Thunderbolt™ 5 Technology

A Single Port. A Universe of Possibilities.

Thunderbolt™

Press Kit
December 2025

About This Document

- The material in this document is public information and has been developed for use with press and customers.
- The purpose of this document is to provide Intel brand and legal approved content for press to easily incorporate Thunderbolt™ technology insights into their own content.
- For any questions regarding the information in this document, please contact thunderboltadmin@intel.com.

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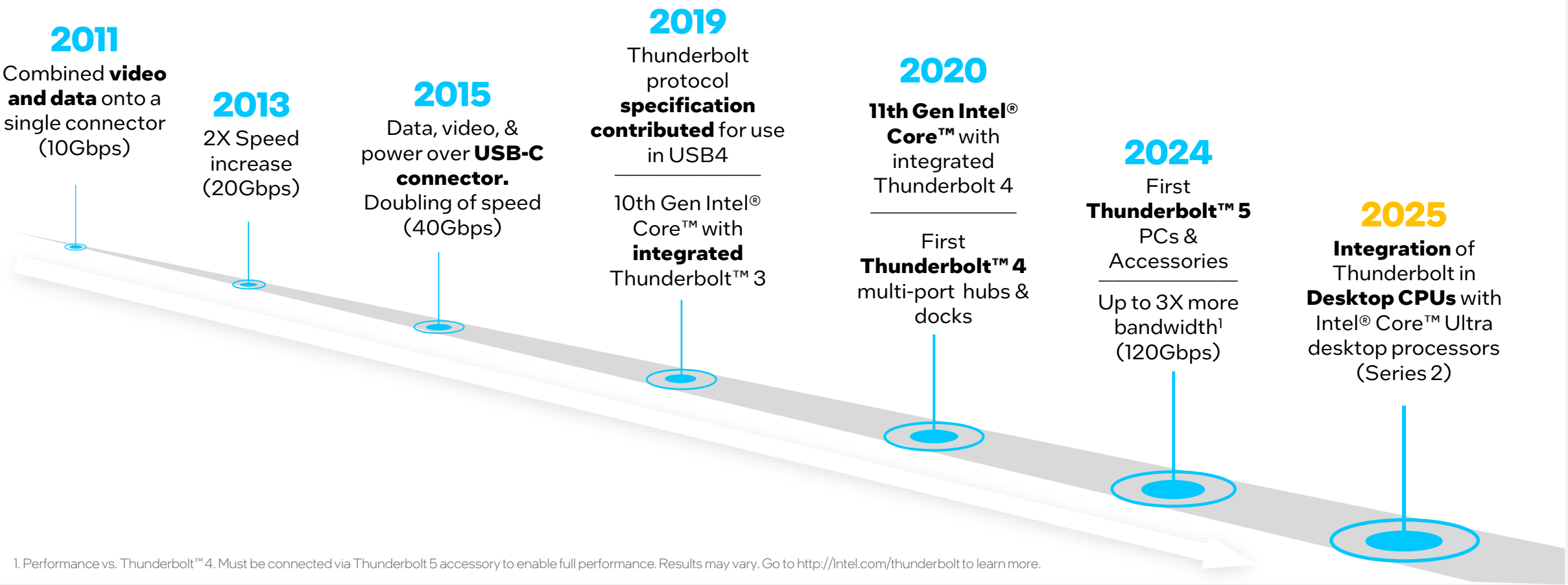
A Timeline of Thunderbolt™ Innovation

Wired Connectivity
Vision

Simplify the connectivity experience to one connector and cable that can do it all with Thunderbolt™ & USB-C.



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Thunderbolt™ Technology Overview

The Most Capable Wired Connectivity Solution

Mainstream Wired Connectivity

Thunderbolt ™ 4 is integrated in Laptop and Desktop platforms.

Required in all Intel® Evo™ Edition and Intel vPro® based laptops.

Leadership Technology

Thunderboltt™ 5 now shipping across Mobile, DT, Accessory and Cables.

Thunderbolt™ Share

Providing a new level of PC-to-PC user experiences.

Rapid Growth

Mobile

~2020 designs[2] with 90% attach rate to Intel® Core™ processors.

Desktop

~440 designs[2] and growing.

Accessories

>1300 designs[2] for more selection of docks, monitors, and storage than ever before.

