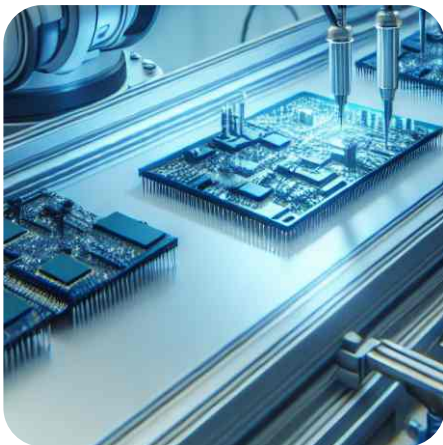
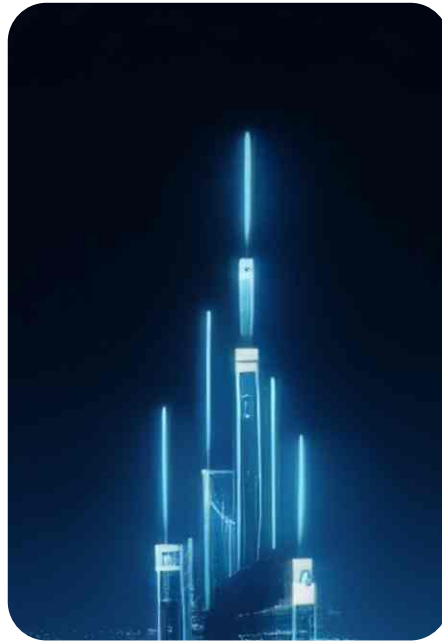


# CERVOZ

Making Memories for Industry



# INDUSTRIAL

Storage, Memory and Expansion Solutions



## ABOUT CERVOZ

Founded in 2006, Cervoz Technology Co., Ltd. specializes in embedded components for the industrial market. With over two decades of experience, the company focuses on the design and development of storage, memory and expansion card solutions for diverse industrial applications.

Cervoz provides industrial-grade products that emphasize stability and longevity, featuring long-term availability, strict BOM control, and high compatibility. Our solutions are engineered to meet the rigorous demands of industrial environments, supporting both legacy systems and mainstream technologies.

Our product portfolio includes

- Industrial Storage: SSDs and Memory Cards
- Industrial Memory: DRAM Modules
- Industrial Modular Expansion Cards

Headquartered in Taipei, Taiwan, Cervoz supports a global customer base through a commitment to reliability and meeting specific project requirements.

## OUR COMMITMENT

### Making Memories for Industry

We focus on ensuring system stability and long-term reliability for diverse industrial applications. By combining strict component sourcing with internal validation and lifecycle management, Cervoz supports smooth system integration while maintaining long-term product durability.





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#### Our Value

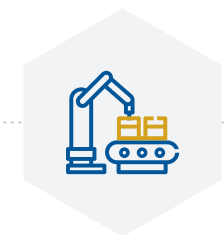
## CORE COMPETENCES

We stand together with our customer through listening to the demand and feedback, using our experience and expertise to collaborate producing high reliability and compatibility product for industrial applications.



### Industrial Grade Design

Only first-grade materials are used for all product lines. Our R&D expertise results in outstanding hardware and firmware designs creating products with the highest reliability, compatibility and endurance.



### Manufacturing

In the manufacturing process, we utilize the latest automation technologies. Every workflow is in line with ISO international standards to create a high-yield and the highest quality products.



### Product Management

We follow a unified fixed BOM principle, as well as long-term product availability in order to fulfill customers' long-term projects. Cervoz' product lifecycles are 3 to 5 years, with 8 years being the longest. We have a comprehensive ERP inventory management system with high safety stock levels ready to deliver when you need us.



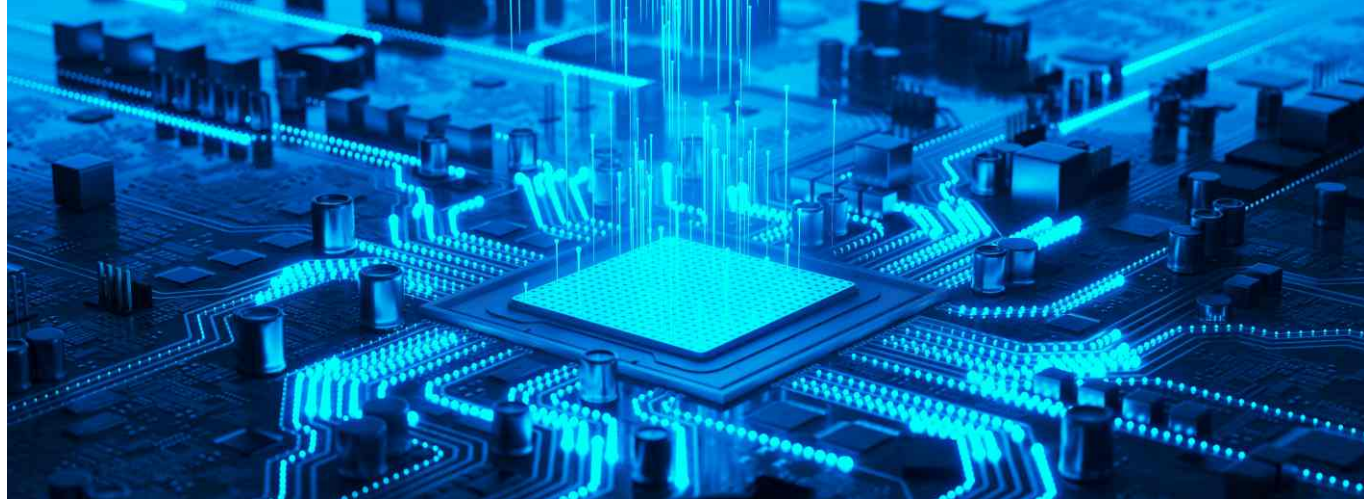
### Quality Assurance

For our quality assurance procedures, we test at all levels, including EVT (Engineering Verification Test), DVT (Design Verification Test) and PVT (Production Verification Test), as well as application and compliance tests. It brings Cervoz' product with high reliability and top compatibility. Cervoz products are certified with CE, FCC, REACH and RoHS.



### Premium Service

We care about every detail and exceed customers' expectations. We use our industry know-how and experience to offer premium sales and services and provide real-time technical support. Our services cover specialized testing and reporting on demand, debugging analysis, customization service and many more.



Our Innovation

## TECHNOLOGIES

### Multi-Layered Data Protection

A specialized design product with multi-layered data protection against information leakage which is consist of AES 256-bit, write protection, quick erase and physical destruction.



AES

AES 256-bit  
Encryption



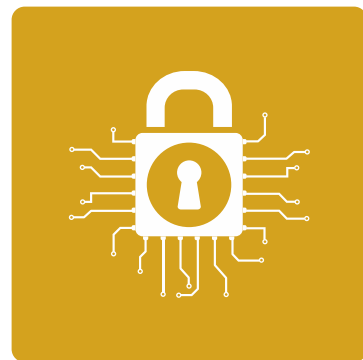
Write Protect



Quick Erase



Self-Physical  
Destruction



### Powerguard (Power Loss Protection)

Powerguard SSD is designed for mission-critical application when the system encounters unpredictable power failure.

Powerguard is a Power Loss Protection (PLP) technology developed by Cervoz. It provides additional power during an unexpected power outage to complete current flash write operation, moreover, to protect firmware, mapping table integrity.

### Reliability-Optimized MLC

Cervoz Reliance Series utilizes our " Reliability Optimized MLC (RO-MLC) Technology ".

We adopt specialized firmware to simulate the mechanism acting like SLC. It is a cost-effective solution for high-reliability applications.



Value-added Service

## TECHNOLOGIES

Cervoz continues to bring the most innovative products and develops industrial-grade technologies that focus on reliability, durability, and performance to offer unique features and value-added solutions to a wide range of industries.



### Cervoz FlashMonitor

Cervoz FlashMonitor is specialized flash disk monitoring software, developed in-house, dedicated to monitoring flash storage health. Disk relevant information and health conditions can be checked and monitored in real time, preventing functional degradation and predicting disk lifespan.

### Wide Temperature

Cervoz wide temperature storage and memory modules support operating temperatures from - 40°C ~ +85°C. Product compatibility and stability through strict environmental testing, which makes the products exceptionally durable for harsh environments.



### Conformal Coating

Conformal coating is a thin protective film applied to products as protection against moisture, dust, chemicals, thermal shocks and sunlight. If storage and memory modules must withstand harsh environments, the conformal coating becomes necessary in order to prevent damage or failure of the electronics and at the same time increases the lifecycle of the product.

### Anti-Vibration Fill

The purpose of Anti-Vibration Fill is to enhance the robustness of storage and memory modules. It is done by filling epoxy resin between the edges of PCB and ICs to prevent the solder joints from coming loose to enhance resistance against the pull-out and shear force.



### Isolation

Isolation describes the design of modular expansion cards whereby the input and output circuits are electrically and physically separated. The design prevents any interference or harm to the device from the power source, and overall increases the safety of the device to users.



# APPLICATIONS

Cervoz offers a variety of storage and memory product from entry-level to the supreme-level to fulfill any industrial application needs.



## Industrial Automation

Industrial automation systems require continuous operation and stable performance in demanding factory environments. Cervoz provides industrial storage and memory solutions designed to support long service life, wide compatibility, and consistent system operation.



## Embedded Computing

Embedded computing platforms often face constraints in space, power, and long-term availability. Cervoz offers compact storage, memory and expansion cards designed to support stable integration across diverse system architectures.



## In-Vehicle/ Transportation

In-vehicle and transportation systems operate under vibration, temperature variation, and power fluctuation. Cervoz provides validated storage and memory solutions designed to support reliable operation in demanding transportation environments.



# RUGGED & DEFENSE

Rugged and defense applications require validated reliability, environmental endurance, and secure data handling under extreme conditions such as shock, vibration, and temperature variation. Cervoz offers military-grade SSD and DRAM solutions designed and tested in compliance with U.S. military standards MIL-STD-810G/H. These solutions sustain harsh operating environments and incorporate multiple data protection features, including AES 256-bit encryption, write protection, quick erase, and self-physical destruction for mission-critical deployments.







## Defense-Grade Protection

Cervoz Military-Grade SSDs and DRAM modules are engineered to exceed the most stringent military and aerospace standards. Designed specifically for mission-critical applications, they combine proven reliability with cutting-edge technology to deliver uncompromising performance in the world's harshest environments. Our MIL-STD-810G/H certified solutions ensure data integrity and operational continuity when failure is not an option.



### MIL-STD-810G/H Certification

Compliant with MIL-STD-810G and 810H standards. Enhanced shock testing (Method 516.8) includes pyrotechnic simulation, while advanced vibration testing (Method 514.8) better replicates real battlefield conditions with dynamic cycling protocols.



### Powerguard Technology

Proprietary power-loss protection technology prevents data corruption during unexpected power failures. Critical for mission-continuity applications where power interruption could compromise operational effectiveness or data integrity.



### Extreme Environmental Tolerance

Engineered for operation in temperatures ranging from -40°C to +85°C. Enhanced thermal cycling protocols ensure reliable startup and operation during rapid temperature transitions encountered in military deployments.



### Advanced Security Architecture

Hardware-based AES 256-bit encryption provides military-grade data protection, while Quick Erase enables immediate data sanitization. Write Protection prevents unauthorized modification, and Self-Physical Destruction capability offers ultimate security when required.



### Enhanced Shock and Vibration Resistance

Surpassing standard industrial requirements, our military-grade SSDs withstand enhanced shock levels including pyrotechnic simulation testing.

## Defense-Grade SSDs & DRAM Modules

# SPEC SHEET

## 2.5" I M.2 SSDs Portfolio

| US Military Standards                                       | MIL-STD-810G          | MIL-STD-810H                                |                       |
|-------------------------------------------------------------|-----------------------|---------------------------------------------|-----------------------|
| Series                                                      | M339                  | T445                                        | T455                  |
| Form Factor                                                 | 25" SSD               | M.2 2242 I M.2 2280                         | M.2 2242 I M.2 2280   |
| Interface                                                   | SATA III              | PCIe Gen4x4                                 | PCIe Gen4x4           |
| Connector                                                   | SATA (7 + 15 pin)     | M.2 (M)                                     | M.2 (M)               |
| NAND Type                                                   | 3D MLC                | 3D TLC                                      | 3D TLC                |
| Capacity                                                    | 32GB ~ 512GB          | 256GB ~ 2TB                                 | 240GB ~ 1920GB        |
| Sequential Read (Max)                                       | 550MB/s               | 5,010MB/s I 5,080MB/s                       | 5,010MB/s I 5,080MB/s |
| Sequential Write (Max)                                      | 355MB/s               | 4,690MB/s I 4,740MB/s                       | 4,690MB/s I 4,740MB/s |
| Wide Temp (-40~85°C)                                        | √                     | √                                           | √                     |
| DRAM Buffer                                                 | √                     | –                                           | –                     |
| Powerguard (PLP)                                            | √                     | –                                           | –                     |
| Conformal Coating                                           | Optional              | Optional                                    | Optional              |
| Anti-Vibration Fill                                         | √                     | Optional                                    | Optional              |
| AES 256-bit Encryption                                      | √                     | –                                           | –                     |
| Multi-Layered Data Security (Quick Erase/ Physical Destroy) | √                     | –                                           | –                     |
| Write Protection                                            | √                     | Optional                                    | Optional              |
| FlashMonitor                                                | √                     | √                                           | √                     |
| Dimension (LxWxH/mm)                                        | 100.00 x 69.85 x 7.00 | 42.00 x 22.00 x 2.15 I 80.00 x 22.00 x 2.15 |                       |

Product specifications are subject to change without prior notice.

## DRAM Modules Portfolio

| US Military Standards  | MIL-STD-810H                            |                              |
|------------------------|-----------------------------------------|------------------------------|
| Module                 | DDR4                                    | DDR5                         |
| DIMM Type              | DIMM I SO-DIMM I VLP DIMM I VLP SO-DIMM | DIMM I SO-DIMM I VLP DIMM    |
| Speed (MT/s)           | 2400MHz, 2666MHz, 2933MHz, 3200MHz      | 4800MHz, 5600MHz             |
| Density                | 4GB, 8GB, 16GB, 32GB                    | 8GB, 16GB, 32GB, 48GB        |
| Function               | Non-ECC, ECC, Registered+ECC            | Non-ECC, ECC, Registered+ECC |
| Voltage                | 1.2V                                    | 1.1V                         |
| Operating Temp.        | √                                       | √                            |
| Wide Temp (-40 ~ 95°C) | √                                       | √                            |
| Anti-vibration Fill    | Optional                                | Optional                     |
| Conformal Coating      | Optional                                | Optional                     |
| PCB Height( mm)        | 31.25 I 30.00 I 18.75 I 18.00           | 31.25 I 30.00 I 18.75        |

Product specifications are subject to change without prior notice.



# ENABLING AI AT THE EDGE

At the edge, AI workloads move data processing closer to where information is generated, placing greater demands on system responsiveness and data handling efficiency. Cervoz supports edge AI architectures by providing a stable and scalable hardware foundation for embedded and industrial platforms.

Edge AI deployments often face constraints in space, power, and operating conditions outside data center environments. Cervoz storage, memory, and expansion solutions are designed to support consistent data handling and sustained system operation in real-world edge AI deployments.

Focus Market

## APPLICATIONS



### Healthcare

AI and data-driven healthcare are transforming how medical systems analyze, store, and access information. Cervoz provides industrial-grade storage, memory, and expansion solutions that ensure reliability, high performance, and long-term stability for healthcare applications.



### Networking & Telecom

Networking and telecom infrastructure must handle high data throughput, low latency, and scalable system architectures. Cervoz solutions support these requirements by enabling fast storage access for data processing, stable memory performance for network workloads, and expansion capabilities that allow flexible interface and bandwidth upgrades.



### Retail / Service / Entertainment

Retail and service systems rely on continuous data access, transaction stability, and flexible peripheral connectivity. Cervoz solutions support these platforms with reliable storage for transaction and content data, stable memory for system responsiveness, and expansion options that simplify integration with POS devices, displays, and interactive systems.



