



PHISON

Computex 2024

Phison
Media Update

June 2024

PHISON

> 6 Quick Facts About Phison



Experience

24+

Years



\$2B

Growing Revenue

80%+

R&D Exp. / OPEX



4000

Headcount

75% R&D

20%+

Global SSD Controller
Market Share

Business Focus

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

> We Serve World's Largest Storage OEMs

NAND flash makers are Phison customers and suppliers

KIOXIA

Micron®

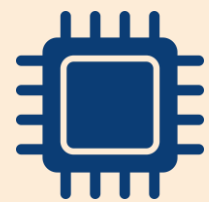
Western
Digital®

SAMSUNG

SOLIDIGM

SK hynix

OEM Customers



*NAND Storage
Private Label*



*IP
Licensing*



*PC
OEM*



*Gaming
Consoles*



Automotive



Datacenter



*Industrial
Embedded*

PHISON

> Recent Awards and Media Recognitions



European Hardware Awards 2024 – 10th Anniversary Finalists Announced

April 29, 2024

Over 100 of the world's leading technology journalists have delved into the plethora of hardware products available on the market, casting their votes for their preferred choices. On Monday, 3rd June 2024, the 10th edition of the European Hardware Awards will be unveiled, showcasing the definitive list of the finest hardware currently available.

7 out of 11 nominees enabled by Phison solutions

Tom's Hardware Innovation Awards 2024: A Step Forward

News

By Avram Piltch | Contributions from Sarah Jacobsson Purewal, Brandon Hill, Jarred Walton, Les Pounder, Andrew E. Freedman, Paul Alcorn, Denise Bertacchi published May 3, 2024

Some major stand-outs in a year of modest change.



Crucial T705, powered by Phison E26 controller, wins the most innovative SSD of 2024

tom's **HARDWARE**

Best SSDs 2024: From Budget SATA to Blazing-Fast NVMe

Best-picks By Paul Alcorn | Contributions from Shane Downing published April 27, 2024

Based on our extensive tests, these are best SSDs for every need and budget.

7 Phison-powered solutions made Tom's Hardware's list of Best SSDs (End of April, 2024)



Home > Best Products > Storage > SSDs

The Best Internal SSDs for 2024

Join Generation Flash: Here's everything you need to know to buy the right internal SSD, plus our top picks across all the M.2 and 2.5-inch drives PC Labs has tested.

By Tony Hoffman & John Burek

Updated April 15, 2024

Phison E26/E25/E21T solutions selected as PCMag's choice of The Best Internal SSDs for 2024 (April 2024)

- **Crucial T705: E26**
- **Crucial T500: E25**
- **Crucial P3: E21T**

Sources:

1. https://www.eha.digital/2024/04/29/european-hardware-awards-2024-10th-anniversary-finalists-announced/?fbclid=IwZXh0bgNhZW0CMTEAAAR0Ikr8S0PcxHel8ehDyJwi_1ZR29uaPdWnkpEJ4XbbTNTtFolWUIGyqRes_aem_Af_oYJqh4l8DVeAbro1qjrOKA1imB8SNNUqYDIV82GhQavFF8ghRsHXQipEma4hL037BIJs1cOOa2upbIKLIFUwL
2. <https://www.pcmag.com/picks/the-best-internal-ssds>
3. <https://www.tomshardware.com/pc-components/tomshardware-innovation-awards-2024#section-crucial-t705-ssd>
4. <https://www.tomshardware.com/reviews/best-ssds,3891.html>

> E26

- PCIe Gen5x4
- TSMC 12nm Process
- LPDDR4
- 8-Channel with 32 CEs
- 3D TLC Support
- Dual ARM Cortex R5 CPU + Andes N25 CoXProcessor™
- Phison 5th Gen LDPC + RAID ECC
- AES 256 / TCG Opal
- Form Factor: M.2 2280

Sequential Performance*

Read 14,000 MB/s

Write 12,000 MB/s

Random Performance*

Read 1,500K IOPS

Write 1,600K IOPS

*Based on SSD module capability.

PHISON

Max14um Performance On Display

Push system boundaries with the fastest Gen5 solution



PHISON

> E31T

- **PCIe Gen5x4**
- **TSMC 7nm Process**
- **DRAM-less Design**
- **4-Channel with 16 CEs**
- **Up to 8TB Capacity**
- **3D TLC / QLC Support**
- **ARM Cortex R5 CPU**
- **Phison 7th Gen LDPC + RAID ECC**
- **AES256 / TCG Opal / Pyrite**

Sequential Performance*

Read >10,000 MB/s

Write >10,000 MB/s

Random Performance*

Read 1,500K IOPS

Write 1,500K IOPS

*Based on existing 3600MT/s NAND, performance may vary with different configurations and power limitation.

