

The logo for UD info, featuring the letters 'UD' in a bold, white, sans-serif font, followed by the word 'info' in a white, italicized, sans-serif font. The background is a dark blue with a blurred image of a circuit board and some glowing orange and blue lights.

**UD** *info*

**Industrial Storage  
Solution Provider**

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[www.udinfo-tech.com](http://www.udinfo-tech.com)



## ■ Background

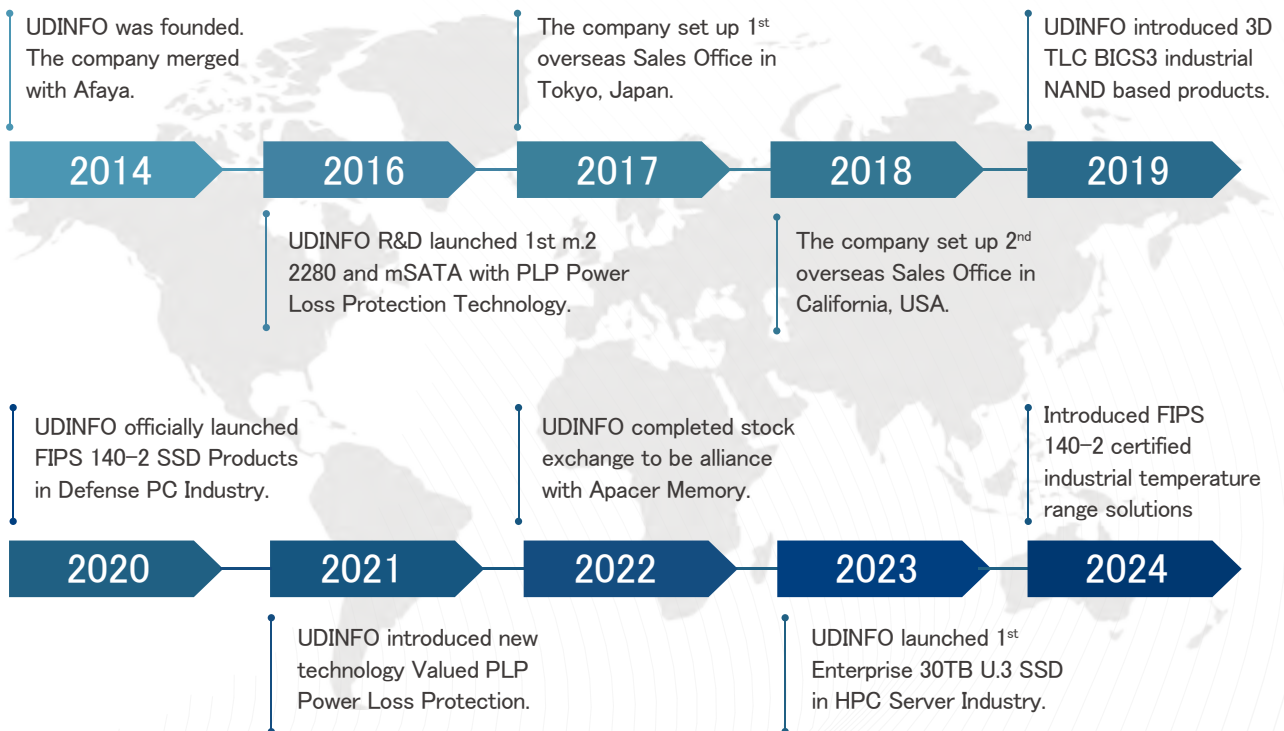
Founded in 2014, UDINFO is a professional engineering team that provides comprehensive NAND storage and DRAM solutions.

Acquiring Afaya Corporation, a pioneer in the CompactFlash market, UDINFO specializes in NAND firmware modification for industrial PCs and military rugged computing. In 2022, UDINFO formed an alliance with Apacer Technology Inc., enhancing its capabilities.

UDINFO's team excels in NAND firmware customization, SSD system integration, and NAND Flash manufacturing. Serving sectors like defense PC, HPC server, surveillance system, and navigation, UDINFO is a total-memory-solution provider, focusing on high-performance computing and rugged PC applications.

UDINFO's customization, flexibility, and specialization have earned it an excellent reputation in meeting the defense industry's demanding storage applications.