Our Products

# FLASH STORAGE SOLUTION

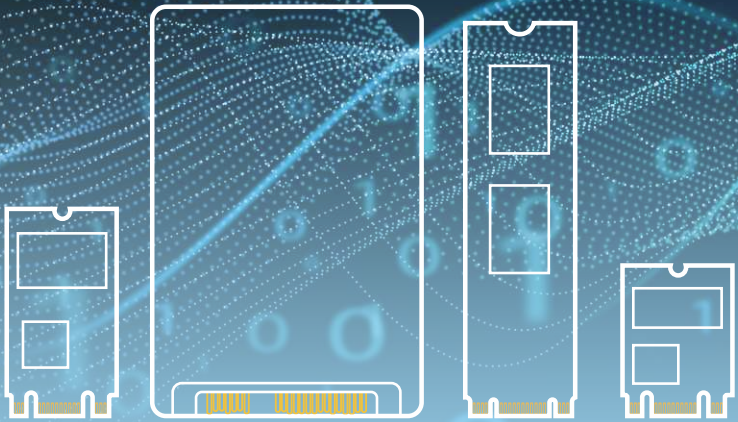
Cervoz industrial flash storage solutions are designed to support mission-critical systems that require consistent performance, responsive data access, and long service life. To meet diverse system requirements, these solutions are available in multiple form factors, including **U.2, 2.5" SSDs, M.2 embedded modules, mSATA, CFast, and CompactFlash** for enterprise and industrial applications.

The product portfolio includes **Supreme (SLC)**, **Reliance (RO-MLC)**, **Momentum (MLC)**, and **Titan (TLC)** series, built on advanced NAND flash technology and manufactured to stringent industrial-grade specifications. These solutions incorporate data protection mechanisms such as power loss protection, end-to-end data protection, error correction, and wear leveling to help maintain continuous operation and data integrity.

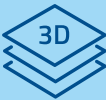


# FLASH STORAGE SOLUTIONS

## Built for Industrial Systems



Cervoz flash storage solutions are designed to address this diversity by offering multiple storage interfaces and form factors within a unified industrial portfolio. This flexible approach allows system designers to select appropriate storage solutions based on performance, space, and integration requirements, without increasing platform redesign complexity.



### Advanced NAND & Flash Technologies

Integrates advanced NAND management technologies such as 3D NAND and LDPC ECC for improved endurance, data integrity, and storage efficiency.



### Wide Temperature & Durability Design

Industrial grade temperature(−40°C to +85°C) support and rugged durability features help storage operate reliably in harsh environments.



### Powerguard & Data Protection

Data protection mechanisms like Powerguard and end-to-end protection help preserve stored data in unstable power or high-stress conditions.



### Flexible Interfaces & Form Factors

Offers SATA III and PCIe storage options in a wide range of form factors, enabling storage selection that aligns with space, interface, and platform requirements.

\*\* Available on specific models and/or form factors.





### Solution Product Line

#### INDUSTRIAL 2.5" SSD

##### SATA SSD

2.5" SSD

##### PCIe SSD

U.2 SSD

#### EMBEDDED MODULE

##### SATA SSD

mSATA / Half Slim

M.2 2242/ M.2 2280

##### PCIe SSD

M.2 2230

M.2 2242/ M.2 2280

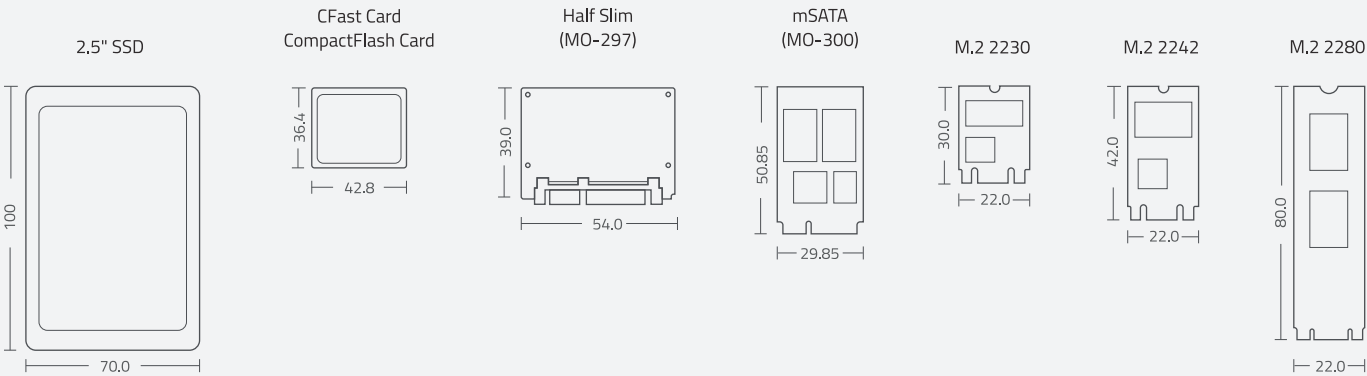
#### MEMORY CARD

##### SATA SSD

CompactFlash Card

CFast Card

### Form Factor Comparison



Units: mm



### Industrial SATA III SSDs

Cervoz SATA III SSDs deliver stable storage performance with broad compatibility across industrial platforms. Based on the SATA III interface, they provide a reliable storage solution for systems that prioritize stability and long-term availability.

Available in 2.5" SSD, mSATA, and M.2 form factors, these SSDs integrate easily with existing system architectures. They are commonly used in industrial PCs, HMI systems, and long-life embedded projects that require consistent performance and minimal platform changes.



#### Powerguard

Helps protect stored data and system integrity during unexpected power interruptions, reducing the risk of data corruption and supporting stable system recovery.



#### Enhanced ECC & Wear Leveling

Applies advanced error correction and wear leveling mechanisms to improve data reliability and extend flash endurance over prolonged operation.



#### Industrial Compatibility

Designed to support wide operating temperature ranges and rugged protective features, enabling reliable storage operation across diverse industrial deployment environments.



#### Lifecycle Management

Implements a fixed BOM strategy and long-term supply planning to support extended system lifecycles and minimize redesign risks.

\*\*Available on specific models and/or form factors.





Product Series  
Supreme (SLC) Series / Reliance (RO-MLC) Series

Operating Temperature  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

2.5" SATA SSD

| S350                 |                                              |
|----------------------|----------------------------------------------|
| Series               | Supreme Series (SLC)                         |
| Form Factor          | 2.5 inch                                     |
| Interface            | SATA III 6.0Gb/s                             |
| Connector            | SATA (7 + 15 pin)                            |
| NAND Flash Type      | SLC                                          |
| Capacity             | 8GB ~ 128GB                                  |
| Dimension (LxWxH/mm) | 100.00 x 69.85 x 7.00                        |
| Sequential Read      | up to 510MB/s                                |
| Sequential Write     | up to 420MB/s                                |
| MTBF                 | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                   |
| Wide Temp.           | –40°C ~ 85°C                                 |
| Supply Voltage       | 5V DC +/-5%                                  |
| Power Consumption    | Active mode: < 2300mW,<br>Idle mode: < 325mW |
| With DRAM Buffer     | –                                            |
| Powerguard           | –                                            |
| Specialty Technology | Static and dynamic wear leveling             |
| FlashMonitor         | √                                            |

| R335                 |                                                            | R336                                         |
|----------------------|------------------------------------------------------------|----------------------------------------------|
| Series               | Reliance Series (RO-MLC)                                   | Reliance Series (RO-MLC)                     |
| Form Factor          | 2.5 inch                                                   | 2.5 inch                                     |
| Interface            | SATA III 6.0Gb/s                                           | SATA III 6.0Gb/s                             |
| Connector            | SATA (7 + 15 pin)                                          | SATA (7 + 15 pin)                            |
| NAND Flash Type      | 3D MLC                                                     | 3D MLC                                       |
| Capacity             | 16GB ~ 256GB                                               | 16GB ~ 256GB                                 |
| Dimension (LxWxH/mm) | 100.00 x 69.85 x 7.00                                      | 100.00 x 69.85 x 7.00                        |
| Sequential Read      | up to 550MB/s                                              | up to 550MB/s                                |
| Sequential Write     | up to 465MB/s                                              | up to 465MB/s                                |
| MTBF                 | >3,000,000 hours                                           | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                                 | 0°C ~ 70°C                                   |
| Wide Temp.           | –40°C ~ 85°C                                               | –40°C ~ 85°C                                 |
| Supply Voltage       | 5V DC +/-5%                                                | 5V DC +/-5%                                  |
| Power Consumption    | Active mode: < 2200mW,<br>Idle mode: < 445mW               | Active mode: < 2030mW,<br>Idle mode: < 425mW |
| With DRAM Buffer     | √                                                          | √                                            |
| Powerguard           | –                                                          | √                                            |
| Specialty Technology | Low power consumption, Shock resistance and anti-vibration |                                              |
| FlashMonitor         | √                                                          | √                                            |

Product specifications are subject to change without prior notice.



Product Series  
Momentum (MLC) Series / Titan (TLC) Series

Operating Temperature  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

2.5" SATA SSD

| M350                 |                                              | M335                                                       | M336                                         |
|----------------------|----------------------------------------------|------------------------------------------------------------|----------------------------------------------|
| Series               | Momentum Series (MLC)                        | Momentum Series (MLC)                                      | Momentum Series (MLC)                        |
| Form Factor          | 2.5 inch                                     | 2.5 inch                                                   | 2.5 inch                                     |
| Interface            | SATA III 6.0Gb/s                             | SATA III 6.0Gb/s                                           | SATA III 6.0Gb/s                             |
| Connector            | SATA (7 + 15 pin)                            | SATA (7 + 15 pin)                                          | SATA (7 + 15 pin)                            |
| NAND Flash Type      | MLC                                          | 3D MLC                                                     | 3D MLC                                       |
| Capacity             | 16GB ~ 512GB                                 | 32GB ~ 512GB                                               | 32GB ~ 512GB                                 |
| Dimension (LxWxH/mm) | 100.00 x 69.85 x 7.00                        | 100.00 x 69.85 x 7.00                                      | 100.00 x 69.85 x 7.00                        |
| Sequential Read      | up to 495MB/s                                | up to 550MB/s                                              | up to 550MB/s                                |
| Sequential Write     | up to 420MB/s                                | up to 435MB/s                                              | up to 450MB/s                                |
| MTBF                 | >3,000,000 hours                             | >3,000,000 hours                                           | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                   | 0°C ~ 70°C                                                 | 0°C ~ 70°C                                   |
| Wide Temp.           | –40°C ~ 85°C                                 | –40°C ~ 85°C                                               | –40°C ~ 85°C                                 |
| Supply Voltage       | 5V DC +/-5%                                  | 5V DC +/-5%                                                | 5V DC +/-5%                                  |
| Power Consumption    | Active mode: < 1910mW,<br>Idle mode: < 355mW | Active mode: < 2625mW,<br>Idle mode: < 440mW               | Active mode: < 2505mW,<br>Idle mode: < 425mW |
| With DRAM Buffer     | –                                            | √                                                          | √                                            |
| Powerguard           | –                                            | –                                                          | √                                            |
| Specialty Technology | Static and dynamic wear leveling             | Low power consumption, Shock resistance and anti-vibration |                                              |
| FlashMonitor         | √                                            | √                                                          | √                                            |

| T383                 |                                              | T387                                                       | T386                                         |
|----------------------|----------------------------------------------|------------------------------------------------------------|----------------------------------------------|
| Series               | Titan Series (TLC)                           | Titan Series (TLC)                                         | Titan Series (TLC)                           |
| Form Factor          | 2.5 inch                                     | 2.5 inch                                                   | 2.5 inch                                     |
| Interface            | SATA III 6.0Gb/s                             | SATA III 6.0Gb/s                                           | SATA III 6.0Gb/s                             |
| Connector            | SATA (7 + 15 pin)                            | SATA (7 + 15 pin)                                          | SATA (7 + 15 pin)                            |
| NAND Flash Type      | 3D TLC NAND                                  | 3D TLC NAND                                                | 3D TLC NAND                                  |
| Capacity             | 128GB/256GB/512GB/1TB/2TB                    | 256GB/512GB/1TB/2TB                                        | 256GB/512GB/1TB/2TB                          |
| Dimension (LxWxH/mm) | 100.10 x 69.85 x 7.00mm                      | 100.00 x 69.85 x 7.00                                      | 100.00 x 69.85 x 7.00                        |
| Sequential Read      | up to 560MB/s                                | up to 560MB/s                                              | up to 560MB/s                                |
| Sequential Write     | up to 500MB/s                                | up to 420MB/s                                              | up to 420MB/s                                |
| MTBF                 | >3,000,000 hours                             | >3,000,000 hours                                           | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                   | 0°C ~ 70°C                                                 | 0°C ~ 70°C                                   |
| Wide Temp.           | –                                            | –40°C ~ 85°C                                               | –40°C ~ 85°C                                 |
| Supply Voltage       | 5V DC +/-5%                                  | +5V DC ± 5%                                                | +5V DC ± 5%                                  |
| Power Consumption    | Active mode: < 1005mW,<br>Idle mode: < 385mW | Active mode: < 2405mW,<br>Idle mode: < 525mW               | Active mode: < 2405mW,<br>Idle mode: < 525mW |
| With DRAM Buffer     | –                                            | √                                                          | √                                            |
| Powerguard           | –                                            | –                                                          | √                                            |
| Specialty Technology | End-to-End data protection                   | Support AES 256-bit Encryption, End-to-End data protection |                                              |
| FlashMonitor         | √                                            | √                                                          | √                                            |

Product specifications are subject to change without prior notice.





Product Series  
Supreme (SLC) Series / Reliance (RO-MLC) Series  
Momentum (MLC) Series

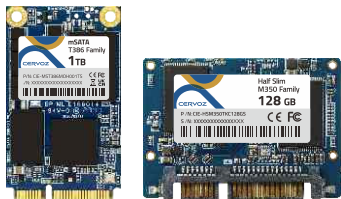
Operating Temperature  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

mSATA

|                      | S350                                         | R335                                                                 | R336                                                                 |
|----------------------|----------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
| Series               | Supreme Series (SLC)                         | Reliance Series (RO-MLC)                                             | Reliance Series (RO-MLC)                                             |
| Form Factor          | mSATA                                        | mSATA                                                                | mSATA                                                                |
| Interface            | SATA III 6.0Gb/s                             | SATA III 6.0Gb/s                                                     | SATA III 6.0Gb/s                                                     |
| Connector            | mSATA                                        | mSATA                                                                | mSATA                                                                |
| NAND Flash Type      | SLC                                          | 3D MLC (Controlled by Reliability Optimized-MLC Technology)          |                                                                      |
| Capacity             | 8GB ~ 128GB                                  | 16GB ~ 128GB                                                         | 16GB ~ 64GB                                                          |
| Dimension (LxWxH/mm) | 50,80 x 29,85 x 4,00                         | 50,95 x 30,00 x 3,90                                                 | 50,95 x 30,00 x 3,90                                                 |
| Sequential Read      | up to 510MB/s                                | up to 510MB/s                                                        | up to 495MB/s                                                        |
| Sequential Write     | up to 420MB/s                                | up to 465MB/s                                                        | up to 440MB/s                                                        |
| MTBF                 | >3,000,000 hours                             | >3,000,000 hours                                                     | >3,000,000 hours                                                     |
| Standard Temp.       | 0°C ~ 70°C                                   | 0°C ~ 70°C                                                           | 0°C ~ 70°C                                                           |
| Wide Temp.           | –40°C ~ 85°C                                 | –40°C ~ 85°C                                                         | –40°C ~ 85°C                                                         |
| Supply Voltage       | 3.3V DC +/-5%                                | 3.3V DC +/-5%                                                        | 3.3V DC +/-5%                                                        |
| Power Consumption    | Active mode: < 2250mW,<br>Idle mode: < 325mW | Active mode: < 2090mW,<br>Idle mode: < 430mW,<br>DEVSLP mode: < 55mW | Active mode: < 1970mW,<br>Idle mode: < 375mW,<br>DEVSLP mode: < 45mW |
| With DRAM Buffer     | –                                            | √                                                                    | √                                                                    |
| Powerguard           | –                                            | –                                                                    | √                                                                    |
| FlashMonitor         | √                                            | √                                                                    | √                                                                    |

|                      | M350                                         | M335                                                                  | M336                                                                 |
|----------------------|----------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------|
| Series               | Momentum Series (MLC)                        | Momentum Series (MLC)                                                 | Momentum Series (MLC)                                                |
| Form Factor          | mSATA                                        | mSATA                                                                 | mSATA                                                                |
| Interface            | SATA III 6.0Gb/s                             | SATA III 6.0Gb/s                                                      | SATA III 6.0Gb/s                                                     |
| Connector            | mSATA                                        | mSATA                                                                 | mSATA                                                                |
| NAND Flash Type      | MLC                                          | 3D MLC                                                                | 3D MLC                                                               |
| Capacity             | 32GB ~ 512GB                                 | 32GB ~ 256GB                                                          | 32GB ~ 128GB                                                         |
| Dimension (LxWxH/mm) | 50,80 x 29,85 x 4,00                         | 50,95 x 30,00 x 3,90                                                  | 50,95 x 30,00 x 3,90                                                 |
| Sequential Read      | up to 495MB/s                                | up to 545MB/s                                                         | up to 545MB/s                                                        |
| Sequential Write     | up to 265MB/s                                | up to 435MB/s                                                         | up to 330MB/s                                                        |
| MTBF                 | >3,000,000 hours                             | >3,000,000 hours                                                      | >3,000,000 hours                                                     |
| Standard Temp.       | 0°C ~ 70°C                                   | 0°C ~ 70°C                                                            | 0°C ~ 70°C                                                           |
| Wide Temp.           | –40°C ~ 85°C                                 | –40°C ~ 85°C                                                          | –40°C ~ 85°C                                                         |
| Supply Voltage       | 3.3V DC +/-5%                                | 3.3V DC +/-5%                                                         | 3.3V DC +/-5%                                                        |
| Power Consumption    | Active mode: < 2690mW,<br>Idle mode: < 285mW | Active mode: < 2295mW,<br>Idle mode: < 390mW,<br>Slumber mode: < 70mW | Active mode: < 1890mW,<br>Idle mode: < 390mW,<br>DEVSLP mode: < 70mW |
| With DRAM Buffer     | –                                            | √                                                                     | √                                                                    |
| Powerguard           | –                                            | –                                                                     | √                                                                    |
| FlashMonitor         | √                                            | √                                                                     | √                                                                    |

Product specifications are subject to change without prior notice.