PHISON

World's First 10 GB/s
Mainstream SSD

All Day Computing with Gen5 Efficiency



PHISON

> U21

- **Native USB4 (40Gbps)**
- **TSMC 12nm Process**
- **DRAM-less Design**
- **4-Channel with 16 CEs**
- **Up to 16TB Capacity**
- **3D TLC / QLC Support**
- **Phison 7th Gen LDPC & RAID ECC**
- **AES256 Support**
- **Form Factor: External SSD (U32C)**
- **Backwards Compatible with Legacy USB Standards**

Sequential Performance*

Read up to 4,000 MB/s

Write up to 4,000 MB/s

*Device Performance; real performance is based on system configuration

PHISON

World's First Native USB4 Controller

USB4 Performance and Portability



PHISON

> Phison's Advantages in High Speed Interface IC

**No.1
Market
Share**

PCIe
Gen5.0 Redriver
5Mu ship to date

**World's 1st
Certified**

PCI-SIG 5.0
Redriver IC
In-house Gen5-PHY

**Proprietary
PHiTUNE**

Fast EQ
tuning analysis
50X reduction in
R&D efforts

**One-Stop
Shopping**

Redriver +
Retimer portfolio
Flexibility in
design options

**Pin-to-Pin
Compatible**

With leading
industry supplier
Enables multiple source

> Redriver PS7162

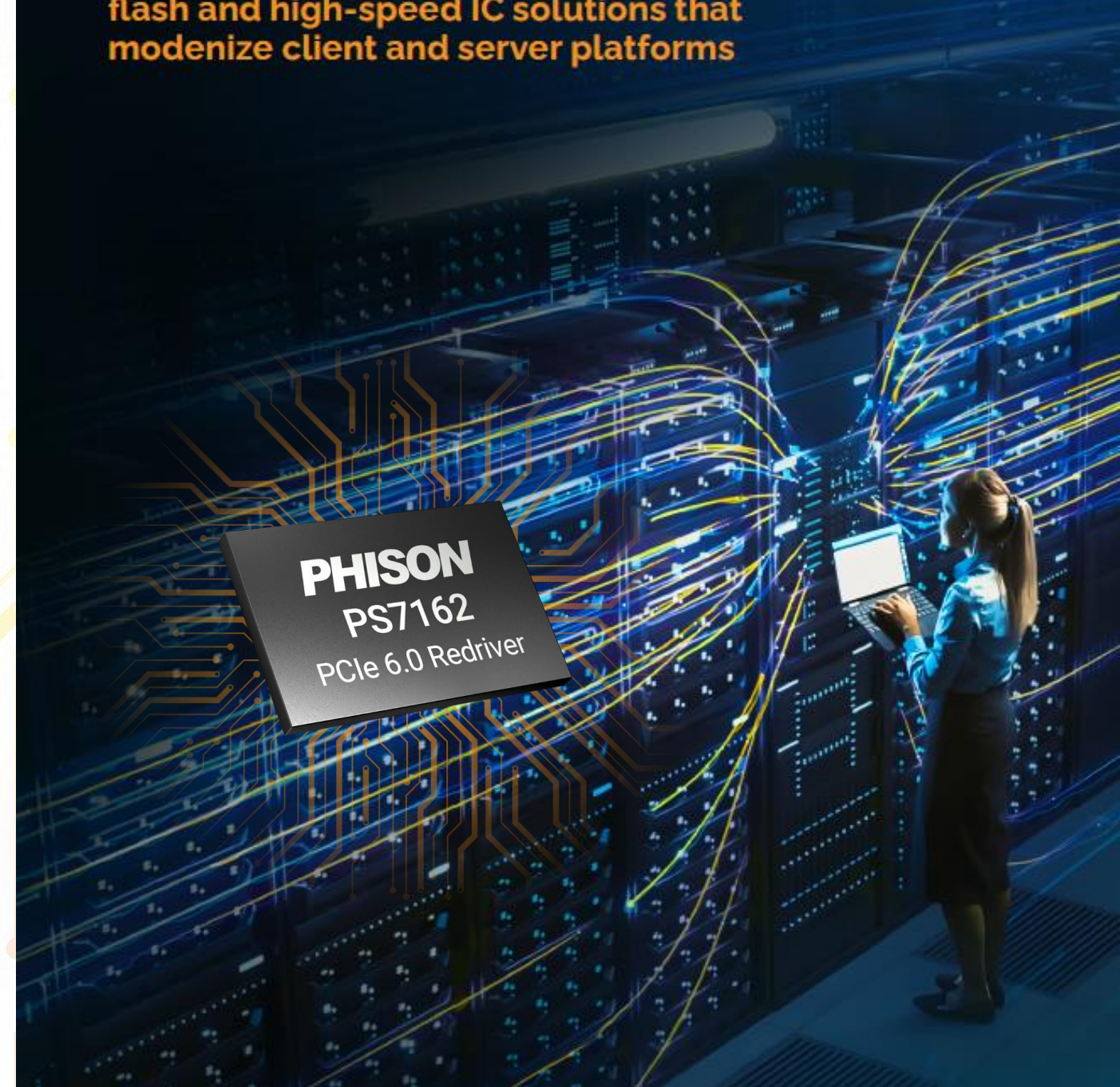
- PCIe 6.0
- I2C mode support
- 8-Channel (Non-interleaved)
- 4-Level I/O for EQ and GAIN settings to reduce pin count
- Pin-to-pin vs. PCIe 5.0
- 20dB max EQ boosting range
- 70ps ultra-low latency
- Package type: FCLGA
- SiGe BiCMOS process
- "PHiTUNE " Auto-EQ tuning tool
- Optimized Linearity for PCIe 6.0



