2019 Edition

Innodisk Selection Guide

Flash Storage, DRAM Modules and Embedded Peripherals

innodisk

ABOUT US

Innodisk is a service-driven provider of flash memory, DRAM modules, embedded peripherals and software solutions for industrial and enterprise applications. With satisfied customers across the embedded, server, in-vehicle, cloud storage markets and more, we have set ourselves apart with a commitment to dependable products and unparalleled service. This has resulted in solutions designed to supplement existing industrial solutions and high IOPS flash arrays for industrial and enterprise applications. The expanded business lines are leading our next steps in being a comprehensive solution and service provider in the industrial storage industry.

Founded in 2005 and headquartered in Taipei, Taiwan, Innodisk services clients globally with engineering experts and sales teams in China, Europe, Japan, and the United States. With abundant experience and an unrivaled knowledge of the memory industry, Innodisk develops products with excellent quality, remarkable performance and the highest reliability.

For more information about Innodisk, please visit http://www.innodisk.com.

Our Advantages

Technical Aptitude by Design

Our advantage lies in our portfolio of hardware, software and firmware technology and how we arrange these basic building blocks into new works of innovation.

Deeply Rooted in the Market

The awareness of the pit falls and opportunities of vertical markets allow us to view the full picture when crafting the optimal solution.

We Are in It Together

To reach the optimal solution, working together with our partner from day one is paramount. The best possible outcome can be managed by developing solutions jointly.
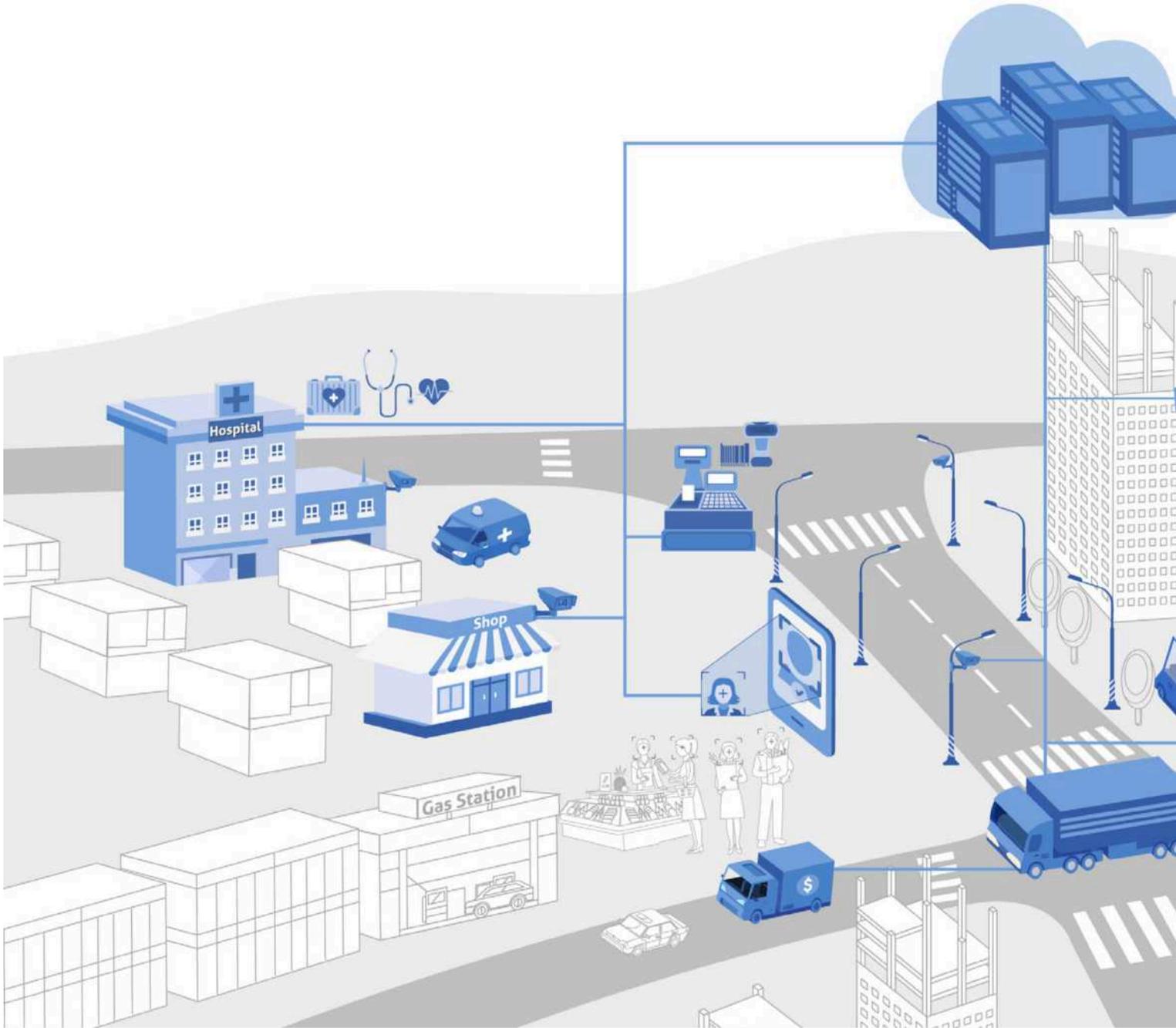
Surveillance in the AIoT Era

Comprehensive Memory, Storage, and Communication Solutions for the Surveillance Sector

The role of surveillance and video recording is poised to play a major role in the future markets of where AI and IoT meet. AI requires more computational power, which puts a bigger toll on the IoT device. Adding on the environmental challenges of IoT applications, the requirements can be difficult to meet. However, with robust and optimized components, these challenges can be met head on.

innodisk
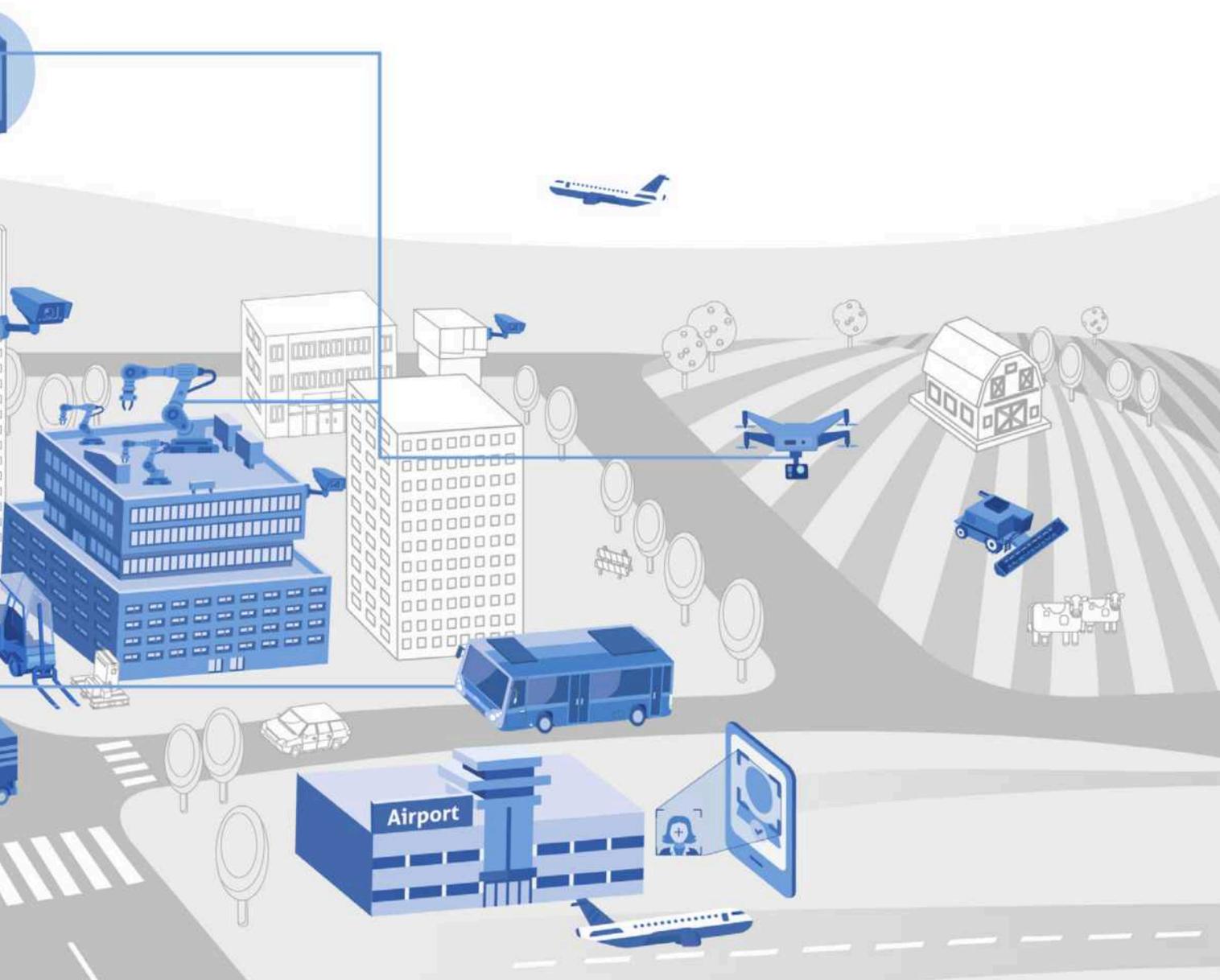
Storage Optimized for Video Recording

RECLine™ is the exclusive firmware algorithm for video recording that ensures steady performance without any frame-loss.

Compact Memory that Doesn't Waver

Our Very Low Profile (VLP) and Mini DRAM modules combine small form factors with high performance to make sure data recording goes off without a hitch.

Rugged Power and Signal Transmission

Innodisk's PoE extension cards provide ruggedness and galvanic isolation, ensuring uncompromised signal strength and power to your devices.

Entering the Era of 3D NAND

Industrial 3D TLC solution with top reliability and high endurance

3TG6-P and 3TE7 are Innodisk's latest product lines with 3D TLC NAND Flash, and are targeted at industrial applications. The series have reliable design, self-developed firmware and MLC-like characteristics. 3TG6-P series is a performance-oriented product line, and offers high speed and high capacity; In terms of boot drive and small form factors storage, the 3TE7 is the perfect choice. Both 3TG6-P & 3TE7 support various form designs, including: 2.5" SSD, M.2, SATADOM and mSATA.
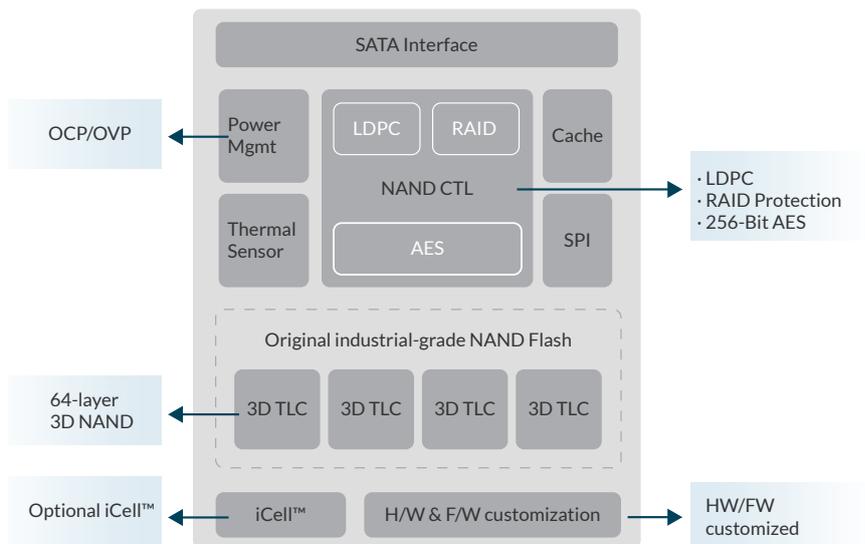
Benefits

- Reliability: Advanced LDPC ECC engine & internal RAID engine offer additional level of data protection
- Data Integrity: Unique power management & iData Guard to ensure data integrity under various environmental conditions
- Optimality: Extreme sequential and random performance with 3D NAND solution, no performance drop concern
- Security: 256-bit AES & End-to-End data path protection*
- Quality: Original industrial-grade NAND flash chips
- Manageability: iSMART & iCAP compatibility

InnoREC™ Surveillance Storage Series

Firmware Optimized for the Strict Requirements of the Surveillance Industry

InnoREC™ is Innodisk's proprietary flash feature set designed specifically for surveillance applications. Through the smart integration of firmware and hardware, the speed and steady performance required by modern surveillance solutions is fully met.

RECLine™
RECLine™ is the exclusive firmware algorithm for video recording that ensures steady performance without any frame-loss

iData Guard
iData Guard is our patented power cycling data management system, which helps to ensure surveillance data integrity during and after unexpected power outages

iCell
Ensures data is flushed from volatile storage to prevent the loss of valuable surveillance data during sudden power failures

Quick Erase
Quick Erase can delete all data within a few seconds – preventing leakage of potentially sensitive data
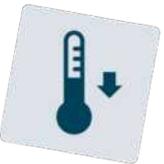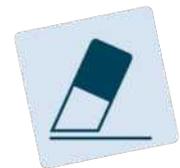
Thermal Sensor
When the surveillance system threatens to overheat, an immediate warning is issued. The SSD will automatically adjust the transmission frequency to ensure continued performance and reliability

Passive Cooling
The SSD layout is design for maximum heat dissipation – ensuring performance and enhanced data retention
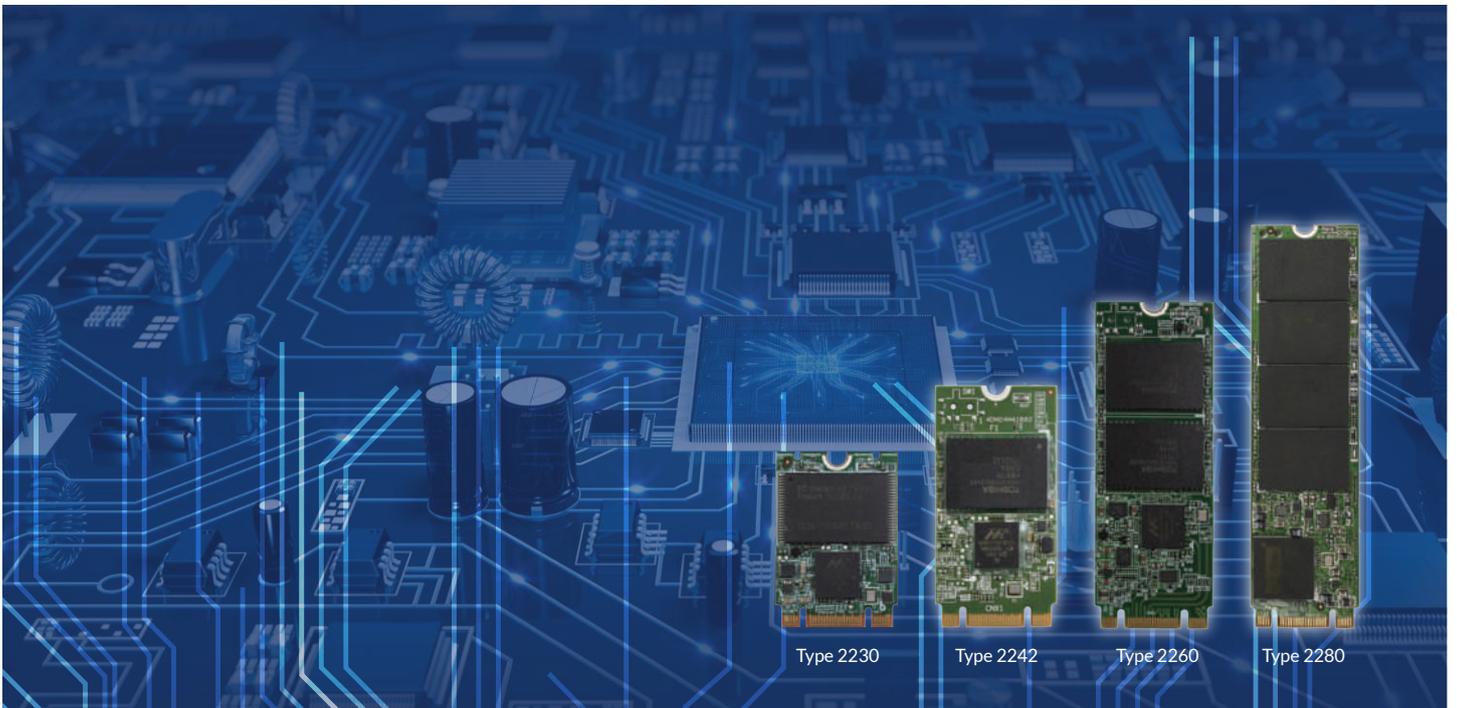
Type 2230   Type 2242   Type 2260   Type 2280

Comprehensive M.2 solutions

Diverse M.2 Solutions for Industrial and Embedded Storage

After the M.2 was announced as the next generation form factor, there has been a steady migration from the older mPCIe cards. This new form factor is instrumental for new IoT application as more and more platforms are adopting it as their main port.