Product Series  
Momentum (MLC) Series / Titan (TLC) Series

Operating Temperature  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

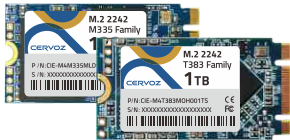
mSATA I Half Slim

|                      | T383                                        | T387                                                       | T386                                         |
|----------------------|---------------------------------------------|------------------------------------------------------------|----------------------------------------------|
| Series               | Titan Series (TLC)                          | Titan Series (TLC)                                         | Titan Series (TLC)                           |
| Form Factor          | mSATA                                       | mSATA                                                      | mSATA                                        |
| Interface            | SATA III 6.0Gb/s                            | SATA III 6.0Gb/s                                           | SATA III 6.0Gb/s                             |
| Connector            | mSATA                                       | mSATA                                                      | mSATA                                        |
| NAND Flash Type      | 3D TLC NAND                                 | 3D TLC NAND                                                | 3D TLC NAND                                  |
| Capacity             | 128GB/256GB/512GB/1TB/2TB                   | 256GB/512GB/1TB                                            | 256GB/512GB/1TB                              |
| Dimension (LxWxH/mm) | 50,95 x 30,00 x 3,60                        | 50,80 x 29,85 x 4,00                                       | 50,95 x 30,00 x 3,90                         |
| Sequential Read      | up to 560MB/s                               | up to 560MB/s                                              | up to 560MB/s                                |
| Sequential Write     | up to 510MB/s                               | up to 410MB/s                                              | up to 415MB/s                                |
| MTBF                 | >3,000,000 hours                            | >3,000,000 hours                                           | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                  | 0°C ~ 70°C                                                 | 0°C ~ 70°C                                   |
| Wide Temp.           | –                                           | –40°C ~ 85°C                                               | –40°C ~ 85°C                                 |
| Supply Voltage       | 3.3V DC +/-5%                               | 3.3V DC +/-5%                                              | 3.3V DC +/-5%                                |
| Power Consumption    | Active mode: < 970mW,<br>Idle mode: < 410mW | Active mode: < 2495mW,<br>Idle mode: < 500mW               | Active mode: < 2495mW,<br>Idle mode: < 500mW |
| With DRAM Buffer     | –                                           | √                                                          | √                                            |
| Powerguard           | –                                           | –                                                          | √                                            |
| Specialty Technology | End-to-End data protection                  | Support AES 256-bit Encryption, End-to-End data protection |                                              |
| FlashMonitor         | √                                           | √                                                          | √                                            |

|                      | M350                                         | T383                                         |
|----------------------|----------------------------------------------|----------------------------------------------|
| Series               | Momentum Series (MLC)                        | Titan Series (TLC)                           |
| Form Factor          | Half Slim                                    | Half Slim                                    |
| Interface            | SATA III 6.0Gb/s                             | SATA III 6.0Gb/s                             |
| Connector            | SATA (7+15pin)                               | SATA (7+15pin)                               |
| NAND Flash Type      | MLC                                          | 3D TLC NAND                                  |
| Capacity             | 32GB ~ 128GB                                 | 128GB/256GB/512GB/1TB/2TB                    |
| Dimension (LxWxH/mm) | 54,00 x 39,00 x 4,00                         | 54,00*39,00*5,50                             |
| Sequential Read      | up to 495MB/s                                | up to 560MB/s                                |
| Sequential Write     | up to 315MB/s                                | up to 500MB/s                                |
| MTBF                 | >3,000,000 hours                             | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                   | 0°C ~ 70°C                                   |
| Wide Temp.           | –40°C ~ 85°C                                 | –                                            |
| Supply Voltage       | 5V DC +/-5%                                  | +5V DC +/-5%                                 |
| Power Consumption    | Active mode: < 1600mW,<br>Idle mode: < 285mW | Active mode: < 1005mW,<br>Idle mode: < 385mW |
| With DRAM Buffer     | –                                            | –                                            |
| Powerguard           | –                                            | –                                            |
| Specialty Technology | Static and dynamic wear leveling             | End-to-End data protection                   |
| FlashMonitor         | √                                            | √                                            |

Product specifications are subject to change without prior notice.





Product Series

Reliance (RO-MLC) Series / Momentum (MLC) Series

Titan (TLC) Series

Operating Temperature

Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

M.2 2242

| R335                 |                                                                 | M335                                                            |
|----------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Series               | Reliance Series (RO-MLC)                                        | Momentum Series (MLC)                                           |
| Form Factor          | M.2 2242                                                        | M.2 2242                                                        |
| Interface            | SATA III 6.0Gb/s                                                | SATA III 6.0Gb/s                                                |
| Connector            | M.2 (B+M)                                                       | M.2 (B+M)                                                       |
| NAND Flash Type      | 3D MLC ( Controlled by RO-MLC)                                  | 3D MLC                                                          |
| Capacity             | 16GB ~ 64GB                                                     | 32GB ~ 128GB                                                    |
| Dimension (LxWxH/mm) | 42.00 x 22.00                                                   | 42.00 x 22.00 x 3.65                                            |
| Sequential Read      | up to 510MB/s                                                   | up to 545MB/s                                                   |
| Sequential Write     | up to 455MB/s                                                   | up to 330MB/s                                                   |
| MTBF                 | >3,000,000 hours                                                | >3,000,000 hours                                                |
| Standard Temp.       | 0°C ~ 70°C                                                      | 0°C ~ 70°C                                                      |
| Wide Temp.           | –40°C ~ 85°C                                                    | –40°C ~ 85°C                                                    |
| Supply Voltage       | 3.3V DC +/-5%                                                   | 3.3V DC +/-5%                                                   |
| Power Consumption    | Active mode: < 1885mW, Idle mode: < 385mW, Slumber mode: < 60mW | Active mode: < 1885mW, Idle mode: < 385mW, Slumber mode: < 60mW |
| With DRAM Buffer     | √                                                               | √                                                               |
| Powerguard           | –                                                               | –                                                               |
| Specialty Technology | Low power consumption, Shock resistance and anti-vibration      |                                                                 |
| FlashMonitor         | √                                                               | √                                                               |

| M350                 |                                           | T383                                     |
|----------------------|-------------------------------------------|------------------------------------------|
| Series               | Momentum Series (MLC)                     | Titan Series (TLC)                       |
| Form Factor          | M.2 2242                                  | M.2 2242                                 |
| Interface            | SATA III 6.0Gb/s                          | SATA III 6.0Gb/s                         |
| Connector            | M.2 (B+M)                                 | M.2 (B+M)                                |
| NAND Flash Type      | MLC                                       | 3D TLC                                   |
| Capacity             | 16GB ~ 256GB                              | 128GB/256GB/512GB/1TB                    |
| Dimension (LxWxH/mm) | 42.00 x 22.00 x 3.75                      | 42.00 x 22.00 x 3.50                     |
| Sequential Read      | up to 475MB/s                             | up to 560MB/s                            |
| Sequential Write     | up to 420MB/s                             | up to 505MB/s                            |
| MTBF                 | >3,000,000 hours                          | >3,000,000 hours                         |
| Standard Temp.       | 0°C ~ 70°C                                | 0°C ~ 70°C                               |
| Wide Temp.           | –40°C ~ 85°C                              | –                                        |
| Supply Voltage       | 3.3V DC +/-5%                             | 3.3V DC +/-5%                            |
| Power Consumption    | Active mode: < 1535mW, Idle mode: < 260mW | Active mode: < 895mW, Idle mode: < 225mW |
| With DRAM Buffer     | –                                         | –                                        |
| Powerguard           | –                                         | –                                        |
| Specialty Technology | Static and dynamic wear leveling          | End-to-End data protection               |
| FlashMonitor         | √                                         | √                                        |

Product specifications are subject to change without prior notice.



Product Series

Reliance (RO-MLC) Series / Momentum (MLC) Series

Titan (TLC) Series

Operating Temperature

Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

M.2 2280

| R335                 |                                                                | M335                                                           | M350                                      |
|----------------------|----------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------|
| Series               | Reliance Series (RO-MLC)                                       | Momentum Series (MLC)                                          | Momentum Series (MLC)                     |
| Form Factor          | M.2 2280                                                       | M.2 2280                                                       | M.2 2280                                  |
| Interface            | SATA III 6.0Gb/s                                               | SATA III 6.0Gb/s                                               | SATA III 6.0Gb/s                          |
| Connector            | M.2 (B+M)                                                      | M.2 (B+M)                                                      | M.2 (B+M)                                 |
| NAND Flash Type      | RO-MLC                                                         | 3D MLC                                                         | MLC                                       |
| Capacity             | 16GB ~ 128GB                                                   | 32GB ~ 256GB                                                   | 32GB ~ 512GB                              |
| Dimension (LxWxH/mm) | 80.00 x 22.00 x 3.90                                           | 80.00 x 22.00 x 3.90                                           | 80.00 x 22.00 x 3.90                      |
| Sequential Read      | up to 510MB/s                                                  | up to 545MB/s                                                  | up to 490MB/s                             |
| Sequential Write     | up to 465MB/s                                                  | up to 435MB/s                                                  | up to 470MB/s                             |
| MTBF                 | >3,000,000 hours                                               | >3,000,000 hours                                               | >3,000,000 hours                          |
| Standard Temp.       | 0°C ~ 70°C                                                     | 0°C ~ 70°C                                                     | 0°C ~ 70°C                                |
| Wide Temp.           | –40°C ~ 85°C                                                   | –40°C ~ 85°C                                                   | –40°C ~ 85°C                              |
| Supply Voltage       | 3.3V DC +/-5%                                                  | 3.3V DC +/-5%                                                  | 3.3V DC +/-5%                             |
| Power Consumption    | Active mode: < 2295mW, Idle mode: < 390mW, Slumber mode: <70mW | Active mode: < 2295mW, Idle mode: < 390mW, Slumber mode: <70mW | Active mode: < 2650mW, Idle mode: < 280mW |
| With DRAM Buffer     | √                                                              | √                                                              | –                                         |
| Powerguard           | –                                                              | –                                                              | –                                         |
| FlashMonitor         | √                                                              | √                                                              | √                                         |

| T383                 |                                          | T387                                                       | T386                                      |
|----------------------|------------------------------------------|------------------------------------------------------------|-------------------------------------------|
| Series               | Titan Series (TLC)                       | Titan Series (TLC)                                         | Titan Series (TLC)                        |
| Form Factor          | M.2 2280                                 | M.2 2280                                                   | M.2 2280                                  |
| Interface            | SATA III 6.0Gb/s                         | SATA III 6.0Gb/s                                           | SATA III 6.0Gb/s                          |
| Connector            | M.2 (B+M)                                | M.2 (B+M)                                                  | M.2 (B+M)                                 |
| NAND Flash Type      | 3D TLC                                   | 3D TLC NAND                                                | 3D TLC NAND                               |
| Capacity             | 128GB/256GB/512GB/1TB/2TB                | 256GB ~ 2TB                                                | 256GB/512GB/1TB/2TB                       |
| Dimension (LxWxH/mm) | 80.00 x 22.00 x 2.15                     | 80.00 x 22.00 x 3.50                                       | 80.00 x 22.00 x 3.50                      |
| Sequential Read      | up to 560MB/s                            | up to 560MB/s                                              | up to 560MB/s                             |
| Sequential Write     | up to 505MB/s                            | up to 425MB/s                                              | up to 425MB/s                             |
| MTBF                 | >3,000,000 hours                         | >3,000,000 hours                                           | >3,000,000 hours                          |
| Standard Temp.       | 0°C ~ 70°C                               | 0°C ~ 70°C                                                 | 0°C ~ 70°C                                |
| Wide Temp.           | –                                        | –40°C ~ 85°C                                               | –40°C ~ 85°C                              |
| Supply Voltage       | 3.3V DC +/-5%                            | +3.3V DC ± 5%                                              | 3.3V DC +/-5%                             |
| Power Consumption    | Active mode: < 990mW, Idle mode: < 225mW | Active mode: < 2550mW, Idle mode: < 550mW                  | Active mode: < 2550mW, Idle mode: < 550mW |
| With DRAM Buffer     | –                                        | √                                                          | √                                         |
| Powerguard           | –                                        | –                                                          | √                                         |
| Specialty Technology | Static and dynamic wear leveling         | Support AES 256-bit Encryption, End-to-End data protection |                                           |
| FlashMonitor         | √                                        | √                                                          | √                                         |

Product specifications are subject to change without prior notice.