PS7162 measurement result in a PCIe 6.0 (PAM4) system environment.

Ecosystem for Next-Gen PCIe Connectivity

Phison leads the ecosystem with NAND flash and high-speed IC solutions that modernize client and server platforms



PHISON
PS7162
PCIe 6.0 Redriver

> Phison High Speed Interface IC Proven Record

80+
Design-ins

Phison Redriver
80+ Design-in Projects in Total
PS7102 Alone
20+ Design-in Projects

PASSED
100+
devices

Phison Retimer has passed PIC-SIG workshop #126 **PS7201** qualified for

100+ different devices across PCIe Generations
20+ platforms with validation on-going at Tier-1 customer sites

AIC

ASUS®

ASRock

ASRock
— Rack —



FOXCONN

GIGABYTE™

GIGA
COMPUTING



Inventec

Lenovo

Quanta



wistron

Phison PS7201 PCIe Gen5 Retimer Shown

At the show, the company showed off an example of its PCIe redrivers in the [ASRock Rack GENOAD8X-2T/BCM](#) we reviewed. That is a very cool AMD EPYC Genoa motherboard. The PCIe redrivers are more like amplifiers for the signal to help extend reach and tend to be less costly than full retimers.



Phison Retimers On ASRock Rack GENOAD8X 2T BCM Motherboard

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Generative AI Innovation

aiDAPTIV⁺ System
Scaling boundaries, not budgets

**Model
Creation**



Cloud AI Servers

**Domain
Training**



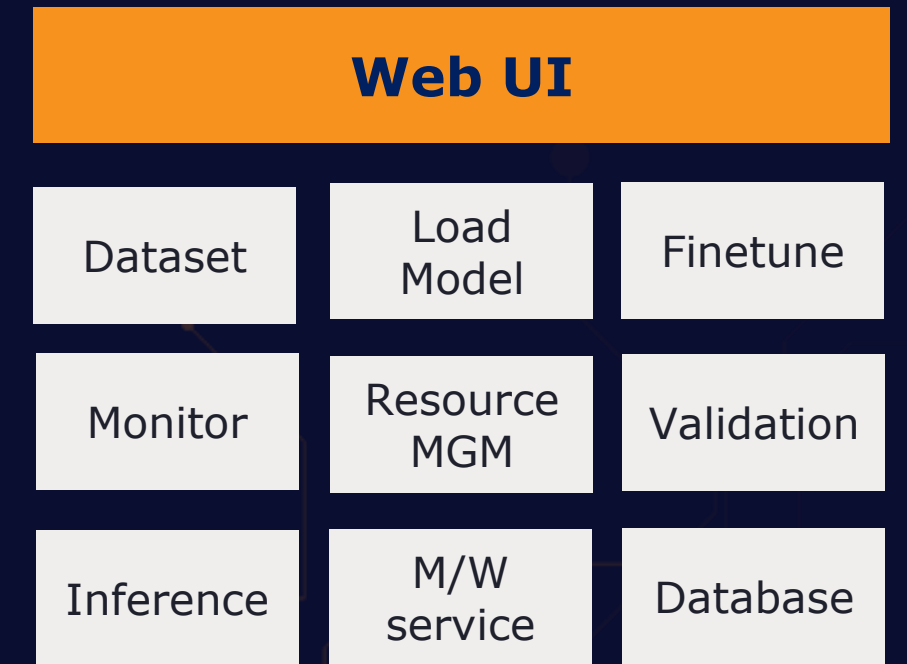
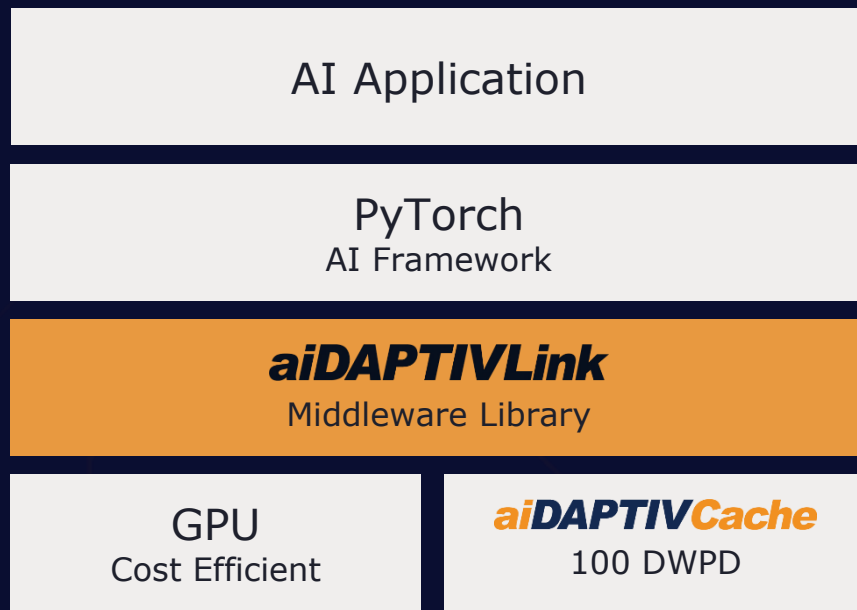
aiDAPTIV⁺ *An Answer to The Needs*
Phison On-promise AI Fine-tuning Solution