1. Based on sales of Thunderbolt™ controllers to computer and accessory vendors
2 Based on number of accessories to complete Thunderbolt™
3 Estimates and Projection based on Intel® internal data

Thunderbolt™ 5 Growing World-wide

More to Come

Laptops and Desktops

~40 laptops and desktops
available in 2025 across Gaming, Creator and Mobile Workstation

Accessories and Cables

75 accessory certifications
completed and ramping quickly

For the latest certified products, go to https://www.thunderbolttechnology.net/products

Product images may not represent actual products available in market. Refer to https://www.thunderbolttechnology.net/products for current availability.

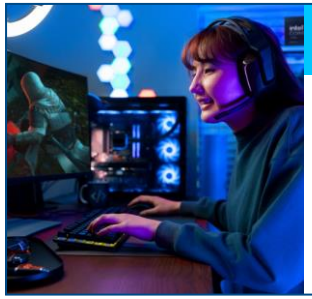
Thunderbolt™ 5

Unparalleled Connectivity Speed to Create, Play, and Work

Accelerate all your PC experiences with up to **3x more bandwidth**[1] (up to 120 Gbps) compared to Thunderbolt™ 4.

Connect to high-res displays and transfer files fast

- 8K HDR monitors to see every detail
- Quickly backup and archive projects
- Empower AI-driven creative workflows



Play and connect with community without friction

- 480Hz displays for smooth game play
- Next-level SSDs for portable gaming
- Studio quality capture and streaming

Analyze, create, or collaborate from anywhere

- Redefine workspaces, connect easily
- Enable unparalleled display experiences
- Accelerate workflows and collaboration

1. Bandwidth Boost provides 120 Gbps Transmit bandwidth which is 3X higher than Thunderbolt™ 4, at 40 Gbps bandwidth. Must be connected via Thunderbolt 5 accessory to enable full performance. Results may vary. Go to http://Intel.com/thunderbolt to learn more.

Discover New Capabilities Powered by Thunderbolt™

	For Mainstream Users	For Advanced Users
Video	▪ Connect **two 4K(60Hz) displays** or **one 8K(30Hz) display** for stunning clarity. ▪ Enjoy smooth HD gaming up to **240 Hz** for a responsive experience.	▪ Power up your setup with **up to three 4K displays** at 144 Hz or **one 8K display at 60 Hz.** ▪ Perfect for creators and gamers who want **ultra-detailed visuals and fluid motion.**
Data	▪ **40 Gbps speed** for fast file transfers and accessory performance. ▪ **Move large media files fast,** like video, photo, and music.	▪ **Double the bandwidth**[1] with **80 Gbps** for lightning-fast transfers. ▪ Ideal for **high-res media workflows**, Gaming performance, and demanding applications. ▪ Build your dream setup without compromise, **2x more bandwidth**[1] for SSDs, eGPUs, USB peripherals, and more.
PC Connection	▪ **Charge laptops up to 100W** with one cable. ▪ Fewer cables, less clutter, **more convenience**, and common peripheral sharing with Thunderbolt™ Share.	▪ **Up to 240W of power delivery** for next-gen laptops and workstations means one cable to **power, connect, and create.** ▪ **Easy, fast, and efficient** PC-to-PC Thunderbolt™ Share experiences.

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Thunderbolt™ 5 Provides Industry Leading Experience

Simplicity, Reliability, and Maximized Performance

More accessories

Standards Based, Royalty Free

PCI EXPRESS — PCIe 4.0

DisplayPort — v2.1

CERTIFIED USB 80Gbps — USB4* v2
USB3 20G

More speed

Up to 3x faster for video and data[1]

80G bi-directional
120G transmit

More video

Bandwidth Boost for display experiences

120G transmit and up to three streams
Dual 8K[2] (60Hz) monitor support or three 4K (144 Hz)

More power

Up to 2x more PC charging[1]

Up to **240W** PC charging
15W device

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Other names and brands may be claimed as the property of others

Thunderbolt™ 5: The Fastest, Most Versatile Connection

The best display experiences

Up to 120 Gbps transmitted bandwidth

- 3x more than Thunderbolt™ 4[1]
- 50% more than DP 2.1[2]
- Dynamic display bandwidth management
- Up to three display streams

Outstanding docking solutions

3x more bandwidth for video than Thunderbolt™ 4[1]