**Product Series**  
Supreme (SLC) Series / Reliance (RO-MLC) Series  
Momentum (MLC) Series

**Operating Temperature**  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: -40°C ~ 85°C

CompactFlash Card I CFast Card

|                      | S141                                                                           | M141                                       |
|----------------------|--------------------------------------------------------------------------------|--------------------------------------------|
| Series               | Supreme Series (SLC)                                                           | Momentum Series (MLC)                      |
| Form Factor          | CompactFlash                                                                   | CompactFlash                               |
| Interface            | CompactFlash Specification v6.0                                                | CompactFlash Specification v6.0            |
| Connector            | PATA (50 pin)                                                                  | PATA (50 pin)                              |
| NAND Flash Type      | SLC                                                                            | MLC                                        |
| Capacity             | 256MB ~ 16GB                                                                   | 8GB ~ 64GB                                 |
| Dimension (LxWxH/mm) | 42.8 x 36.4 x 3.3                                                              | 42.8 x 36.4 x 3.3                          |
| Sequential Read      | up to 80MB/s                                                                   | up to 125MB/s                              |
| Sequential Write     | up to 70MB/s                                                                   | up to 95MB/s                               |
| MTBF                 | >3,000,000 hours                                                               | >3,000,000 hours                           |
| Standard Temp.       | 0°C ~ 70°C                                                                     | 0°C ~ 70°C                                 |
| Wide Temp.           | -40°C ~ 85°C                                                                   | -40°C ~ 85°C                               |
| Supply Voltage       | 3.3V DC I 5V DC +/-5%                                                          | 3.3V DC I 5V DC +/-5%                      |
| Power Consumption    | Active mode: <730mW,<br>Idle mode: < 25mW                                      | Active mode: < 730mW,<br>Idle mode: < 25mW |
| With DRAM Buffer     | -                                                                              | -                                          |
| Powerguard           | -                                                                              | -                                          |
| Specialty Technology | Operating as boot disk, Static and dynamic wear leveling, Bad block management |                                            |
| FlashMonitor         | √                                                                              | √                                          |

|                      | S350                                                                           | R350                                         | M350                                         |
|----------------------|--------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------|
| Series               | Supreme Series (SLC)                                                           | Reliance Series (RO-MLC)                     | Momentum Series (MLC)                        |
| Form Factor          | CFast                                                                          | CFast                                        | CFast                                        |
| Interface            | SATA III 6.0Gb/s                                                               | SATA III 6.0Gb/s                             | SATA III 6.0Gb/s                             |
| Connector            | SATA (7+17 pin)                                                                | SATA (7+17 pin)                              | SATA (7+17 pin)                              |
| NAND Flash Type      | SLC                                                                            | RO-MLC                                       | MLC                                          |
| Capacity             | 8GB ~ 32GB                                                                     | 16GB ~ 64GB                                  | 32GB ~ 128GB                                 |
| Dimension (LxWxH/mm) | 42.8 x 36.4 x 3.3                                                              | 42.8 x 36.4 x 3.3                            | 42.8 x 36.4 x 3.3                            |
| Sequential Read      | up to 510MB/s                                                                  | up to 510MB/s                                | up to 495MB/s                                |
| Sequential Write     | up to 300MB/s                                                                  | up to 450MB/s                                | up to 445MB/s                                |
| MTBF                 | >3,000,000 hours                                                               | >3,000,000 hours                             | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                                                     | 0°C ~ 70°C                                   | 0°C ~ 70°C                                   |
| Wide Temp.           | -40°C ~ 85°C                                                                   | -40°C ~ 85°C                                 | -40°C ~ 85°C                                 |
| Supply Voltage       | 3.3V DC +/- 5%                                                                 | 3.3V DC +/- 5%                               | 3.3V DC +/- 5%                               |
| Power Consumption    | Active mode: < 1700mW,<br>Idle mode: < 325mW                                   | Active mode: < 1475mW,<br>Idle mode: < 260mW | Active mode: < 1550mW,<br>Idle mode: < 300mW |
| With DRAM Buffer     | -                                                                              | -                                            | -                                            |
| Powerguard           | -                                                                              | -                                            | -                                            |
| Specialty Technology | Operating as boot disk, Static and dynamic wear leveling, Bad block management |                                              |                                              |
| FlashMonitor         | √                                                                              | √                                            | √                                            |

Product specifications are subject to change without prior notice.



Industrial PCIe SSDs

Cervoz Industrial PCIe SSDs are designed for applications that require higher throughput and faster data access. Leveraging the PCIe interface, these SSDs support increased bandwidth and lower latency to meet the demands of data-intensive and performance-driven systems.

Available in modern form factors such as M.2 and U.2, Cervoz PCIe SSDs integrate smoothly into contemporary platforms where storage performance directly impacts system responsiveness. They are commonly deployed in edge computing, AI-enabled systems, and advanced industrial platforms that require sustained high-speed data processing.



High-Speed PCIe Architecture

Leverages PCIe lanes and the NVMe architecture to deliver higher bandwidth and lower latency for data-intensive industrial applications.



Advanced ECC & Bad Block Management

Enhances data integrity and storage reliability by correcting errors and managing defective flash blocks, supporting stable operation under high-performance and data-intensive workloads.



Thermal & Heat Management

Designed to manage thermal behavior effectively and prevent performance throttling during sustained high-load operation, helping maintain consistent data throughput over time.



Wide Temperature Endurance

Supports stable storage operation across a wide operating temperature range, enabling consistent performance in industrial environments with varying thermal conditions.

\*\*Available on specific models and/or form factors.





Product Series  
Titan (TLC) Series

Operating Temperature  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

M.2 2230

| T425                 |                                                                                       |                                              |
|----------------------|---------------------------------------------------------------------------------------|----------------------------------------------|
| Series               | Titan Series (TLC)                                                                    | Titan Series (TLC)                           |
| Form Factor          | M.2 2230                                                                              | M.2 2230                                     |
| Interface            | PCIe Gen3x2                                                                           | PCIe Gen3x2                                  |
| Connector            | M.2 2230 (A+E)                                                                        | M.2 2230 (B+M)                               |
| NAND Flash Type      | 3D TLC                                                                                | 3D TLC                                       |
| Capacity             | 128GB/256GB                                                                           | 128GB/256GB                                  |
| Dimension (LxWxH/mm) | 30.00 x 22.00 x 3.50                                                                  | 30.00 x 22.00 x 3.50                         |
| Sequential Read      | up to 880MB/s                                                                         | up to 1300MB/s                               |
| Sequential Write     | up to 820MB/s                                                                         | up to 1050MB/s                               |
| MTBF                 | >3,000,000 hours                                                                      | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                                                                            | 0°C ~ 70°C                                   |
| Wide Temp.           | –40°C ~ 85°C                                                                          | –40°C ~ 85°C                                 |
| Supply Voltage       | 3.3V DC +/-5%                                                                         | 3.3V DC +/-5%                                |
| Power Consumption    | Active mode: < 1650mW,<br>Idle mode: < 400mW                                          | Active mode: < 1900mW,<br>Idle mode: < 450mW |
| With DRAM Buffer     | –                                                                                     | –                                            |
| Powerguard           | –                                                                                     | –                                            |
| Specialty Technology | End-to-End data protection, SLC write cache technology, Thermal throttling technology |                                              |
| FlashMonitor         | √                                                                                     | √                                            |

| T445                   |                                                                                   | T455                 |
|------------------------|-----------------------------------------------------------------------------------|----------------------|
| Series                 | Titan Series (TLC)                                                                | Titan Series (TLC)   |
| Form Factor            | M.2 2230                                                                          | M.2 2230             |
| Interface              | PCIe Gen4x4                                                                       | PCIe Gen4x4          |
| Connector              | M.2 2230 (M)                                                                      | M.2 2230 (M)         |
| NAND Flash Type        | 3D TLC                                                                            | 3D TLC               |
| Capacity               | 256GB ~ 1TB                                                                       | 240GB ~ 960GB        |
| Dimension (LxWxH/mm)   | 30.00 x 22.00 x 3.50                                                              | 30.00 x 22.00 x 3.50 |
| Sequential Read        | up to 5,095MB/s                                                                   | up to 5,095MB/s      |
| Sequential Write       | up to 4,740MB/s                                                                   | up to 4,740MB/s      |
| MTBF                   | >3,000,000 hours                                                                  | >3,000,000 hours     |
| Standard Temp.         | 0°C ~ 70°C                                                                        | 0°C ~ 70°C           |
| Wide Temp.             | –40°C ~ 85°C                                                                      | –40°C ~ 85°C         |
| Supply Voltage         | 3.3V DC +/-5%                                                                     | 3.3V DC +/-5%        |
| Power Consumption      | Active mode: < 4650mW, Idle mode: < 720mW                                         |                      |
| With DRAM Buffer       | –                                                                                 | –                    |
| Powerguard             | –                                                                                 | –                    |
| MIL-STD-810H Compliant | Optional                                                                          | Optional             |
| Specialty Technology   | Write Protect Function (Optional), End-to-End data protection, Thermal throttling |                      |
| FlashMonitor           | √                                                                                 | √                    |

Product specifications are subject to change without prior notice.



Product Series  
Titan (TLC) Series

Operating Temperature  
Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

M.2 2242

| T425                 |                                                                                       | T421                                          | T405                                          |
|----------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Series               | Titan Series (TLC)                                                                    | Titan Series (TLC)                            | Titan Series (TLC)                            |
| Form Factor          | M.2 2242                                                                              | M.2 2242                                      | M.2 2242                                      |
| Interface            | PCIe Gen3x2                                                                           | PCIe Gen3x2                                   | PCIe Gen3x4                                   |
| Connector            | M.2 2242 (B+M)                                                                        | M.2 2242 (B+M)                                | M.2 2242 (M)                                  |
| NAND Flash Type      | 3D TLC                                                                                | 3D TLC                                        | 3D TLC                                        |
| Capacity             | 128GB/256GB/512GB                                                                     | 120GB ~ 1920GB                                | 128GB/ 256GB/ 512GB                           |
| Dimension (LxWxH/mm) | 42.00 x 22.00 x 3.50                                                                  | 42.00 x 22.00 x 3.50                          | 42.00 x 22.00 x 3.50                          |
| Sequential Read      | up to 1770MB/s                                                                        | up to 1780MB/s                                | up to 2605MB/s                                |
| Sequential Write     | up to 1520MB/s                                                                        | up to 1640MB/s                                | up to 1800MB/s                                |
| MTBF                 | >3,000,000 hours                                                                      | >3,000,000 hours                              | >3,000,000 hours                              |
| Standard Temp.       | 0°C ~ 70°C                                                                            | 0°C ~ 70°C                                    | 0°C ~ 70°C                                    |
| Wide Temp.           | –40°C ~ 85°C                                                                          | –40°C ~ 85°C                                  | –40°C ~ 85°C                                  |
| Supply Voltage       | 3.3V DC +/-5%                                                                         | 3.3V DC +/-5%                                 | 3.3V DC +/-5%                                 |
| Power Consumption    | Active mode: < 2400mW,<br>Idle mode: < 500mW                                          | Active mode: < 3000mW,<br>Idle mode: < 1000mW | Active mode: < 2600mW,<br>Idle mode: < 1050mW |
| With DRAM Buffer     | –                                                                                     | –                                             | –                                             |
| Powerguard           | –                                                                                     | –                                             | –                                             |
| Specialty Technology | End-to-End data protection, SLC write cache technology, Thermal throttling technology |                                               |                                               |
| FlashMonitor         | √                                                                                     | √                                             | √                                             |

| T445                   |                                                                                   | T455                 |
|------------------------|-----------------------------------------------------------------------------------|----------------------|
| Series                 | Titan Series (TLC)                                                                | Titan Series (TLC)   |
| Form Factor            | M.2 2242                                                                          | M.2 2242             |
| Interface              | PCIe Gen4x4                                                                       | PCIe Gen4x4          |
| Connector              | M.2 2242 (M)                                                                      | M.2 2242 (M)         |
| NAND Flash Type        | 3D TLC                                                                            | 3D TLC               |
| Capacity               | 256GB ~ 2TB                                                                       | 240GB ~ 1920GB       |
| Dimension (LxWxH/mm)   | 42.00 x 22.00 x 3.50                                                              | 42.00 x 22.00 x 3.50 |
| Sequential Read        | up to 5,010MB/s                                                                   | up to 5,010MB/s      |
| Sequential Write       | up to 4,690MB/s                                                                   | up to 4,690MB/s      |
| MTBF                   | >3,000,000 hours                                                                  | >3,000,000 hours     |
| Standard Temp.         | 0°C ~ 70°C                                                                        | 0°C ~ 70°C           |
| Wide Temp.             | –40°C ~ 85°C                                                                      | –40°C ~ 85°C         |
| Supply Voltage         | 3.3V DC +/-5%                                                                     | 3.3V DC +/-5%        |
| Power Consumption      | Active mode: < 5130mW, Idle mode: < 805mW                                         |                      |
| With DRAM Buffer       | –                                                                                 | –                    |
| Powerguard             | –                                                                                 | –                    |
| MIL-STD-810H Compliant | Optional                                                                          | Optional             |
| Specialty Technology   | Write Protect Function (Optional), End-to-End data protection, Thermal throttling |                      |
| FlashMonitor           | √                                                                                 | √                    |

Product specifications are subject to change without prior notice.



Product Series

Titan (TLC) Series

Operating Temperature

Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

M.2 2280

| T405                 |                                                        | T436                                            |
|----------------------|--------------------------------------------------------|-------------------------------------------------|
| Series               | Titan Series (TLC)                                     | Titan Series (TLC)                              |
| Form Factor          | M.2 2280                                               | M.2 2280                                        |
| Interface            | PCIe Gen3x4                                            | PCIe Gen3x4                                     |
| Connector            | M.2 2280 (M)                                           | M.2 2280 (M)                                    |
| NAND Flash Type      | 3D TLC                                                 | 3D TLC                                          |
| Capacity             | 128GB ~ 1TB                                            | Standard/Wide Temp.: 240GB~1920GB/960GB         |
| Dimension (LxWxH/mm) | 80.00 x 22.00 x 3.50                                   | 80.00 x 22.00 x 3.50                            |
| Sequential Read      | up to 2605MB/s                                         | up to 3,445MB/s                                 |
| Sequential Write     | up to 1880MB/s                                         | up to 1,000MB/s                                 |
| MTBF                 | >3,000,000 hours                                       | >3,000,000 hours                                |
| Standard Temp.       | 0°C ~ 70°C                                             | 0°C ~ 70°C                                      |
| Wide Temp.           | –40°C ~ 85°C                                           | –40°C ~ 85°C                                    |
| Supply Voltage       | 3.3V DC +/-5%                                          | 3.3V DC +/-5%                                   |
| Power Consumption    | Active mode: < 2820mW,<br>Idle mode: < 1100mW          | Active mode: < 6,000mW,<br>Idle mode: < 2,000mW |
| With DRAM Buffer     | –                                                      | √                                               |
| Powerguard           | –                                                      | √                                               |
| Specialty Technology | End-to-End data protection, Dynamic Thermal throttling |                                                 |
| FlashMonitor         | √                                                      | √                                               |

| T441                 |                                        | T445                                                   | T455                                         |
|----------------------|----------------------------------------|--------------------------------------------------------|----------------------------------------------|
| Series               | Titan Series (TLC)                     | Titan Series (TLC)                                     | Titan Series (TLC)                           |
| Form Factor          | M.2 2280                               | M.2 2280                                               | M.2 2280                                     |
| Interface            | PCIe Gen4x4                            | PCIe Gen4x4                                            | PCIe Gen4x4                                  |
| Connector            | M.2 2280 (M)                           | M.2 2280 (M)                                           | M.2 2280 (M)                                 |
| NAND Flash Type      | 3D TLC                                 | 3D TLC                                                 | 3D TLC                                       |
| Capacity             | 480GB~3840GB                           | 256GB~2TB                                              | 240GB~1920GB                                 |
| Dimension (LxWxH/mm) | 80.00 x 22.00 x 3.50                   | 80.00 x 22.00 x 2.15                                   | 80.00 x 22.00 x 2.15                         |
| Sequential Read      | up to 7,100 MB/s                       | up to 5,080MB/s                                        | up to 5,080MB/s                              |
| Sequential Write     | up to 6,190 MB/s                       | up to 4,740MB/s                                        | up to 4,740MB/s                              |
| MTBF                 | >3,000,000 hours                       | >3,000,000 hours                                       | >3,000,000 hours                             |
| Standard Temp.       | 0°C ~ 70°C                             | 0°C ~ 70°C                                             | 0°C ~ 70°C                                   |
| Wide Temp.           | –                                      | –40°C ~ 85°C                                           | –40°C ~ 85°C                                 |
| Supply Voltage       | 3.3V DC +/-5%                          | 3.3V DC +/-5%                                          | 3.3V DC +/-5%                                |
| Power Consumption    | Active mode: < 11W,<br>Idle mode: < 2W | Active mode: < 5130mW,<br>Idle mode: < 805mW           | Active mode: < 5130mW,<br>Idle mode: < 805mW |
| With DRAM Buffer     | √                                      | –                                                      |                                              |
| Powerguard           | –                                      | –                                                      |                                              |
| Specialty Technology | End-to-End data protection             | Single-Sided Design, MIL-STD-810H Compliant (Optional) |                                              |
| FlashMonitor         | √                                      | √                                                      |                                              |



