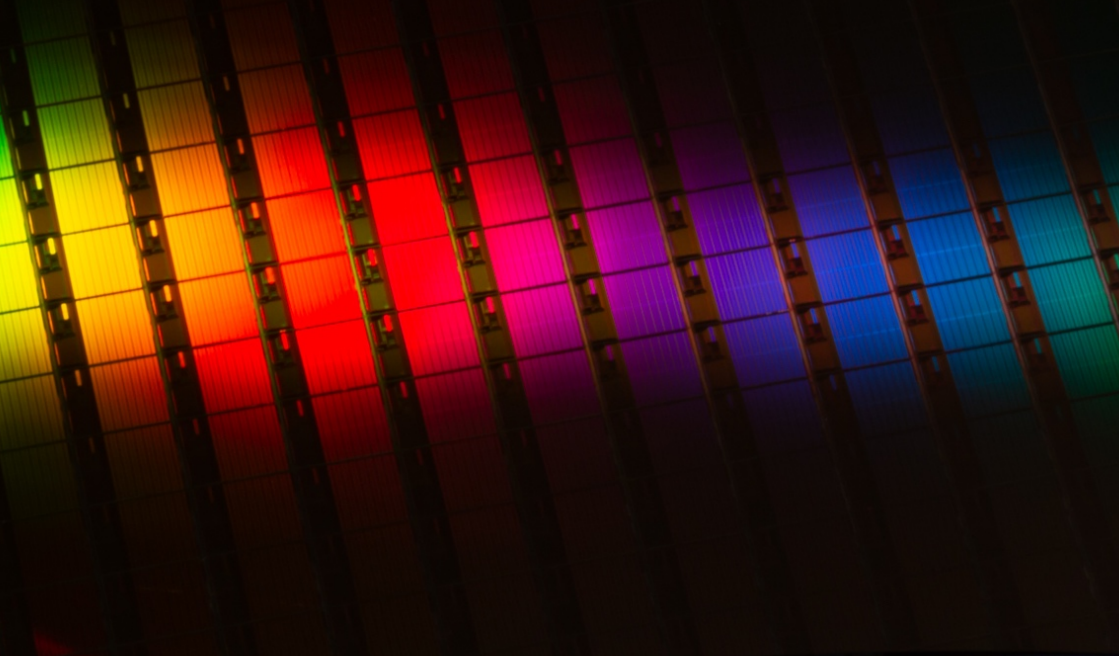

Micron®
Two brands. One channel.
Product Catalog
July 2022
Micron | crucial by Micron



# About Micron

**Transforming how the world uses information to enrich life for all.**

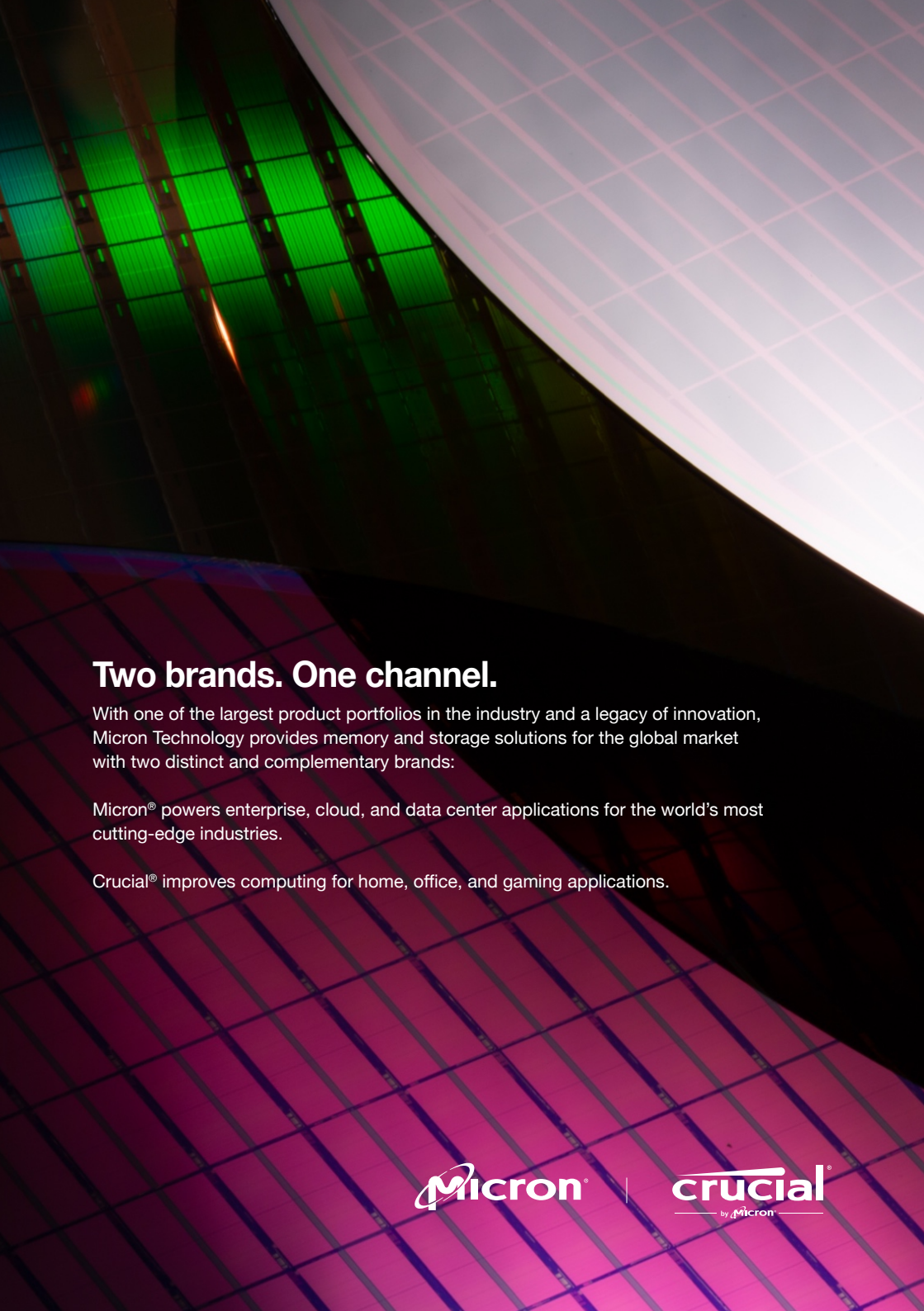
Micron is a world leader in innovating memory and storage solutions that accelerate the transformation of information into intelligence. Our more than 40,000 team members, in 17 different countries, work with countless customers to innovate every day and pursue the products that will shape how we live and work tomorrow.

## 43+ years

of manufacturing excellence

## 50,000+ patents

and growing, advancing memory and storage technology with Micron reliability



# Two brands. One channel.

With one of the largest product portfolios in the industry and a legacy of innovation, Micron Technology provides memory and storage solutions for the global market with two distinct and complementary brands:

Micron® powers enterprise, cloud, and data center applications for the world's most cutting-edge industries.

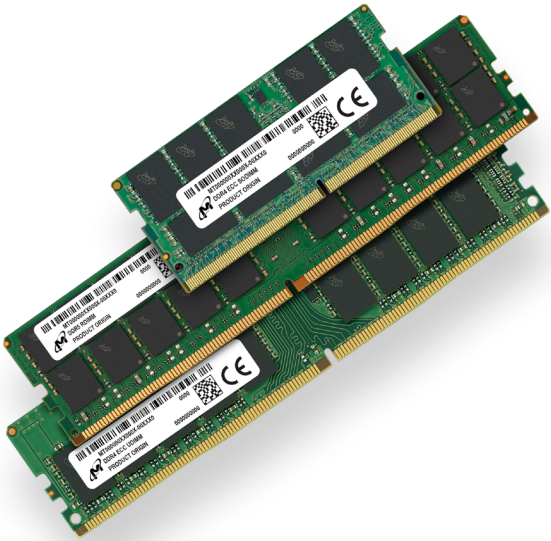
Crucial® improves computing for home, office, and gaming applications.