To stay ahead of the curve, Innodisk has launched comprehensive M.2 solutions for both data storage and embedded expansions. This complete series includes 2230, 2242, 2260, and 2280 form factors that support both B and M key configurations, thus ensuring compatibility with the newest platforms on the market.

Innodisk M.2 solid state drives (SSD) are offered in a wide variety of models. The SATA III interface is a true and tested solution for standard applications, while PCIe 3.0 is the go-to for systems requiring exceptional performance. Furthermore, extensive firmware customization is also available: the M.2 SSD can be optimized for server and security environments, and it is also available with the newest 3D NAND flash.

Innodisk's comprehensive M.2 storage solutions are the perfect fit for the next generation of IoT devices.

Wide Product Range
- PCIe and SATA Solutions
- SLC/ iSLC/ MLC/ 3D TLC
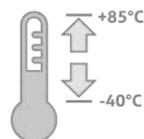
Industrial-Design
- Wide Temperature -40~85°C
- High Durability
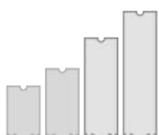
Flexible Solutions
- Multiple Form Factors
- Compatible with Both B and M Key

Power Loss Protection
- iData Guard
- iCell (Optional)

Server-Ready DRAM Designed for Wide Temperatures

2666MT/s RDIMM Ready to Tackle the Heat from the Most Demanding Server Environments

The new Innodisk DDR4 2666-series introduces the industry-first 2666MT/s Registered DIMM for wide temperature industrial and embedded applications. The series boasts faster data transfer speed and increased efficiency, and is also designed for server applications on the Intel® Xeon®Scalable platforms (also known as Purley).

| Optimization through Versatility	All-in-One	Platform Compliance	Industrial-grade
• The new DRAM series include both registered and unbuffered modules both with and without ECC • Available in a host of different form factors that ensure compatibility with your platform	• Innodisk can as the only industrial-grade provider offer a Wide Temperature DDR4 2666MT/s module in a VLP form factor with buffered memory	• Compatible with the newest platforms from Intel: Mehlow and Purley server and Coffee Lake	• Rugged memory modules with proven track record, rigorously tested to withstand sulfur, shock and vibration
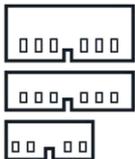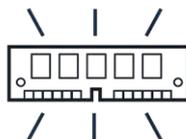
Anti-Sulfuration DRAM for ALL DDR4 DRAM Modules

Robust Modules that Bring the Needed Endurance to the Industrial Market

The Innodisk Many Anti-Sulfuration DRAM modules are designed for operators that are facing increasing difficulty with high sulfur content in their surroundings. The sulfur can cause corrosion damage to DRAM modules and lead to complete module failure, and, most detrimental to the operator, costly downtime.

These modules are protected against the high sulfur concentrations by a specialized design that shields the components, effectively sealing off the exposed parts of the module from the sulfur in the air.

What is sulfuration?

- Sulfur reacts with silver used in DRAM modules and creates silver sulfide (Ag2S)
- This corrosion lowers conductivity and can potentially lead to module failure
- Sulfuration is most commonly encountered in areas with pollution and volcanic activity; as well as in the petrochemical, mining and energy sector

Free-of-Cost Upgrade
- All Innodisk DDR4 modules will be upgraded without any added cost to include robust anti-sulfuration measures

Long-term Protection
- Decrease your TCO by investing in modules with lasting durability in hostile environments

Bringing Industrial-Grade Machine Vision and Surveillance to the Forefront

New PoE+ Expansion Cards Further Enhances Power Output and Reliability

PoE+ enables reliable connection to Powered Devices (PD) such as surveillance cameras and machine vision cameras, as well as point-of-sales systems and voice-over-IP equipment.

These rugged expansion cards are highly compatible, and have been extensively tested at full loading with different camera types, on different platforms and operating systems. The high compatibility with machine vision cameras makes the PoE expansion cards an integral part of quality assurance systems and also helps pave the way for deep learning applications.

Available in space-saving form factors and with flexible mounting options, the Innodisk PoE expansion cards are easily integrated into any Power Source Equipment (PSE). These expansion cards sports isolated, wide temperature design and is certified to withstand HiPOT and surge occurrences, making it the optimal choice for operation in harsh conditions.

Wide Compatibility

- Tested and approved for small and large size surveillance cameras as well as machine vision cameras
- Compatible across on a wide array of platforms and operating systems
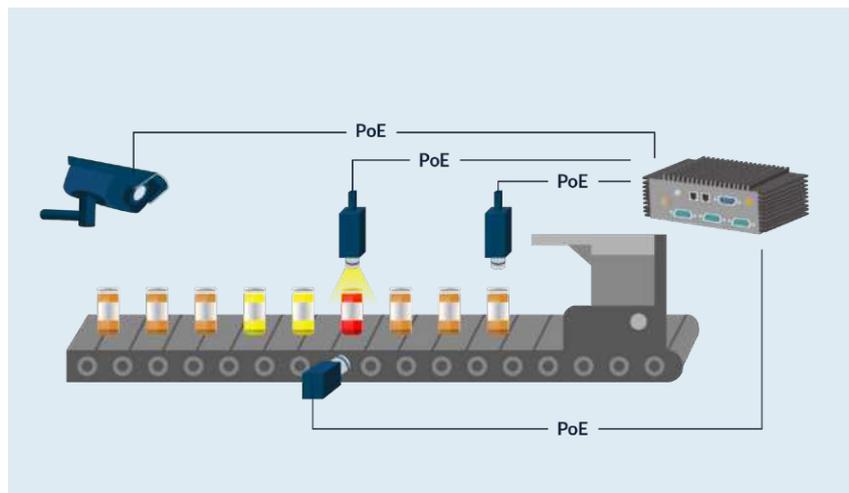
A Commitment to Technical Innovation

Innodisk continues to bring the most innovative products to a range of industries by developing outstanding proprietary technologies. Here are just few examples of Innodisk's breakthroughs and innovations.

Cable-less Power
Pin 7/ Pin8

Innodisk's patented Pin 7 and Pin 8 SATA power technologies take the cable-less concept to the next step by eliminating the need for power cables. Yielding a 100% cable-less, shock resistant, space saving plug-and-play storage solution that optimizes airflow and makes the best use of limited board space in embedded and rackmount server systems.

iSMART™

iSMART is a powerful, easy-to-use SSD and HDD health monitoring tool. It allows system integrators to track important disk information, such as temperature, storage space, bad blocks, lifespan and firmware, all under one platform. With iSMART, system integrators can better manage disk usage and know exactly when to replace a disk before the end of its life cycle.

iCell™

iCell is a smart data protection technology that is built into Innodisk's SSDs. iCell is crucial for mission-critical applications, where working under extreme conditions and without backup power is unavoidable. Our iCell technology provides a mechanism to instantaneously discharge data stored in temporary volatile DRAM buffers to flash storage, to ensure the safety of data during power failures.
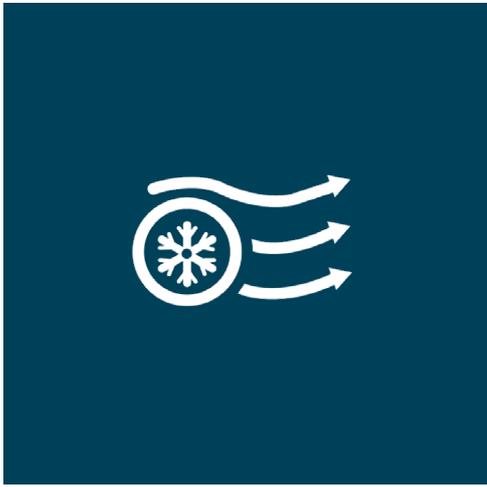
Passive Cooling

SSDs may easily lose data due to overheating. Innodisk has redesigned the cable layout by using copper to separate the controller and flash. This reduces the thermal conductivity rate and enhances data retention.

iPower Guard™

Innodisk's Power on Protection is a new circuit protection feature that is dually designed to allow uninterrupted SSD functionality in an inconsistent power supply situation, as well as provide accelerated boot-up for emergency startups or system shutdowns.
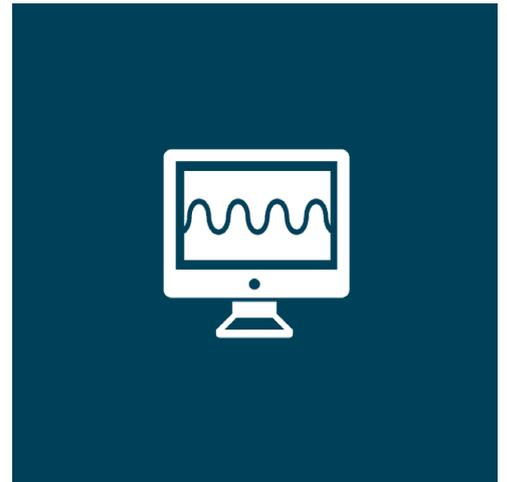
Stable Power Control

Innodisk's stable power control is used to optimize power circuits and establish OCP/OVP mechanisms to prevent electronic components from burning out due to voltage and/or current surges.

iSLC

iSLC is our exclusive technology designed to ensure longer-lasting and more reliable performance than conventional MLC NAND flash. Through the use of flash management algorithms, iSLC improves SSD endurance up to 20,000 cycles, increasing the lifespan to at least 7 times longer than MLC-based solutions.

A Commitment to Technical Innovation

Innodisk continues to bring the most innovative products to a range of industries by developing outstanding proprietary technologies. Here are just few examples of Innodisk's breakthroughs and innovations.
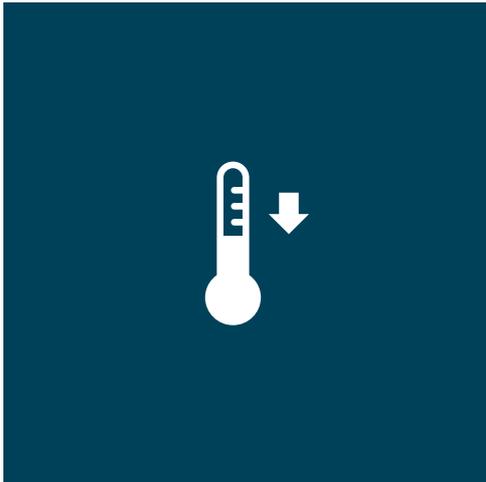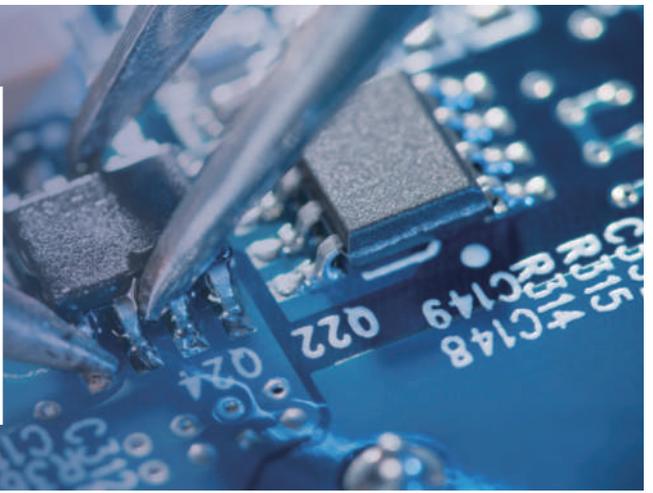
Thermal Sensor

Innodisk's Thermal Sensor is a robust heat and workload management technology that is built into our DRAM modules and flash storage. It is a crucial solution for industrial & aerospace and defense applications, which are often susceptible to extreme heat and performance stress. Innodisk's Thermal Sensors help to lower the working temperature while distributing workloads, which prevents modules from overworking and overheating, and greatly enhances system performance and system stability.

iData Guard™

Innodisk's iData Guard is a comprehensive data protection mechanism that functions before and after a sudden power outage to the SSD. Low-power detection terminates data writing before an abnormal power-off, while table-remapping after power-on deletes corrupt data and maintains data integrity. Innodisk's iData Guard provides effective power cycling management, preventing data stored in flash from degrading with use.
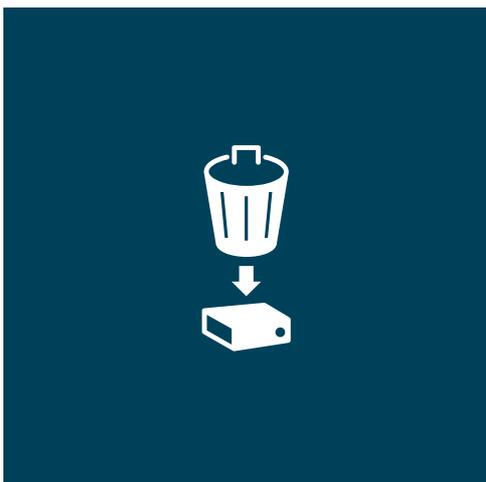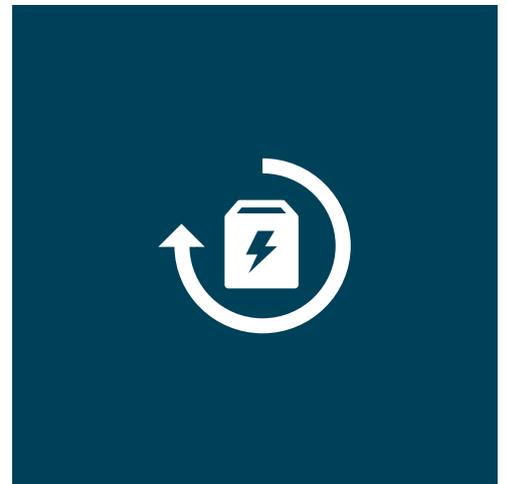
Garbage Collection/TRIM

Innodisk's Garbage Collection/TRIM technology is used to maintain data consistency and perform continual data cleansing on SSDs. It runs as a background process, freeing up valuable controller resources while sorting good data into available blocks, and deleting bad blocks. It also significantly reduces write operations to the drive, thereby increasing the SSD's speed and lifespan. With Innodisk Garbage Collection/TRIM technology, an SSD's health and performance is optimized.

L^3 Architecture

Innodisk's exclusive L^3 Architecture firmware, which combines Long-Life with LDPC ECC, yields a prolonged lifespan, exceptional reliability and high performance. Innodisk's exclusive industrial oriented firmware also provides a flexible customization service, making it perfect for a variety of industrial applications.

iTracker™

iTracker is Innodisk's dedicated software tool for SD 3.0 cards and USB products. It offers a customizable approach to accessing flash card SMART values. Compatibility with both Windows and Linux systems and an intuitive user interface ensures an easy system integration and user experience.

InnoRobust™ Data Security

The InnoRobust™ Data Security is comprised of Security Erase, Destroy, Physical Destroy and Quick Erase. These sophisticated technologies are aimed at quickly and efficiently erasing and destroying data that is in danger of being compromised.