Product Series

Titan (TLC) Series

Operating Temperature

Standard Temp.: 0°C ~ 70°C / Wide Temp.: –40°C ~ 85°C

M.2 2280 | U.2

| T449                   |                                                        |
|------------------------|--------------------------------------------------------|
| Series                 | Titan Series (TLC)                                     |
| Form Factor            | M.2 2280                                               |
| Interface              | PCIe Gen4x4                                            |
| Connector              | M.2 2280 (M)                                           |
| NAND Flash Type        | 3D TLC                                                 |
| Capacity               | 128GB ~ 2TB                                            |
| Dimension (LxWxH/mm)   | 80.00 x 22.00 x 3.50                                   |
| Sequential Read        | up to 5,010MB/s                                        |
| Sequential Write       | up to 4,690MB/s                                        |
| MTBF                   | >3,000,000 hours                                       |
| Standard Temp.         | 0°C ~ 70°C                                             |
| Wide Temp.             | –40°C ~ 85°C                                           |
| Supply Voltage         | 3.3V DC +/-5%                                          |
| Power Consumption      | Active mode: < 5130mW, Idle mode: < 805mW              |
| With DRAM Buffer       | –                                                      |
| Powerguard             | –                                                      |
| MIL-STD-810H Compliant | √                                                      |
| Specialty Technology   | Quick Erase, Write Protect , Self-Physical Destruction |
| FlashMonitor           | √                                                      |

| T442                 |                                                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series               | Titan Series (TLC)                                                                                                                                                                 |
| Form Factor          | 2.5inch x 15mm                                                                                                                                                                     |
| Interface            | PCIe Gen4x4                                                                                                                                                                        |
| Connector            | U.2                                                                                                                                                                                |
| NAND Flash Type      | TLC NAND                                                                                                                                                                           |
| Capacity             | 1920GB~30.72TB                                                                                                                                                                     |
| Dimension (LxWxH/mm) | 100.00 x 69,85 x 14,65mm                                                                                                                                                           |
| Sequential Read      | up to 13,490MB/s                                                                                                                                                                   |
| Sequential Write     | up to 8,685MB/s                                                                                                                                                                    |
| MTBF                 | >2,500,000 hours                                                                                                                                                                   |
| Standard Temp.       | 0°C ~ 70°C                                                                                                                                                                         |
| Wide Temp.           | –                                                                                                                                                                                  |
| Supply Voltage       | +12V DC ± 10%                                                                                                                                                                      |
| Power Consumption    | Active mode: < 25W, Idle mode: < 5W                                                                                                                                                |
| With DRAM Buffer     | √                                                                                                                                                                                  |
| Powerguard           | √                                                                                                                                                                                  |
| Specialty Technology | Support AES 256-bit Hardware Encryption, TCG OPAL 2.0 Compliant, Support Crypto Erase & Secure Erase,<br>Physical Presence SID (PSID) for Drive Revert, IEEE 1667 (eDrive) Support |
| FlashMonitor         | √                                                                                                                                                                                  |

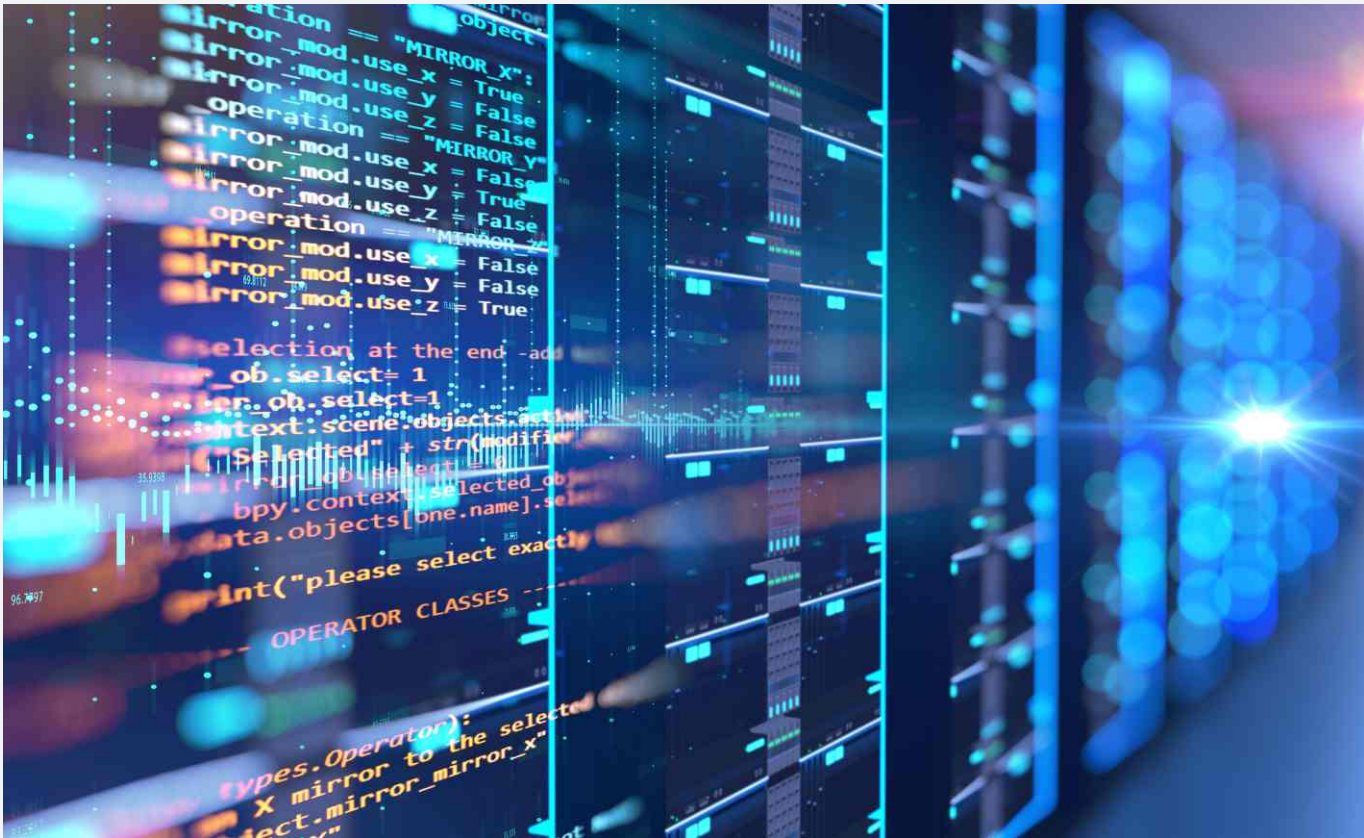


Our Products

# DRAM MODULE SOLUTION

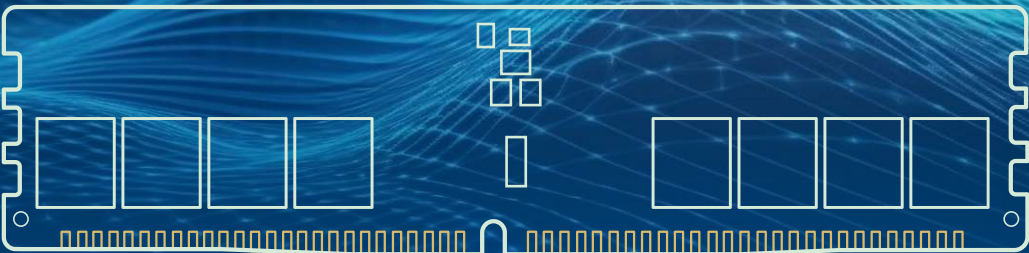
Cervoz industrial DRAM modules support embedded, industrial, and server platforms requiring stable performance and long-term availability. The product line covers **DIMM**, **SO-DIMM**, **VLP-DIMM**, **VLP SO-DIMM**, as well as **CSODIMM** and **CUDIMM** architectures to meet diverse system design requirements.

Available in *Standard*, *Wide Temperature*, and *Server-grade series*, the modules support DRAM generations from DDR1 to DDR5 with optional ECC and registered configurations. Manufactured to JEDEC standards using original major-brand DRAM chips, all modules follow a fixed BOM principle and are validated across multiple platforms to ensure consistent compatibility and reliability.



# CUDIMM & CSODIMM

## Designed for Data-Intensive and AI-Driven Workloads



As data-intensive and AI-driven workloads continue to scale, system performance is increasingly constrained by memory bandwidth, signal integrity, and power efficiency. Traditional DRAM modules can struggle to keep pace with these demands, making memory a critical bottleneck in modern high-performance systems. CUDIMM and CSODIMM architectures are introduced to address these limitations at the module level.



### High-Speed DDR5 (Up to 6400 MT/s)

Supports higher memory bandwidth to accelerate data access and reduce memory bottlenecks in data-intensive workloads.



### Built-in Clock Driver (CKD)

Improves signal integrity and timing stability to enable reliable high-frequency memory operation.



### High-Density Capacity (Up to 64GB)

Enables higher memory capacity per module to support larger datasets and more demanding workloads.



### On-Die ECC for Data Integrity

Detects and corrects internal memory errors to help maintain data accuracy during high-speed operation.



### Industrial-Grade Reliability

Designed and validated for stable operation over extended lifecycles in industrial and embedded system deployments.

\*\*Available on specific models and/or form factors.

Solution Product Line

STANDARD SERIES

DDR5/ DDR3  
DIMM/ SO-DIMM/ VLP DIMM

DDR4  
DIMM/ SO-DIMM  
VLP DIMM/ VLP SO-DIMM

DDR2  
DIMM/ SO-DIMM

WIDE TEMP. SERIES

DDR5  
DIMM/ SO-DIMM

DDR4/ DDR3  
DIMM/ SO-DIMM

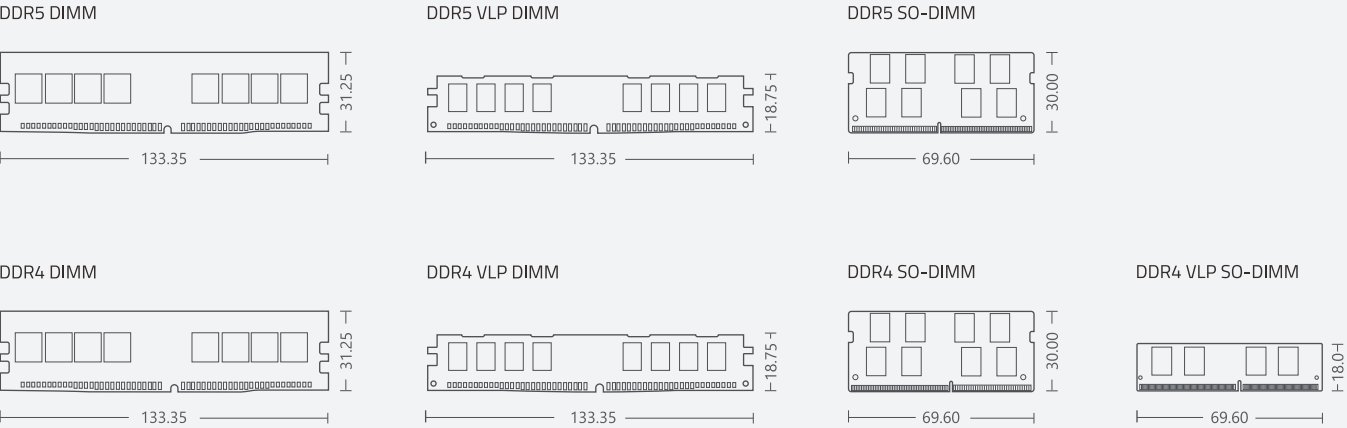
DDR2  
SO-DIMM

SERVER SERIES

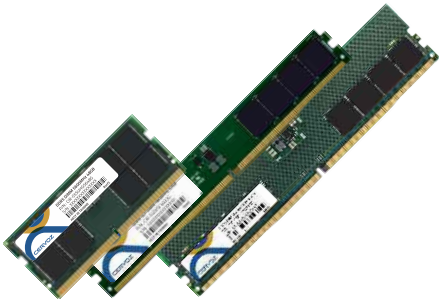
DDR5/ DDR4  
DIMM with ECC  
SO-DIMM with ECC  
Registered DIMM with ECC

DDR3  
DIMM with ECC  
Registered DIMM with ECC

Form Factor Comparison



Units: mm



DDR5/ DDR3  
DIMM/ SO-DIMM/ VLP DIMM

DDR4  
DIMM/ SO-DIMM/ VLP DIMM/ VLP SO-DIMM

DDR2  
DIMM/ SO-DIMM

Standard Series

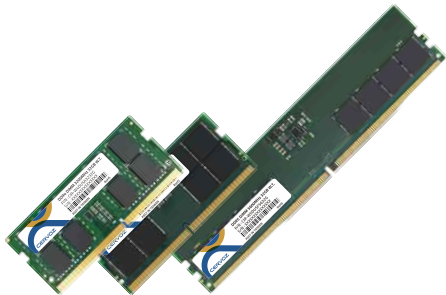
| DDR5                  |                       |                      |
|-----------------------|-----------------------|----------------------|
| DIMM Type             | DIMM I SO-DIMM        | VLP DIMM             |
| Speed (MT/s)          | 4800, 5600            | 4800, 5600           |
| Capacity              | 8GB, 16GB, 32GB, 48GB | 16GB, 32GB           |
| Pin Count             | 288pin I 262pin       | 288pin               |
| Type                  | Unbuffered (Non-ECC)  | Unbuffered (Non-ECC) |
| Voltage               | 1.1V                  | 1.1V                 |
| Operating Temp.(Tc)   | 0°C ~ 95°C            | 0°C ~ 95°C           |
| US Military Standards | √                     | √                    |
| Anti-vibration Fill   | Optional              | Optional             |
| Conformal Coating     | Optional              | Optional             |
| PCB Height(mm)        | 31.25/ 30,00          | 18.75                |

| DDR4                  |                              |                        |
|-----------------------|------------------------------|------------------------|
| DIMM Type             | DIMM I SO-DIMM               | VLP DIMM I VLP SO-DIMM |
| Speed (MT/s)          | 2133, 2400, 2666, 2933, 3200 | 2666                   |
| Capacity              | 4GB, 8GB, 16GB, 32GB         | 4GB, 8GB, 16GB         |
| Pin Count             | 288pin I 260pin              | 288pin I 260pin        |
| Type                  | Unbuffered (Non-ECC)         | Unbuffered (Non-ECC)   |
| Voltage               | 1.2V                         | 1.2V                   |
| Operating Temp.(Tc)   | 0°C ~ 95°C                   | 0°C ~ 95°C             |
| US Military Standards | √                            | √                      |
| Anti-vibration Fill   | Optional                     | Optional               |
| Conformal Coating     | Optional                     | Optional               |
| PCB Height(mm)        | 31.25/ 30,00                 | 18.75/ 18,00           |

| DDR3                  |                           | DDR2                 |
|-----------------------|---------------------------|----------------------|
| DIMM Type             | DIMM I SO-DIMM I VLP DIMM | DIMM I SO-DIMM       |
| Speed (MT/s)          | 1066, 1333, 1600, 1866    | 667, 800             |
| Capacity              | 2GB, 4GB, 8GB             | 1GB, 2GB             |
| Pin Count             | 240pin I 204pin I 240pin  | 240pin I 200pin      |
| Type                  | Unbuffered (Non-ECC)      | Unbuffered (Non-ECC) |
| Voltage               | 1.5V I 1.5V/1.35V         | 1.8V                 |
| Operating Temp.       | 0°C ~ 85°C                | 0°C ~ 85°C           |
| US Military Standards | —                         | —                    |
| Anti-vibration Fill   | Optional                  | Optional             |
| Conformal Coating     | Optional                  | Optional             |
| PCB Height(mm)        | 30.00 I 30.00 I 18.30     | 30.00                |

Product specifications are subject to change without prior notice.