## ■ Milestones



## FIPS

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- Ensures secure and reliable data processing with strong encryption.
- FIPS 140 -2 : Applied on 2.5" SATA SSD, M.2 SATA & PCIe M.2 2280
- FIPS 140-3 : Applied on PCIe M.2 2280, U.2, U.3 & E1.S

## Data Erase

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- Erase all data, tables and hidden area
- Hardware push button or Software GPIO control
- Follow different military standards

## MIL-STD

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- Comply with US military specification that guarantees a level of durability for unit

## Conformal Coating

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- A layer of plastic protection is applied on all PCBA products in order to protect from dirt, dust, moisture, corrosion, electrical conduction and thermal conduction

## Write-Protect or Read only

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- Read Only
- Hardware Switch or Software GPIO control

## Power Loss Protection (PLP)

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- Extra power to protect all data during power loss at write

## Opal / AES (Security Encryption)

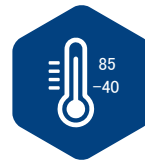
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- Protect the confidentiality of stored user data against unauthorized access once it leaves the owner's control
- Hardware Encryptions are applied on SATA interface & PCIe interface SSD

## Wide Temperature

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- All the components are designed and tested under -40~85 °C

## Physical Destory (PD)

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- Inputting a high voltage current through the module, damage the flash IC and ensure all data are completely destroyed

## S.M.A.R.T. (Self Monitoring Analysis Reporting Technology)

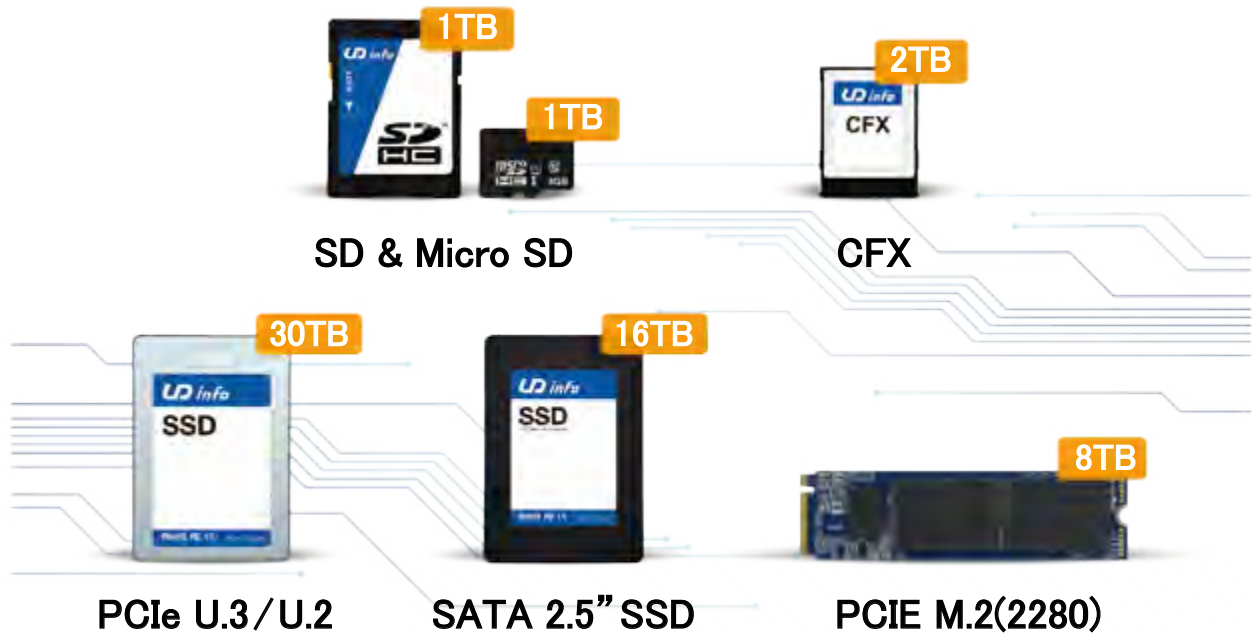
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- Setting criteria for warning message