6x more bandwidth for data (vs USB3)[1]

The most data bandwidth

2x more than today's solutions[1]

SSD

GPU

High speed networking

2x the speed of Thunderbolt™ 4[1]

More power

Up to 240W

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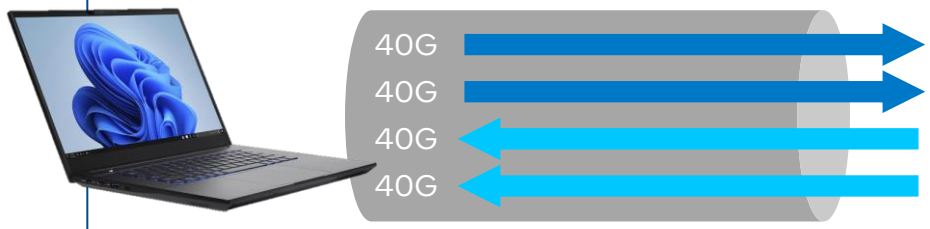
Thunderbolt™ 5 Delivers Up to 120 Gbps

Bandwidth Boost for the Best Display Experience

Bandwidth flexibility based on usage

Evenly distributed

80 Gbps of bandwidth in each direction



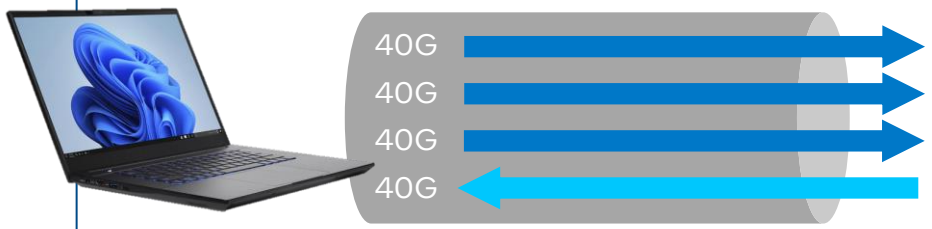
Connection provides
Transmit: 80 Gbps
Receive: 80 Gbps

High speed transmitter

High speed receiver

Bandwidth Boost

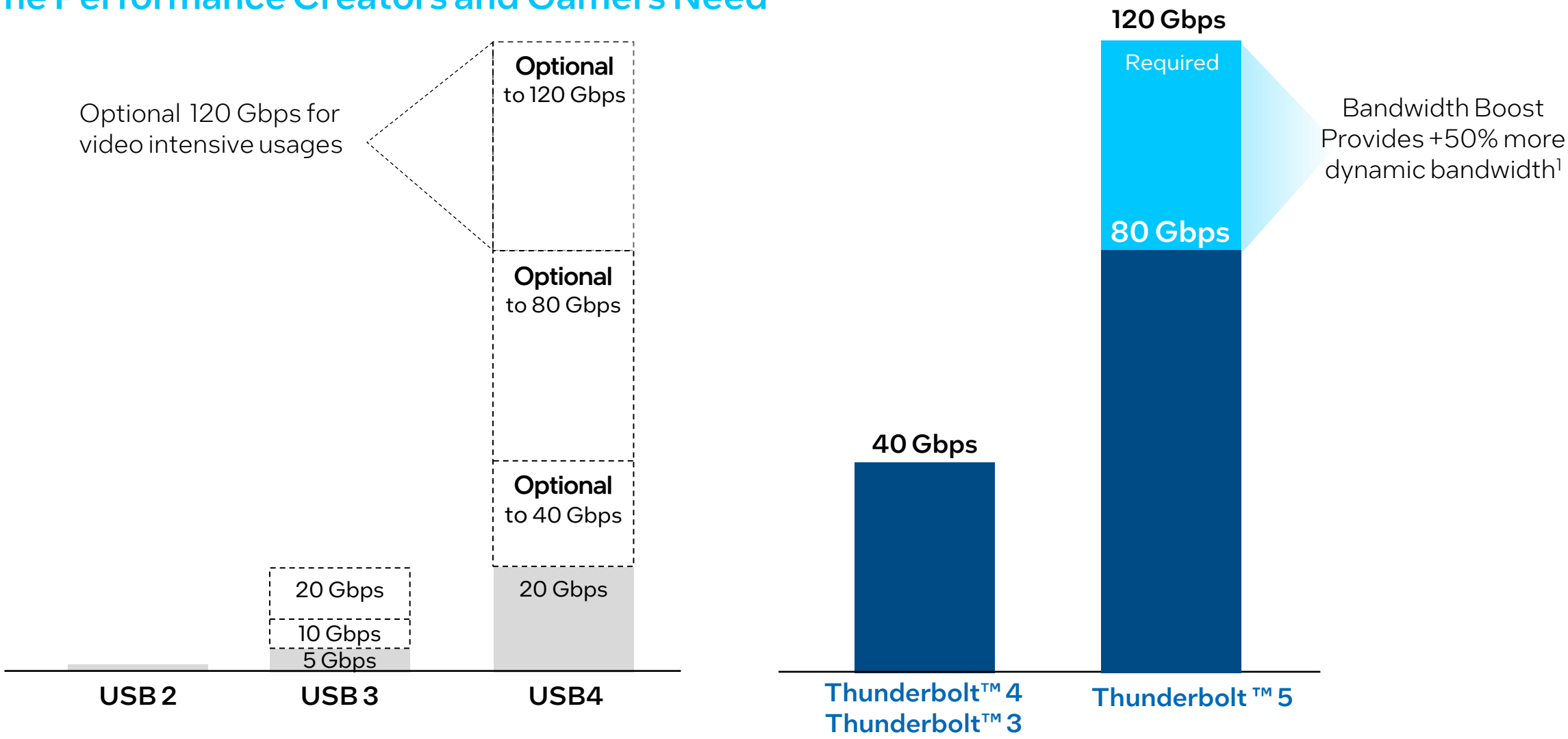
Up to 120 Gbps for higher display bandwidth needs