**DDR5**  
DIMM/ SO-DIMM/ VLP DIMM

**DDR4/ DDR3**  
DIMM/ SO-DIMM

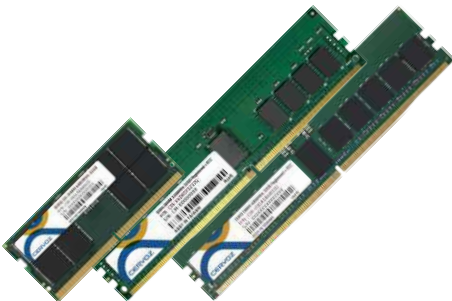
**DDR2**  
SO-DIMM

Wide Temperature Series

| DDR5                  |                       |                      |
|-----------------------|-----------------------|----------------------|
| DIMM Type             | DIMM I SO-DIMM        | VLP DIMM             |
| Speed (MT/s)          | 4800, 5600            | 4800, 5600           |
| Capacity              | 8GB, 16GB, 32GB, 48GB | 16GB, 32GB           |
| Pin Count             | 288pin/ 262pin        | 288pin               |
| Type                  | Unbuffered (Non-ECC)  | Unbuffered (Non-ECC) |
| Voltage               | 1.1V                  | 1.1V                 |
| Operating Temp.(Tc)   | −40°C ~ 95°C          | −40°C ~ 95°C         |
| US Military Standards | √                     | √                    |
| Anti-vibration Fill   | Optional              | Optional             |
| Conformal Coating     | Optional              | Optional             |
| PCB Height(mm)        | 31.25/ 30.00          | 18.75                |

| DDR4                  |                              |                              |
|-----------------------|------------------------------|------------------------------|
| DIMM Type             | DIMM                         | SO-DIMM                      |
| Speed (MT/s)          | 2133, 2400, 2666, 2933, 3200 | 2133, 2400, 2666, 2933, 3200 |
| Capacity              | 4GB, 8GB, 16GB, 32GB         | 4GB, 8GB, 16GB, 32GB         |
| Pin Count             | 288pin                       | 260pin                       |
| Type                  | Unbuffered (Non-ECC)         | Unbuffered (Non-ECC)         |
| Voltage               | 1.2V                         | 1.2V                         |
| Operating Temp.(Tc)   | −40°C ~ 95°C                 | −40°C ~ 95°C                 |
| US Military Standards | √                            | √                            |
| Anti-vibration Fill   | Optional                     | Optional                     |
| Conformal Coating     | Optional                     | Optional                     |
| PCB Height(mm)        | 31.25                        | 30.00                        |

| DDR3                  |                      | DDR2                 |
|-----------------------|----------------------|----------------------|
| DIMM Type             | DIMM I SO-DIMM       | SO-DIMM              |
| Speed (MT/s)          | 1333, 1600, 1866     | 667, 800             |
| Capacity              | 2GB, 4GB, 8GB        | 1GB, 2GB             |
| Pin Count             | 240pin/ 204pin       | 200pin               |
| Type                  | Unbuffered (Non-ECC) | Unbuffered (Non-ECC) |
| Voltage               | 1.5V/1.35V           | 1.8V                 |
| Operating Temp.       | −40°C~ 85°C          | −40°C ~ 85°C         |
| US Military Standards | —                    | —                    |
| Anti-vibration Fill   | Optional             | Optional             |
| Conformal Coating     | Optional             | Optional             |
| PCB Height(mm)        | 30.00                | 30.00                |



**DDR5/ DDR4**  
DIMM with ECC/ SO-DIMM with ECC  
Registered DIMM with ECC

**DDR3**  
DIMM with ECC  
Registered DIMM with ECC

Server Series

| DDR5                  |                                               |                       |
|-----------------------|-----------------------------------------------|-----------------------|
| DIMM Type             | DIMM I Registered DIMM                        | SO-DIMM               |
| Speed (MT/s)          | 4800, 5600                                    | 4800, 5600            |
| Capacity              | 16GB, 32GB                                    | 16GB, 32GB            |
| Pin Count             | 288pin                                        | 262pin                |
| Type                  | Unbuffered (with ECC) I Registered (with ECC) | Unbuffered (with ECC) |
| Voltage               | 1.1V                                          | 1.1V                  |
| Operating Temp.(Tc)   | 0°C ~ 95°C                                    | 0°C ~ 95°C            |
| US Military Standards | √                                             | √                     |
| Anti-vibration Fill   | Optional                                      | Optional              |
| Conformal Coating     | Optional                                      | Optional              |
| PCB Height(mm)        | 31.25                                         | 30.00                 |

| DDR4                  |                                               |                        |
|-----------------------|-----------------------------------------------|------------------------|
| DIMM Type             | DIMM I Registered DIMM                        | SO-DIMM                |
| Speed (MT/s)          | 2400, 2666, 2933, 3200                        | 2400, 2666, 2933, 3200 |
| Capacity              | 4GB, 8GB, 16GB, 32GB                          | 4GB, 8GB, 16GB, 32GB   |
| Pin Count             | 288pin                                        | 260pin                 |
| Type                  | Unbuffered (with ECC) I Registered (with ECC) | Unbuffered (with ECC)  |
| Voltage               | 1.2V                                          | 1.2V                   |
| Operating Temp.(Tc)   | 0°C ~ 95°C                                    | 0°C ~ 95°C             |
| US Military Standards | √                                             | √                      |
| Anti-vibration Fill   | Optional                                      | Optional               |
| Conformal Coating     | Optional                                      | Optional               |
| PCB Height(mm)        | 31.25                                         | 30.00                  |

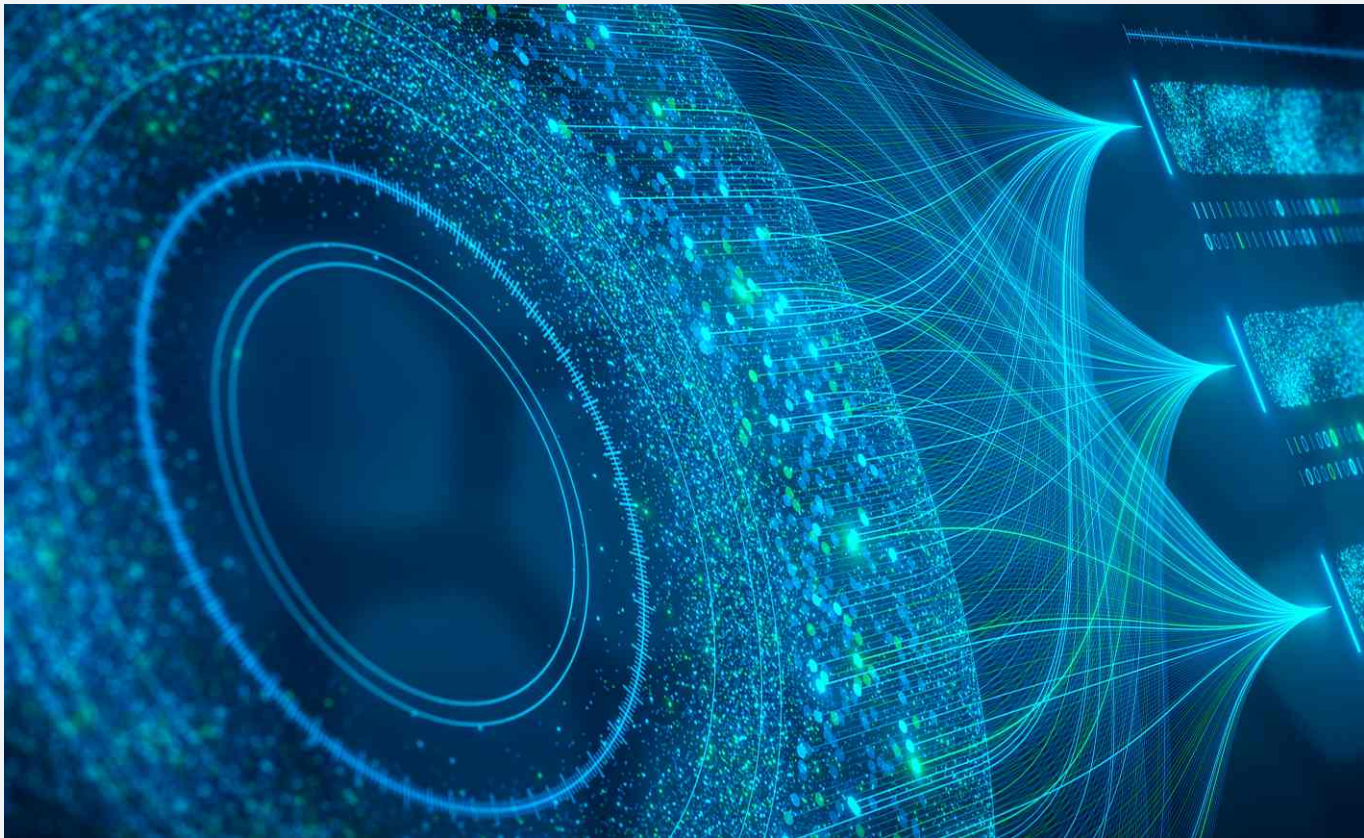
| DDR3                  |                       |                       |
|-----------------------|-----------------------|-----------------------|
| DIMM Type             | DIMM                  | Registered DIMM       |
| Speed (MT/s)          | 1333, 1600            | 1600                  |
| Capacity              | 2GB, 4GB, 8GB         | 2GB, 4GB, 8GB         |
| Pin Count             | 240pin                | 240pin                |
| Type                  | Unbuffered (with ECC) | Registered (with ECC) |
| Voltage               | 1.5V/1.35V            | 1.5V/1.35V            |
| Operating Temp.       | 0°C ~ 85°C            | 0°C ~ 85°C            |
| US Military Standards | —                     | —                     |
| Anti-vibration Fill   | Optional              | Optional              |
| Conformal Coating     | Optional              | Optional              |
| PCB Height(mm)        | 30.00                 | 30.00                 |



# MODULAR EXPANSION CARD SOLUTION

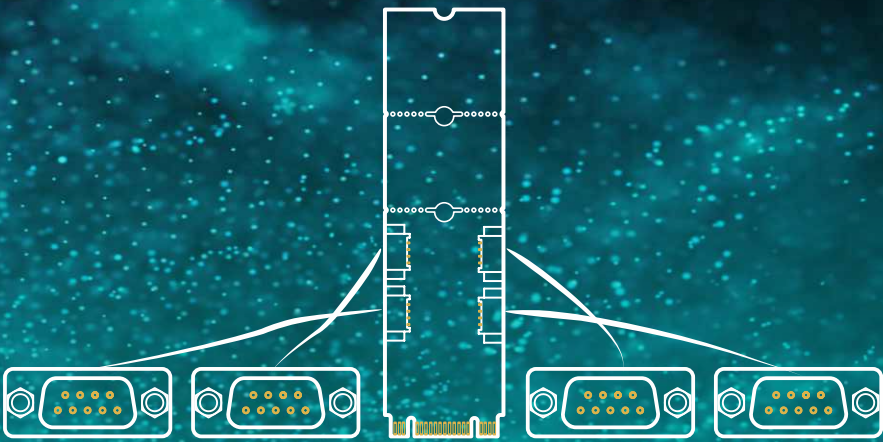
Cervoz Modular Expansion Cards provide flexible system expansion for embedded and industrial platforms requiring additional connectivity and interface options. The product series covers seven key functions, including *Ethernet*, *Wi-Fi*, *CAN Bus*, *Serial*, *SATA*, *USB*, and *Display*, addressing a wide range of system integration needs.

Available in **PCIe**, **mini PCIe**, and **M.2 form factors (2230, 2242, 2260, 2280)**, these cards support efficient system design across platforms with different performance and space requirements. Unique to Cervoz, the M.2 card design allows length adjustment from 2280 to 2260 or 2242, simplifying system design and inventory management. All modules are validated for compatibility and reliability across diverse industrial platforms.



# CAN Bus Expansion Cards

## Reliable CAN Communication for Industrial Systems



Cervoz CAN Bus expansion cards combine support for CAN 2.0 and CAN FD to address evolving industrial communication requirements. While CAN 2.0 remains widely used for standard control communication, CAN FD enables higher data throughput for data-intensive applications. Designed for industrial system integration, these expansion cards provide a flexible approach to extending CAN connectivity without increasing system complexity.



### CAN 2.0 & CAN FD

Supports both classical CAN and CAN FD to accommodate different data rate and bandwidth requirements.



### Industrial-Grade Protection

Provides 2.5 kV isolation and up to 15 kV ESD protection to help ensure stable CAN communication and long-term reliability in industrial environments.



### Effortless Integration

Supports 2- or 4-port configurations and a modular 3-in-1 breakaway M.2 design compatible with 2242, 2260, and 2280 form factors for flexible system integration.



### Wide Temperature Operation

Designed to maintain stable CAN Bus communication across a wide operating temperature range for continuous industrial operation.

\*\*Available on specific models and/or form factors.





## Solution Product Line

### NETWORKING

#### Ethernet Series

Mini PCIe/ M.2 (B+M Key)  
M.2 (A+E Key)/ PCIe

#### Wi-Fi Series

Mini PCIe/ M.2 (A+E/ E Key)

### COMMUNICATION

#### CAN Bus Series

M.2 (B+M Key)

#### Serial Series

Mini PCIe/ M.2 (B+M Key)

### SYSTEM I/O & DISPLAY

#### USB Series

Mini PCIe/ M.2 (B+M Key)/ PCIe

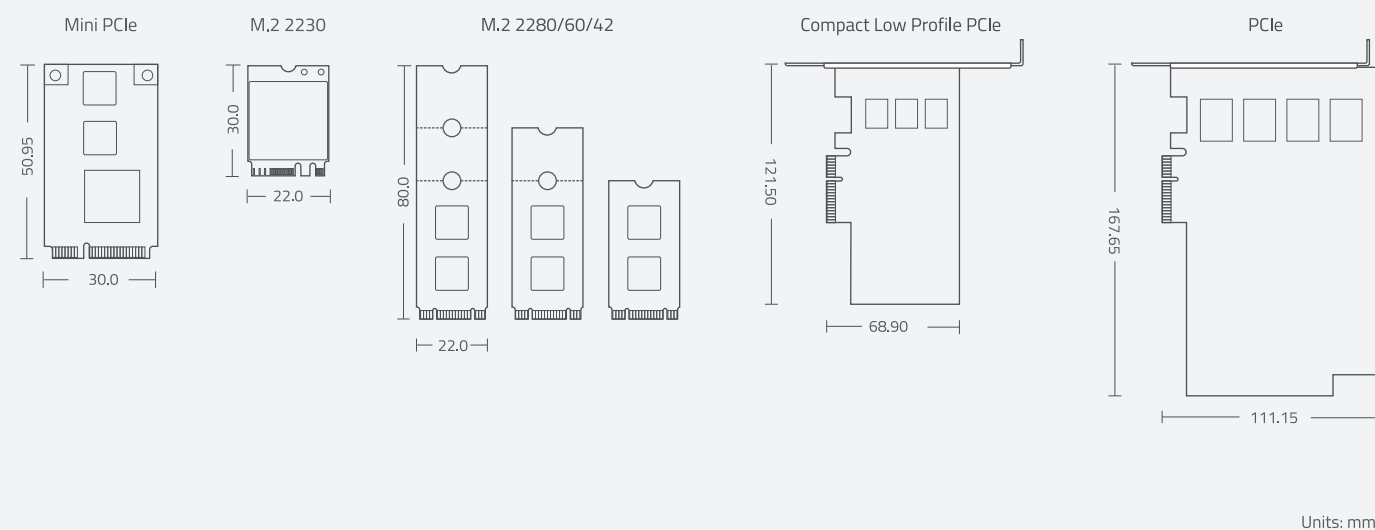
#### Display Series

Mini PCIe/ M.2 (B+M Key)

#### SATA Series

Mini PCIe

## Form Factor Comparison



## Modular Expansion Card

# Expand Capabilities for Diverse Industrial PCs

CervoZ Mini-PCIe expansion card allows extension of device connectivity for slim and compact PC installation in many different applications: Factory Automation, KIOSK/ POS, Fleet Management, In-Vehicle/ Transportation and Networking.