AES Hardware Encryption

Advanced Encryption Standard (AES) is the standard cipher used by the US government to protect confidential data on storage devices. By integrating the encryption-engine in the SSD controller, the encryption/ decryption process is done without affecting CPU performance. The encryption key is safely stored away in the SSD and can be destroyed in less than a second, rendering all stored data useless as it cannot be decrypted.

DRAM Solutions

Conformal Coating

Innodisk conformal coating refers to the chemical materials that are applied in layers to cover components. The thickness of the coating ranges between 0.03 mm and 0.13 mm thick. Conformal coating protects against moisture, contaminants, dust and acid-or-alkaline materials, meeting IPC-A-610 standards for electronic components.

Anti-Sulfuration

In the mining, petroleum and chemical industry, or installations in areas with volcanic activity, hydrogen sulfide gas is often a common challenge. The gas will react with the silver found in DRAM ICs, which can result in lower conductivity and eventual failure. This is effectively mitigated by covering the resistors with a sulfur resistant material, ensuring smooth operation in harsh environments.

Wide Temperature
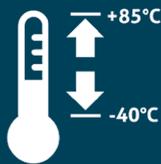
Innodisk's wide temperature range design has extended the existing JEDEC standard range from -40°C to 85°C. Innodisk's wide temperature Flash and DRAM modules are designed for industrial, and aerospace and defense applications. Wide temperature design is vital in ensuring operation and performance reliability in extreme temperatures.

Side Fill

Side Fill is value-added technology that can improve device reliability and extend product life. By applying resin on three sides of the DRAM IC, Side Fill can reinforce the joints between the BGA and the PCB. Tests show that when using Side Fill, DRAM IC can tolerate 1.5 times the amount of tension. If the device needs to remain operational during strong tremors or stringent thermal cycling, we highly recommend taking advantage of our Side Fill DRAM, especially so for these applications: factory automation, defense & aerospace and renewable energy.

Different Applications

Innodisk focuses on providing reliable memory and expansion solutions for mission-critical applications. We understand the importance of quality in industrial and embedded flash, DRAM, expansion card and software products. Therefore, our solutions are all crafted to meet the individual needs of each vertical market. Our experienced in-house firmware development team delivers fast turnaround and knowledgeable support whenever customization is required.

Embedded & Server Boot-up Solution

The Innodisk Boot-up series is designed for industrial and server applications. Due to its tiny form factors, M.2 and SATADOM® frees up a precious bay for other storage options. The SATADOM® easily fits in a 1U environment with an exclusive Cable-less design; it exemplifies true plug & play and eliminates messy cables.
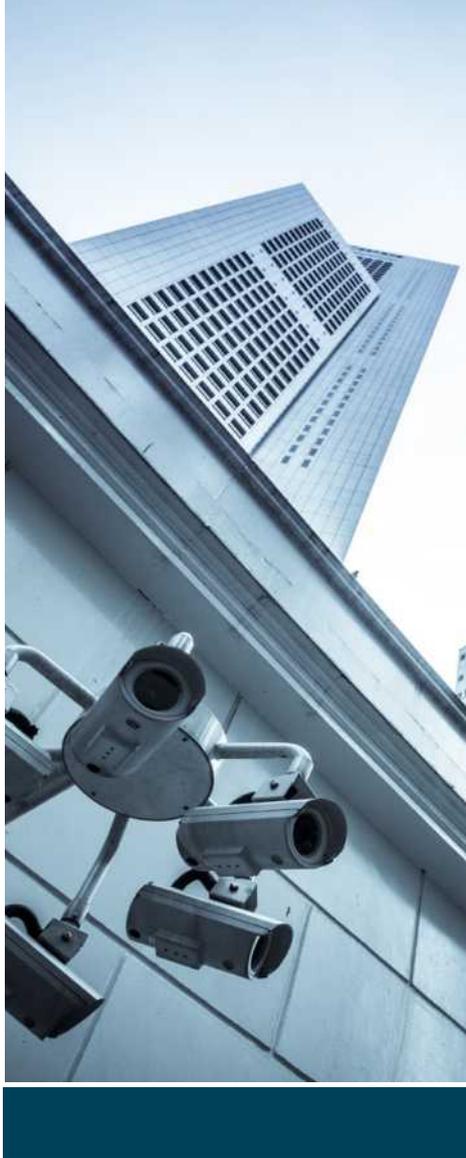
Surveillance

The number one concern for modern day surveillance applications is stable data recording. With our InnoREC™ feature set, firmware is optimized to ensure lasting and stable writing performance – ensuring zero loss of data quality. With restricted space and simultaneous read/write operations, high speed and compact memory solutions are also an imperative. Our Very Low Profile (VLP) and Mini DRAM modules combine small form factors with high performance to make sure data recording goes off without a hitch.
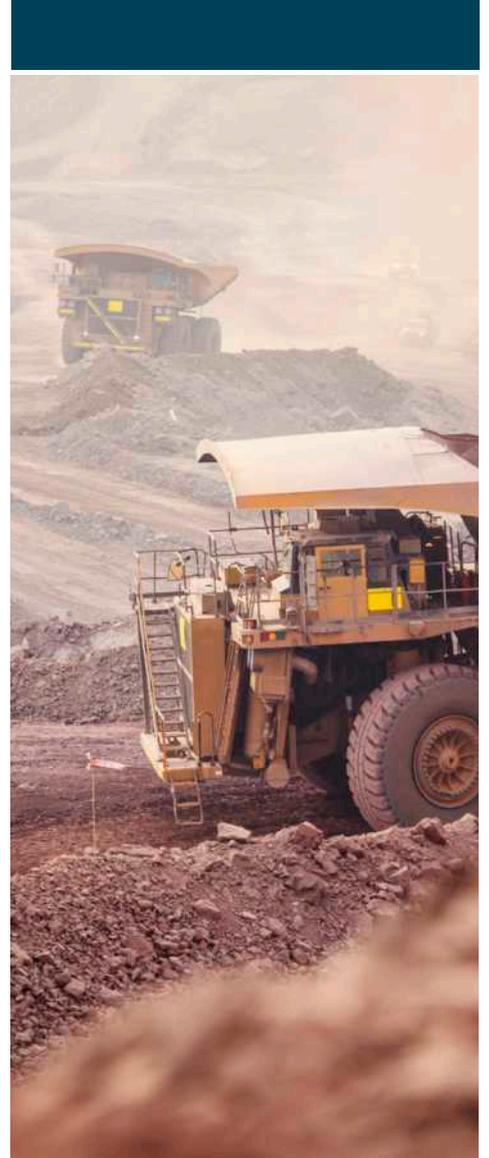
In-Vehicle Computing Systems

Innodisk's Flash, DRAM and embedded peripheral products for in-vehicle computing systems are designed to operate under harsh conditions, while supporting the flexibility of the sealed system's placement within the automobile. These reliable storage and memory solutions are heat and shock resistant and have low power consumption that can prevent vehicle challenges caused by power volatility.

innodisk

New Flash Product Naming Rule

2.5” SATA SSD 3 T E 7

Form Factor
SSD
Slim SSD
SATADOM
SATA Slim
mSATA
mini PCIeDOM
M.2
CFast
CF Card
EDC
SD
microSD
USB
nanoSSD

Interface

3: Generation III
2: Generation II
1: Generation I

Flash Type

S: SLC
We offer a series of products with SLC-based flash, boasting faster write speeds, lower power consumption and higher cell endurance. SLC-based flash is more reliable and suitable of critical applications.

M: MLC
The primary benefit of MLC-based flash is its lower cost per unit of storage due to the higher data density. This benefit makes MLC-based flash a perfect replacement of traditional HDD.

I: iSLC
iSLC is Innodisk's exclusive firmware technology, which improves the performance and data quality and boasts a similar write performance as that of SLC-based solutions. Through the use of flash management algorithms, iSLC improves SSD endurance up to 20,000 times.

T: TLC
TLC-based 3D NAND flash is a new technology with a novel architecture. The more concentrated die size provides higher density and lower cost.

Application & Series

E: Embedded
G: EverGreen
R: InnoRobust
V: InnoREC
S: Server

Product Series

G: EverGreen
The EverGreen series is designed with an integrated external DRAM cache which significantly improves SSD random data transfer rate and extends lifespan.

E: Embedded
Embedded series is the best solution for the industrial embedded system because it offers reliability, high performance and long endurance. We offer complete form factors to fulfill customer and business needs , including 2.5" SSD, 1.8" SSD, SAT.ADOM, mSATA, SATA Slim, SATADOM, iCF & CFast, EDC, and SD.

R: InnoRobust
InnoRobust series meet all of today's aerospace and defense application requirements. InnoRobust storage products are fully compliant with aerospace and defense standards, including MIL-STD-810G and MIL-I-46058C. InnoRobust products are fully protected against heat, dust, extreme temperatures, shock, vibration, and other environmental stresses. We also deliver industry-leading data protection technologies to keep sensitive information secure.

V: InnoREC
InnoREC SSDs are specifically designed for surveillance applications and boasts smart firmware algorithms that guarantees a continuous, stable data recording.

S: Server
The SATADOM® server boot-up devices are designed for an easy server integration, and reliable performance. The devices are certified for Windows Server 2016 Hyper V and VMware hypervisors.

Table of Contents

Flash Memory

Innodisk flash memory products are designed to be highly reliable and stable, and provide longer life cycles for the embedded and industrial systems in which they are used. Innodisk offers the industry's widest selection of flash memory form factors, including standard 1.8" and 2.5" Industrial SSDs, M.2, SATADOM®—the smallest high-speed SATA storage in the industry, CompactFlash Cards, mSATA , SATA Slim, and USB Flash Drives. Our products are available in 3D NAND triple-level cell (TLC), single-level cell (SLC), and multi-level cell (MLC) flash types, as well as iSLC – our own proprietary technology that merges the best features from MLC and SLC.

M.2

The Innodisk M.2 series pack a lot of performance into a thin, industrial grade form factor. The M.2 series includes both Non-Volatile Memory Express (NVMe) and SATA devices. The NVMe specification is designed specifically for flash devices and can deliver the fastest speeds in the industry.

M.2 (NVMe) Highlights

- PCIe Gen III x 2 and x 4 solution
- Truly industrial grade PCIe NVMe SSD
- Heatsink-less design
- Wide range of form factors and dimensions available, including type 2242, 2260, and 2280
- Support industrial grade wide temperature -40°C ~ 85°C (only available in PCIe Gen III x2 solution)
- iData GuardTM, iPower Guard and iCell technology for data protection and integrity while abnormal power failure happened
- Support iSMART disk health monitoring
- Support End-to-End Data Path Protection (ETEP)

Dimension(mm)

Type 2242   Type 2260   Type2280
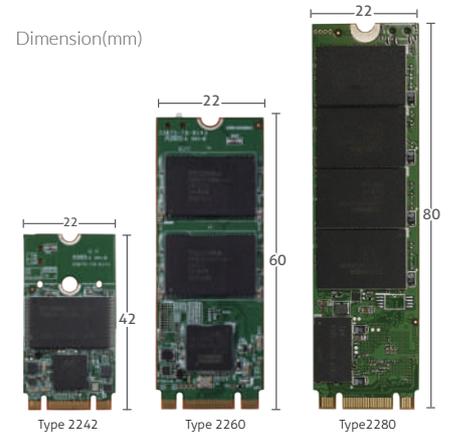
Model Name	M.2(P42) 3ME2	M.2 (P42) 3TE2	M.2(P80) 3ME2	M.2 (P80) 3TE2	M.2(P80) 3TE4
Key Features	1. Type 2242-D2-B-M 2. Less controller heat 3. Supports NVMe 1.3 4. End-to-End Data Path Protection 5. iData Guard Data Protection	1. Low power consumption 2. Less controller heat 3. Supports NVMe 1.3 4. End-to-End Data Path Protection 5. iData Guard Data Protection	1. Low power consumption 2. Less controller heat 3. Supports NVMe 1.3 4. End-to-End Data Path Protection 5. iData Guard Data Protection	1. Low power consumption 2. Less controller heat 3. Supports NVMe 1.3 4. End-to-End Data Path Protection 5. iData Guard Data Protection	1. DRAM-less Solution 2. Supports NVMe 1.3 3. iData Guard Data Protection 4. End-to-End Data Path Protection
Interface	PCIe Gen3 x 2	PCIe Gen3 x 2	PCIe Gen3 x 2	PCIe Gen3 x 2	PCIe Gen3 x 4
Flash Type	MLC	3D TLC	MLC	3D TLC	3D TLC
Capacity	32GB~256GB	64GB~512GB	32GB~512GB	64GB~1TB	128GB~1TB
Max. Channel	4	4	4	4	4
Sequential R/W (MB/sec, max.)	1300/340	1300/680	1300/480	1300/680	2100/1700
Max. Power Consumption	2.9W(3.3 x 880mA)	2.3W(3.3 x 700mA)	3.72W(3.3 x 1125mA)	3W(3.3 x 910mA)	TBD
Thermal Sensor	Y	Y	Y	Y	Y
External DRAM Buffer	N	N	N	N	N
iData Guard	Y	Y	Y	Y	Y
iCell	N	N	Optional	Optional	Optional
TRIM	Y	Y	Y	Y	Y
ATA Security	N	N	N	N	N
S.M.A.R.T	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	22.0 x 42.0 x 3.5	22.0 x 42.0 x 3.5	22.0 x 80.0 x 3.5	22.0 x 80.0 x 3.5	22.0 x 80.0 x 3.5
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours				
Standard Temp. OP (0°C~+70°C)	DEM24-XXXM61BC***	DEM24-XXXM61EC***	DEM28-XXXM61BC***	DEM28-XXXM61EC***	DEM28-XXXIB1EC***
Wide Temp. OP (-40°C~+85°C)	DEM24-XXXM61BW***	DEM24-XXXM61EW***	DEM28-XXXM61BW***	DEM28-XXXM61EW***	TBD
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type				

M.2 (SATA) Highlights

- Wide range of form factors and dimensions available, includeing type 2230, 2242, 2260, and 2280.
- iData GuardTM, iPower Guard and iCell technology for data protection and intergraty while abnormal power failure happened
- Support iSMART disk health monitoring

Dimension (mm)

Type 2230 | Type 2242 | Type 2260 | Type2280
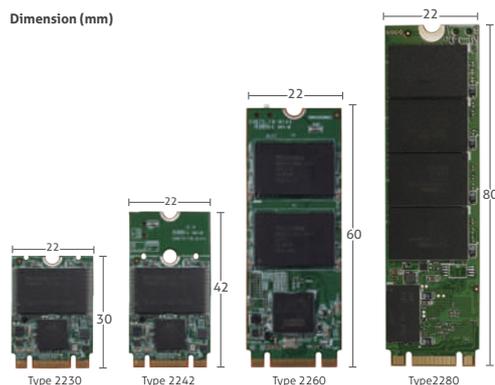
Model Name	M.2 (S30) 3ME4	M.2 (S60) 3ME3
Key Features	1. Type 2230-D2-B-M 2. Exclusive L^3 architecture 3. Designed with LDPC ECC Engine 4. Budget-friendly MLC-based solution	1. Type 2260-D2-B-M 2. High IOPS 3. iData Guard Protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	MLC
Capacity	8GB~128GB	32GB~512GB
Max. Channel	2	4
Sequential R/W (MB/sec, max.)	530/210	380/200
Max. Power Consumption	1.6W (3.3V x 505mA)	1.3W (3.3V x 370mA)
Thermal Sensor	Y	STD: N, W/T: Y
External DRAM Buffer	N	N
iData Guard	Y	Y
iCell	N	N
TRIM	Y	Y
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	22.0 x 30.0 x 3.2	22.0 x 60.0 x 3.5
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/ MTBF: >3 million hours	
Standard Temp. OP (0℃~+70℃)	DEM23-XXXM41BC***	DEM26-XXXD08%C***
Wide Temp. OP (-40℃~+85℃)	DEM23-XXXM41BW***	DEM26-XXXD08%W***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type	