Micron® | crucial® by Micron®

# Accelerate Your Time to Market with Quality DRAM Components

Stretch your IT budget and get the performance of a brand new server at a fraction of the cost. Upgrading your installed memory with Micron® DRAM is one of the easiest and most affordable ways to make your deployments faster and more efficient. From cloud to consumer, Micron has the perfect solution for your business applications.

# Micron
# Server Memory



## Peak performance for all your systems.

Micron Server and Workstation Memory undergoes a detailed 34-stage manufacturing process, to ensure that it meets or exceeds the performance demands of virtualization, cloud, big data and hyperscale computing. This extra emphasis on quality and reliability boosts system performance and minimizes costly downtime.

### PRODUCT HIGHLIGHTS

- Increases system performance
- Compatible with OEM servers, workstations and warranties[1]
- Quality tested to mission-critical server and workstation standards
- Supports the Mac Pro line with the same high quality you expect for your system
- 3-year limited warranty[2]

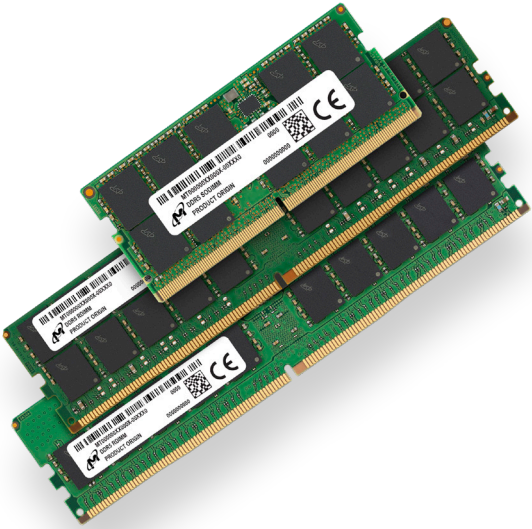
### MODULE TYPES

**DDR4:**
RDIMM, LRDIMM,
ECC UDIMM,
ECC SODIMM,
VLP RDIMM,
VLP ECC UDIMM

**DDR5:**
RDIMM, ECC UDIMM,
ECC SODIMM

Micron

# DDR5 Server Memory



**BEST FOR**

- Maximizing new DDR5 server and workstation performance

## DDR5: More than a generational jump.

Speed up next-generation application performance with Micron® DDR5 server DRAM: more than a generational jump in memory innovation. Reverse the trend of decreased bandwidth per core, feed rapidly growing processor core counts with memory bandwidth and capacity, plus enable nearly 2x the data rates[39] of DDR4.

**PRODUCT HIGHLIGHTS**

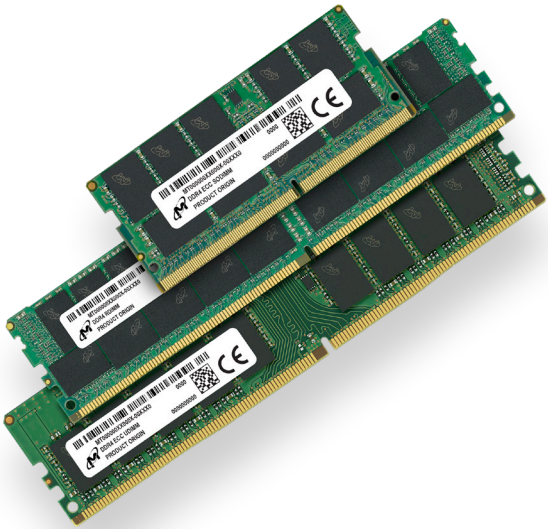
- Increase performance by 85% or more over DDR4[39]
- Initial speeds up to 4800MT/s[40]
- Optimized for the latest Intel® and AMD® processors
- Three-year limited warranty
- 100% component and module tested
- Operating voltage reduced from DDR4's 1.2V to 1.1V[42]

**MODULE TYPE**

**RDIMM,**
**RDIMM (9x4), ECC**
**UDIMM,**
**ECC SODIMM[41]**

Micron

# DDR4 Server Memory



**BEST FOR**

- Maximizing server and workstation performance

## Speed up your servers and workstations

Speed up applications and get more out of your IT budget with Micron® Server DRAM. Maximizing installed memory capacity with Micron server and workstation memory is one of the easiest and most affordable ways to make your deployments faster and more efficient.

**PRODUCT HIGHLIGHTS**

- Process data at speeds up to 3200MT/s
- Higher component densities enable greater installed memory capacity per system
- 100% component and module tested to mission-critical server standards
- Optimized for the latest Intel® and AMD® processor product families
- Three-year limited warranty

**MODULE TYPE**

**RDIMM,**
**VLP RDIMM,**
**LRDIMM,**
**ECC UDIMM,**
**VLP ECC UDIMM,**
**ECC SODIMM**


# Unleashing the data-intensive workloads of today and tomorrow

## Micron

# Data Center SSDs

Better SSDs come from better NAND. As the creator of the industry's broadest portfolio of SATA SSDs and the world's first QLC SSD, Micron builds enterprise solutions to fit critical data storage needs. With more than 40 years of expertise and innovation to its name, Micron is positioned to be a leader in the technology world as artificial intelligence, deep learning, and other big data applications mature.

# Micron
# 7450 family
## NVMe™ SSDs


### BEST FOR

- Hyperconverged infrastructure
- Cloud infrastructure
- Big data, object storage

## Performance. Power. Precision.

The Micron 7450 SSD enables advanced storage solutions with multiple form factors, capacities up to 16TB-class, and multiple security options. Software defined storage, database and virtualization solutions excel on the Micron 7450, thanks to its PCIe® Gen4 throughput, low latency, and excellent quality-of-service. This vertically integrated solution includes many Micron-developed technologies, such as its industry-leading 176-layer NAND[30] that delivers sub-2ms[31] quality of service, controller, firmware, and memory.

### PRODUCT HIGHLIGHTS

- PCIe® 4.0 NVMe™ technology with sequential performance up to 6800MB/s and random performance up to 1M IOPS[31]
- Built on world's most advanced 176-layer NAND[30]
- Excellent sub-2ms latency[31] for 99.999% quality of service

### CAPACITIES

| 7450 PRO[4]: U.3 (7 mm, 15mm) (Read-Intensive) | 7450 MAX[3]: U.3 (7 mm, 15mm) (Mixed-Use) | 7450 PRO[4]: E1.S (5.9 mm, 15 mm) (Read-Intensive) | 7450 PRO[4]: M.2 (2280, 22110) (Read-Intensive) | 7450 MAX[3]: M.2 (2280, 22110) (Mixed-Use) |
|---|---|---|---|---|
| • 960GB | • 800GB | • 960GB | • 480GB[25] | • 400GB[25] |
| • 1.92TB | • 1.6TB | • 1.92TB | • 960GB[25] | • 800GB[25] |
| • 3.84TB | • 3.2TB | • 3.84TB | • 1.92TB | • 1.6TB |
| • 7.68TB | • 6.4TB | • 7.68TB | • 3.84TB | • 3.2TB |
| • 15.36TB | • 12.8TB | | | |

# Micron
# 7400 family
## NVMe™ SSDs


### BEST FOR

- SQL and NoSQL databases
- Block and object stores
- VDI and virtualization

## Powerful performance, first-rate flexibility

Servers are rapidly migrating from legacy data center technologies to NVM Express™ (NVMe) and flash-optimized form factors to maximize performance, reduce costs and provide a secure platform for virtualization, containers, cloud, software-defined storage and more. Meeting the challenge requires forward-thinking storage — storage that easily fits into different platforms, storage performance tuned for your workloads and storage that is highly secure. Storage like the Micron 7400 SSD.