Connection provides
Transmit: Up to **120 Gbps**
Receive: 40 Gbps

Thunderbolt™ 5 Delivers Up to 120 Gbps

The Performance Creators and Gamers Need



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Thunderbolt™ Family of Accessories

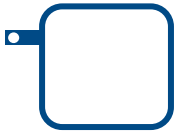
Thunderbolt™ Accessories to Meet Your Needs

Consumer and Commercial Docks

External Graphics

Portable Storage, Enclosures

Adapters



Portable Docks

External AI Accelerator

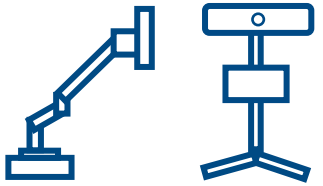
Desktop Storage

Docking Monitors

Hubs & Compact Docks

Video Interfaces

Audio Interfaces



Monitor Stand Docks

Thunderbolt enables powerful solutions for all your productivity, creation, and gaming needs.

Thunderbolt™ 5 Unleashes AI PC Experiences

Bandwidth for AI Workload Environments

Get versatile high-speed connectivity through **high bandwidth** while maintaining **compatibility** with current and future devices.

Protocol Versatility

Connect a wide range of devices with a single port (Thunderbolt, USB, DisplayPort, PCIe), from external storage and monitors to specialized AI hardware and docks.

High-Speed Data Transfer

Ultra-fast bandwidth enables rapid movement of large datasets between Thunderbolt™ storage and compute systems—critical for AI workflows.

Power for Your PC and Devices

Charge AI PCs (up to 240W) without multiple adapters, for a streamlined setup and smaller footprint. Thunderbolt™ ports provide up to 15W to power accessories so you can do more on the go.

