



PHISON

CES 2024

Taking you to the fast lane

Presented by | *Chris Ramseyer*



AGENDA

Corporate Update Consumer SSD Lineup

- E31T
- E26 “Max14um”
- E27T 2230/2280

USB4 SoC

- U21 USB4 SoC

New Enterprise SSD

- X2 Controller



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Corporate Updates

Quick Facts About Phison



Experience

23+

Years



\$2B

2022 Revenue

80%+

R&D Exp. / OPEX



**3800
+HC**

75% R&D

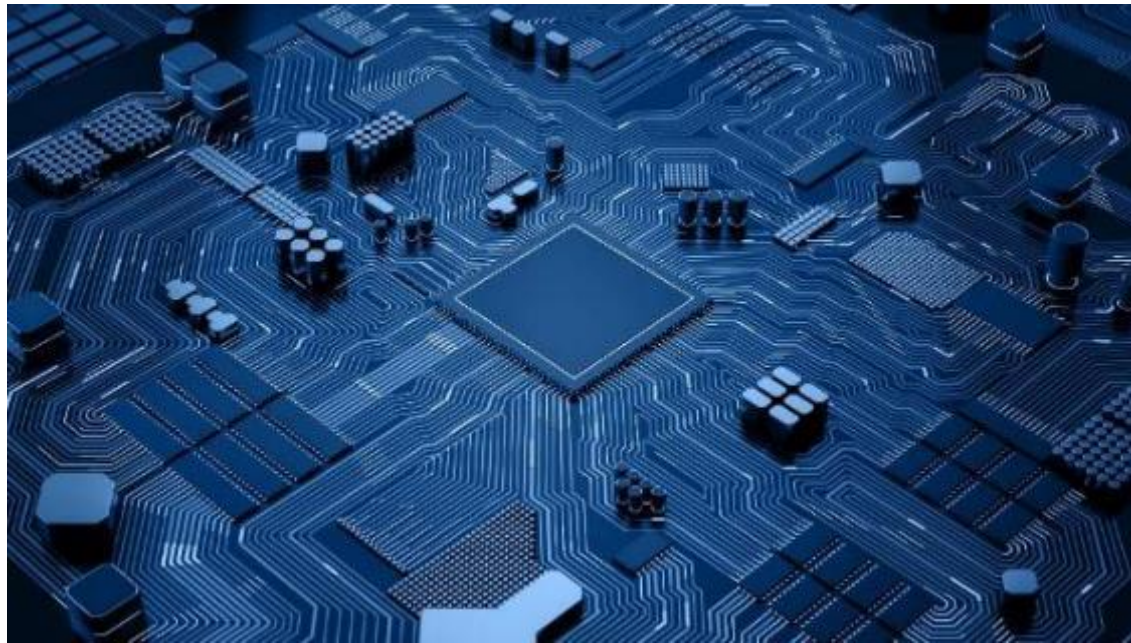
26%+

Client SSD Controller
Market Share

Business Focus

Client | Embedded | Enterprise
Automotive | Gaming | Design Service
Power IC | Signal IC

IMAGIN⁺ Design Services Empowering Innovation



Controller ASICs

- Best Partner for NAND Semicon
- Design to Support Multiple NANDs
- Sophisticated ASIC Knowledge
- Cutting-Edge ECC Design



Finished SSDs

- Controller/NAND/DRAM All-In-One
- Vertical Integration
- System-Level Validation
- One-stop Shopping



Design Service

- Comprehensive IP License
- TSMC/UMC Process
- Highly Customized
- Software Development Kit

Phison's Partnership with World's Largest Storage OEMs



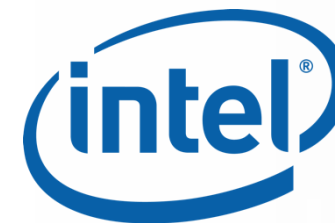
NAND flash makers are Phison customers and suppliers

KIOXIA

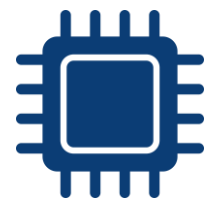


Western
Digital®

SAMSUNG



OEM Customers



*NAND Storage
Private Label*



*IP
Licensing*



*PC
OEM*



*Gaming
Consoles*



Automotive



Datacenter



*Industrial
Embedded*

Phison 2023 Year-In-Review



Honored by Micron & Kioxia



Imagin+ Design Service in Fruition



- Simply the best OEM SSD ever made. – E25 (Tech Radar)
- Space NVMe SSD 4TB on ISS
- E18 pSLC for 100% sustained workload for up to 42 DWPD
- E26 Max14um SSD with Frore System Airjet
- Pass Auto ASPICE CL3
- aiDAPTIV+ AI HW Architecture