Model Name	M.2 (S42) 3TE7	M.2 (S42) 3TG6-P	M.2 (S42) 3SE4	M.2 (S42) 3IE4
Key Features	1. Truly industrial designed firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offer additional level of data protection	1. Type 2242-D2-B-M 2. High quality SLC-based solution 3. DRAM-less, high-level data integrity 4. LDPC technology secures SSD reliability 5. Excellent data transfer speed	1. Type 2242-D2-B-M 2. Designed with LDPC ECC engine 3. Lifespan 7 times longer tham MLC 4. Cost-effective industrial flash with iSLC
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	3D TLC	3D TLC	SLC	iSLC
Capacity	32GB~512GB	128GB~512GB	8GB~64GB	8GB~128GB
Max. Channel	4	4	2	2
Sequential R/W (MB/sec, max.)	560/330	560/510	520/360	530/380
Max. Power Consumption	1.6W (3.3V x 475mA)	2.4W (3.3V x 739mA)	0.6W (3.3V x 185mA)	1.5W (3.3V x 460mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	Y	N	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	22.0 x 42.0 x 3.5	22.0 x 42.0 x 3.5	22.0 x 42.0 x 3.5	22.0 x 42.0 x 3.2
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours			
Standard Temp. OP (0℃~+70℃)	DEM24-XXXDK1EC***	DGM24-XXXM71EC***	DEM24-XXXM41SC***	DHM24-XXXM41BC***
Wide Temp. OP (-40℃~+85℃)	DEM24-XXXDK1EW***	DGM24-XXXM71EW***	DEM24-XXXM41SW***	DHM24-XXXM41BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type			

Model Name	M.2 (S42) 3ME4	M.2 (S42) 3MG2-P	M.2 (S80) 3TG6-P	M.2 (S80) 3TE7
Key Features	1. Type 2242-D2-B-M 2. Exclusive L^3 architecture 3. Designed with LDPC ECC Engine 4. Budget-friendly MLC-based solution	1. Type 2242-D2-B-M 2. High sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offer additional level of data protection 4. AES 256-key ,end to end data path protection	1. Truly industrial designed firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	MLC	3D TLC	3D TLC
Capacity	8GB~256GB	32GB~256GB	128GB~1TB	32GB~1TB
Max. Channel	2	4	4	4
Sequential R/W (MB/sec, max.)	530/210	560/360	560/510	550/370
Max. Power Consumption	1.4W (3.3V x 422mA)	1.09 W (3.3V x 330mA)	2.6W (3.3V x 799mA)	2.0W (3.3V x 614mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	Y	Y	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	22.0 x 42.0 x 3.2	22.0 x 42.0 x 3.5	22.0 x 80.0 x 3.5	22.0 x 80.0 x 3.5
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours			
Standard Temp. OP (0℃~+70℃)	DEM24-XXXM41BC***	DGM24-XXX-D81%C***	DGM28-XXXM71EC***	DEM28-XXXDK1EC***
Wide Temp. OP (-40℃~+85℃)	DEM24-XXXM41BW***	DGM24-XXX-D81%W***	DGM28-XXXM71EW***	DEM28-XXXDK1EW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type			

| Model Name	M.2 (S80) 3SE4	M.2 (S80) 3IE4	M.2 (S80) 3ME4	M.2 (S80) 3MG2-P
Key Features	1. Type 2280-S2-B-M (single side) 2. High quality SLC-based solution 3. DRAM-less, high-level data integrity 4. LDPC technology secures SSD reliability 5. Excellent data transfer speed	1. Type 2280-D2-B-M 2. Designed with LDPC ECC engine 3. Lifespan 7 times longer tham MLC 4. Cost-effective industrial flash with iSLC	1. Type 2280-D2-B-M 2. Exclusive L^3 architecture 3. Designed with LDPC ECC Engine 4. Budget-friendly MLC-based solution	1. Type 2280-D2-B-M 2. High sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	SLC	iSLC	MLC	MLC
Capacity	8GB~64GB	8GB~128GB	8GB~256GB	16GB~1TB
Max. Channel	2	2	2	4
Sequential R/W (MB/sec, max.)	520/360	530/360	530/210	530/450
Max. Power Consumption	1.6W (3.3V x 500 mA)	0.9 W (3.3V x 270mA)	0.9 W (3.3V x 270mA)	3.63W (3.3V x 1.1A)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	N	N	Y
iData Guard	Y	Y	Y	Y
iCell	N	N	N	Optional
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	22.0 x 80.0 x 3.2	22.0 x 80.0 x 3.2	22.0 x 80.0 x 3.2	22.0 x 80.0 x 3.5
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours			
Standard Temp. OP (0℃~+70℃)	DEM28-XXXM41SC***	DHM28-XXXM41BC***	DEM28-XXXM41BC***	DGM28-XXXD81%C***
Wide Temp. OP (-40℃~+85℃)	DEM28-XXXM41SW***	DHM28-XXXM41BW***	DEM28-XXXM41BW***	DGM28-XXXD81%W***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type			

nanoSSD

The Innodisk nanoSSD is an integrated SATA storage device. It combines Innodisk's ID106/ID108 NAND flash controller and latest NAND flash in a JEDEC MO-276(SATA μSSD) form factor with one single ball grid array (BGA) package, giving the nanoSSD a compact size and making it very easy to design in. The Innodisk nanoSSD , supporting SATA III 6.0Gbp/s , offers excellent high data transfer rates, along with lower power consumption. It is an ideal solution for any kind of limited-space application.

Features

- Integrated NAND Flash controller with Flash in a single chip
- Compliant with JEDEC MO-276 (SATA μSSD) specifications
- SATA III interface with BGA package
- Intelligent Flash management & real time garbage collection

Benefits of nanoSSD

- Chip type, easy to design in without mechanical interference
- SATA interface, highly compatible with x86 system
- Excellent data transfer rates
- Fully compliant with industrial standards
- Suitable for ultra-thin or compact systems
- Zero peripheral circuits
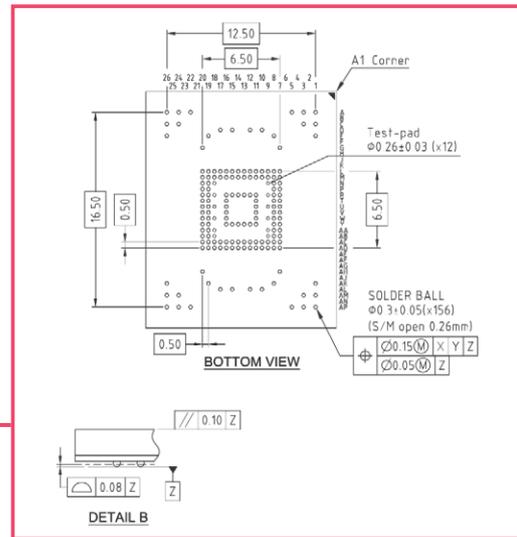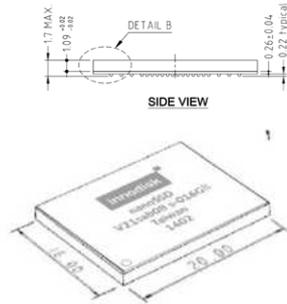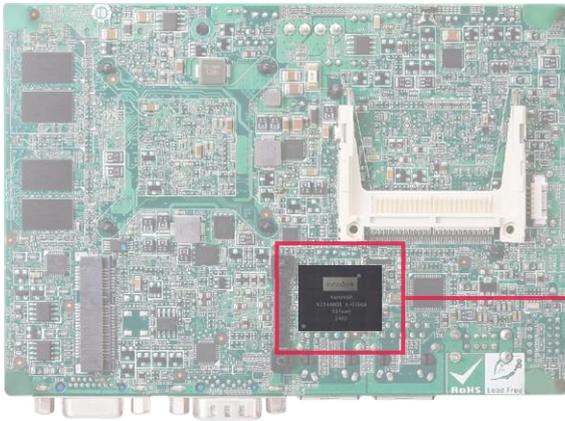
The Innodisk nanoSSD mechanical drawing

Model Name	nanoSSD 3SE	nanoSSD 3IE3	nanoSSD 3ME3
Key Features	1. Using BGA package to make controller and flash as single chip 2. Adopt SATA III interface,well Compatibility 3. Complaint with JEDEC MO-276 SPEC		
Interface	SATA III 6.0Gb/s		
Flash Type	SLC	iSLC	MLC
Capacity	2GB~16GB	16GB~64GB	16GB~128GB
Max. Channel	4		
Sequential R/W (MB/sec, max.)	410/195	440/260	410/140
Max. Power Consumption	2.5W	2.3W	
Thermal Sensor	N	N	
External DRAM Buffer	N	N	
iData Guard	Y	Y	
iCell	N	N	
TRIM	N	Y	
ATA Security	Y	Y	
S.M.A.R.T	Y	Y	
Dimension (WxLxH/mm)	16.0 x 20.0 x 1.7		
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours		
Standard Temp. OP (0°C~+70°C)	DENSD-XXXD06SC***	DHNSD-XXXD08BC***	DENSD-XXXD08BC***
Wide Temp. OP (-40°C~+85°C)	DENSD-XXXD06SW***	DHNSD-XXXD08BW***	DENSD-XXXD08BW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code)		

SSD

Innodisk SSDs bring a whole new level of high performance to memory storage. Our wide selection of SSDs are designed for different applications, including industrial/embedded, enterprise server, aviation, defense, and other semi-industrial applications, such as thin clients, POS, and kiosk. Our SSDs come in 3D TLC, iSLC, SLC and MLC types, and support PATA/IDE 44 pin, SATA II (3.0Gb/s), and SATA III (6.0Gb/s).

Model Name	2.5"SATA SSD 3TE7	2.5"SATA SSD 3TG6-P	2.5" SATA SSD 3SE4
Key Features	1. Truly industrial designed firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offer additional level of data protection	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	3D TLC	3D TLC	SLC
Capacity	32GB~1TB	128GB~4TB	8GB~64GB *For 128GB, please check 2.5"SATA SSD 3SE3
Max. Channel	4	4	2
Sequential R/W (MB/sec, max.)	560/525	540 /470	520/360
Max. Power Consumption	0.8W (5V x 160mA)	128GB~1TB 3.1W (5V x 620mA) 2TB~4TB 6W (5V x 1.2A)	1.1W (5V x 220 mA)
Thermal Sensor		Y	
External DRAM Buffer	N	Y	N
iData Guard	Y	Y	Y
iCell	N	Optional	N
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.85 x 100.1 x 6.9	69.8 x 100.1 x 6.9	69.85 x 100.1 x 6.9
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours		
Standard Temp. OP (0°C~+70°C)	DES25-XXXDK1EC***	DGS25-XXXM71EC***	DES25-XXXM41SC***
Wide Temp. OP (-40°C~+85°C)	DES25-XXXDK1EW***	DGS25-XXXM71EW***	DES25-XXXM41SW***
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=01T, 2TB=02T) ***= flash configuration (internal control code) %=Flash		

Model Name	2.5" SATA SSD 3SE2-P	2.5" SATA SSD 3SR3-P	2.5" SATA SSD 3IE4
Key Features	1. High IOPS performance with DRAM solution 2. High quality SLC-based solution 3. Support AES function	1. Compliant with MIL-STD-810G 2. HW/SW Data Security (Quick Erase/Destroy/ Security Erase/ Write Protect) 3. iCell supported, 100% data protection	1. Exclusive L^3 architecture 2. Designed with LDPC ECC engine 3. Cost-effective industrial Flash with iSLC 4. Lifespan 7 times longer than MLC
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	SLC	SLC	iSLC
Capacity	8GB~512GB	8GB~256GB	8GB~128GB *For 256GB, please check 2.5"SATA S SD 3IE3
Max. Channel	4	4	2
Sequential R/W (MB/sec, max.)	520/420	490/240	530/380
Max. Power Consumption	2.15W (5V x 430mA)	2.65W (5V x 530mA)	0.8W (5V x 160mA)
Thermal Sensor		Y	
External DRAM Buffer	Y	Y	N
iData Guard	Y	Y	Y
iCell	Optional	Y	N
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.8 x 99.8 x 9.2	69.8 x 99.8 x 9.2	69.8 x 100.1 x 6.9
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours		
Standard Temp. OP (0°C~+70°C)	DES25-XXXD82SC***	DRS25-XXXD70SC***	DHS25-XXXM41%C***
Wide Temp. OP (-40°C~+85°C)	DES25-XXXD82SW***	DRS25-XXXD70SW***	DHS25-XXXM41%W***
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=01T, 2TB=02T) ***= flash configuration (internal control code) %=Flash		

Model Name	2.5" SATA SSD 3MG2-P	2.5" SATA SSD 3ME4
Key Features	1. EverGreen L^2 architecture 2. High Sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection	1. EverGreen L^3 architecture 2. High Sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	MLC
Capacity	8GB-2TB	8GB-256GB
Max. Channel	4	2
Sequential R/W (MB/sec, max.)	520/480	520/210
Max. Power Consumption	6W (5V x 1.2A)	0.8W (5V x 160mA)
Thermal Sensor	Y	
External DRAM Buffer	Y	N
iData Guard	Y	Y
iCell	Optional	N
TRIM	Y	Y
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	69.8 x 100.1 x 6.9 69.8 x 100.0 x 9.5 (2TB)	69.8 x 100.1 x 6.9
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours	
Standard Temp. OP (0°C~+70°C)	DGS25-XXXD81%C***(P)	DES25-XXXM41%C***
Wide Temp. OP (-40°C~+85°C)	DRS25-XXXD81%W***(P)	DES25-XXXM41%W***
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=01T, 2TB=02T) ***= flash configuration (internal control code) %=Flash	

| Model Name	2,5" SATA SSD 3MR2-P	2.5" SATA SSD 3MR3-P	1.8 "SATA SSD 3TG6-P
Key Features	1. Compliant with MIL-STD-810G 2. HW/SW Data Security (Quick Erase/ Destroy/ Security Erase/Write Protect) 3. High random performance 4. iCell supported, 100% data protection	1. Compliant with MIL-STD-810G 2. HW/SW Data Security (QEraser/ Destroy/ SEraser/ Write Protect) 3. iCell supported, 100% data protection	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offer additional level of data protection 4. AES 256-key ,end to end data path protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	MLC	3D TLC
Capacity	8GB~2TB	64GB~512GB	32GB~1TB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max.)	520/450	490/270	540/470
Max. Power Consumption	6W (5V x 1.2mA)	4.5W (5V x 900mA)	0.8W (5V x 160mA)
Thermal Sensor	STD : N , W/T : Y		Y
External DRAM Buffer	Y	Y	Y
iData Guard	Y	Y	Y
iCell	Y	Y	Optional
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.8 x 99.8 x 9.2	69.8 x 99.8 x 9.2	54.0 x 78.5 x 5.0
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours		
Standard Temp. OP (0°C~+70°C)	DRS25-XXXD81%C***P	DRS25-XXXD70%C***	DGS18-XXXM71EC1*** DGS18-XXXM71EC2*** *Edition 1: 5V, Edition 2: 3.3V
Wide Temp. OP (-40°C~+85°C)	DRS25-XXXD81%W***P	DRS25-XXXD70%W***	DGS18-XXXM71EW1*** DGS18-XXXM71EW2***
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=01T, 2TB=02T) ***= flash configuration (internal control code) %=Flash		