Inference



AI PCs / Other End Devices

> aiDAPTIV+ Family



aiDAPTIVLink
Middleware

Drop-in for all
existing AI applications

aiDAPTIVCache
Pascari AI-Series SSD Family

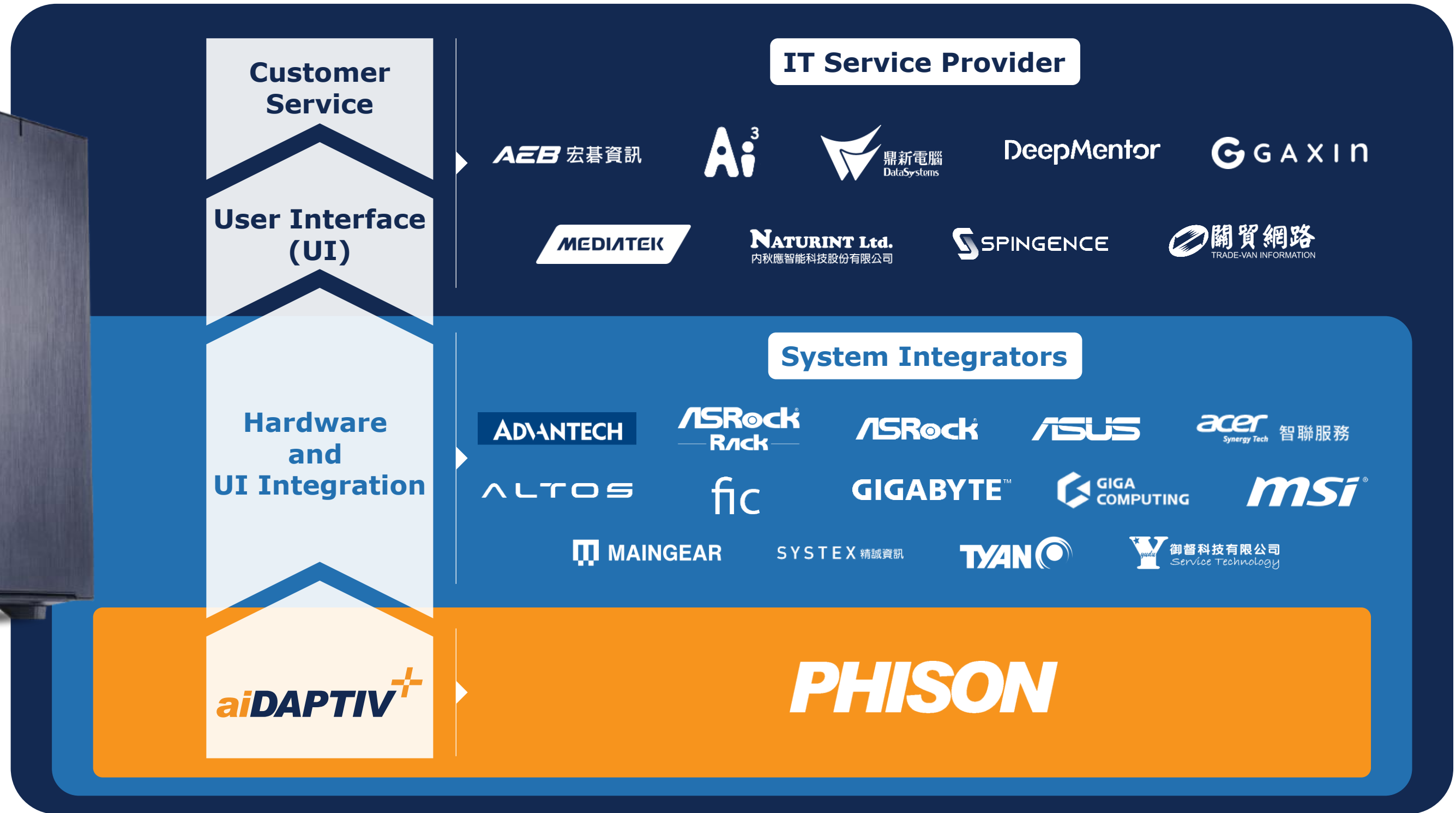
Seamless Integration
with HBM

aiDAPTIV+
Pro Suite

End-to-End Experience
Fine-tune to Inference

> Phison *aiDAPTIV*⁺ Ecosystem

Powered by
PHISON
aiDAPTIV⁺

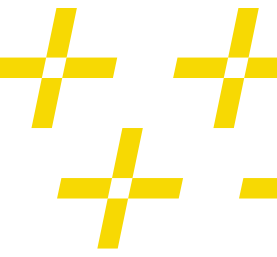




 **PASCARI**

Enterprise SSD

PHISON



What is PASCARI?

PASCARI is Phison's new brand name for its enterprise SSD product line. PASCARI stands for:

Performance

AI

Security

Capacity

Acceleration

Reliability

Innovation

Why does Phison create a new brand for enterprise?

Industry recognition, demonstration of value and product availability are our main reason. The introduction of the Pascari brand aims to establish our solution as market-proven through active engagements, thereby delivering enduring benefits to our ecosystem of partners.