Workstation Performance

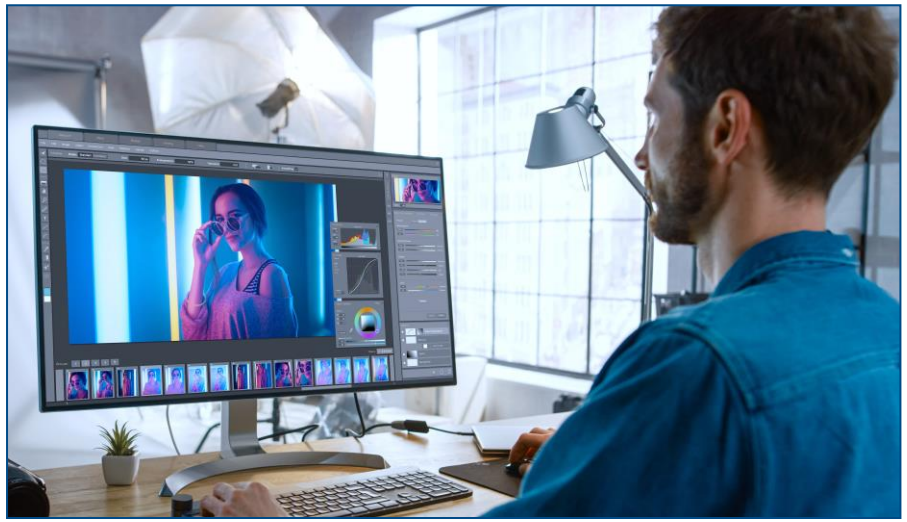
Thunderbolt™ 5 delivers up to 120 Gbps bandwidth, empowering AI-driven creative workflows using AI tools for video editing, image generation, and audio processing.

Extending System Architecture with Thunderbolt™

Plug and Play Connection for Performance Boost

External Graphics

- Graphics performance boost
- Faster frame rates for Gamers
- Reduced encode, export time for Creators



External AI Accelerators

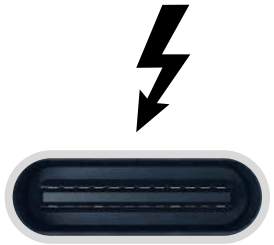
- Elevated video collaboration & audio effects
- Creator/Gaming effects
- Local AI Inferencing reduces need to reach into the cloud

More Creative, Superior Gaming, Higher Productivity, Personalized Experience

Thunderbolt™ 5 is Easy to Find

Thunderbolt Brand Continues to be Simple

To simplify computer and compatible accessory purchases, **just look for the Thunderbolt™ logo**. Thunderbolt computers and accessories are **certified to work together** to ensure a great experience – **now and in the future**.

Name	Logo	Icon	Port	Cable
Thunderbolt™ 5	Thunderbolt™			

Thunderbolt™ 5 Leaps Ahead

		Thunderbolt™ 5 Technology	Thunderbolt™ 4 Technology	USB4
Unrivaled Simplicity	One universal computer port (USB Type-C)	✓	✓	✓
	Universal cables up to 2 meters in length	Up to 120 Gbps	40 Gbps	Optional
	Accessories with four Thunderbolt™ ports	✓	✓	
Certified Reliability	Mandatory certification for all shipping computers, accessories, and cables	✓	✓	
	Cable testing and cable quality audits for Thunderbolt cable manufacturers	✓	✓	
	Required Intel® VT-d-based DMA protection[1]	✓	✓	
	USB4 specification compliance required	✓	✓	✓
Maximized Performance	PC speed requirements	Up to 120 Gbps	40 Gbps	20 Gbps
	PC video minimum requirements	Dual 6K	Dual 4K	One monitor (No minimum bandwidth)
	PC data requirements	PCIe: 64 Gbps USB 3: 10 Gbps[2]	PCIe: 32 Gbps USB 3: 10 Gbps	USB 3: 10 Gbps
	Required PC charging on at least one computer port[3]	Required Available up to 240W	Required Available up to 140W	
	Required PC wake from sleep when computer is connected to a Thunderbolt™ dock	✓	✓	
	Minimum PC port power for accessories	15W	15W	7.5W
	Thunderbolt™ networking[4]	64 Gbps	32 Gbps	

1. Or equivalent when utilizing a non-Intel CPU. 2. Available up to USB 3: 20 Gbps. 3. Charging via Thunderbolt ports is required for Thunderbolt 4 based PCs which require less than 100W to charge and for Thunderbolt 5 is based PCs that require less than 140W 4. Maximum theoretical bandwidth, realized performance dependent on specific hardware and software configuration.

Unparalleled Connectivity, Speed and Simplicity

Thunderbolt™ 5 Powers Experiences Now and in the Future

Unrivaled Simplicity

Best-in-class connectivity[1], providing the fastest, most versatile connection to your PC and accessories.

Certified Reliability

Industry-leading performance, capabilities, and reliability through a rigorous Certification program.

Maximized Performance

The highest port bandwidth available, enabling ultra-fast data transfer, high-resolution video, and power delivery though a single compact connection.

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Legal Disclaimers

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Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex
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