## High Capacity Solutions

Release the power of storage / Built for Performance / Reliable & Durable



## DRAM Modules

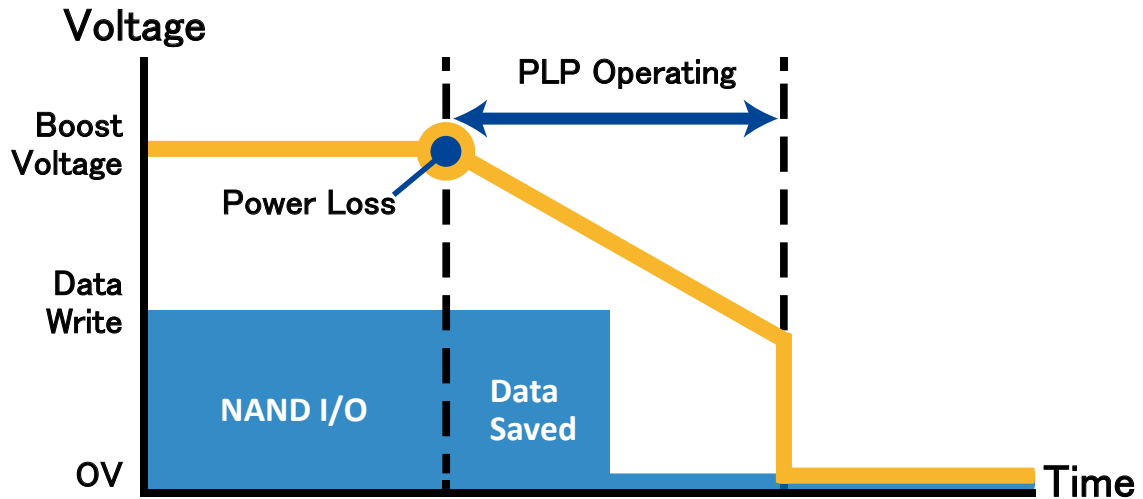
A full range of industrial grade DRAM Modules solution for from the legacy DDR to the latest DDR5 DRAM modules, that support a variety of applications and enable a perfect digital experience.

Form Factors	DDR5	DDR4	DDR3	DDR2	DDR
<b>SODIMM</b>	8GB~32GB Up to 5600MT/s ECC & Non-ECC	2GB~32GB Up to 3200MT/s ECC & Non-ECC	2GB~8GB Up to 1866MT/s ECC & Non-ECC	1GB~2GB Up to 800MT/s	512MB~1GB Up to 400MT/s
<b>UDIMM</b>	8GB~32GB Up to 5600MT/s ECC & Non-ECC	2GB~32GB Up to 3200MT/s ECC & Non-ECC	2GB~8GB Up to 1866MT/s ECC & Non-ECC	1GB~2GB Up to 800MT/s	512MB~1GB Up to 400MT/s



## ■ Power Loss Protection (PLP)

PLP helps secure the integrity of data from losing during power sudden off by adding Extra Power in the circuitry.



- Able to protect system and data
- Applied on PCIe U.2, PCIe M.2 2280, 2.5" SATA SSD, mSATA, M.2 SATA
- Available for SLC, MLC, 2D & 3D pSLC & 3D TLC Flash

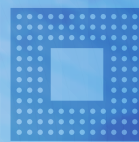
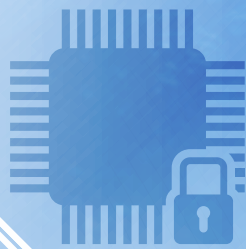
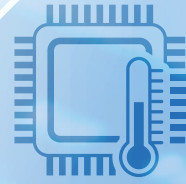
## ■ Pseudo SLC (pSLC)

NAND Types		Structures	Reliability (P/E Cycle)
2D	SLC		60K
	MLC		3K
	pSLC (Pseudo SLC)		30K
3D	TLC		3K
	pSLC (Pseudo SLC)		100K+

- pSLC is an Ideal Alternative Solution provides Reliability & Cost Efficiency, perfect for Heavy Write Application with Great Performance.
- Base on MLC or 3D TLC Flash to simulate SLC Performance.

# Solutions

## Solutions



## PCIe

\*TLC \*eTLC \*pSLC



- PCIe Gen 3x4 / 4x4 / 5x4
- 2.5”(U.3/U.2)
- Capacity: Up to 30720GB



## PCIe

\*TLC \*eTLC \*pSLC



- PCIe Gen 3x4 / 4x4 / 5x4
- M.2 2230 / 2242 / 2280 / E1.S / mini PCIe module
- Capacity: Up to 7680 GB



## PCIe

\*TLC \*pSLC

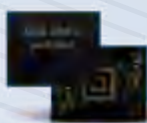


- PCIe Gen 3x2 / Gen 4x2
- CFexpress
- Capacity: Up to 2TB



## PCIe

\*TLC \*pSLC



- PCIe Gen 3x4 / Gen 4x4
- uSSD (BGA SSD)
- 1113 (11.5x13.0mm) / 1620 (16.0x20.0mm)
- Capacity: Up to 1TB