Model Name	1.8" SATA SSD 3SE2-P	1.8" SATA SSD 3SE3-P	1.8" SATA SSD 3MG3-P	Slim SSD 3ME4	PATA 1MG3-P
Key Features	1. High IOPS performance with DRAM solution 2. High quality SLC-based solution 3. Support AES function 4. iCell supported, 100% data protection	1. High quality SLC-based solution 2. Enhanced power cycling management 3. iSMART disk health monitoring	1. Built-in DRAM buffer 2. Intelligent error recovery system 3. Excellent data transfer speed and high IOPS performance 4. iData Guard for abnormal power failure	1. 1.8' housing, 50% space saving 2. Exclusive L^3 architecture 3. Designed with LDPC ECC engine	1. Built-in DRAM buffer 2. Intelligent error recovery system 3. Excellent data transfer speed 4. iData Guard Protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	PIO Mode 0~4 Ultra DMA 0~5
Flash Type	SLC	SLC	MLC	MLC	MLC
Capacity	8GB-512GB	8GB-512GB	32GB~1TB	8GB~256GB	8GB~512GB
Max. Channel	4	4	4	2	4
Sequential R/W (MB/sec, max.)	540/360	490/230	520/450	530/210	90/90
Max. Power Consumption	A: 2.9W (3.3V x 880mA)* B: 3.9W (5V x 780mA)*	1.5W (5V x 300 mA)	6W (5V x 1.2A)	0.8W (5V x 160mA)	2W (5V x 400mA)
Thermal Sensor	Y	STD : N , W/T : Y		Y	STD : N , W/T : Y
External DRAM Buffer	Y	Y	Y	Y	Y
iData Guard	Y	Y	Y	Y	Y
iCell	Y	N	N	N	N
TRIM	Y	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	54.0 x 78.5 x 5.0	54.0 x 78.5 x 5.0	54.0 x 78.5 x 5.0	69.85 x 50.0 x 9.0	69.85 x 99.85 x 9.2
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours				
Standard Temp. OP (0°C~+70°C)	DES18-XXXD82SCA**(P) DES18-XXXD82SCB**(P) *Edition A: 3.3V ; Edition B:5V	DES18-XXXD70SC***	DGS18-XXXD81%C***	DEMLM-XXXM41%C***	DGP25-XXXD70%C***
Wide Temp. OP (-40°C~+85°C)	DES18-XXXD82SWA**(P) DES18-XXXD82SWB**(P)	DES18-XXXD70SW***	DGS18-XXXD81%W***	DEMLM-XXXM41%W***	N/A
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=01T, 2TB=02T) ***= flash configuration (internal control code) %=Flash				

What is iCell?
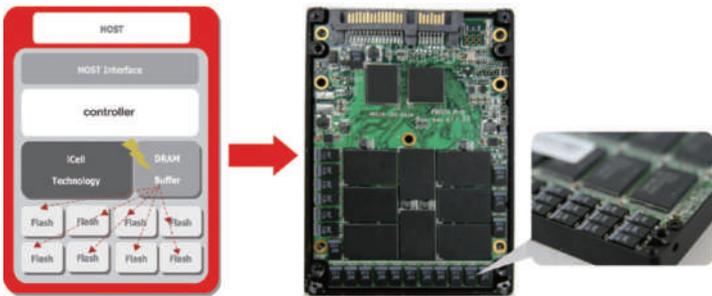
iCell Technology gives the SSD a power boost in the event of an abnormal power failure and ensures reliable and accurate data transfer from DRAM cache to NAND flash.

What is iSecurity?

The iSecurity function under iSMART allows the user to easily operate the data erase command. The user may select the data erase function, monitor erase progress and also compare data before and after the erasure.

What is TRIM?
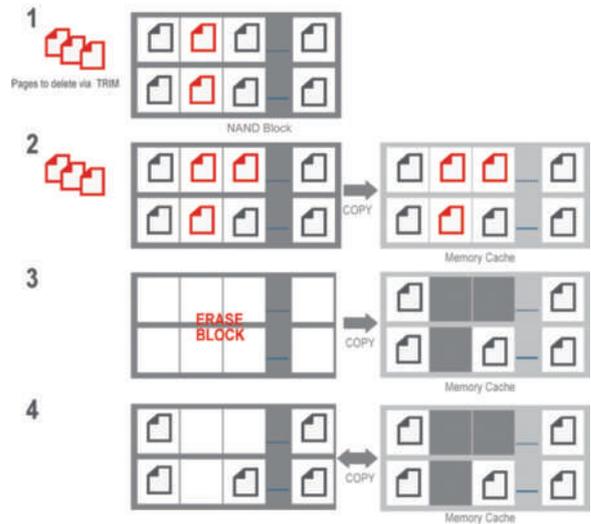
SSDs are made up of millions of NAND flash cells. They can be written into groups called pages (generally 4KB in size) but can only be erased in larger groups called blocks (generally 128 pages or 512KB). The addresses of the deleted files are sent along with the TRIM command to the SSD's controller so the drive can function optimally. The TRIM commands allows the SSD to delete data more expediently, thus increasing overall performance. The TRIM command is generally sent from the OS when the system is idle. This cleans up invalid data from the blocks so the drive can perform like new.

innodisk

SATADOM®

Innodisk's Serial ATA Disk on Module (SATADOM®) is the world's smallest form factor with exclusive built-in Pin 7 and Pin 8 VCC, which simplifies motherboard design. Since it has no external cables, it is more robust and enhances the disk functions of various industrial and enterprise applications. Innodisk's SATADOM® also supports the SATA II and SATA III interface with faster data transfer rates and is available in capacities ranging from 512MB up to 256GB.

SATADOM-SL 3ME4

Innodisk, the service-driven flash and DRAM module provider, features the innovative SATADOM® patented Pin8 and Pin7 cable-less SATA power combined with exclusive L3 architecture, prolonging the lifespan of SATADOM-SL 3ME4 with exceptional performance and reliability. SATADOM-SL 3ME4 is the best storage design for industrial computers and server boot drives. SATADOM-SL 3ME won the Taiwan Excellence Award 2017 in the highly competitive category of "Computer Hardware and Peripheral Equipment."

3ME4 series
- High performance
- LDPC
- Low WAI
- SMART supported
- Original MLC designed

SATADOM-SL
- Tiny size
- Cable-less (Pin8 /Pin7 supported)
- OS boot drive
- Durable

Flexible power supply design

- External power cable
- SATA Pin 8 VCC
- SATA Pin 7 VCC

External power cable

SATA Pin 7 power VCC   SATA Pin 8 power VCC

| Form Factor	SATADOM-SV/SH			
Model Name	**SATADOM 3TE7**	**SATADOM 3SE4**	**SATADOM 3IE4**	**SATADOM 3ME4**
Key Features	1. Industrial-grade firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed	1. Cost-effective industrial Flash with iSLC 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. Pin 8/Pin 7 supported	1. Vertical and low profile horizontal design 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Pin 8/Pin 7 supported
Interface	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s
Flash Type	3D TLC	SLC	iSLC	MLC
Capacity	32GB~256GB	8GB~32GB	8GB~64GB	8GB~128GB
Max. Channel	2	2	2	2
Sequential R/W (MB/sec, max.)	510/300	520/260	530/350	530/120
Max. Power Consumption	1.55W (5V x 309mA)	1.58W (5V x 315mA)	0.95W (5V x 189mA)	1.27W (5V x 254mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	N	N	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	SV: 40.4 x 21.03 x 10.4 mm SH: 32.7 x 18 x 14.15 mm	SV: 40.4 x 21.03 x 10.4 mm SH: 32.7 x 18 x 14.15 mm	SV:40.4 x 21.03 x 10.4	SV: 40.4 x 21.03 x 10.4 SH: 32.7 x 18 x 15.15
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard Temp.OP(0°C~+70°C)	SV: DESSV-XXXDK1EC***# SH: DESSH-XXXDK1EC***#	SV: DESSV-XXXM41SC***# SH: DESSH-XXXM41SC***#	SV: DHSSV-XXXM41BC***#	SV: DESSV-XXXM41BC***# SH: DESSH-XXXM41BC***#
Wide Temp.OP (-40°C~+85°C)	SV: DESSV-XXXDK1EW***# SH: DESSH-XXXDK1EW***#	SV: DESSV-XXXM41SW***# SH: DESSH-XXXM41SW***#	SV: DHSSV-XXXM41BW***#	SV: DESSV-XXXM41BW***# SH: DESSH-XXXM41BW***#
Notes	xxx = density (08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8) *For SLC 01GB~4GB, please check FF 3SE or 3SE3			

Form Factor	SATADOM-SL/SH Type D			
Model Name	**SATADOM 3TE7**	**SATADOM 3SE4**	**SATADOM 3IE4**	**SATADOM 3ME4**
Key Features	1. Industrial-grade firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed	1. Below 1U best boot solution. 2. Cost-effective industrial Flash with iSLC 3. Exclusive L^3 architecture 4. Latest LDPC ECC engine 5. Pin 8/Pin 7 supported	1. Below 1U best boot solution. 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Pin 8/Pin 7 supported
Interface	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s
Flash Type	3D TLC	SLC	iSLC	MLC
Capacity	32GB~256GB	8GB~32GB	8GB~64GB	8GB~128GB
Max. Channel	2	2	2	2
Sequential R/W (MB/sec, max.)	510/300	520/260	530/350	530/120
Max. Power Consumption	1.5W (5V x 300mA)	0.95W (5V x 186mA)	1.02W (5V x 204mA)	1.02W (5V x 204mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	N	N	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	SL: 29.6 x 33.06 x 10.5 SH(D):30 x 20.79 x 15.20	SL: 29.6 x 33.06 x 10.5 SH(D):30 x 20.79 x 15.15	SL: 29.6 x 33.06 x 10.5	SL: 29.6 x 33.06 x 10.5 SH(D): 30 x 20.79 x 15.15
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55℃ ~ +95℃ MTBF: >3 million hours			
Standard Temp. OP (0℃~+70℃)	SL: DESSL-XXXDK1EC***# SH(D): DESSF-XXXDK1EC***#	SL: DESSL-XXXM41SC***# SH(D): DESSF-XXXM41SC***#	SL: DHSSL-XXXM41BC***#	SL: DESSL-XXXM41BC***# SH(D): DESSF-XXXM41BC***#
Wide Temp. OP (-40℃~+85℃)	SL: DESSL-XXXDK1EW***# SH(D): DESSF-XXXDK1EW***#	SL: DESSL-XXXM41SW***# SH(D): DESSF-XXXM41SW***#	SL: DHSSL-XXXM41BW***#	SL: DESSL-XXXM41BW***# SH(D): DESSF-XXXM41BW***#
Notes	xxx = density (08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8) *For SLC 01GB~4GB, please check FF 3SE or 3SE3			

Form Factor	SATADOM-ML/MH				
Model Name	**SATADOM 3SE4**	**SATADOM 3IE4**	**SATADOM 3ME4**	**SATADOM 3TG6-P**	**SATADOM 3MG2-P**
Key Features	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed	1. Hareware write protect supported 2. Cost-effective industrial Flash with iSLC 3. Exclusive L^3 architecture 4. Latest LDPC ECC engine 5. High IOPS 6. Pin 8/Pin 7 supported	1. Hareware write protect supported 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Pin 8/Pin 7 supported	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offers additional level of data protection 4. AES 256-bit key, end-to-end data path protection	1. Hareware write protect supported 2. High IOPS 3. Write protect 4. High performance SATADOM
Interface	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s
Flash Type	SLC	iSLC	MLC	3D TLC	MLC
Capacity	8GB~64GB	16GB~128GB	32GB~256GB	128GB~256GB	32GB~256GB
Max. Channel	2	2	2	4	4
Sequential R/W (MB/sec, max.)	520/360	530/360	530/210	560/290	560/180
Max. Power Consumption	1.58W (5V x 315mA)	0.815W (5V x 163mA)	0.815W (5V x 163mA)	2.14W (5V x 428mA)	2.68W (5V x 535mA)
Thermal Sensor	Y	Y	Y	Y	Y
External DRAM Buffer	N	N	N	Y	Y
iData Guard	Y	Y	Y	Y	Y
iCell	N	N	N	N	N
TRIM	Y	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	ML: 36.7 x 31.2 x 10.7	ML: 31.2 x 36.7 x 10.7 MH: 23.5 x 33.6 x 14.8	ML: 31.2 x 36.7 x 10.7 MH: 23.5 x 33.6 x 14.8	ML: 37.17 x 31.5 x 12.6	ML: 37.17 x 31.5 x 12.6
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55℃ ~ +95℃ MTBF: >3 million hours				
Standard Temp. OP (0℃~+70℃)	ML: DESML-XXXM41SC***#	ML: DHSML-XXX-M41BC***# MH: DHSMH-XXX-M41BC***#	ML: DESML-XXX-M41BC***# MH: DESMH-XXX-M41BC***#	ML: DGSML-XXXM71EC***#	ML: DGSML-XXXD81BC***#
Wide Temp. OP (-40℃~+85℃)	ML: DESML-XXXM-41SW***#	ML: DHSML-XXX-M41BW***# MH: DHSMH-XXX-M41BW***#	ML: DESML-XXX-M41BW***# MH: DESMH-XXX-M41BW***#	ML: DGSML-XXXM71EW***#	ML: DGSML-XXXD-81BW***#
Notes	xxx = density (08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8) *For SLC 4GB, please check FF 3SE or 3SE3				

Form Factor	SATADOM-SH Type C		SATADOM-MV	
Model Name	**SATADOM 3SE4**	**SATADOM 3ME4**	**SATADOM 3IE4**	**SATADOM 3ME4**
Key Features	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed	1. Low profile horizontal design 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Pin 8/Pin 7 supported	1. Hareware write protect supported 2. Cost-effective industrial Flash with iSLC 3. Exclusive L^3 architecture 4. Latest LDPC ECC engine 5. High IOPS 6. Pin 8/Pin 7 supported	1. Hareware write protect supported 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Pin 8/Pin 7 supported
Interface	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s
Flash Type	SLC	MLC	iSLC	MLC
Capacity	8GB~32GB	8GB~128GB	8GB~64GB	8GB~128GB
Max. Channel	2	2	2	2
Sequential R/W (MB/sec, max.)	520/260	530/120	530/340	530/210
Max. Power Consumption	1.49W (5V x 297mA)	1.02W (5V x 204mA)	1.72W (5V x 343mA)	1.08W (5V x 216mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	N	N	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	32.7 x 18 x 14.5	32.7 x 18 x 14.5	41.55 x 25.26 x 10.4	41.55 x 25.26 x 10.4
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard Temp. OP (0°C~+70°C)	DESSC-XXXM41SC***#	DESSC-XXXM41BC***#	DHSMV-XXXM41BC***#	DESMV-XXXM41BC***#
Wide Temp. OP (-40°C~+85°C)	DESSC-XXXM41SW***#	DESSC-XXXM41BW***#	DHSMV-XXXM41BW***#	DESMV-XXXM41BW***#
Notes	xxx = density (08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8) *For SLC 01GB~4GB, please check FF 3SE or 3SE3			

SATA Slim

The Innodisk SATA Slim is compliant with the JEDEC SFF-8156 standard form factor and ATA protocol. It does not require drivers, and can be configured as a boot device or a data storage device. It is also suitable for portable/hand-held devices, thin clients, and industrial applications that require the effective reduction of operation system boot time and power consumption. With a 7+15 pin SATA interface, the Innodisk SATA Slim supports most platforms with a standard SATA port.