### PRODUCT HIGHLIGHTS

- World's broadest SSD portfolio for data center infrastructure innovation
- PCIe Gen4 performance that scales
- Hardware driven performance at the leading edge of security[24]
- 5-year limited warranty

### CAPACITIES

| 7400 PRO[4]: U.3 (7 mm) (Read-Intensive) | 7400 MAX[3]: U.3 (7 mm) (Mixed-Use) | 7400 PRO[4]: E1.S (5.9 mm, 15 mm) (Read-Intensive) | 7400 MAX[3]: E1.S (5.9 mm, 15 mm) (Mixed-Use) | 7400 PRO[4]: M.2 (2280, 22110) (Read-Intensive) | 7400 MAX[3]: M.2 (2280, 22110) (Mixed-Use) |
|---|---|---|---|---|---|
| • 960GB | • 800GB | • 960GB | • 800GB | • 480GB[25] | • 400GB[25] |
| • 1.92TB | • 1.6TB | • 1.92TB | • 1.6TB | • 960GB[25] | • 800GB[25] |
| • 3.84TB | • 3.2TB | • 3.84TB | • 3.2TB | • 1.92TB | • 1.6TB |
| • 7.68TB | • 6.4TB | | | • 3.84TB | • 3.2TB |

# Micron
# 5400 family
## SATA SSDs


## Proven SATA solutions

The Micron® 5400 is the world's first data center SATA SSD built with 3D 176-layer TLC NAND[43], delivering 50% better reliability and 67% more endurance than typical data center SATA drives[44] in capacities ranging from 240GB to a class-leading 7.68TB[45]. With a proven architecture that delivers peace of mind, unparalleled reliability and endurance, the 5400 is Micron's 11th generation of data center SATA SSDs, built on the industry's broadest portfolio.

### BEST FOR

- Hyperconverged infrastructure
- Cloud infrastructure
- Big data
- Object storage

### PRODUCT HIGHLIGHTS

- Proven and stable 11th generation data center SATA SSD
- Built on the world's most advanced 176-layer NAND[1]
- Class-leading reliability and endurance[46]
- 5-year limited warranty[47]

### CAPACITIES

**5400 BOOT[4]: M.2**
(2280) (Read-Intensive)
- 240GB

**5400 PRO[5]: M.2**
(2280) (Read-Intensive)
- 240GB
- 480GB
- 960GB

**5400 PRO[5]: 2.5 in**
(7 mm) (Read-Intensive)
- 240GB
- 480GB
- 960GB
- 1.92TB
- 3.84TB
- 7.68TB

**5400 MAX[6]: 2.5 in**
(7 mm) (Mixed-Use)
- 480GB
- 960GB
- 1.92TB
- 3.84TB

# Micron
# 9300 series
## NVMe™ SSDs


**BEST FOR**

- OLTP
- AI/ML/DL training & caching
- Block
- Object storage

## When microseconds matter.

Performance-critical cloud and enterprise workloads demand consistently fast throughput and near real-time access to data. The Micron 9300 series of NVM Express (NVMe™) SSDs delivers industry-leading sequential write performance and the lowest average write latency in the market to accelerate your growing data center demands.[7]

**PRODUCT HIGHLIGHTS**

- Consistently read and write up to 3.5GB of sequential data
- Optimized for performance-critical workloads: caching, database acceleration, OLTP, high frequency trading, block and object stores, and training/caching for AI and machine learning
- Random reads/writes up to 850/310K IOPS[8]
- 5-year limited warranty

**CAPACITIES**

**9300 PRO: U.2**

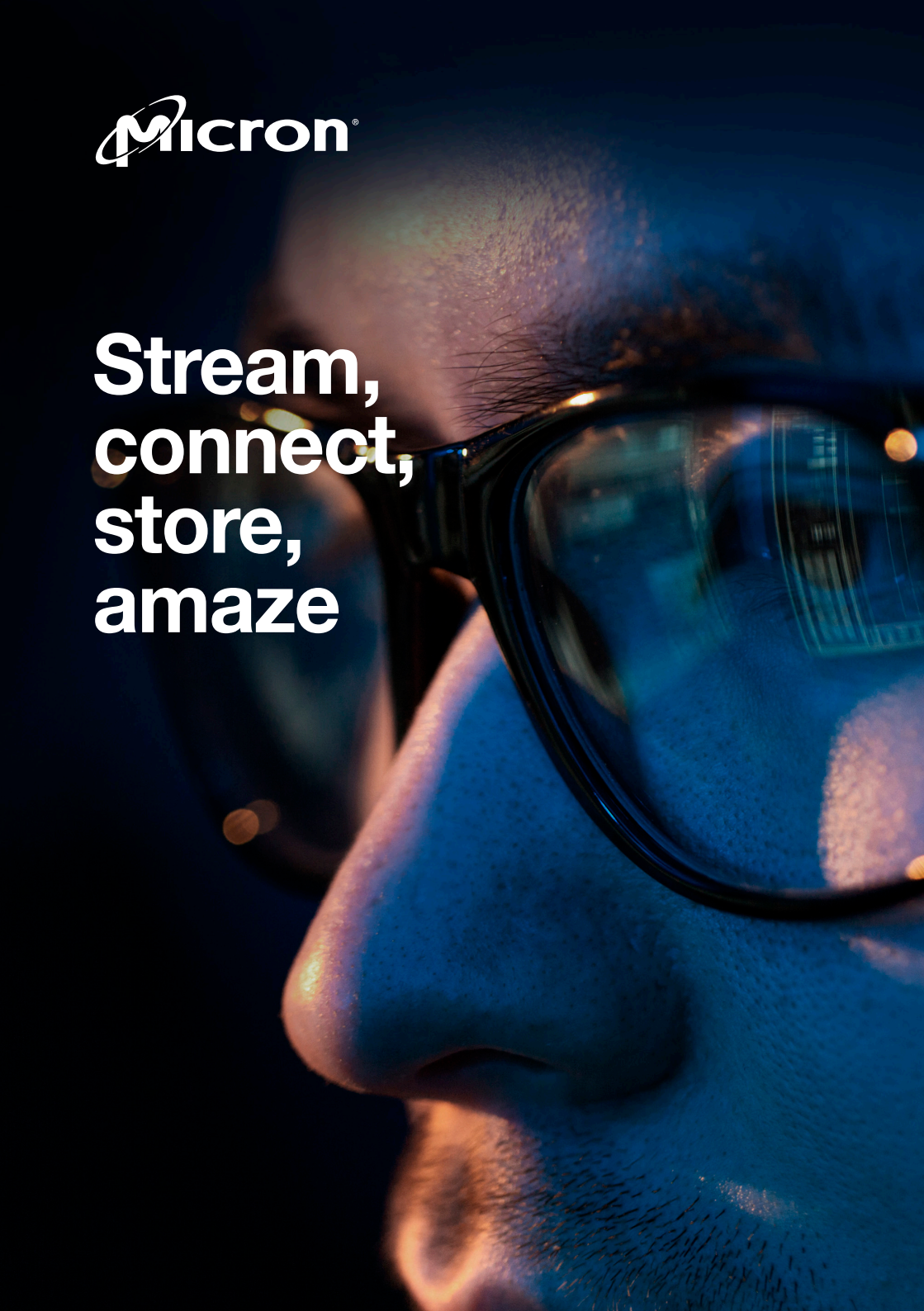
(15 mm) (Read-Intensive)

- 3.84TB • 7.68TB
- 15.36TB

**9300 MAX: U.2**

(15 mm) (Mixed-Use)

- 3.2TB
- 6.4TB
- 12.8TB


Micron
Stream,
connect,
store,
amaze

## Micron

# Client SSDs

Bring your customers the performance, agility and security they need with Micron's leading-edge client SSDs. We're accelerating transactions, reducing complexity, and lowering costs so you can store more, do more and know more about your data.

# Micron
# 3400 series
## PCIe NVMe™ Client SSD


**BEST FOR**

- Corporate notebooks
- Workstations
- Video production
- Server boot

## For the most data-intensive applications.

The Micron 3400 SSD with NVMe™ combines the performance of industry-leading 176-layer NAND and PCIe Gen4. The 3400 has the capacity to manage the most demanding workstation, gaming and corporate PC applications — yet it consumes minimal power. The Micron 3400 SSD is a future-proof solution that will harness the I/O loads needed to manage today's 4K (and tomorrow's 8K) double or triple monitors, as well as work-from-home setups that have blurred the lines between personal and work-related tasks.