## SATA

\*SLC \*MLC \*TLC \*pSLC



- 1.8" SATA SSD
- 2.5" SATA SSD

– Capacity: Up to 15360 GB



## SATA

\*SLC \*MLC \*TLC \*pSLC



- mSATA
- mSATA mini

– Capacity: Up to 2TB



## SATA

\*SLC \*MLC \*TLC \*pSLC



- M.2 2242 / 2280

– Capacity: Up to 2TB



## SATA

\*SLC \*MLC \*TLC \*pSLC



- Half Slim (MO-297)

– Capacity: Up to 2TB



## SATA

\*SLC \*MLC \*TLC \*pSLC

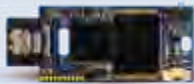


- CFast
- Capacity: Up to 1TB



## SATA

\*SLC \*MLC \*TLC \*pSLC



- SATA Module
- Capacity: Up to 512 GB



## SATA

\*TLC \*pSLC

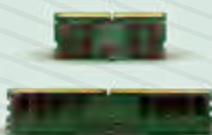


- uSSD (MO-276)
- 1620 (16.0x20.0mm)
- Capacity: Up to 512 GB



## DRAM

\*DDR \*DDR2 \*DDR3 \*DDR4 \*DDR5



- ECC UDIMM / ECC SODIMM
- UDIMM / SODIMM
- RDIMM
- Capacity: Up to 48 GB



## CARD

\*SLC \*MLC \*TLC \*pSLC



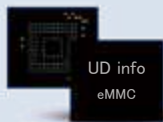
- SD Card
- Micro SD Card
- SD express

– Capacity: Up to 1TB



## EMMC

\*MLC \*TLC \*pSLC



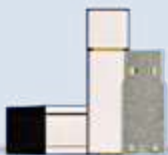
- EMMC

– Capacity: Up to 256 GB



## USB (TypeA/C)

\*SLC \*MLC \*TLC \*pSLC



- USB 2.0
- USB 3.0
- USB 3.2 Gen2x1

– Capacity: Up to 2TB



## PATA

\*SLC



### ▪ PCMCIA

– Capacity: Up to 32 GB



## PATA

\*SLC \*MLC \*pSLC



### ▪ 2.5" PATA SSD

– Capacity: Up to 256 GB



## PATA

\*SLC \*MLC \*pSLC



### ▪ CF Card

– Capacity: Up to 256 GB



## PATA

\*SLC

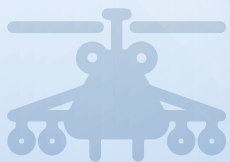


### ▪ IDE DOM

– Capacity: Up to 8 GB



# Rugged Applications



## ■ FIPS 140-2

This U.S. government standard ensures strong data encryption, keeping sensitive information safe and secure during use.



NIST Link

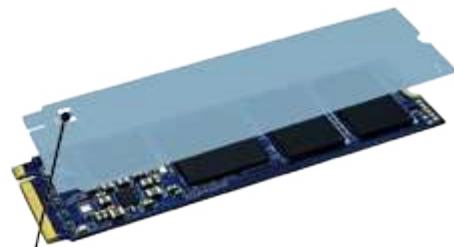


### 2.5" SATA SSD

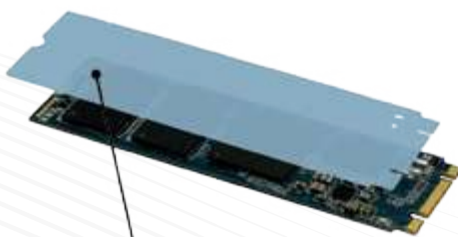
- Industrial Temp Range (-40~85°C)
- Up to **4TB**