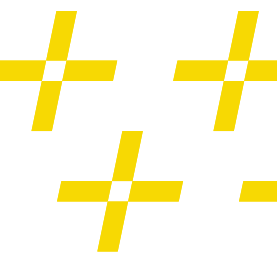
How will the brand impact the other product lines?

The Pascari brand is dedicated solely to enterprise products. Phison has no plans to develop new brands for client, embedded or industrial storage products.

Where can I buy PASCARI-branded SSDs?

We are actively working with channel partners to expand our access to end customers. For detailed partner list, please refer to our website: www.phisonenterprise.com

PASCARI Product Line-up



High Performance X-Series

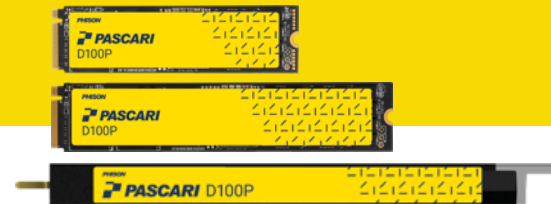
PCIe 4.0/5.0
Up to 30.72TB
1/3 DWPD



U.2 / U.3 / E3.S

Data Center D-Series

PCIe 4.0/5.0
Up to 7.68TB
1/3 DWPD



M.2 / E1.S

SATA S-Series

SATA III
Up to 15.36TB
0.4/1/3 DWPD



2.5"