**PRODUCT HIGHLIGHTS**

- Industry-leading 176-layer NAND and PCIe Gen4
- NVMe 1.4
- Host-controlled thermal management (HCTM)
- Support for TCG Opal 2.01 and Pyrite 2.01
- Power loss protection
- SMBus temperature sense
- FW activate w/o reset
- Sanitize block and crypto erase
- 3-year limited warranty

**CAPACITIES**

**3400 PCIe NVMe™**
(2280)

- 512GB
- 1TB
- 2TB

# Micron
# 2210 series
## PCIe NVMe™ Client SSD


### BEST FOR

- Corporate notebook
- Hand-held gaming console
- Gaming
- Video production

## Won’t set you back (nor hold you back).

The Micron 2210 QLC SSD bridges the gap between the low cost of hard drives and the performance, reliability, low power, and security of SSDs. For the first time Micron brings together NVMe performance and low cost QLC NAND. The Micron 2210 changes the game by bringing advanced SSD capabilities to HDD-like price points.

### PRODUCT HIGHLIGHTS

- NVMe 1.3
- Host-controlled thermal management (HCTM)
- Second generation 3D 96-layer QLC NAND
- Support for TCG Opal 2.0 and Pyrite
- Power loss protection (data at rest)
- System crash protection (SCP)
- 3-year limited warranty

### CAPACITIES

**2210 PCIe NVMe™**
(2280)

- 512GB
- 1TB
- 2TB

# About Crucial

## The memory and storage experts.™

Memory and storage are crucial — your desktop or laptop won't work without them. Every time you press the power button, move your mouse, load apps, type or save documents, you're using memory and storage. When it comes to choosing a brand, four factors are critical: expertise, compatibility, reliability and commitment. As a brand of Micron®, Crucial® is integrated into one of the largest memory manufacturers in the world, providing the same technology that gets prebuilt into new computers. We live and breathe memory and storage, and we're here to transform your system's performance.

## 174,000+ systems

compatible with Crucial products. Nearly every system in existence.

## 193,000+ product reviews

4.8 out of 5 average rating

## 190 countries

Crucial products are available in over 190 countries and territories.

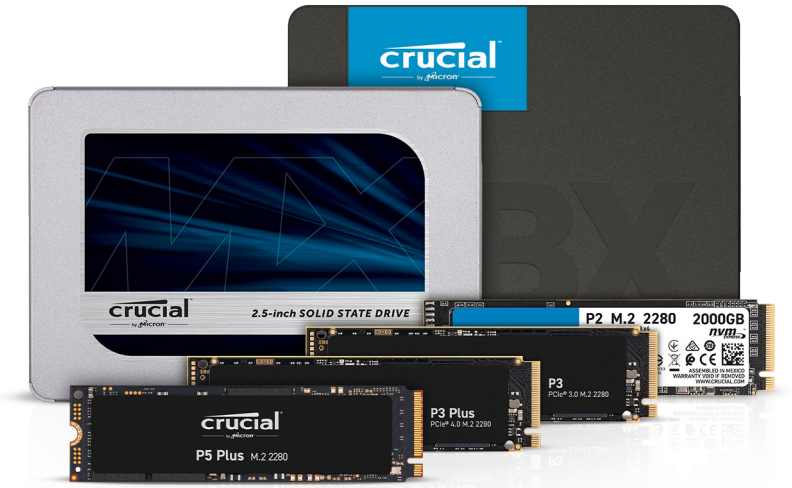

Micron
crucial
by Micron


crucial
by Micron
Transform
the Pace of
Productivity

## Crucial

# Consumer SSDs

Improve system performance with durable, energy-efficient solid state drives (SSDs) for client or home applications. Unlike hard drives, SSDs access data almost instantly and can be significantly faster and more reliable than traditional HDDs[9]. Built with NAND flash memory and backed by excellent customer support, Crucial® SSDs come in multiple form factors, price points and capacities to offer the most flexibility for your upgrade needs.



# Crucial
# P5 Plus
## M.2 NVMe™ PCIe SSD


**BEST FOR**

- Our fastest Gen4 NVMe SSD for gaming and data-intensive applications

## Unlock Gen4 Speed.

Are you ready for next-gen performance? The Crucial® P5 Plus SSD delivers remarkable speed and data protection with sequential reads up to 6600MB/s[23] for transformative computing. Engineered by Micron® for intensive workloads using the latest Gen4 NVMe™ technology, the Crucial P5 Plus is also backward compatible with most Gen3 systems for ultimate flexibility.

**PRODUCT HIGHLIGHTS**

- PCIe® 4.0 NVMe™ technology with up to 6600MB/s sequential reads
- Built on our own leading Micron® Advanced 3D NAND and innovative controller technology
- Includes cloning and SSD management software for performance optimization, data security, and firmware updates
- 5-year limited warranty[12]

**CAPACITIES**

- 500GB
- 1TB
- 2TB

# Crucial
# P3 Plus
## M.2 NVMe™ PCIe SSD


**BEST FOR**

- Our fast Gen4 NVMe SSD for data-intensive applications

## Fast. Affordable. Reliable.

Valuable Gen4 performance is here. Introducing the Crucial® P3 Plus Gen4 NVMe™ SSD, delivering impressive speed with sequential reads/writes up to 5000/4200MB/s[32] while providing data protection for optimal security. Engineered by Micron® with the latest Gen4 NVMe technology, the Crucial P3 Plus comes in generous capacities[33] and offers flexible backward compatibility for most Gen3 systems.

**PRODUCT HIGHLIGHTS**

- Impressive read/write speeds up to 5000/4200MB/s[32]
- Spacious storage up to 4TB[33]
- NVMe PCIe 4.0 M.2 (2280)
- Backward compatibility with Gen3
- Micron® Advanced 3D NAND
- Performs up to 43% faster than the fastest Gen3 NVMe SSDs[34]

**CAPACITIES**

- 500GB
- 1TB
- 2TB
- 4TB

# Crucial
# P3
## M.2 NVMe™ PCIe SSD


**BEST FOR**

- Our fastest Gen3 NVMe SSD for switching from HDD or SATA

## The NVMe Speed You Need

Basic bootup speeds won't cut it — not at work, on the go, or in the game. But the Crucial® P3 SSD is anything but basic. With NVMe™ performance that's 5x faster than SATA[36] and storage capacities up to 4TB[37], the P3 leaves older storage technology in the dust. Get faster bootups, downloads and file transfers, and store all your files, photos, videos, apps, and games with room to spare with the quality and dependability you expect from Crucial.

**PRODUCT HIGHLIGHTS**

- Impressive read/write speeds up to 3500/3000MB/s[35]
- Spacious storage up to 4TB[37]
- Solid Gen3 performance
- Micron® Advanced 3D NAND
- NVMe™ PCIe 3.0 M.2 (2280)
- Performs up to 45% better than the previous generation[38]

**CAPACITIES**

- 500GB
- 1TB
- 2TB
- 4TB

# Crucial
# P2
## M.2 NVMe™ PCIe SSD


**BEST FOR**

- Our everyday NVMe SSD for switching from HDD or SATA

## Boost your computer's potential.

Whether you're at work, in the game or on the go, ordinary bootup speeds can frustrate your best laid plans. Good thing the Crucial P2 SSD really flies. With plenty of storage and performance accelerated by the latest NVMe™ technology, the P2 has the speed and dependability you need to explore your computer's potential.

