

**4x1R**

DDR5-3600

**4x2R**

DDR5-3600

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**ECC Support:** Yes (Requires mobo support)

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## Graphics Capabilities

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**Integrated Graphics:** Yes

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**Graphics Model:** AMD Radeon™ Graphics

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**Graphics Core Count:** 2

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**Graphics Frequency:** 2200 MHz

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**USB Type-C® DisplayPort™ Alternate Mode:** Yes

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## Product IDs

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**Product ID Boxed:** 100-100000514WOF

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**Product ID Tray:** 100-000000514

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## Key Features

**Supported Technologies:**

AMD EXPO™ Technology  
AMD Ryzen™ Technologies

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