### PCIe M.2 2280

- Industrial Temp Range (-40~85°C)
- Up to **2TB**



Conformal Coating



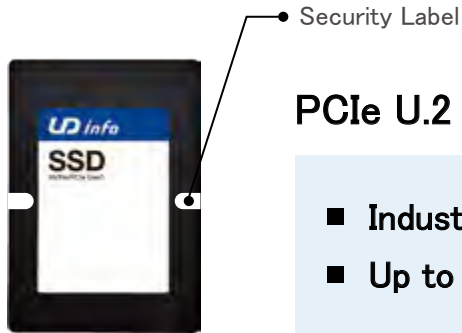
Conformal Coating

### M.2 SATA 2280

- Industrial Temp Range (-40~85°C)
- Up to **2TB**

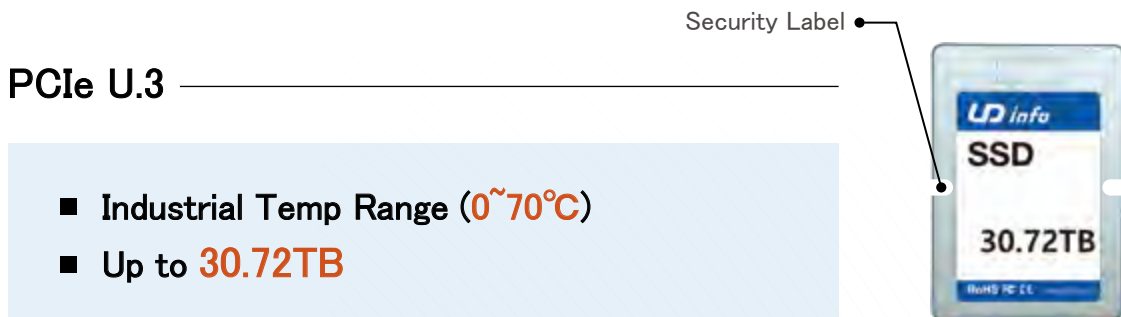
## ■ FIPS 140-3

An upgraded version of FIPS 140-2, this standard provides advanced protections against modern cyberthreats, offering even greater peace of mind.



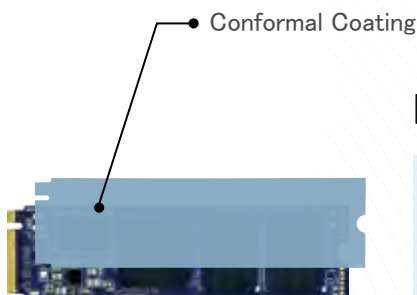
### PCIe U.2

- Industrial Temp Range ( $-40\sim 85^{\circ}\text{C}$ )
- Up to **8TB**



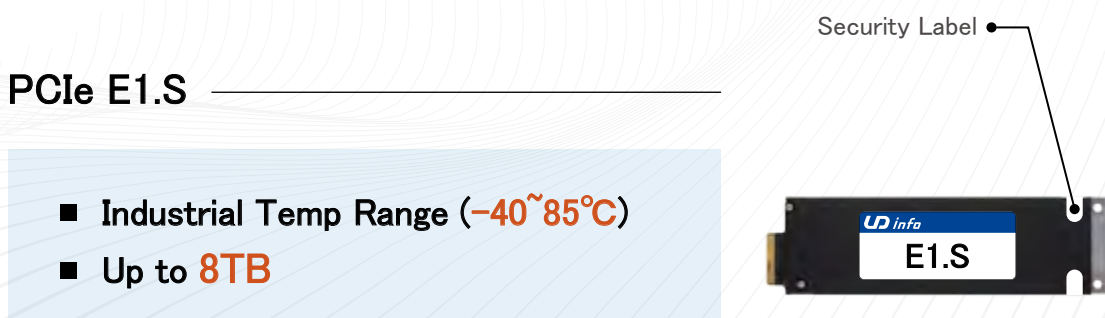
### PCIe U.3

- Industrial Temp Range ( $0\sim 70^{\circ}\text{C}$ )
- Up to **30.72TB**



### PCIe M.2 2280

- Industrial Temp Range ( $-40\sim 85^{\circ}\text{C}$ )
- Up to **8TB**



### PCIe E1.S

- Industrial Temp Range ( $-40\sim 85^{\circ}\text{C}$ )
- Up to **8TB**

## ■ 128TB NVMeGen4 x16 RAID Add-In Card

- Impressive capacity of up to 128TB.
- Exceptional Speed with performance of up to 28GB/s.
- Available with PCIe M.2 2280 x 16 for optimal performance.
- Suitable for versatile application including Edge Servers, defense systems, and transportation systems, providing reliable and efficient data storage solutions.