**PRODUCT HIGHLIGHTS**

- 2400MB/s sequential reads[16]
- NVMe™ PCIe interface, marking the next step in storage innovation
- Includes SSD management software for performance optimization, data security and firmware updates
- 5-year limited warranty[12]

**CAPACITIES**

- 250GB
- 500GB
- 1TB
- 2TB

# Crucial
# MX500
## SATA SSD


**BEST FOR**

- Our everyday SATA SSD for upgrading from HDD

# Performance. Price.

Sluggish systems don't need replacing, they need upgrading. Improve system performance and increase workforce productivity by upgrading to the Crucial MX500 SATA SSD. With an MX500 upgrade, systems start up in seconds, and up to 4TB of storage provides ample room for even heavy file loads. The MX500 is built with Micron quality, speed, and security that's all backed by helpful service and support.

**PRODUCT HIGHLIGHTS**

- Sequential reads/writes up to 560/510MB/s on all file types[10]
- Random reads/writes up to 95/90K on all file types[10]
- Over 45x more energy efficient than a typical hard drive[11]
- Accelerated by Micron 3D NAND technology
- More durable than a hard drive – no small moving parts that are prone to failure
- Dynamic write acceleration delivers faster saves and file transfers
- 5-year limited warranty[12]

**CAPACITIES**

- 250GB
- 500GB
- 1TB
- 2TB
- 4TB

# Crucial
# BX500
## SATA SSD


**BEST FOR**

- Our SATA SSD for value-minded buyers switching from HDD

# Essential performance for your workforce.

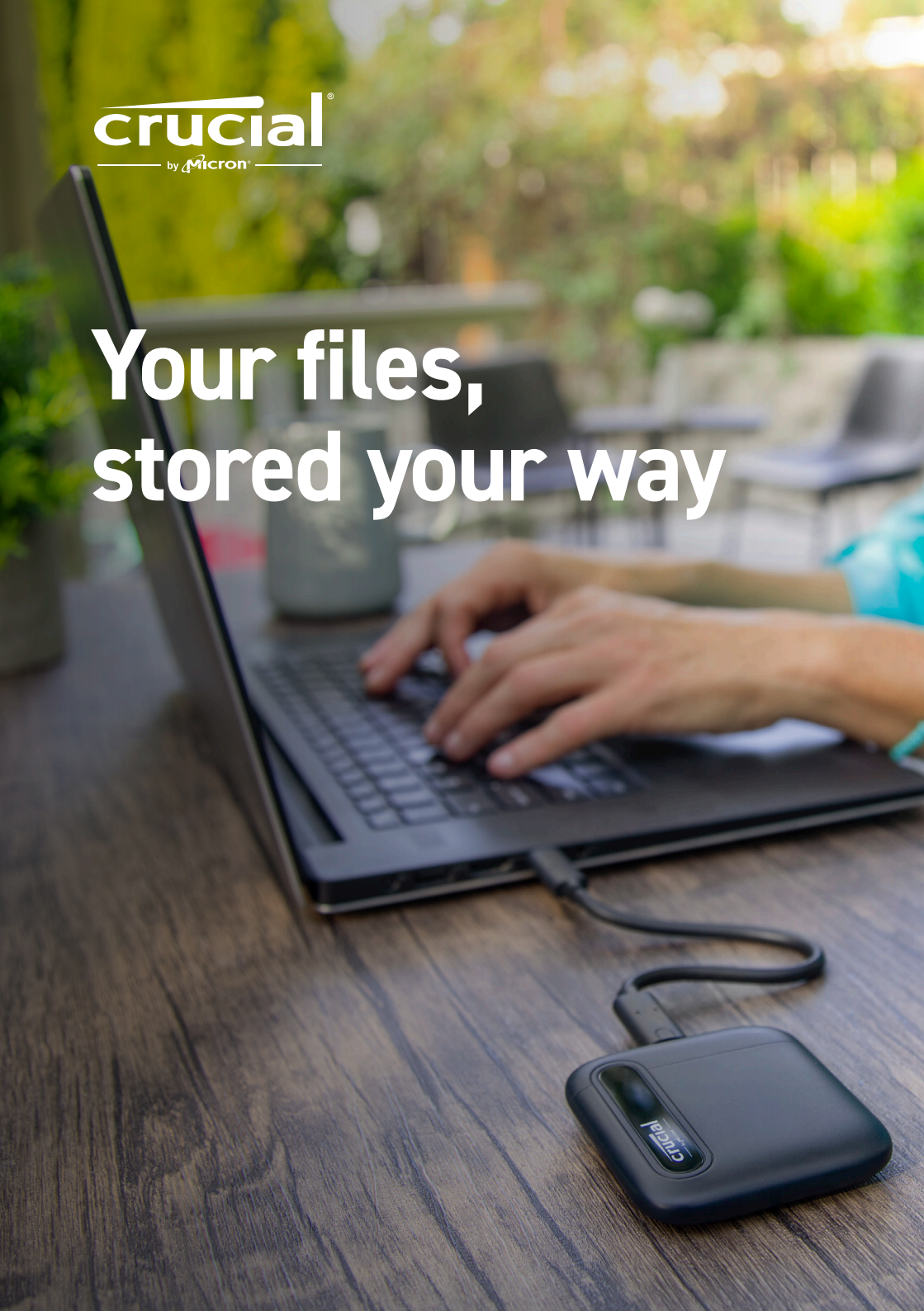
Replacing all the aging computers in your business can be expensive! For a fraction of the cost, you can upgrade your computers and accelerate your business with Crucial® BX500 SSDs. Adding a flash-based storage drive improves performance and extends your purchase cycle, lowering your total cost of ownership. It's the easiest way to speed up a computer and extend its life without the price.

**PRODUCT HIGHLIGHTS**

- Sequential reads/writes up to 540/500MB/s[13,14]
- More durable than a hard drive - no small moving parts that are prone to failure
- Multistep data integrity algorithm
- Thermal monitoring
- SLC write acceleration
- Active garbage collection
- TRIM support
- Self-monitoring and reporting technology (SMART)
- 3-year limited warranty[15]

**CAPACITIES**

- 240GB
- 480GB
- 1TB
- 2TB


crucial
by Micron
Your files,
stored your way

## Crucial

# Portable SSDs

Add fast, reliable storage to your PC, tablet, gaming console and more with a lightweight, durable Crucial® portable SSD.

Crucial X6 and X8 portable SSDs have enough room to back up and protect up to 20,000 photos, 100 hours of video, 3,000 songs and 400GB of documents with room to spare.[17]

# Crucial
# X8
## Portable SSD


**BEST FOR**

- Fast, cloudless storage for on-the-go professionals

## Storage evolved.

Protect your memories with the Crucial® X8 Portable SSD — back up important photos, videos and documents with up to 2TB capacity. Expand storage on your PS4™, Xbox One, iPad Pro, Android device, or simply free up space on your computer quickly with speeds up to 1050MB/s. The Crucial X8 runs up to 1.8x faster than other portable SSDs and up to 7.5x faster than portable HDDs.[19] Store with confidence on the Crucial X8.

**PRODUCT HIGHLIGHTS**

- Incredible performance with read speeds up to 1050MB/s[19]
- Works with Windows, Mac, iPad Pro, Chromebook, Android, Linux, PS4™, and Xbox One with USB-C 3.2 Gen 2 and USB-A connectors[21]
- Beautiful and durable design, featuring an anodized aluminum unibody core. Drop proof up to 7.5 feet. Extreme-temperature, shock, and vibration proof
- Size: 110 x 53 x 11.5 mm
- 3-year limited warranty[2]

**CAPACITIES**

- 1TB
- 2TB

# Crucial
# X6
## Portable SSD


**BEST FOR**

- Portable cloudless storage for everyday computing

# The future is faster.

How much data will fit in a drive that's smaller than a cell phone? With the Crucial® X6 Portable SSD, the answer is: A lot! With 500GB, 1TB, 2TB or 4TB of portable capacity[18], the X6 is the tiny drive with tremendous space. Perfect for transporting files between the office and home, traveling for business, or just adding extra space, no screwdriver required.