Model Name	**SATA Slim 3TE7**	**SATA Slim 3TG6-P**	**SATA Slim 3SE4**
Key Features	1. Industrial-grade firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offers additional level of data protection	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	3D TLC	3D TLC	SLC
Capacity	32GB~1TB	128GB~1TB	8GB~64GB *For128GB, please check SATA Slim 3SE3
Max. Channel	4	4	2
Sequential R/W (MB/sec, max.)	560/525	540/470	530/360
Max. Power Consumption	0.8W (5V x 160mA)	3.1W (5V x 620mA)	1.1 W (5V x 220mA)
Thermal Sensor	Y	Y	Y
External DRAM Buffer	N	Y	N
iData Guard	Y	Y	Y
iCell	N	N	N
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	54.0 x 39.0 x 4.0	54.0 x 39.0 x 4.0	54.0 x 39.0 x 4.0
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million		
Standard Temp. OP (0°C~+70°C)	DESLM-XXXDK1EC***	DGSLM-XXXM71EC***	DESLM-XXXM41SC***
Wide Temp. OP (-40°C~+85°C)	DESLM-XXXDK1EW***	DGSLM-XXXM71EW***	DESLM-XXXM41SW***
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type		

Model Name	SATA Slim 3IE4	SATA Slim 3ME4	SATA Slim 3MG2-P
Key Features	1. Exclusive L^3 architecture 2. Designed with LDPC ECC engine 3. Cost-effective industrial Flash with iSLC	1. Exclusive L^3 architecture 2. Designed with LDPC ECC engine 3. Compatible with JEDEC MO-297	1. EverGreen L^2 architecture 2. High Sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	iSLC	MLC	MLC
Capacity	8GB~128GB	8GB~128GB	8GB~256GB
Max. Channel	2	2	4
Sequential R/W (MB/sec, max.)	530/360	530/210	520/290
Max. Power Consumption	0.8W (5V x 160mA)	0.8W (5V x 160mA)	2.6W (5V x 520mA)
Thermal Sensor	Y	Y	STD : N, W/T : Y
External DRAM Buffer	N	N	Y
iData Guard	Y	Y	Y
iCell	N	N	N
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	54.0 x 39.0 x 4.0	54.0 x 39.0 x 4.0	54.0 x 39.0 x 4.0
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million		
Standard Temp.OP (0°C~+70°C)	DHSLM-XXXM41%C***	DESLM-XXXM41%C***	DGSLM-XXXD81%C***
Wide Temp.OP (-40°C~+85°C)	DHSLM-XXXM41%W***	DESLM-XXXM41%W***	DGSLM-XXXD81%W***
Notes	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type		

mSATA

mSATA, which is compliant with the JEDEC MO300/MO300B standard, was announced by the Serial ATA International Organization on September 21, 2009. Applications include netbooks, portable devices and other devices that require a smaller solid-state drive. The connector is similar in appearance to a PCI Express Mini Card interface and is electrically compatible; however, the data signals need a connection to the SATA host controller instead of the PCI-express host controller. Innodisk's mSATA supports high-performance data transfer rates of 1.5 Gb/s, 3.0 Gb/s and 6.0 Gb/s.

Model Name	mSATA 3TE7	mSATA 3TG6-P
Key Features	1. Industrial-grade firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. Extreme seq. and random performance with 3D NAND solution 2. Advanced LDPC ECC engine 3. RAID engine offers additional level of data protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	3D TLC	3D TLC
Capacity	32GB~1TB	128GB~1TB
Max. Channel	4	4
Sequential R/W (MB/sec, max.)	560/525	560/510
Max. Power Consumption	2.2 W (3.3V x 674mA)	2.64 W (3.3V x 800mA)
Thermal Sensor	Y	Y
External DRAM Buffer	N	Y
iData Guard	Y	Y
iCell	N	N
TRIM	Y	Y
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.7
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours***	
Standard Temp. OP (0°C~+70°C)	DEMSR-XXXDK1EC***	DGMSR-XXXM71EC***
Wide Temp. OP (-40°C~+85°C)	DEMSR-XXXDK1EW***	DGMSR-XXXM71EW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)%=Flash Type	

Model Name	mSATA 3SE4	mSATA 3SE-P	mSATA 3IE4	mSATA 3MG2-P	mSATA 3ME4
Key Features	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed	1. Excellent data transfer speed and IOPS 2. Support TRIM command 3. Built-in DRAM buffer	1. Cost-effective industrial Flash with iSLC 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC 4. Excellent data transfer speed 5. LDPC technology secures SSD reliability	1. High IOPS by on-board DRAM design 2. Featuring L^2 architecture, expanding the lifespan 3. DEVSLP supported	1. LDPC technology secures SSD reliability 2. DRAM-less, high-level data integrity
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	SLC	SLC	iSLC	MLC	MLC
Capacity	8GB~64GB *For 4GB/ 128GB, please check mSATA 3SE3	8GB~64GB	8GB~128GB	8GB~512GB	8GB~256GB *For 512 GB, please check mSATA 3ME3
Max. Channel	2	4	2	4	2
Sequential R/W (MB/sec, max.)	525/350	490/260	530/365	520/450	535/210
Max. Power Consumption	1.32W(3.3V x 400mA)	1.2 W(3.3V x 360mA)	0.6W(3.3V x 200mA)	2.2 W(3.3 V x 660 mA)	0.6W (3.3V x 205mA)
Thermal Sensor	Y	STD : N, W/T : Y	Y	Y	Y
External DRAM Buffer	N	Y	N	Y	N
iData Guard	Y	Y	Y	Y	Y
iCell	N	N	N	N	N
TRIM	Y	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.7
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours***				
Standard Temp. OP (0℃~+70℃)	DEMSR-XXXM41SC***	DEMSR-XXXD67SC***	DHMSR-XXXM41BC***	DGMSR-XXXD81SC***	DEMSR-XXXM41BC***
Wide Temp. OP (-40℃~+85℃)	DEMSR-XXXM41SW***	DEMSR-XXXD67SW***	DHMSR-XXXM41BW***	DGMSR-XXXD81SW***	DEMSR-XXXM41BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)%=Flash Type				

Model Name	mSATA mini 3TE7	mSATA mini 3SE4	mSATA mini 3IE4	mSATA mini 3ME4
Key Features	1. Truly industrial designed firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed	1. Cost-effective industrial Flash with iSLC 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC 4. Excellent data transfer speed 5. LDPC technology secures SSD reliability	1. LDPC technology secures SSD reliability 2. DRAM-less, high-level data integrity
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	3D TLC	SLC	iSLC	MLC
Capacity	32GB~512GB	8GB~64GB *For 4GB, please check mSATA mini 3SE3	8GB~64GB	8GB~128GB
Max. Channel	4	2	2	2
Sequential R/W (MB/sec, max.)	560/520	525/360	530/340	430/125
Max. Power Consumption	0.6W (3.3V x 190mA)	1.3W (3.3 V x 400mA)	0.6W (3.3V x 200mA)	0.6W (3.3V x 190mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	N	N	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	30 x 26.8 x 3.6	30 x 26.8 x 3.4	30 x 26.8 x 3.4	30 x 26.8 x 3.4
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours***			
Standard Temp. OP (0℃~+70℃)	DEMSM-XXXDK1EC***	DEMSM-XXXM41SC***	DHMSM-XXXM41BC***	DEMSM-XXXM41BC***
Wide Temp. OP (-40℃~+85℃)	DEMSM-XXXDK1EW***	DEMSM-XXXM41SW***	DHMSM-XXXM41BW**	DEMSM-XXXM41BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)%=Flash Type			

SD/micro SD

Innodisk SD and microSD cards are single-level flash devices built for rugged applications in the embedded field. As an industrial-grade SD/microSD card, these cards deliver outstanding performance of up to 54MB per second as well as excellent endurance and reliability, especially compared to other cards used in the mobile market. The Innodisk SD and microSD cards are compatible with SD 2.0 /SD 3.0 standards and support SDHC Class 10(UHS-I). They also feature SMART technology, which monitors the reliability of these SD cards.

Model Name	Industrial micro SD Card	Micro SD 3SE3	MicroSD 3ME2	Industrial SD Card	Industrial SD Card 3ME3
Key Features	Enhanced power cycling management	Power cycling enhancement	1. Support Class 10 with UHS-I 2. High performance 3. SPI mode supported	1. Designed for industrial applications 2. High reliability 3. Customizeable 4. Power fail mangement 5. AES (Optional)	1. High performance 2. Power fail management 3. BCH ECC implement
Interface	SD 1.01/2.0	SD 3.0	SD 3.0	SD 3.0	SD 3.0
Flash Type	SLC	SLC	MLC	SLC/iSLC/MLC	MLC
Capacity	1GB~4GB	4GB~8GB	8GB~64GB	SLC: 128MB~32GB iSLC: 8GB~64GB MLC: 8GB~128GB	8GB~128GB
Max. Channel	1	1	1	1	1
Sequential R/W (MB/sec, max.)	23/20	30/23	75/31	SLC: 23/21 iSLC: 61/36 MLC: 54/18	80/46
Max. Power Consumption	0.17W (3.3V x 50mA)	1.2W (3.3V x 387mA)	0.7W (3.3V x 219mA)	0.22W (3.3V x 69mA)(SLC) 0.34W (3.3V x 105mA)(MLC)	0.56W (3.6V x 158mA)
S.M.A.R.T	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	11.0 x 15.0 x 1.0	11.0 x 15.0 x 1.0	11.0 x 15.0 x 1.0	24.0 x 32.0 x 2.1	24.0 x 32.0 x 2.1
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours				
Standard Temp. OP (-25°C~+85°C)	DS2M-XXXI81AC***	DESDM-XXXS02AE***	DESDM-XXXE21SEASK	DESDC-XXXY81%C*** DHSDC-XXXY81%C***(iSLC)	DESDC-XXXS02BC***
Wide emp. OP (-40°C~+85°C)	DS2M-XXXI81AW***	DESDM-XXXS02AW***	NA	DESDC-XXXY81%W*** DHSDC-XXXY81%W***(iSLC)	DESDC-XXXS02BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G)*** = flash configuration (internal control code) %=Flash Type				

CFast

The Innodisk CFast is a small form factor card standard with high data storage capacity. It is suitable for semi-industrial applications. Compliant with the CFast 2.0 standard, it is designed with a 7+17 pin connector and is SATA compatible. The Innodisk CFast offers data transfer rates of sequential read up to 560 MB/sec and of sequential write up to 520MB/sec.

Model Name	CFast 3TE7	CFast 3SE4
Key Features	1. Industrial-grade firmware with 3D NAND 2. Advanced LDPC ECC engine 3. Internal RAID Technology 4. DRAM-less, high-level data integrity 5. Excellent data transfer speed	1. High quality SLC-based solution 2. DRAM-less, high-level data integrity 3. LDPC technology secures SSD reliability 4. Excellent data transfer speed
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Connector	7pin+17pin	7pin+17pin
Flash Type	3D TLC	SLC
Capacity	32GB~512GB	8GB~64GB
Max. Channel	4	2
Sequential R/W (MB/sec, max.)	560/330	530/360
Max. Power Consumption	1.81W (3.3V x 550mA)	1.59W (3.3V x 480mA)
Thermal Sensor	Y	Y
External DRAM Buffer	N	N
iData Guard	Y	Y
iCell	N	N
TRIM	Y	Y
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x 3.6	42.8 x 36.4 x 3.6
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours	
Standard Temp. OP (0°C~+70°C)	DECFA-XXXDK1EC***	DHCFA-XXXM41SC***
Wide Temp. OP (-40°C~+85°C)	DECFA-XXXDK1EW***	DECFA-XXXM41SW***
Note	xxx = density (08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type	

Model Name	CFast 3IE4	CFast 3ME4	CFast 3MG2-P
Key Features	1. Cost-effective industrial Flash with iSLC 2. Lifespan 7 times longer than MLC 3. Excellent IOPS performance 4. Designed with LDPC ECC engine 5. Support hardware write protect	1.Exclusive L^3 architecture 2. Designed with LDPC ECC engine 3. Excellent IOPS performance 4.Support hardware write protect	1. Compliant with CFast 2.0 satndard 2. EverGreen L^2 architecture 3. High Sequential/IOPS performance 4. Support DEVSLP 5. iData Guard Protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Connector	7pin+17pin	7pin+17pin	7pin+17pin
Flash Type	iSLC	MLC	MLC
Capacity	8GB~128GB	8GB~256GB	32GB~256GB
Max. Channel	2	2	4
Sequential R/W (MB/sec, max.)	530/360	530/210	560/350
Max. Power Consumption	0.76W (3.3V x 230mA)	0.86W (3.3V x 260mA)	2.51W (3.3V x 760mA)
Thermal Sensor	Y	Y	Y
External DRAM Buffer	N	N	Y
iData Guard	Y	Y	Y
iCell	N	N	N
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x 3.6	42.8 x 36.4 x 3.6	42.8 x 36.4 x 3.6
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours		
Standard Temp. OP (0℃~+70℃)	DHCFA-XXXM41BC***	DECFA-XXXM41BC***	DGCFA-XXXD81BC***
Wide Temp. OP (-40℃~+85℃)	DHCFA-XXXM41BW***	DECFA-XXXM41BW***	DGCFA-XXXD81BW***
Note	xxx = density (08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56) ***= flash configuration (internal control code) %=Flash Type		

CF Card

Innodisk's Industrial CompactFlash Memory Card (iCF) complies with the PCMCIA* ATA standard. Designed to replace traditional rotating disk drives, Innodisk iCFs are embedded solid-state data storage systems that are designed for mobile computing and the industrial work place.

Model Name	iCF 9000	iCF 1SE	iCF 1ME
Key Features	1. High sustained data transfer speed 2. Enhanced power cycling management	High quality SLC-based solution	1. Budget friendly MLC-based solution 2. Enhanced power cycling management
Interface	PATA	PATA	PATA
Connector	50pin CF connector	50pin CF connector	50pin CF connector
Flash Type	SLC	SLC	MLC
Capacity	1GB~64GB	512MB~8GB	8GB~256GB
Max. Channel	4	2	2
Sequential R/W (MB/sec, max.)	110/100	40/30	110/110
Max. Power Consumption	0.95W (5V x 190mA) 0.63W (3.3V x 190mA)	0.75W (5V x 150mA) 0.5W (3.3V x 150mA)	0.76W (5V x 155mA) 0.52W (3.3V x 155 mA)
Thermal Sensor	N	N	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/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
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours		
Standard Temp. OP (0℃~+70℃)	DC1M-XXXD71AC***	DC1M-XXXD41AC***	DECFC-XXXD53BC***
Wide Temp. OP (-40℃~+85℃)	DC1M-XXXD71AW***	DC1M-XXXD41AW***	DECFC-XXXD53BW***
Note	PIO mode 0-6 UDMA mode 0-7	PIO mode 0-6 UDMA mode 0-4	PIO mode 0-6 UDMA mode 0-7
Notes	XXX = density (512MB=512, 01GB=01G, 02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56) ***= flash configuration (internal control code) % =Flash Type		

Mini PCIeDOM

The Innodisk Mini PCIeDOM is a Flash based disk module with standard Mini PCIe form factor, and PCI Express Gen.1 interface. It is suitable for board maker or SI to design in the product as a boot drive or a storage device. Meanwhile, it supports multiple operating systems with no driver needed, including Windows XP, Windows 7, and Linux based OS.

Model Name	Mini PCIeDOM 1SE	Mini PCIeDOM 1ME3
Key Features	1. Standard Mini PCIe form factor 2. Driver-less 3. PCIe Gen.1x1	1. Standard Mini PCIe form factor 2. Driver-less 3. PCIe Gen.1x1
Interface	PCI Express Gen.1x1	PCI Express Gen.1x1
Flash Type	SLC	MLC
Capacity	4GB~64GB	16GB~256GB
Max. Channel	4	2
Sequential R/W (MB/sec, max.)	85/85	130/100
Max. Power Consumption	2.3 W (3.3V x 700mA)	2 W (3.3V x 620mA)
Thermal Sensor	STD : N, W/T : Y	
External DRAM Buffer	N	N
iData Guard	Y	Y
iCell	N	N
TRIM	N	N
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	30.0 x 50.95 x 5.0	30.0 x 50.9 x 5.0
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours	
Standard Temp. OP (0℃~+70℃)	DEEDM-XXXJ30AC***	DEEDM-XXXD09BC***
Wide Temp. OP (-40℃~+85℃)	DEEDM-XXXJ30AW***	DEEDM-XXXD09BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code) %=Flash Type	

EDC

The Innodisk Embedded Disk Card (EDC) complies with PCMCIA* ATA standards and fits into all platforms with an IDE connector. The Innodisk Embedded Disk Card comes in capacities ranging from 512MB to 256GB and is available in 40-pin and 44-pin connector packages.