Ultra Capacity  
Superior performance

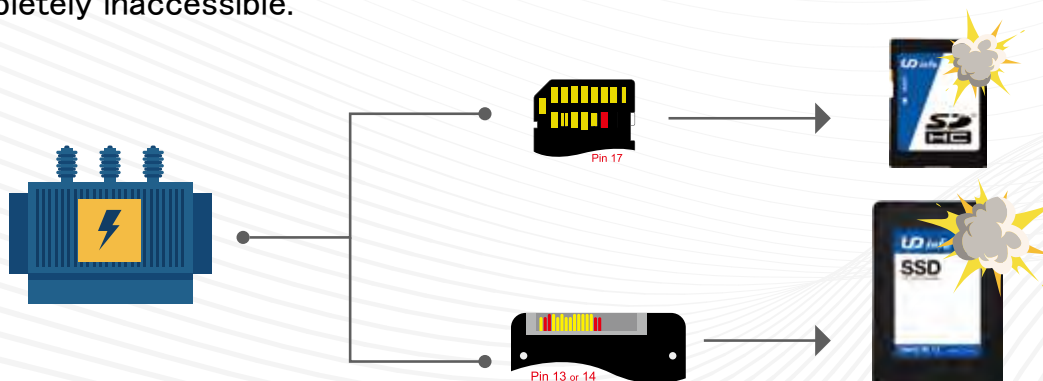
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- Available with PCIe M.2 2280 x 16
- Capacity : Up to **128TB**
- Performance : Read Up to **28GB/s**

## ■ Physical Destory

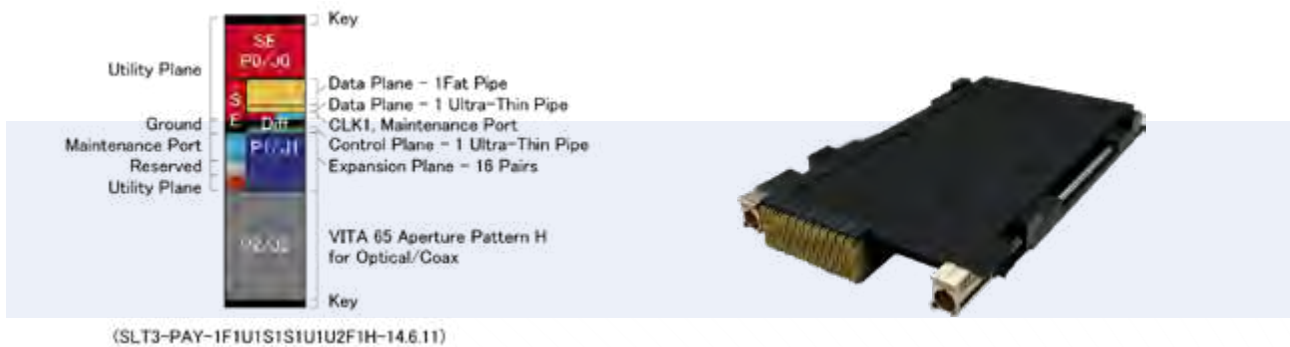
The protection of data is a key issue in industrial applications. It is essential that storage devices protect confidential data by data protection mechanism. Physical destruction performs a complete and total data erase of the SSD and SD Card. Using a high voltage input, physical destruction completely burns out the flash IC in a short period of time, causing irreversible damage and rendering the SSD completely inaccessible.





## VPX

- 3U OpenVPX, 1" slot pitch
- SOSA™ – aligned
- IPMI 2.0 compliant
- PCIe Gen4x4
- Total Capacity up to 30TB
- Compatible with SOSA slot profile
- Optional FIPS 140–2, CC/CSfC
- Optional TCG OPAL, Write Protect, Secure Erase
- Conduction – cooled or Air – cooled
- Operation Temperature:
  - Standard: 0° C ~ 70° C
  - Wide: –40° C ~ 85° C



## Low power consumption solutions

- Providing a range of SSD options with low power consumption by modifying the firmware and parameters.
- Effectively reduce the SSD's surface temperature and power consumption, improving energy efficiency and reliability.

Solutions	Active Read (W)	Active Write (W)	Idle (W)	Performance Read (MB/s)	Performance Write (MB/s)
Standard	9.3 (3A)	11 (3.3A)	2.6	6300	2300
Low power consumption solution 01	6.3 (1.9A)	9.3 (2.8A)	2.3	3340	2320
Low power consumption solution 02	6 (1.8A)	7.4 (2.2A)	2.1	1761	1720
Solution with lowest power consumption	3.6 (1A)	3.8 (1.1A)	1.9	450	450

# tested by using UDinfo M2P 80-DH 4TB solution





UD INFO CORPORATION 2025

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