**PRODUCT HIGHLIGHTS**

- 500GB/1TB/2TB/4TB storage capacity[18]
- Size: 69 x 64 x 11 mm
- Fast transfers with read speeds up to 540MB/s[19]
- Compact, lightweight, and portable design works with most popular devices
- 6.5 ft (2 m) drop proof[20], shock and extreme temperature resistant
- Backed by Micron quality
- USB-A adapter available separately or bundled
- 3-year limited warranty[2]

**CAPACITIES**

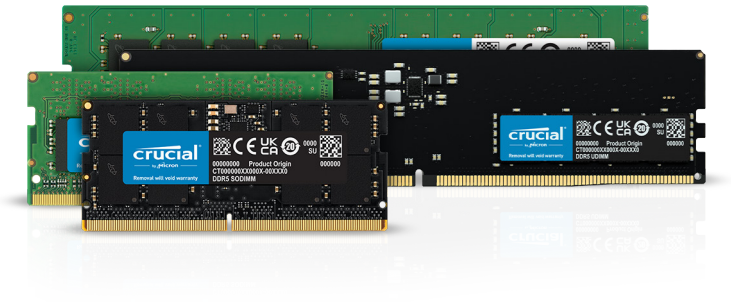
- 500GB
- 1TB
- 2TB
- 4TB

crucial
by Micron

# Maximize Speed and Performance

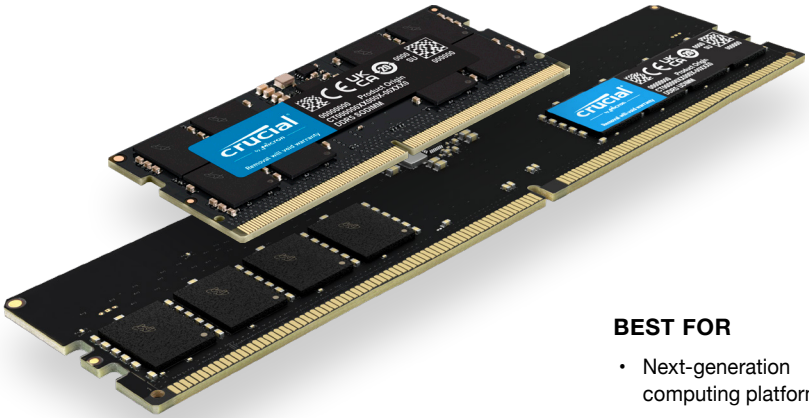
# Crucial Memory

Upgrading memory is one of the fastest, easiest, and most affordable improvements you can make to your computer — and you'll notice the difference in performance right away. All Crucial memory modules are 100% component and module tested and backed by one of the industry's most in-depth quality test programs. Built with more than 40 years of manufacturing expertise and a limited lifetime warranty[22], Crucial memory is made to last.



Crucial

# DDR5 Desktop and Laptop Memory



**BEST FOR**

- Next-generation computing platforms

## Not Just Faster. *Better.*

Crucial DDR5 Memory has the high speed needed for the next generation of multi-core CPUs, but it's not just faster than DDR4, it's better[26]. This innovative technology empowers your system to multitask seamlessly, load, analyze, edit, and render faster — all with higher frame rates, significantly less lag, and optimized power efficiency over the previous generation[27]. Available in blazing speeds of 4800MT/s and densities of up to 32GB at launch, Crucial DDR5 Memory can enable your computer[28] to harness the blazing speeds that were once only possible with extreme performance memory[29].

**PRODUCT HIGHLIGHTS**

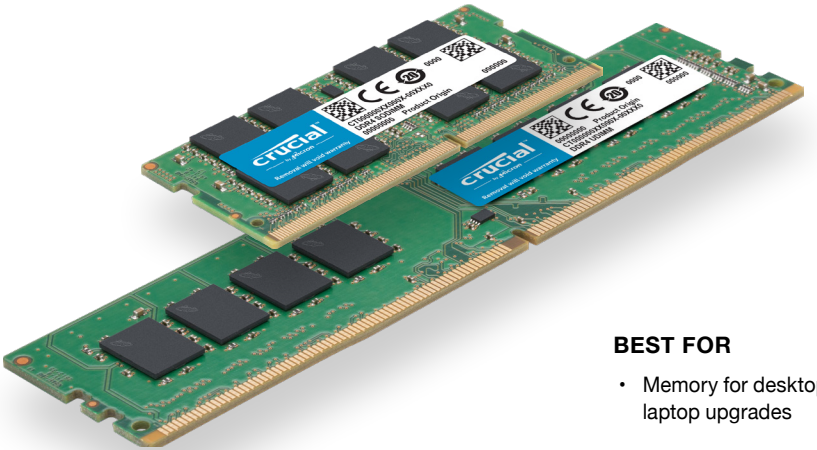
- Boost workforce productivity
- Multitask seamlessly
- Future-proof workstations for stability and performance
- Optimize power efficiency when scaling your business
- Limited lifetime warranty[22]

**MODULE TYPE**

**UDIMM**
**SODIMM**

Crucial

# DDR4 Desktop and Laptop Memory



**BEST FOR**

- Memory for desktop/ laptop upgrades

## Installs as easy as 1-2-3

There's an easy cure for a slow computer: more memory. Designed to help your system run faster and smoother, Crucial® Desktop Memory is one of the easiest and most affordable ways to improve your system's performance. Load programs faster. Increase responsiveness. Run data-intensive applications with ease, and increase your desktop's multitasking capabilities.

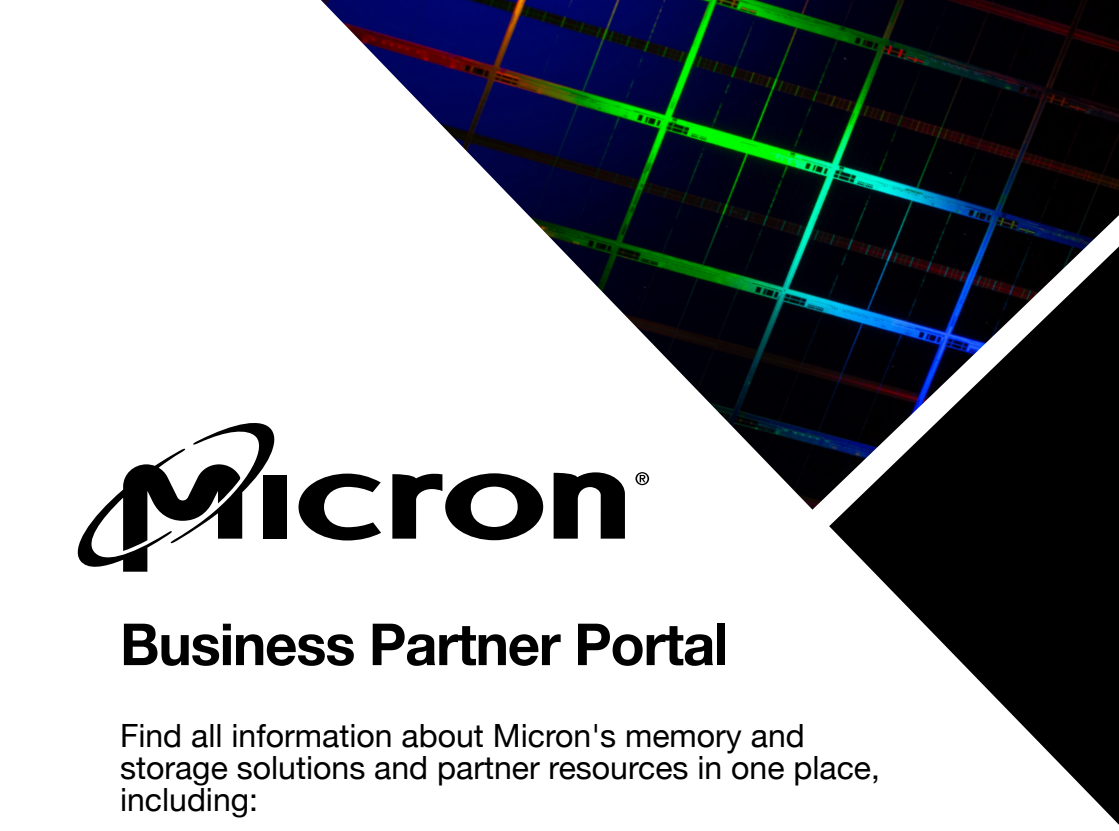
**PRODUCT HIGHLIGHTS**

- Increases PC or Mac performance
- Easy to install
- Designed for compatibility with OEM systems and warranties
- 100% component and module tested for reliability
- Limited lifetime warranty[22]

**MODULE TYPE**

**UDIMM**
**SODIMM**

*Parts ending with an M have been manufactured for Mac systems with upgradeable memory.*



# Business Partner Portal

Find all information about Micron's memory and storage solutions and partner resources in one place, including:

- Product information
- Training
- Videos and Webinars
- Marketing materials

**micronpg.com**

REGISTER NOW!