Gen5 High Speed Signal IC Tops Market Share



#1 PCIe Gen 5.0 Redriver Market Share



1st PCI-SIG 5.0 Certified Redriver IC + Retimer IC Supplier

Enterprise SSD Qualified by Tier 1 OEM



- Dual-port, best performance-per watt Gen4 Enterprise SSD
- Gen4 X100 SSD qualified by 10+ OEMs
- Gen5 Dual-port SSD enabled by X2 controller coming in 2024

Phison 2023 Year-In-Review



Phison E26 and E25 “Best SSD of 2023 Awards”

- **Tom’s Hardware**
- **TweakTown**
- **PC Gamer**
- **eTeknix**
- **Digit.in**
- **PC World**
- **PC Mag**
- **Tech Radar**
- **XDA Developers**
- **And More!**

Phison E26 and E25 Commentary

- **Simply the best OEM SSD ever made. – E25 (Tech Radar)**
- **It's the highest performing retail SSD we've ever tested, and our SSD of the Year for 2023! – E26 (TweakTown)**
- **...this is easily one of the fastest drives on the market.. – E26 (eTeknix)**
- **...absolutely obliterated the competition in both synthetic and real-world benchmarks. – E26 (PC World)**
- **We loved this SSD in our review, and it's one of the fastest consumer-grade SSDs available. - E26 (XDA Developers)**



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Consumer SSD Lineup



1.

E31T

World's First Mainstream PCIe Gen5 SSD



PHISON
PS5031-E31T

Highlights

PHISON
PS5031-E31T

- **PCIe Gen5x4**
- **TSMC 7nm Process**
- **DRAMless Design**
- **4-Channels with 16 Chip Enables**
- **Up to 8TB Capacity**
- **3D TLC / QLC Support**

- **ARM Cortex R5 CPU**
- **7th Generations LDPC + RAID ECC**
- **4K Code Word**
- **AES256 / TCG Opal / Pyrite Support**

- **Sequential Read** **10.8GB/s Today**
 14+GB/s with Future NAND
- **Sequential Write** **10.8GB/s**
- **Random Read** **1,500K IOPS**
- **Random Write** **1,500K IOPS**



2. E26 "Max14um"

Taking Gen5 to the Limit



Highlights

- PCIe Gen5x4
- TSMC 12nm Process
- 8-Channels with 32 Chip Enables
- Up to 8TB Capacity
- 3D TLC
- World's First 14GB/s Consumer SSD
- World's First Consumer SSD with Over 1000MB/s in UL's PCMark 10 and 3DMark Storage Tests
- Shipping Early 2024
- **Sequential Read** **14+GB/s**
- **Sequential Write** **12GB/s**
- **Random Read** **1,500K IOPS**
- **Random Write** **1,600K IOPS**



Taking You To The Fast Lane

With Phison E26 - The World's Fastest Gen5 SSD

crucial[®]
by Micron

PNY[®]

Apacer[®]

msi[®]

GIGABYTE[™]

 影驰[®]
GALAX

 **CORSAIR**

Nextorage

SABRENT

 **SEAGATE**

CFD SALES INC.

TEAMGROUP 

 **SSTC**

 **inland**[™]

MICRO CENTER[®]
computers & electronics



3. **E27T 2230** Next-Generation 2230 SSD for Portable Gaming Devices



Highlights

- **PCIe Gen4x4**
- **TSMC 12nm Process**
- **4-Channels with 16 Chip Enables**
- **Up to 2TB Capacity**
- **3D TLC / QLC**
- **DRAMless Design**

- **World's Fastest M.2 2230 SSD**
- **Drop-in replacement and optimized for Steam Deck, ROG Ally, and Lenovo Legion Go**

- **Sequential Read** **6,000MB/s**
- **Sequential Write** **5,000MB/s**
- **Random Read** **800K IOPS**
- **Random Write** **850K IOPS**