Model Name	EDC 1SE Vertical Type	EDC 1SE Horizontal Type	EDC 1ME Vertical Type	EDC 1ME Horizontal Type
Key Features	1. Dust prevention 2. High quality SLC-based solution	1. High quality SLC-based solution 2. Supported mounting hole	1. Budget- friendly MLC-based solution 2. High performacne PATA solution	1. Budget- friendly MLC-based solution 2. High performacne PATA solution
Connector	40/44 pin	40/44 pin	44 pin	44 pin
Interface	PATA	PATA	PATA	PATA
Flash Type	SLC	SLC	MLC	MLC
Capacity	512MB~4GB	512MB~8GB	8GB~128GB	8GB~256GB
Max. Channel	2	2	2	2
Sequential R/W (MB/sec, max.)	40/28	40/28	110/75	110/75
Max. Power Consumption	0.75W (5V x 150mA) 0.5W (3.3V x 150mA)	0.75W (5V x 150mA) 0.5W (3.3V x 150mA)	1.05W (5V x 150mA) 0.69W (3.3V x 150mA)	1.05W (5V x 150mA) 0.69W (3.3V x 150mA)
Thermal Sensor	N	N	N	N
External DRAM Buffer	N	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	40 pin: 60.2 x 27.3 x 6.4 44 pin: 50.3 x 27.3 x 5.8	40 pin (A,B type): 55 x 32.4 x 12.9 40 pin (C,D type): 55 x 32.4 x 14.6 40 pin (E,F type): 55 x 32.4 x 18.3 44 pin (A,B type): 48 x 32.6 x 6.7 44 pin (C,D type): 48 x 32.6 x 12.8 44 pin (E,F type): 48 x 32.6 x 12.9	50.3 x 27.3 x 7.5	A,B type: 48 x 32.6 x 7.3
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55℃ ~ +95℃/MTBF: >3 million hours			
Standard Temp. OP (0℃~+70℃)	40PIN DE0H-XXXD41AC*** 44PIN DE4H-XXXD41AC***	40PIN DE0P%-XXXD41AC*** 44PIN DE4P%-XXXD41AC***	DEE4H-XXXD53BC***	DEE4%-XXXD53BC***
Wide Temp. OP (-40℃~+85℃)	40PIN DE0H-XXXD41AW*** 44PIN DE4H-XXXD41AW***	40PIN DE0P%-XXXD41AW*** 44PIN DE4P%-XXXD41AW***	DEE4H-XXXD53BW***	DEE4%-XXXD53BW***
Note	xxx = density (512MB=512, 01GB=01G, 02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A2, 256GB=B56) ***= flash configuration (internal control code), %=Horizonyal type(A,B,C,D,E,F)			

innodisk

USB

The Innodisk industrial-grade USB series is built using SLC NAND flash and features an attractive small form factor. It provides high-capacity flash memory storage while delivering faster data transmission with high reliability. It also complies with the high-speed USB 3.0 interface and is backward compatible with USB 1.1. The Innodisk USB series has a variety of special features, from plastic and metal housing to secure mounting holes to EDC choices.

Model Name	USB Drive 3SE	USB Drive 3ME	USB Drive 2SE
Key Features	1. Metal housing to enhance ESD protection 2. 30µ golden finger for highly reliable data transfer quality		1. Metal housing to enhance ESD protection 2. 30µ golden finger for highly reliable data transfer quality
Interface	USB 3.0		USB 2.0
Connector	Type A		Type A
Flash Type	SLC	MLC	SLC
Capacity	4GB~32GB	8GB~64GB	512MB~16GB
Max. Channel	1	1	1
Sequential R/W (MB/sec, max.)	100/85	100/50	28/24
Max. Power Consumption	0.70W (5V x 140mA)		0.85W (5V x 170mA)
Dimension (WxLxH/mm)	16.5 x 45.8 x 7.6		16.5 x 45.8 x 7.4
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours		
Standard Temp. OP (0°C~+70°C)	DEUA1-XXXI61SC***	DEUA1-XXXI61BC***	DEUA1-XXXI72AC***
Wide Temp.OP(-40°C~+85°C)	DEUA1-XXXI61SW***	DEUA1-XXXI61BW***	DEUA1-XXXI72AW***
Notes	XXX = density (512MB=512, 01GB=01G, 02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)		

Model Name	USB EDC Vertical 3SE	USB EDC Vertical 3ME	USB EDC Horizontal 2SE	USB EDC Horizontal 2ME	USB EDC Vertical 2SE	USB EDC Vertical 2ME
Key Features	1. High performance with USB 3.0 interface 2. Low power consumption 3. Wear-Leveling supported		1. Supported mounting hole 2. 2.0/2.54 pin pitch		1. Very low profile 2. Low power consumption	
Interface	USB 3.0		USB 2.0		USB 2.0	
Connector	Standard, 20pin, 2.00mm		Standard 9pin, 2.54mm Low profile 9pin, 2.00mm		Standard, 9pin, 2.54mm	
Flash Type	SLC	MLC	SLC	MLC	SLC	MLC
Capacity	4GB~32GB	8GB~64GB	512MB~32GB	8GB~128GB	512MB~16GB	8GB~64GB
Max. Channel	1	1	1	1	1	1
Sequential R/W (MB/sec, max.)	110/85	100/50	28/24	27/18	28/24	26/18
Max. Power Consumption	0.79W (5V x 158mA)		0.85W (5V x 170mA)		0.85W (5V x 170mA)	
Dimension (WxLxH/mm)	24.0 x 22.0 x 5.0		26.6 x 36.9 x 9.6 (Pin Pitch2.54) 26.6 x 36.9 x 6.6 (Pin Pitch2.00)		15.2 x 34.1 x 6.4	
Environment	Vibration: 20G@7~2000Hz/Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours					
Standard Temp. OP (0°C~+70°C)	DEUV1-XXXI61SC***	DEUV1-XXXI61BC***	DEUH1-XXXI72AC*** DEUH2-XXXI72AC***	DEUH1-XXXI72BC*** DEUH2-XXXI72BC***	DEUV1-XXXI72AC***	DEUV1-XXXI72BC***
Wide Temp.OP (-40°C~+85°C)	DEUV1-XXXI61SW***	DEUV1-XXXI61BW***	DEUH1-XXXI72AW*** DEUH2-XXXI72AW***	DEUH1-XXXI72BW*** DEUH2-XXXI72BW***	DEUV1-XXXI72AW***	DEUV1-XXXI72BW***
Notes	XXX = density (512MB=512, 01GB=01G, 02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56,) ***= flash configuration (internal control code)					

Software Solutions

With our newest Innodisk Cloud Administration Platform (iCAP™) we offer complete storage monitoring services for IoT applications. In addition, our extensive software portfolio is designed to meet the growing needs of integration in the embedded and industrial market.

Software portfolio:

- iCAP^{TM} – Cloud Administration Platform
- iSMART^{TM} –Flash Device Management
- iTracker^{TM} –SD Card and USB Management
- iCover^{TM} – System Recovery
- iOpal^{TM} – Self-Encrypting Drive Management

Innodisk Cloud Administration Platform iCAP™

iCAP™ is a browser-accessed management platform that allows you to monitor the status of solid state drives (SSD), memory and other components in edge devices. It does this by gathering data from all connected devices and storing it on a central server, either on the cloud or on a company intranet. From here the data is easily accessible from your cell phone, pad or laptop with online access.

System Architecture

Remote Control

AIoT Devices
(iCAP Agent)

Data Collection

Smart Management

iCAP Dashboard

• Cloud
• On-premise

iCAP Server
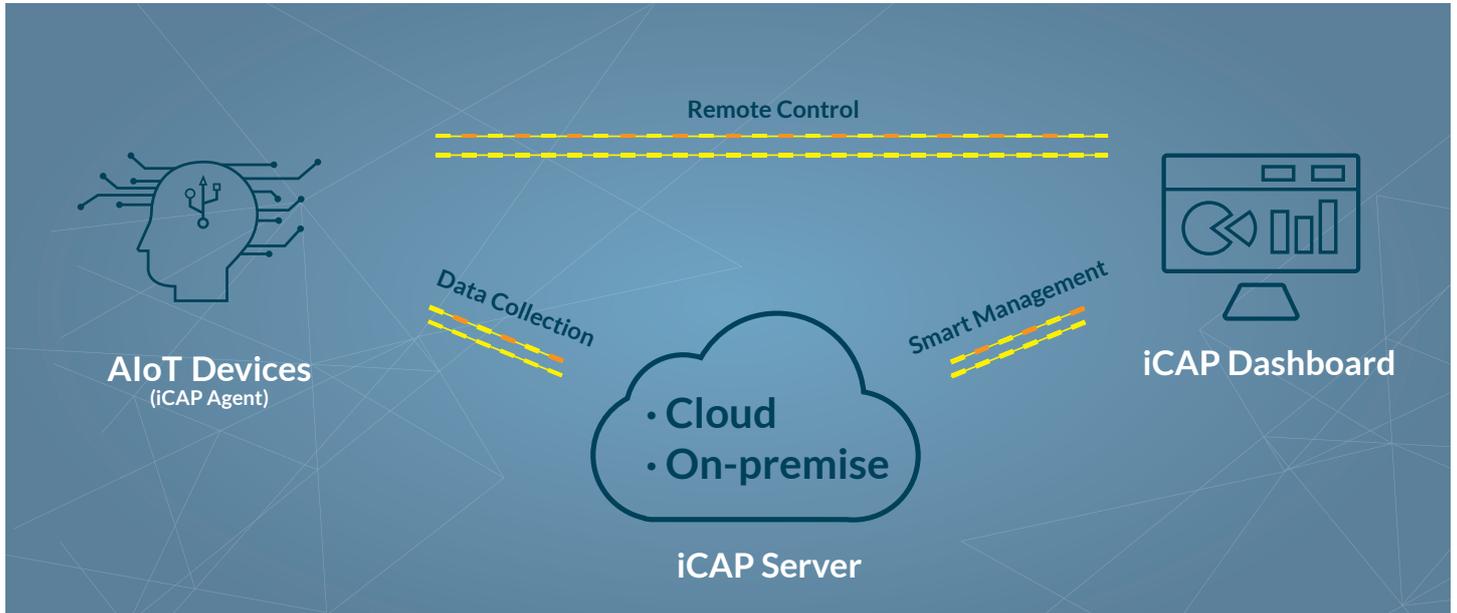
iCAP Dashboard Management Interface

The web page dashboard enables the user to easily manage connected devices through supported browsers

Keep tabs on current CPU and Memory loading

Effectively monitor remote device status

User-friendly monitoring function allowing the user to manage and analyze storage information in detail

By analyzing the read/ write behavior of connected storage devices, iCAP can accurately predict remaining storage device lifetime

Customizable widgets including gauges, Google Maps, and various tables presenting device data

iCAP Advantage

High Compatibility
The iCAP agent application supports devices running on both Windows and Linux and will seamlessly integrate any device not already supported by iCAP.

Flexible Dashboard
User can freely alter the dashboard and choose the parameters and widgets relevant to their application.
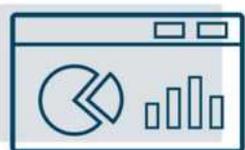
Easy Access
iCAP can be run on a long list of supported web browsers, allowing quick access with internet connectivity, no matter where you are located.

Effective Event Tracker
The event notification tracker will log all changes and keep the user up to speed, enabling a swift resolution to any issues that might occur.

System Backup & Recovery
iCAP integrates Innodisk's proprietary iCover tool that allows for remotely initialized system backup and recovery

System Requirements

Web Service
Web browsers that supports HTML5, CSS3, JavaScript:
Microsoft Internet Explorer 10+ ❙ Google Chrome:9.0+ ❙ Firefox:15.0+ ❙ Safari:5.1+

Server
Hardware Minimum Requirements:
IntelR Core™ i3 2.3 Ghz CPU or above ❙ 4 GB RAM ❙ 20 GB root partition for the system ❙ 100 GB data storage
Operating System:
Ubuntu 14.04+ ❙ Docker 17.03+

Agent
Hardware:
Bundled with Innodisk Storage products
Operating System:
Windows 10/8.1/7/XP kernel 32/64-bits ❙ Ubuntu 16.04 64-bits ❙ Debian 8 64-bits ❙ Others by request

innodisk

iSMART

iSMART is designed to simplify SMART information and provide an easy to read interface for the user. The iSMART tool monitors the health and lifespan of Innodisk's SSDs and also provides details on usage patterns. Alerts are easily configured to issue warnings before any critical errors can occur. With iSMART, the user is able to properly integrate Innodisk's SSDs into their solutions by carefully monitoring behavior and lifespan during development, integration, and mass production.

Dashboard

The Dashboard's home tab aims to provide a summary or quick snapshot of each installed disks in the system. This page offers accurate data information regarding Temperature, Health, Capacity, Lifespan, iAnalyzer, and Notifications.

Device Information

The Device Information page provides additional functions, such as Power Status, Partitions, and detailed information of the device such as Serial Number, Firmware Vision, Interface, and Features. To learn more about SMART information, go to SMART values and refer to the SMART tab.

iAnalyzer

When activated, the iAnalyzer tab displays the read/write behaviors of the SSD in real time. This allows the user to understand their application usage of the SSD. Sequential and Random I/Os are easily broken down into percentages making them easy to read.

Alert

The Alert tab helps the user set trigger points with Temperature, Health percentage, Remaining Capacity or Life Remaining. If these trigger points exceed their boundaries, the iSMART utility can send a warning and email to the user notifying them that something may fail.

PCIe NVMe Support

iSMART supports logging for PCIe NVMe devices. The user can easily check the PCIe storage device health status.

iSMART for Linux

The iSMART Linux version provides every storage device's SMART values by vender command, and also fully supports the iAnalyzer function.

Product specifications are subject to change without prior notice.

iTracker

iTracker is Innodisk's dedicated software tool for SD 3.0 cards and USB products. It offers a customizable approach to accessing flash card SMART values. Compatibility with both Windows and Linux systems and an intuitive user interface ensures an easy system integration and user experience.

SD Information

- iTracker enables easy access to SD card and USB series information
- SD 3.0 (Hyperstone)
  - Product name
  - FW version
  - Correction capability for flash
  - Total number of flash block
- SD 3ME3 (SM2702)
  - Product name
  - Bus width
  - Speed class
  - Speed grade

USB Information

- USB series product (SM3268)
  - Product name
  - Manufacture
  - Serial number
  - Firmware version
  - Package version
  - P/E cycles

SMART

- The iTracker SMART page shows more details about device health status and helps the user predict remaining lifespan
- Write protect feature can also easily be enabled and disabled

System Page

- iTracker system page enables the user to easily check system information

Features:
- Dedicated Innodisk Industrial SD Card and USB Management Software
- Intuitive visualized SMART information
- Flexible widgets for customized requirements
- Support for both Windows & Linux systems

iCover

Reliable backup and recovery for your industrial system through intuitive and simple one-key software

iCover is an easy-to-use, highly-customized backup and recovery software tool designed for industrial computers. iCover will not only recover the operation system, but also all of the applications, drivers and personal data by using the recovery image. It is fully compatible with Microsoft Windows and Linux operating systems. Even if the system should become unresponsive, this quick recovery tool will restore it to its original state.