Sales & Marketing Resources

Marketing Support & Incentives

Crucial Memory Selector Tool

Marketing Campaign Builder

Sales & Marketing Programs

# Micron: Quality from Start to Finish

Micron has fully manufactured NAND and DRAM in-house for more than 40 years, setting us apart from other companies that may simply assemble prebuilt third-party components. Micron's memory and storage is tested, monitored and built to last following a rigorous manufacturing process from sand to silicon.

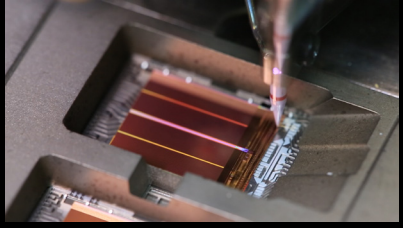
## A Higher Level of Reliability: Manufacturing vs. Assembling

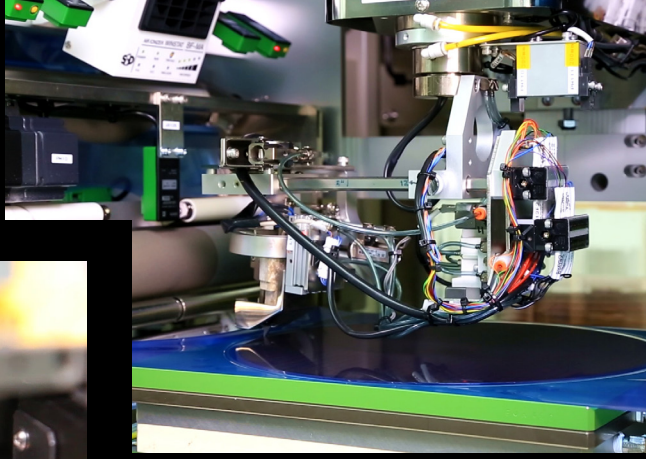
Quality must be checked at every step

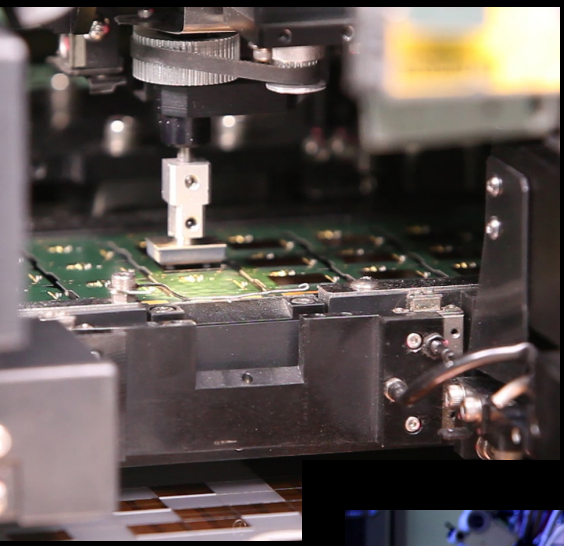
| Step | Why it matters | Can an assembler do it? | Can a manufacturer do it? |
|---|---|---|---|
| **Design & Development** | **Silicon designs are created, tested and vetted** | | ✔ |
| **Fabrication** | **Designs are fabricated on choice silicon, turned into wafers and tested for quality** | | ✔ |
| **Component assembly** | **Die are cut from wafers and microscopic gold wire attaches them to frames** | | ✔ |
| **Component testing** | **Probe, burn, hot/cold and more testing weeds out failures** | **Some can** | ✔ |
| **Module assembly** | **Modules are encapsulated in plastic and assembled onto PCB** | ✔ | ✔ |
| **Quality assurance/ compatibility testing** | **Performance is validated and final tests prove functionality and compatibility** | | ✔ |

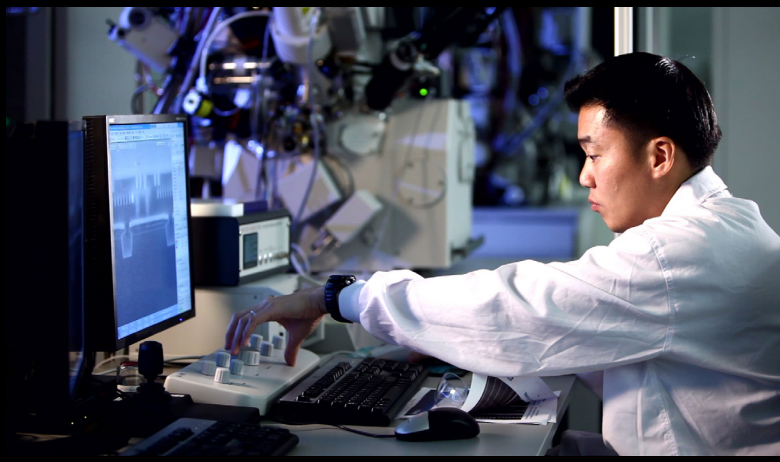
## Trusted Performance for Your Enterprise

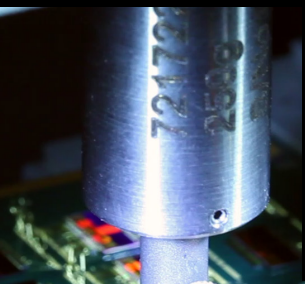
In our manufacturing process, testing and verification, low-performing parts are weeded out, and only the best make it into your servers. Only a true memory manufacturer can select, monitor, and test every aspect of production from start to finish, which delivers a level of reliability that can't be imitated. Trust Micron to deliver compatible NAND and DRAM that boosts performance and powers your enterprise for years to come.