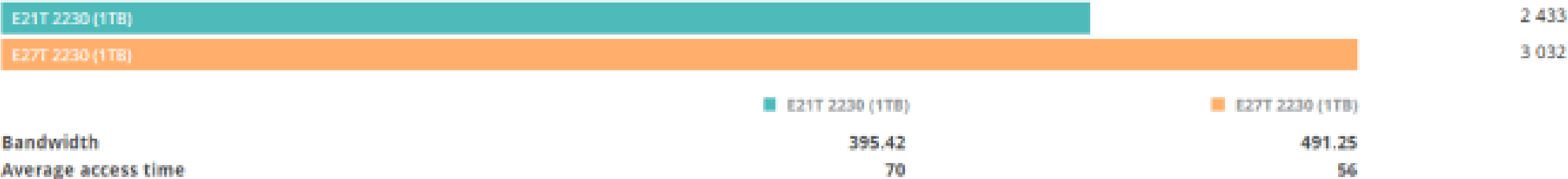


E21T vs. E27T Performance Comparison



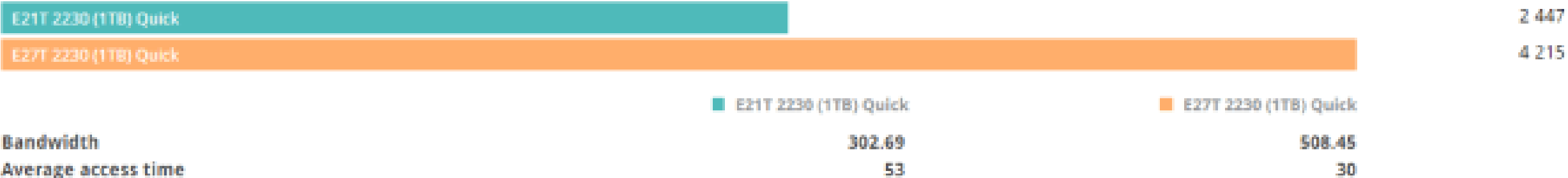
Full System Drive Benchmark comparison

FULL SYSTEM DRIVE BENCHMARK



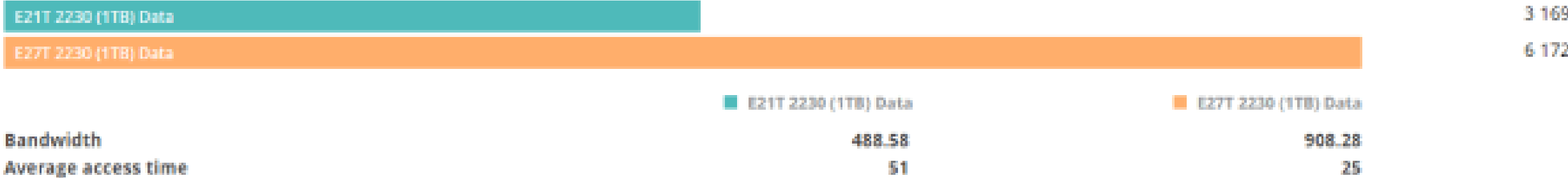
Quick System Drive Benchmark comparison

QUICK SYSTEM DRIVE BENCHMARK



Data Drive Benchmark comparison

DATA DRIVE BENCHMARK



2230 is a popular form factor for mobile gaming devices like the Steam Deck, ROG Ally, and Lenovo Legion Go (w/2242 adapter).

The Phison PS5027-E27T 2230 is optimized to deliver superior real-world performance for mobile gaming and desktop use enabling lower latency and higher throughput performance than anything else in its class.



4. **E27T 2280**

**Next-Generation Gen4 Low-Power
SSD for Desktop and Notebook Devices**

Highlights

- **PCIe Gen4x4**
- **TSMC 12nm Process**
- **4-Channels with 16 Chip Enables**
- **Up to 4TB Capacity**
- **3D TLC / QLC**
- **DRAMless Design**

- **Gen4x4 Notebook Champion**
- **Extremely Low Power Consumption**
- **Low TDP for Improved Heat Dissipation**

- **Sequential Read 7,400MB/s**
- **Sequential Write 6,500MB/s**
- **Random Read 1,200K IOPS**
- **Random Write 1,200K IOPS**





5. **U21 USB4 SoC**

World's First USB4 SoC for High-Speed Throughput



Highlights

PHISON
PS2251-21

- **Native USB4 (40Gbps)**
- **TSMC 12nm Process**
- **4-Channels with 16 Chip Enables**
- **Up to 8TB Capacity**
- **3D TLC / QLC Support**

- **World's First USB4 Single-Chip SoC**
- **Ultra Low Power for Traditional and Emerging form-factors and devices**
- **Backwards Compatible with Legacy USB Standards**

- **Sequential Read** **4,000MB/s***
- **Sequential Write** **4,000MB/s***

*Estimated Performance



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2024 New Enterprise SSD



X2 Controller

**Best Combination of Fast Performance
and Low Power PCIe Gen5 Dual Port SSD**



Highlights

- **PCIe Gen5x4, Dual-Port**
- **TSMC 12nm Process**
- **16-Channels**
- **Up to 128TB Capacity**
- **3D NAND**
- **Computational Storage Device (CSD)**

- **U.2, E3.S Form Factors**
- **Best Performance-Per-Watt**
- **1 and 3 Drive Writes Per Day (DWPD)**

- **Sequential Read** **14+GB/s**
- **Sequential Write** **12GB/s**
- **Random Read** **3,000K IOPS**
- **Random Write** **800K IOPS**



Thank You!



PHISON