In-Vehicle/ Transportation



Fleet Management



Factory Automation



KIOSK/POS

## Core Competence

### Industrial PC Dedication

- Industrial Grade Components
- Multi-Directional Connector Fixation ( MECFIX Daughterboard Design )
- Long Product Lifespan
- Prolonged Warranty Period

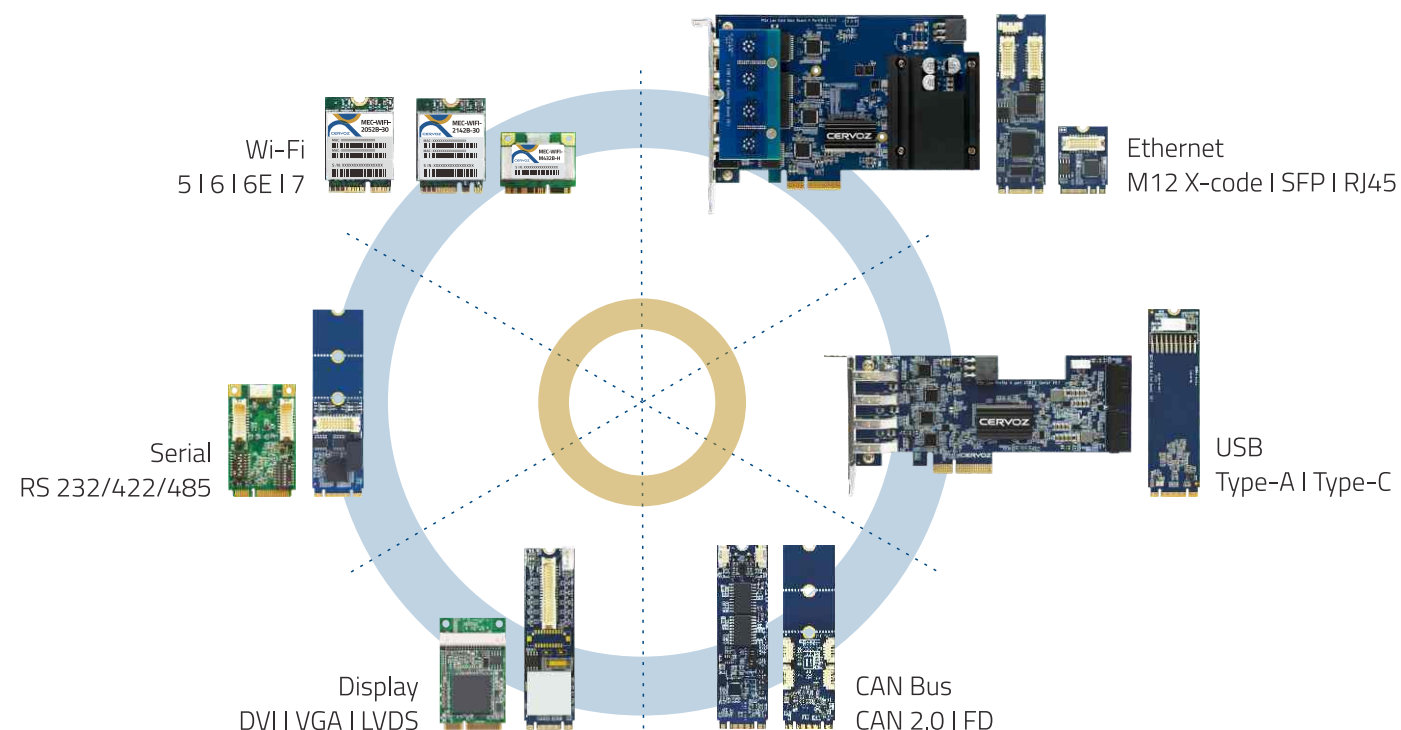
### Comprehensive Product Line

- Various PC I/O Functions
- Various Choices of Expansion Ports

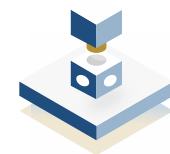
### Full Certification

- CE, FCC, UKCA, RoHS, and REACH

## Various I/O Functional Solutions



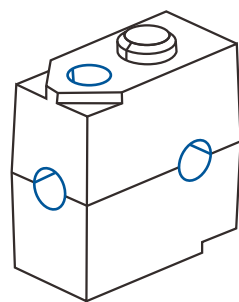
# MECFIX (Versatile Mounting)



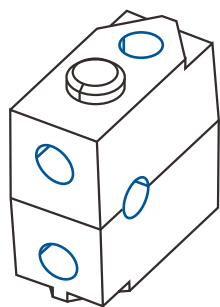
The MECFIX is Cervoz's versatile mounting mechanism that facilitates flexible plugging and connecting of modules and components onto the MEC daughterboard. The MECFIX allows for flexibility and customization that would otherwise not be possible.

## MECFIX-Unique Mounting Machanism

MEC USB, Ethernet and Display series come with special designed daughterboard called MECFIX. The feature of the mounting unit allows versatile mounting options which make system integrators exceptionally flexible while mounting the MEC connectors (MECFIX) on their PC or systems in every possible location.



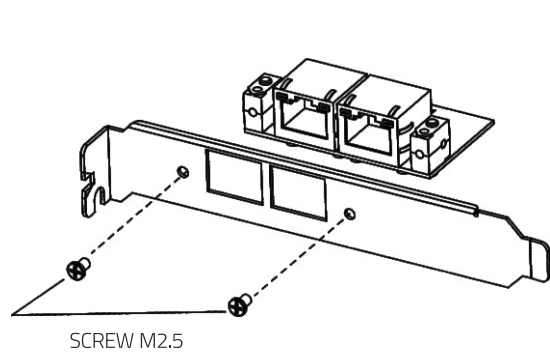
Front



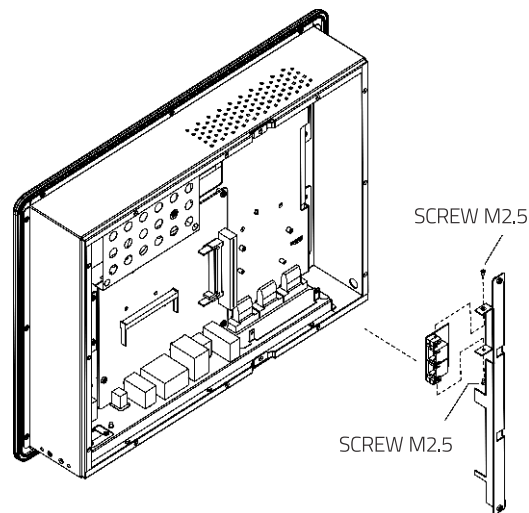
Back

## MECFIX Provides Following Example Mounting

Front Side Mounting



Upper / Right / Left Side Mounting (internal Used)



## Industrial Networking Solutions

As industrial systems become more connected, stable and flexible network connectivity is essential for data exchange, remote management, and system coordination.

Fixed onboard networking can limit scalability and deployment options, especially in space-constrained or evolving system designs. Industrial networking expansion cards provide a practical way to add or upgrade LAN and Wi-Fi connectivity while maintaining system stability and integration flexibility.



### Multiple Speed Options

Supports multiple Ethernet and Wi-Fi speed options to accommodate different bandwidth requirements across industrial networking applications.



### Industrial-Grade Protection

Features isolated Ethernet ports with 2.5 kV surge protection to help maintain stable network communication in electrically noisy industrial environments.



### Flexible Interface Options

Provides RJ45, M12 X-code, and SFP interface options for adaptable integration in industrial networking systems.



### Critical Operating

Supports stable network operation from -40°C to +85°C under continuous and critical operating conditions.

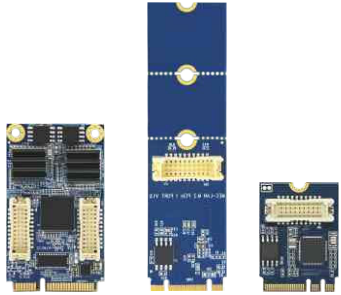


### PoE+ Capability

Supports Power over Ethernet to deliver data and power through a single cable, simplifying device deployment and reducing system complexity.

\*\*Available on specific models and/or form factors.





### Key Features

- Form Factors: Mini PCIe, M.2 2230/42/60/80
- Speeds: 1/2.5/10 GbE
- Space-Saving Design: 3-in-1 Form Factor
- Features: Isolation/ MECFIX
- Interface (Connector): RJ45

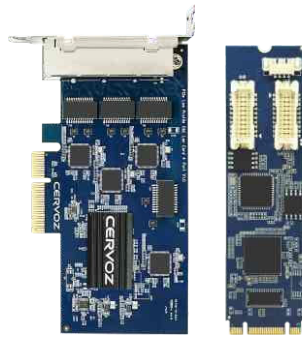
## Ethernet Solution

| MEC-LAN-M101i I MEC-LAN-M102i |                               | MEC-LAN-M601i I MEC-LAN-M602i         |  |
|-------------------------------|-------------------------------|---------------------------------------|--|
| Form Factor                   | Mini PCIe                     | Mini PCIe                             |  |
| Controller                    | Intel I210 x1 I Intel I210 x2 | Intel I226-IT x 1 I Intel I226-IT x 2 |  |
| Connector                     | RJ45                          | RJ45                                  |  |
| Power Consumption             | 195mA@3.3V I 705mA@3.3V       | 350mA@3.3V I 970mA@3.3V               |  |
| Dimensions (WxL/ mm)          | 30.00 x 50.95                 | 30.00 x 50.95                         |  |
| Operating Temp.               | −40°C ~ 85°C                  | −40°C ~ 85°C                          |  |
| Storage Temp..                | −40°C ~ 95°C                  | −40°C ~ 125°C                         |  |
| Port No.                      | 1 I 2                         | 1 I 2                                 |  |
| Data Rate Per Port            | 1GbE                          | 2.5GbE                                |  |
| Special Feature               | 2kV isolation                 | 2kV isolation                         |  |
| MECFIX                        | √                             | √                                     |  |

| MEC-LAN-2001i I MEC-LAN-2002i |                               | MEC-LAN-2601i I MEC-LAN-2602i         |  |
|-------------------------------|-------------------------------|---------------------------------------|--|
| Form Factor                   | M.2 2242/2260/2280 (B+M key)  | M.2 2280 (B+M key)                    |  |
| Controller                    | Intel I210 x1 I Intel I210 x2 | Intel I226-IT x 1 I Intel I226-IT x 2 |  |
| Connector                     | RJ45                          | RJ45                                  |  |
| Power Consumption             | 195mA@3.3V I 625mA@3.3V       | 365mA@3.3V I 990mA@3.3V               |  |
| Dimensions (WxL/ mm)          | 22.00 x 42.00/60.00/80.00     | 22.00 x 80.00                         |  |
| Operating Temp.               | −40°C ~ 85°C                  | −40°C ~ 85°C                          |  |
| Storage Temp..                | −40°C ~ 95°C                  | −40°C ~ 125°C                         |  |
| Port No.                      | 1 I 2                         | 1 I 2                                 |  |
| Data Rate Per Port            | 1 GbE                         | 2.5 GbE                               |  |
| Special Feature               | 2kV isolation                 | 2kV isolation                         |  |
| MECFIX                        | √                             | √                                     |  |

| MEC-LAN-2631i        |                    |
|----------------------|--------------------|
| Form Factor          | M.2 2230 (A+E key) |
| Controller           | Intel I226-IT x1   |
| Connector            | RJ45               |
| Power Consumption    | 350mA@3.3V         |
| Dimensions (WxL/ mm) | 22.00 x 30.00      |
| Operating Temp.      | −40°C ~ 85°C       |
| Storage Temp..       | −40°C ~ 125°C      |
| Port No.             | 1                  |
| Data Rate Per Port   | 2.5 GbE            |
| Special Feature      | 2kV isolation      |
| MECFIX               | √                  |

Product specifications are subject to change without prior notice.



### Key Features

- Speeds: 1/ 2.5/ 10GbE
- Port Options: 1/2/4 Ports
- Form Factors: M.2 2280, PCIe
- Interface (Connector): SFP, RJ45, M12 X-code
- Features: Isolation/ PoE+ Power Module

## Ethernet Solution

| MEC-LAN-2001-SFP     |                                   | MEC-LAN-2002-SFP                  |  |
|----------------------|-----------------------------------|-----------------------------------|--|
| Form Factor          | M.2 2280 (B+M key)                | M.2 2280 (B+M key)                |  |
| Controller           | Intel I210-IS x1                  | Intel I210-IS x2                  |  |
| Connector            | SFP                               | SFP                               |  |
| Power Consumption    | 150mA@3.3V                        | 500mA@3.3V                        |  |
| Dimensions (WxL/ mm) | 22.00 x 80.00                     | 22.00 x 80.00                     |  |
| Operating Temp.      | −40°C ~ 85°C                      | −40°C ~ 85°C                      |  |
| Storage Temp..       | −40°C ~ 125°C                     | −40°C ~ 125°C                     |  |
| Port No.             | 1                                 | 2                                 |  |
| Data Rate Per Port   | 1 GbE                             | 1 GbE                             |  |
| Special Feature      | Wake-on-LAN and Hot-Swap function | Wake-on-LAN and Hot-Swap function |  |
| MECFIX               | √                                 | √                                 |  |

| MEC-LAN-P002         |                    | MEC-LAN-P004       |                    | MEC-LAN-P014       |                    |
|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Form Factor          | PCIe GEN2x4        | PCIe GEN2x4        | PCIe GEN2x4        | PCIe GEN2x4        | PCIe GEN2x4        |
| Controller           | Intel I210 x 2     | Intel I210 x 4     | Intel I210 x 4     | Intel I210 x 4     | Intel I210 x 4     |
| Connector            | RJ45               | RJ45               | RJ45               | M12 X-code         | M12 X-code         |
| Power Consumption    | 900mA@3.3V         | 1273mA@3.3V        | 1273mA@3.3V        | 1390mA@3.3V        | 1390mA@3.3V        |
| Dimensions (WxL/ mm) | 168.00 x 111.00    | 168.00 x 111.00    | 168.00 x 111.00    | 168.00 x 111.00    | 168.00 x 111.00    |
| Operating Temp.      | 0°C ~ 70°C         | 0°C ~ 70°C         | 0°C ~ 70°C         | 0°C ~ 70°C         | 0°C ~ 70°C         |
| Storage Temp..       | −40°C ~ 125°C      | −40°C ~ 95°C       | −40°C ~ 95°C       | −40°C ~ 125°C      | −40°C ~ 125°C      |
| Port No.             | 2                  | 4                  | 4                  | 4                  | 4                  |
| Data Rate Per Port   | 1 GbE              | 1 GbE              | 1 GbE              | 1 GbE              | 1 GbE              |
| Special Feature      | PoE+/2kV isolation | PoE+/2kV isolation | PoE+/2kV isolation | PoE+/2kV isolation | PoE+/2kV isolation |
| MECFIX               | –                  | –                  | –                  | –                  | –                  |

| MEC-LAN-PL502        |                                  | MEC-LAN-PL104                   |                | MEC-LAN-PL604                   |                  |
|----------------------|----------------------------------|---------------------------------|----------------|---------------------------------|------------------|
| Form Factor          | Standard Low-Profile PCIe GEN3x4 | Compact Low-Profile PCIe GEN2x4 |                | Compact Low-Profile PCIe GEN2x4 |                  |
| Controller           | Intel X550-AT2 x 1               | Intel I210 x 4                  | Intel I210 x 4 | Intel I226-IT x4                | Intel I226-IT x4 |
| Connector            | RJ45                             | RJ45                            | RJ45           | RJ45                            | RJ45             |
| Power Consumption    | 850mA@12V                        | 1265mA@3.3V                     | 1265mA@3.3V    | 550mA @12V                      | 550mA @12V       |
| Dimensions (WxL/ mm) | 68.90 x 167.65                   | 68.90 x 121.50                  | 68.90 x 121.50 | 68.90 x 121.50                  | 68.90 x 121.50   |
| Operating Temp.      | 0°C ~ 55°C                       | 0°C ~ 70°C                      | 0°C ~ 70°C     | −40°C ~ 85°C                    | −40°C ~ 85°C     |
| Storage Temp..       | −40°C ~ 125°C                    | −40°C ~ 125°C                   | −40°C ~ 125°C  | −40°C ~ 125°C                   | −40°C ~ 125°C    |
| Port No.             | 2                                | 4                               | 4              | 4                               | 4                |
| Data Rate Per Port   | 10 GbE                           | 1 GbE                           | 1 GbE          | 2.5 GbE                         | 2.5 GbE          |
| Special Feature      | PoE+/2kV isolation               | 2kV isolation                   | 2kV isolation  | 2kV isolation                   | 2kV isolation    |
| MECFIX               | –                                | –                               | –              | –                               | –                |

Product specifications are subject to change without prior notice.