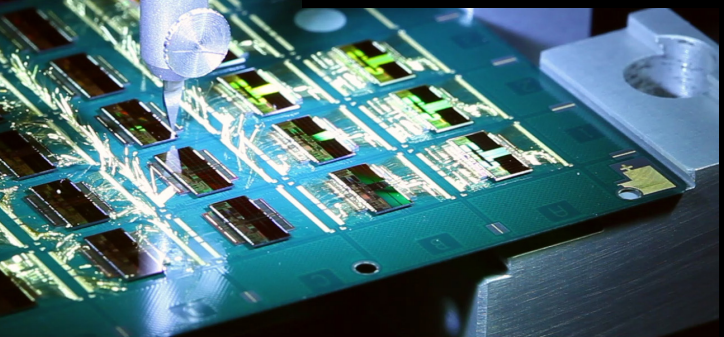












1. Installing Micron server memory does not invalidate OEM warranties. Some major server manufacturers have reserved the right to void the warranty based on their discretion.
2. Warranty valid for three years from the original date of purchase from authorized reseller.
3. Mixed use, 3 drive writes per day.
4. Read intensive, 1 drive write per day.
5. Read intensive, 1-2 drive writes per day.
6. Mixed use, 3-5 drive writes per day.
7. 4KB transfers with a queue depth of 1 are used to measure read/write latency values.
8. Based on maximum data sheet specifications. Performance specs vary by model, capacity, and form factor.
9. Speed comparison based on published specs of the Crucial BX500 and internal hard drives with a rotation speed of 7200rpm.
10. Based on the published specs of the 1TB model. Speeds based on internal testing. Actual performance may vary.
11. Active average power use comparison based on published specs of the 1TB Crucial MX500 SSD and the 1TB Western Digital Caviar Blue™ WD10EZEX internal hard drive, which as of July 2018, is one of the industry's top-selling internal hard drives. All other capacities of the Crucial MX500 SSD have comparable active average power consumption specs.
12. Warranty valid for five years from the original date of purchase or before writing the maximum total bytes written (TBW) as published in the product datasheet and as measured in the product's SMART data, whichever comes first.
13. Active average power use comparison based on published specs of the 480GB Crucial BX500 SSD and the 1TB Western Digital® Caviar BlueTM WD10EZEX internal hard drive, which as of July 2018, is one of the industry's top-selling internal hard drives.
14. Typical I/O performance numbers as measured using CrystalDiskMark® with a queue depth of 32 and write cache enabled. Fresh out-of-box (FOB) state is assumed. For performance measurement purposes, the SSD may be restored to FOB state using the secure erase command. System variations will affect measured results.
15. Warranty valid for three years from the original date of purchase or before writing the maximum total bytes written (TBW) as published in the product datasheet and as measured in the product's SMART data, whichever comes first.
16. Typical I/O performance numbers as measured using CrystalDiskMark® with a queue depth of 128 (QD = 8, Threads = 8) and write cache enabled. Fresh out-of-box (FOB) state is assumed. For performance measurement purposes, the SSD may be restored to FOB state using the secure erase command. System variations will affect measured results.
17. Based on average photo size of 6MB, video at 4K/60fps in H264 format at 24GB/hr, and average music file at 4MB each.
18. Some of the storage capacity is used for formatting and other purposes and is not available for data storage. 1GB equals 1 billion bytes. Not all capacities available at initial launch.
19. MB/s speed measured as maximum sequential performance of device as measured by Crucial on a high-performance desktop computer with Crystal Disk Mark (version 6.0.2 for x64). Your performance may vary. Comparative speed claims measured as maximum sequential performance of similarly situated portable SSDs, mainstream portable HDDs and mainstream USB flash drives from vertically integrated manufacturers selling under their own brands as of June 2019.
20. Up to 6.5ft (2 m) without impact to data on drive on a carpeted floor.
21. Compatibility may vary and may be contingent on device formatting and host capabilities. For more information, see https://crucial.com/support/x8
22. Limited lifetime warranty valid everywhere except Germany, where warranty is valid for 10 years from date of purchase.
23. Typical I/O performance numbers as measured using CrystalDiskMark® with a queue depth of 128 and write cache enabled. Fresh out-of-box (FOB) state is assumed. For performance measurement purposes, the SSD may be restored to FOB state using the secure erase command. System variations will affect measured results. When installed in a Gen3 system, typical read/write speeds are 3300/2700MB/s.
24. No hardware, software or system can provide absolute security under all conditions. Micron assumes no liability for lost, stolen or corrupted data arising from the use of any Micron products, including those products that incorporate any of the mentioned security features.
25. M.2 22 x 80mm available in 400GB, 480GB, 800GB and 960GB; M.2 22 x 110mm available in all listed M.2 capacities.
26. DDR5 architecture includes efficiency improvements that deliver 36% more system bandwidth than DDR4, even at the same theoretical speeds of 3200MT/s, due to the high bus efficiency of DDR5 technology. Combined with lower voltage per module, this design provides superior (better) performance.
27. Under memory-intensive workloads, DDR5 delivers 1.87x the bandwidth as a result of double burst length, double the banks and bank groups, and significantly higher speed than DDR4. It is enabled to support scaling memory performance with improved channel efficiency, even at higher speeds, not just during testing, but under real-world condition, as established by JEDEC, an independent standardization body that develops open standards for the microelectronics industry.
28. Computer must have a DDR5-enabled CPU and motherboard. Crucial DDR5 Desktop Memory is not compatible with DDR4 motherboards.
29. DDR5 launch speeds of 4800MT/s are comparable to extreme-performance DDR4 memory speeds and are 1.5x (50%) faster than maximum standard DDR4 speeds of 3200MT/s. DDR5 launch speeds of 4800MT/s delivers 1.87x the bandwidth of the maximum standard DDR4 speeds of 3200MT/s.
30. Additional information available here: www.micron.com/176
31. Performance measured under the following conditions: Steady state as defined by SNIA Solid State Storage Performance Test Specification Enterprise v1.1; Drive write cache enabled; NVMe power state 0; sequential workloads measured using FIO with a queue depth of 32; random read workloads measured using FIO with a queue depth of 256 (1,000,000 IOPS statement based on 4K sector size; random write workloads measured using FIO with a queue depth of 128)
32. Typical I/O performance numbers as measured using CrystalDiskMark® with command queue full and write cache enabled. Fresh out-of-box (FOB) state is assumed. For performance measurement purposes, the SSD may be restored to FOB state using the secure erase command. System variations will affect measured results.
33. Some of the storage capacity is used for formatting and other purposes and is not available for data storage. 1GB equals 1 billion bytes.
34. Speed comparison are between Crucial P3 Plus published top speeds of 5000MB/s and the fastest published Gen3 speeds for NVMe SSDs, at 3500MB/s.
35. Typical I/O performance numbers as measured using CrystalDiskMark® with command queue full and write cache enabled. Fresh out-of-box (FOB) state is assumed. For performance measurement purposes, the SSD may be restored to FOB state using the secure erase command. System variations will affect measured results.
36. SSD speed comparison between published Crucial P3 NVMe SSD read/write speeds up to 3500/3000MB/s and published Crucial MX500 SATA SSD read/write speeds of 560/510MB/s; SSD vs. HDD speed comparisons between published Crucial P3 NVMe SSD read/write speeds of up to 3500/3000MB/s and top preset consumer hard disk drive read/write speeds of 7200RPM (~156MB/s).
37. Some of the storage capacity is used for formatting and other purposes and is not available for data storage. 1GB equals 1 billion bytes. Not all capacities available at initial launch.
38. The Crucial P3 speeds of up to 3500/3000MB/s are 1.3x and 1.6x faster (respectively) than Crucial P2 speeds of up to 2400/1900MB/s.
39. Under memory-intensive workloads, DDR5 is designed to deliver 1.87x the bandwidth as a result of double burst length, double the banks and bank groups, and significantly higher speed than DDR4, as established by JEDEC, an independent organization that develops open standards for the microelectronics industry.
40. DDR5 launch data rate of 4800MT/s transfers 1.5x (50%) more data than the maximum standard DDR4 data rate of 3200MT/s. JEDEC projected speeds of 8800MT/s are 2.75x faster than DDR4's maximum standard data rate of 3200MT/s.
41. Initial DDR5 Server DRAM shipments will not include the VLP RDIMM variation. It will come later in the year.
42. DDR5 component voltage is 1.1; module voltage for RDIMM is 12 and ECC UDIMM & ECC SODIMM are 5.
43. Additional information available at www.micron.com/176
44. Based on public data sheet specifications. The Micron 5400 SSD has a mean time to failure (MTTF) rating of 3 million device hours, compared to a typical 2 million hour MTTF rating for data center SATA SSDs, based on public information available at the time of this document's publication. The Micron 5400 MAX SSD has up to 5 drive write per day (DWPD) endurance rating compared to up to 3 DWPD rating for other data center SATA SSDs. The Micron 5400 PRO SSD has up to 1.5 DWPD compared to up to 1 DWPD for other data center SATA SSDs.
45. The Micron 5400 SSD is available in 14 capacity, form factor, endurance, and security configurations with power-loss, and data path protection. The closest similar use, data center, SATA SSD offers 12 combinations at the time of this document's publication.
46. Based on similar use, data center, SATA SSDs available on the open market as of the date of this document's publication.
47. Warranty valid for 5 years from the original date of purchase or before writing the maximum total bytes written (TBW) as published in the product datasheet and as measured in the product's SMART data, whichever comes first.



version 07.2022