Boot Drive B-Series

PCIe 4.0 / SATA III
Up to 960GB
1 DWPD



2.5" / M.2

Artificial Intelligence AI-Series

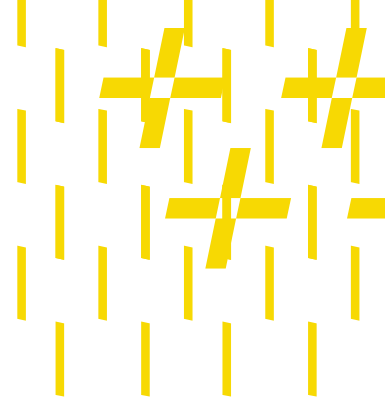
PCIe 4.0
Up to 1.92TB
Up to 100 DWPD



U.2 / M.2

Enterprise SSD X200 / D200 Series

PCIe Gen5 Performance and Efficiency



X200/D200 Series SSD

Designed to be the best of PCIe Gen5 performance, features, endurance, and economics for enterprise applications. Phison is dedicated to developing advanced SSD technology to provide the industry with increased density, higher performance and power efficiency for all mass capacity storage providers.





Specification

- Interface: PCIe 5.0 x 4
- Protocol: NVMe 2.0
- Capacity: Up to 128TB
- Form Factor: U.2 / E3.S / E1.S
- DWPD: 1 and 3 DWPD
- MTBF: 2.5 million hours
- Warranty: 5 years

Features

- Dual-port design
- Ultra-low latency
- Power loss Protection
- MF-QoS
- NVMe-MI
- ISE · TCG OPAL
- Name Space: 128

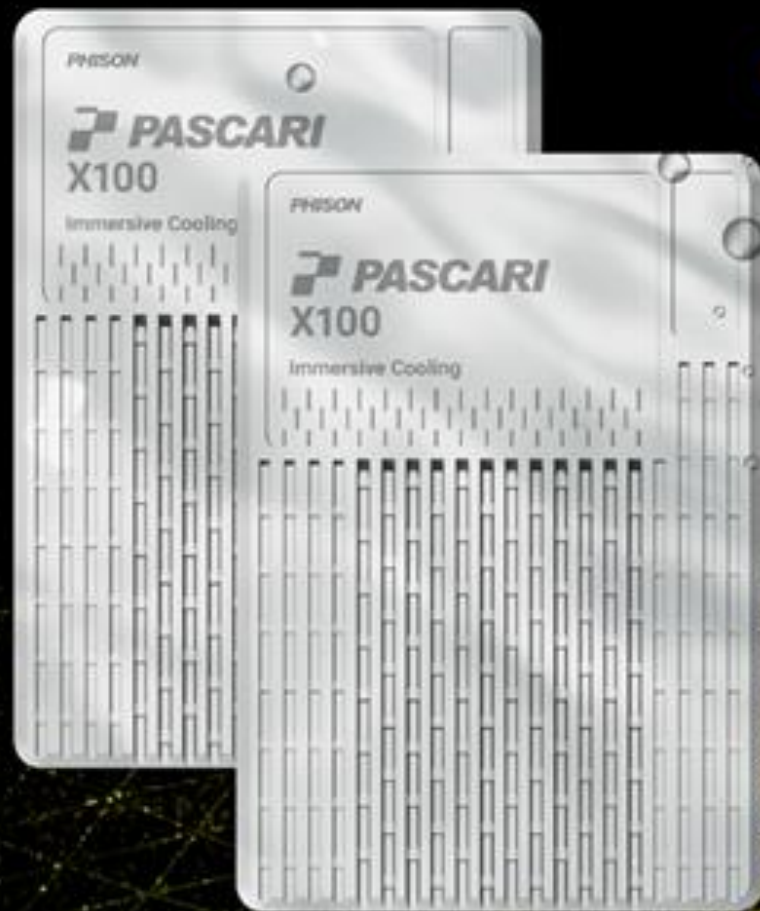
Performance

Seq. Read		14,800 MB/s
Seq. Write		8,700 MB/s
Ran. Read		3,000K IOPS
Ran. Write		900K IOPS

Immersive Cooling SSD

Submerge for Increased Efficiency

X100 Immersive Cooling SSD



- Consistent High Performance
- Excellent Signal Quality
- OCP Standards Compatibility
- High-Temperature Validated
- Customizable Design
- Extensive Warranty with High Urgency Support

 **PASCARI**



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THANK YOU

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