Key Features

- Standards: Wi-Fi 5, Wi-Fi 6, Wi-Fi 6E, Wi-Fi 7
- Frequency Bands: 2.4GHz, 5GHz, 6GHz (Wi-Fi 6E/ 7)
- Form Factors: Mini PCIe and M.2 2230 (A+E/ E key)
- Integrated Bluetooth: Version 4.0, 5.0, 5.2 and 5.4
- MIMO Technology: 2T2R

Wi-Fi Solution

| MEC-WIFI-M432B-H         |                                   | MEC-WIFI-2632B-30                  |
|--------------------------|-----------------------------------|------------------------------------|
| Generation               | Wi-Fi 5                           | Wi-Fi 5                            |
| Form Factor              | Half size                         | M.2 2230 (A+E key)                 |
| Interface                | Mini-PCIe                         | WLAN: PCIe 1.1 / Bluetooth: USB2.0 |
| IEEE Networking Standard | 802.11 a/b/g/n/ac + Bluetooth 4.0 | 802.11 a/b/g/n/ac + Bluetooth 5.0  |
| Chipset                  | Realtek RTL8812AE                 | Realtek RTL8822CE                  |
| RF Frequency Range       | 2.4~2.5GHz                        | 2.4~2.5GHz                         |
|                          | 5.725~5.785GHz                    | 5.15~5.85GHz                       |
|                          | ISM Dual Band                     | ISM Dual Band                      |
| MIMO Technology          | 2T2R                              | 2T2R                               |
| Dimensions (WxL/ mm)     | 29.85 x 26.65                     | 30.0 x 22.0                        |
| Operating Temp.          | 0°C ~ 70°C                        | 0°C ~ 70°C                         |

| MEC-WIFI-2042B-30        |                                      | MEC-WIFI-2042B-30W                   |
|--------------------------|--------------------------------------|--------------------------------------|
| Generation               | Wi-Fi 6                              | Wi-Fi 6                              |
| Form Factor              | M.2 2230 (A+E key)                   | M.2 2230 (A+E key)                   |
| Interface                | WLAN: PCIe 1.1 / Bluetooth: USB2.0   | WLAN: PCIe 1.1 / Bluetooth: USB2.0   |
| IEEE Networking Standard | 802.11 a/b/g/n/ac/ax + Bluetooth 5.2 | 802.11 a/b/g/n/ac/ax + Bluetooth 5.2 |
| Chipset                  | Realtek RTL8852BE                    | Realtek RTL8852BE                    |
| RF Frequency Range       | 2.402~2.484GHz                       | 2.402~2.484GHz                       |
|                          | 5.15~5.85GHz                         | 5.15~5.85GHz                         |
|                          | ISM Dual Band                        | ISM Dual Band                        |
| MIMO Technology          | 2T2R                                 | 2T2R                                 |
| Dimensions (WxL/ mm)     | 30.0 x 22.0                          | 30.0 x 22.0                          |
| Operating Temp.          | 0°C ~ 70°C                           | -40°C ~ 85°C                         |

| MEC-WIFI-2142B-30        |                                      | MEC-WIFI-2052B-30                       |
|--------------------------|--------------------------------------|-----------------------------------------|
| Generation               | Wi-Fi 6E                             | Wi-Fi 7                                 |
| Form Factor              | M.2 2230 (A+E key)                   | M.2 2230 (E key)                        |
| Interface                | WLAN: PCIe 2.1/ Bluetooth: USB2.0    | WLAN: PCIe 2.1 / Bluetooth: USB2.0      |
| IEEE Networking Standard | 802.11 a/b/g/n/ac/ax + Bluetooth 5.2 | 802.11 a/b/g/n/ac/ax/be + Bluetooth 5.4 |
| Chipset                  | Realtek RTL8852BE                    | Realtek RTL8922AE-CG                    |
| RF Frequency Range       | 2.402~2.484GHz                       | 2.402~2.484GHz                          |
|                          | 4.905~5.915GHz                       | 4.905~5.915GHz                          |
|                          | 5.930~7.110GHz                       | 5.930~7.110GHz                          |
| MIMO Technology          | 2T2R                                 | 2T2R                                    |
| Dimensions (WxL/ mm)     | 30.0 x 22.0                          | 30.0 x 22.0                             |
| Operating Temp.          | 0°C ~ 70°C                           | 0°C ~ 70°C                              |

Product specifications are subject to change without prior notice.



Industrial Communication Solutions

In industrial and embedded systems, CAN Bus and serial communication are widely used for device control, monitoring, and data exchange at the field level.

Fixed onboard communication interfaces can limit system flexibility when application requirements change or additional connections are needed. Industrial communication expansion cards provide a practical way to add or adapt CAN Bus and serial connectivity, enabling systems to scale communication capabilities without redesigning the core platform.



CAN Bus & Serial Support

Supports CAN Bus and serial communication to meet diverse industrial control and monitoring requirements.



Industrial-Grade Protection

Designed with electrical protection features to help maintain stable communication in electrically noisy industrial environments.



Effortless Integration

Available in M.2 and Mini PCIe form factors and multi-port configurations to simplify industrial communication integration across different system design.

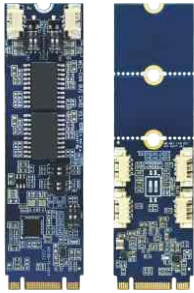


Critical Operating

Supports stable network operation from -40°C to +85°C under continuous and critical operating conditions.

\*\*Available on specific models and/or form factors.





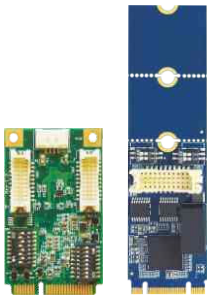
Key Features

- Output I/F: CAN FD/ CAN 2.0 A/B
- Meet the Requirements of the ISO 11898-1:2015
- Frequency Range: 24/ 80MHz
- Form Factors: M.2 2242/2260/2280 (B+M key)
- 2.5 kV Isolation, 3-in-1 Breakaway Design

CAN Bus Solution

| MEC-CAN-2802i I MEC-CAN-2F02i |                                     | MEC-CAN-2814i I MEC-CAN-2814i             |
|-------------------------------|-------------------------------------|-------------------------------------------|
| Form Factor                   | M.2 2280 (B+M key)                  | M.2 2242/2260/2280 (B+M key)              |
| Controller                    | F81601 I F81601A                    |                                           |
| Output I/F                    | CAN 2.0B I CAN FD/2.0A/B            | CAN 2.0B I CAN FD/2.0A/B                  |
| Frequency Range               | 24 MHZ I 80MHz                      | 24 MHZ I 80MHz                            |
| Dimensions (WxL/ mm)          | 22.00 x 80.00                       | 22.00 x 42.00/60.00/80.00                 |
| Operating Temp.               | -40°C ~ 85°C                        | -40°C ~ 85°C                              |
| Baud Rate                     | up to 1Mbps                         | up to 1Mbps                               |
| Port No.                      | 2                                   | 4                                         |
| Power Consumption             | MAX 3.3V @ 400mA I MAX 3.3V @ 600mA | MAX 3.3V @ 1100mA I MAX 3.3V @ 1300mA     |
| Special Feature               | 2.5 kV isolation                    | 2.5 kV isolation, 3-in-1 breakaway design |
| MECFIX                        | -                                   | -                                         |

Product specifications are subject to change without prior notice.



Key Features

- Form Factors: Mini PCIe and M.2 2242/2260/2280 (B+M key)
- Interface: RS-232/422/485 Mode Selectable by DIP Switch Setting
- H/W, S/W Automate Flow Control Supported
- FIFO 256 Bytes, 15 KV ESD Protections on Board
- Support Port to Computer Isolation 2.5kV

Serial Solution

| MEC-COM-M334               | MEC-COM-2012       | MEC-COM-2032i                                           |                    |
|----------------------------|--------------------|---------------------------------------------------------|--------------------|
| Form Factor                | Mini-PCIe          | M.2 2242/2260/2280 (B+M key)                            |                    |
| Controller                 | XR17V354           | XR17V352                                                | XR17V352           |
| Interface                  | RS-232/422/485 x 4 | RS-232 x 2                                              | RS-232/422/485 x 2 |
| Serial Port Voltage Select | 5V or 12V          | 5V or 12V                                               | 5V or 12V          |
| Dimensions (WxL/ mm)       | 30.00 x 50.95      | 22.00 x 42.00/ 60.00/ 80.00                             |                    |
| Operating Temp.            | -40°C ~ 85°C       | -40°C ~ 85°C                                            | -40°C ~ 85°C       |
| Storage Temp.              | -40°C ~ 95°C       | -40°C ~ 95°C                                            | -40°C ~ 95°C       |
| Baud Rate                  | up to 921.6 Kbps   | up to 921.6 Kbps                                        | up to 921.6 Kbps   |
| Power Consumption          | 645mA@3.3V         | 78mA@3.3V                                               | 155mA@3.3V         |
| Special Feature            | DIP switch setting | DIP switch setting, 3-in-1 Form Factor, 2.5kV isolation |                    |
| MECFIX                     | -                  | -                                                       |                    |

Product specifications are subject to change without prior notice.



System I/O & Display Solutions

In embedded systems, USB and SATA support peripheral connectivity and storage, while display interfaces provide visual output for system monitoring and interaction.

Fixed onboard resources can limit flexibility across different deployments. Expansion cards enable adaptable USB, SATA, and display configurations without increasing system design complexity.



USB & SATA Connectivity

Supports USB Type-A and Type-C connectivity along with SATA expansion to accommodate diverse peripheral and storage requirements.



Versatile Display Connectivity

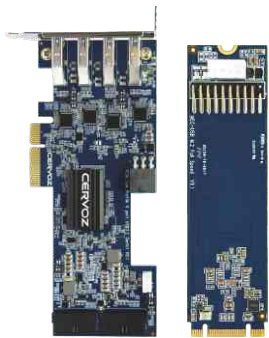
Supports a variety of display interfaces including DVI, VGA, and LVDS to accommodate different visualization needs.



Effortless Integration

Available in multiple port configurations and form factors to simplify system expansion without redesigning the core platform.

\*\*Available on specific models and/or form factors.



Key Features

- Form Factors: Mini PCIe, M.2 (B+M key) and Standard PCIe
- Interface: USB 3.2 Type-A/Type-C
- Data Transfer rate of 1.5/12/480/5000 Mbps
- 3-in-1 Breakaway Design
- Support Hot-Swap function

USB Solution

| MEC-USB-M102         |                                            | MEC-USB-2002 I MEC-USB-2002C               |
|----------------------|--------------------------------------------|--------------------------------------------|
| Form Factor          | Mini-PCIe                                  | M.2 2242/2260/2280 (B+M key)               |
| Controller           | Renesas (NEC) PD720202K8-701-BAA-A         | Renesas (NEC) PD720202K8-701-BAA-A         |
| Interface            | USB 3.2 x 2                                | USB 3.2 x 2 Type-A I USB 3.2 x 2 Type-C    |
| Performance          | Data Transfer rate of 1.5/12/480/5000 Mbps | Data Transfer rate of 1.5/12/480/5000 Mbps |
| Dimensions (WxL/ mm) | 30.00 x 50.95                              | 22.00 x 42.00/ 60.00/ 80.00                |
| Operating Temp.      | 0°C ~ 70°C                                 | 0°C ~ 70°C                                 |
| USB Power(Per Port)  | —                                          | 5V@1000A                                   |
| Port No.             | 2                                          | 2                                          |
| Power Consumption    | 215mA@3.3V                                 | 198mA@3.3V                                 |
| Special Feature      | Hot-Swap function                          | 3-in-1 Form Factor                         |
| MECFIX               | √                                          | —                                          |

| MEC-USB-2012 I MEC-USB-2012C |                                            | MEC-USB-PL004                              |
|------------------------------|--------------------------------------------|--------------------------------------------|
| Form Factor                  | M.2 2280 (B+M key)                         | Standard PCI-Express                       |
| Controller                   | Renesas (NEC) PD720202K8-701-BAA-A x2      | Renesas (NEC) PD720202K8-701-BAA-A x4      |
| Interface                    | USB 3.2 x 2 Type-A I USB 3.2 x 2 Type-C    | USB 3.2 x 4                                |
| Performance                  | Data Transfer rate of 1.5/12/480/5000 Mbps | Data Transfer rate of 1.5/12/480/5000 Mbps |
| Dimensions (WxL/ mm)         | 22.00 x 80.00                              | 68.90 x 158.00                             |
| Operating Temp.              | 0°C ~ 70°C                                 | 0°C ~ 70°C                                 |
| USB Power(Per Port)          | 5V@1000A                                   | 5V@900mA, 5V@1500mA,                       |
| Port No.                     | 2                                          | 4                                          |
| Power Consumption            | 809mA@3.3V                                 | 1400mA @3.3V                               |
| Special Feature              | Hot-Swap function                          | Hot-Swap function                          |
| MECFIX                       | —                                          | —                                          |

| MEC-USB-PL008 I MEC-USB-PL008C |                                                     |
|--------------------------------|-----------------------------------------------------|
| Form Factor                    | Standard PCI-Express                                |
| Controller                     | Renesas (NEC) PD720202K8-701-BAA-A x4               |
| Interface                      | PL008: USB 3.2 x 8 Type-A                           |
|                                | PL008C: USB 3.2 x 4 (T ype-A), USB 3.2 x 4 (Type-C) |
| Performance                    | Data Transfer rate of 1.5/12/480/5000 Mbps          |
| Dimensions (WxL/ mm)           | 68.90 x 158.00                                      |
| Operating Temp.                | 0°C ~ 70°C                                          |
| USB Power(Per Port)            | 5V@900mA, 5V@1500mA,                                |
| Power Consumption              | 1700mA @3.3V                                        |
| Special Feature                | Hot-Swap function                                   |
| MECFIX                         | —                                                   |

Product specifications are subject to change without prior notice.



Key Features

- Form Factors: Mini PCIe and M.2 2280(B+M key)
- Support 1280 x 1024 @ 60Hz DVI /VGA Resolution
- LVDS Display Resolution up to 1920x1080@60Hz
- Built in 256MB DDR3 memory
- Support 3.3V or 5V Panel Power Select by Switch Setting

Display Solution

| MEC-DIS-M002         |                                            | MEC-DIS-271L                       |
|----------------------|--------------------------------------------|------------------------------------|
| Form Factor          | Mini-PCIe                                  | M.2 2280 (B+M key)                 |
| Controller           | SiliconMotion SM750 with 16MB DDR SDRAM    | SMI SM768                          |
| Interface            | DVI x 1 (Support DVI, VGA)                 | LVDS: X1(Single/Dual Channel LVDS) |
| Performance          | DVI Resolution: Up to 1280 x 1024, 60Hz,   | LVDS Resolution: 24/48bit LVDS     |
|                      | VGA Resolution : Up to 1280 x 1024, 60Hz   |                                    |
| Dimensions (WxL/ mm) | 30.00 x 50.95                              | 22.00 x 80.00                      |
| Operating Temp.      | 0°C ~ 70°C                                 | 0°C ~ 70°C / -40°C ~ 85°C          |
| Storage Temp.        | -40°C ~ 95°C                               | -40°C ~ 95°C                       |
| Power Consumption    | 740mA@3.3V                                 | 850mA@3.3V                         |
| Special Feature      | Support simultaneously dual display output | Support 24 or 48 bit LVDS Channel  |
| MECFIX               | √                                          | —                                  |

Product specifications are subject to change without prior notice.



Key Features

- Form Factors: Mini PCIe
- IDE/AHCI Mode Supported
- SATA Port Multiplier and Hot-Swap Supported
- Transfer rate of 1.5Gbps, 3.0Gbps and 6.0Gbps
- Hardware SPAN, RAID 0, RAID 1 Supported

SATA Solution

| MEC-SAT-M002         |                                                                        | MEC-SAT-M102              |
|----------------------|------------------------------------------------------------------------|---------------------------|
| Form Factor          | Mini-PCIe                                                              | Mini-PCIe                 |
| Controller           | Asmedia ASM1061                                                        | Asmedia ASM1061R          |
| Interface            | Serial ATA III x 2 (SATA)                                              | Serial ATA III x 2 (SATA) |
| Performance          | Data Transfer Rate: SATA III transfer rate of 1.5Gbps, 3.0Gbps 6.0Gbps |                           |
| Dimensions (WxL/ mm) | 30.00 x 50.95                                                          | 30.00 x 50.95             |
| Operating Temp.      | 0°C ~ 70°C                                                             | 0°C ~ 70°C                |
| Storage Temp.        | -40°C ~ 95°C                                                           | -40°C ~ 95°C              |
| Port No.             | 2                                                                      | 2                         |
| Power Consumption    | 360mA@3.3V                                                             | 301mA@3.3V                |
| Special Feature      | IDE/AHCI mode supported, SATA Port Multiplier and Hot-Swap supported   |                           |
| RAID                 | —                                                                      | √                         |

Product specifications are subject to change without prior notice.





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