Replaceable logo

One-key recovery

Easy partition backup

Support backup and recovery of operating system to network files system
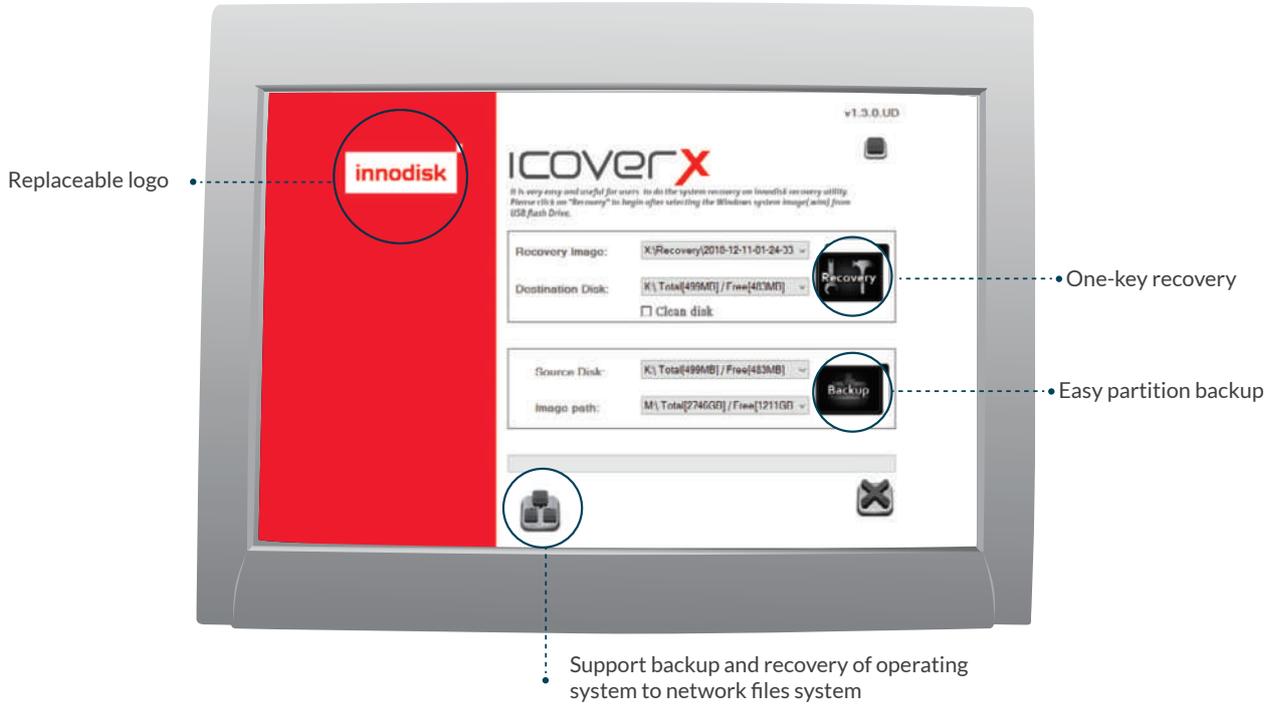
Advantage

Remote Backup and Recovery
Support SMB/CIFS protocol to backup and recover system image

Intelligent disk management
Create and manage the partitions of your system
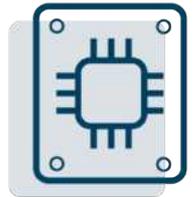
UEFI BIOS Support
Supports legacy/ UEFI BIOS recovery
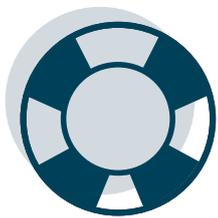
Intuitive GUI operation
Switch between user mode and recovery mode with the touch of a button

System Requirements

Items	iCover
Processor	1GHz or faster
RAM	2GB
Supported Devices	Innodisk Storage Devices
OS Support	Windows: Windows XP/7/8.1/10 ｜ Windows Embedded Series Linux: Ubuntu/Yotco/CentOS
File System	Windows: NTFS/FAT32 Linux: Ext4/Ext3/Ext2

iOpal

TCG Opal-Compliant Software

The TCG defined standard for self-encrypting drives (SED) emphasizes data security and ease of use. Innodisk's software conforms to this standard and can provide a simple and intuitive way to handle SED management. The software allows the user to easily define different ranges for different users – allowing for a system where data is shared on a strictly need-to-know basis.

Limits permissions toward self-encrypting drives, need correspondence to the relevant credentials or passwords for the different levels of functions

Set locking range allows setting up divided locking range for different authorizations

Device locking setting information

Pre Boot-up Authorization(PBA) is a process used to add a shadow Master Boot Record (MBR) region and implement the boot-up authoriza-tion procedure by entering correct password

Revert function can be divided into two levels, which are

Advantages

User-friendly
Gives an intuitive user interface to the TCG Opal 2.0 specifications and SED management while supporting up to 5 devices simultaneously.

Multi-function
iOpal's data storage management features are designed to enhance data security and communication with the host system.

High compatibility:
iOpal is available in both Windows and Linux versions for a much broader applicability

From Factor	
3MG2-P with AES	2.5" SSD, M.2(S42,S80), mSATA, SATA Slim
3SE2-P with AES	2.5" SSD, 1.8" SSD

Supported OS List

Windows 7 / Windows 10 / Linux Ubuntu / Linux Fedora

DRAM Modules

Innodisk's industrial-grade DRAM series features high-quality memory modules that have been specifically designed and developed for industrial computers and similar applications. Our specialized SPD team is ready to provide system designers with a complete turn-key solution for any engineering requirements.

Innodisk's DRAM modules are categorized to meet different systems' needs, and supports DDR4, DDR3, DDR2, DDR, and SDRAM. Our DRAM modules are available in 4 product lines: Embedded, Server, Wide Temperature, and Special Customized.

Innodisk's comprehensive range of DRAM modules includes: Unbuffered DIMM, Unbuffered SO-DIMM, Unbuffered ECC DIMM, Unbuffered ECC SO-DIMM, Mini DIMM, and registered DIMM, conformal coated DRAM, and side filled DRAM.

iRAM™

An Innodisk Exclusive Testing Software

The testing quality and strictness of iRAM easily surpasses that of similar testing software. With this exclusive Innodisk tool, any underperforming components will be quickly be identified and weeded out.

Innodisk ECC & RDIMM Modules Testing Process

Innodisk performs comprehensive quality checks after production. For ECC and RDIMM modules, we can ensure the highest quality, reliability, and performance that ultimately will reduce your maintenance cost.

❶ Vibration test   ❷ Chamber test   ❸ Open/ Short Test

❻ Packing   ❺ Visual Inspection   ❹ iRAM test

The Strengths of iRAM

Precise   Exclusive   Stringent   Reliable   Authentic
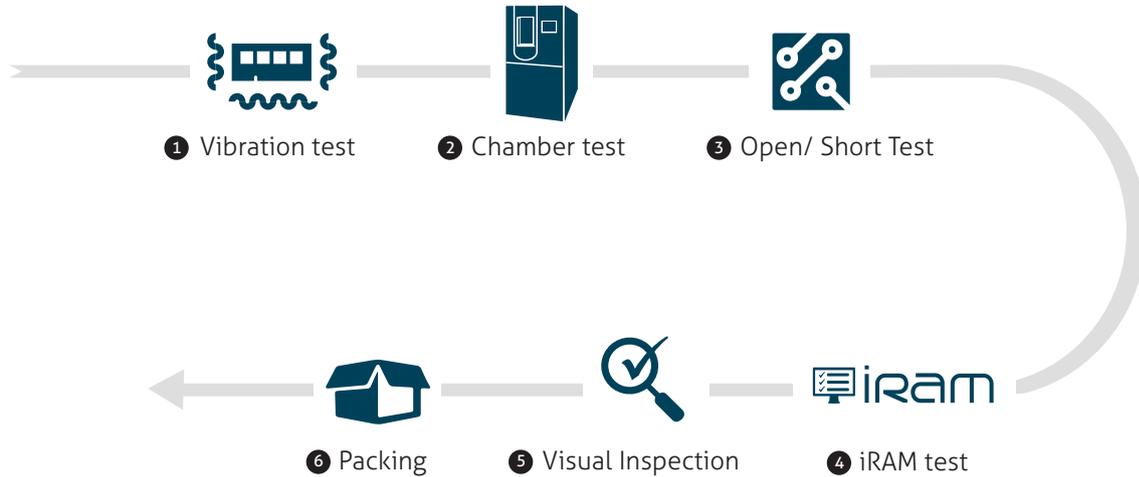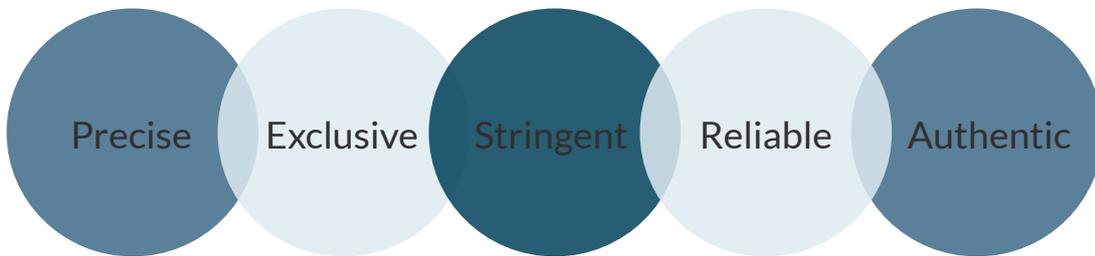
iRAM Advantages

- Exclusive: Unique software developed by Innodisk
- Precise: iRAM can detect IC failure within every piece of IC, including ECC IC status
- Reliable & Stringent: iRAM integrates several tier 1 testing patterns for server platforms. This accurately simulates high-stress and heavy-loading condition and can filter out the potential unqualified modules efficiently
- Authentic: iRAM is a web-based diagnostic tool that not only simulates multipoint servers and workstation computing scenarios but also detects unexpected issues where other software falls short

IC Grade

IC Hierarchy

Original IC	**Original IC (Innodisk)** -Fully tested by major IC suppliers
eTT	**Effectively Tested DRAM** - Effectively tested but test patterns can vary by suppliers - Logo unmarked or only marked with partial IC part number
uTT	**Untested DRAM** - Untested - Logo unmarked
Low Grade	**Low Grade** - DRAM IC with unknown quality confirmed as not having full data sheet parts

Distinguishing Original from Lower Grade IC

Original IC

Manufacturer logo for example

IC P/N

Manufacture code

Lower Grade IC

1. No Manufacturer Logo
2. Incomplete IC P/N
3. Incomplete Manufacturer Code
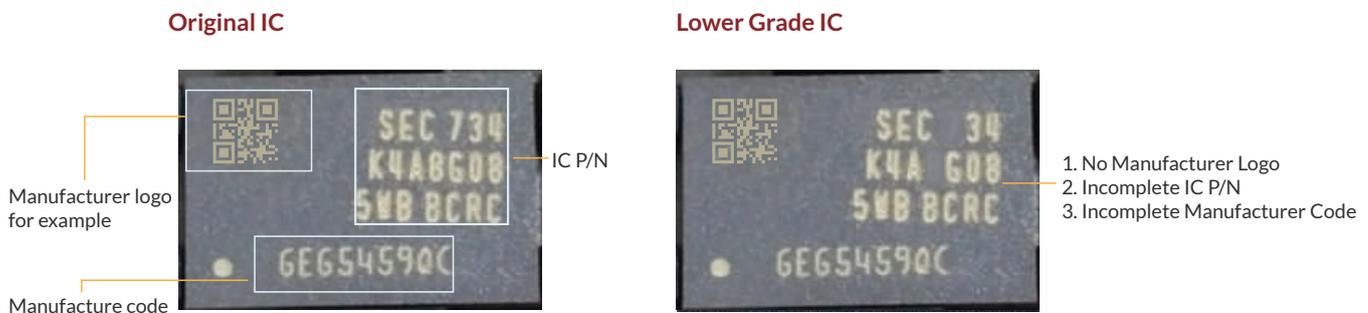
Why do we only use "Original IC"?

1. Top Quality

Environmental and Application Challenges: The areas Innodisk operates in are industrial in nature. These areas give rise to harsh environments and a demand for long-lasting devices, which are the principal challenges we face.

Innodisk uses original IC, not just for the quality guarantees, but also for the international expertise and experience of the manufacturer. Together, the original IC manufacturer and Innodisk offer the customer the most thorough dual guarantee that ensures that you are equipped to face any challenges in your way.

Technology and market development: IoT, AI and AIoT are already solid trends that are actively pursued by the actors in the industrial and embedded markets. High-quality original ICs are necessary to meet the needs of heavy workloads and the high-performance requirements seen in these applications.

2. Original Manufacturer Report

Any device operating under long periods of time will be susceptible to break down and damage. Original man can not only help recycle faulty products and repair damaged ICs, but also provides a complete repair report. This will allow the customer to better understand the reason behind the malfunction and take the necessary steps to avoid future occurrences. However, the original manufacturer will not acknowledge lower grade ICs (as these are third party) and will neither provide a repair report.

Embedded

Embedded UDIMM

UDIMM modules are DRAM modules meant to be used as standard products for general embedded applications. These modules are compliant with JEDEC standards and available in DDR1, DDR2, DDR3, and DDR4.

Series	Standard Solution	
Module Type	DDR4 UDIMM	DDR3 UDIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	2GB/4GB/8GB/16GB/32GB	2GB/4GB/8GB
Function	Non-ECC Unbuffered Memory	
Pin Number	288pin	240pin
Width	64Bits	64Bits
Voltage	1.2V	1.5V/1.35V
PCB Height	1.23 Inches	1.18 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃
Anti-Sulfuration	√	—
Value-Added Service (Optional)	Conformal Coating / Side Fill	

Series	Standard Solution	
Module Type	DDR2 UDIMM	DDR UDIMM
Data Rate	533 MT/s, 667 MT/s, 800 MT/s	333 MT/s, 400 MT/s
Capacity	1GB/2GB/4GB	512MB/1GB
Function	Non-ECC Unbuffered Memory	
Pin Number	240pin	184pin
Width	64Bits	64Bits
Voltage	1.8V	2.6V
PCB Height	1.18 Inches	1.16 Inches
Operating Temperature	0 ~ 85℃	0 ~ 70℃
Anti-Sulfuration	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill	

innodisk

Embedded SODIMM

Small-outline DIMMs (SODIMM) modules are general DRAM modules meant to be usesd as standard products for embedded applications with limited space. These modules are compliant with JEDEC standards and help in eliminating the need for changing designs due to limited space.

Series	Standard Solution		
Module Type	DDR4 SODIMM	DDR3 SODIMM	DDR2 SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s	533 MT/s, 667 MT/s, 800 MT/s
Capacity	2GB/4GB/8GB/16GB/32GB	1GB/2GB/4GB/8GB	512MB/1GB/2GB/4GB
Function	Non-ECC Unbuffered Memory		
Pin Number	260pin	204pin	200pin
Width	64Bits	64Bits	64Bits
Voltage	1.2V	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃
Anti-Sulfuration	√	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Series	Standard Solution	
Module Type	DDR SODIMM	SDRAM SODIMM
Data Rate	333 MT/s, 400 MT/s	100 MT/s, 133 MT/s
Capacity	256MB/512MB/1GB	128MB/256MB/512MB
Function	Non-ECC Unbuffered Memory	
Pin Number	200pin	144pin
Width	64Bits	64Bits
Voltage	2.6V	3.3V
PCB Height	1.25 Inches	1.25 Inches
Operating Temperature	0 ~ 70℃	0 ~ 70℃
Anti-Sulfuration	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill	

Server
Registered DIMM

Registered DIMM modules are designed to ensure data integrity at both the device and system level of the server. In addition, all Innodisk Registered DIMM modules are tested by our exclusive iRAM testing software to ensure stable performance.

Series	Server Solution	
Module Type	DDR4 RDIMM	DDR3 RDIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	4GB/8GB/16GB/32GB*	2GB/4GB/8GB
Function	Registered Memory with ECC	
Pin Number	288pin	240pin
Width	72Bits	72Bits
Voltage	1.2V	1.5V/1.35V
PCB Height	1.23 Inches	1.18 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃
Golden finger 30μ"	√	√
Anti-Sulfuration	√ (*With exception of the 32GB module)	—

Wide Temperature

Wide Temperature Unbuffered DIMM

Designed for industrial systems, Innodisk's Wide Temperature DRAM modules are the best choice for applications operating in harsh conditions. Our wide temperature modules use industrial-grade SDRAM components with 30u" Gold fingers to ensure that the memory maintains its high-quality signal, even at temperatures as low as -40℃ or as high as 85℃.

Series	Wide Temperature Solution	
Module Type	DDR4 WT UDIMM	DDR3 WT UDIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	4GB/8GB/16GB/32GB	2GB/4GB/8GB
Function	Non-ECC Unbuffered Memory	
Pin Number	288pin	240pin
Width	64Bits	64Bits
Voltage	1.2V	1.5V/1.35V
PCB Height	1.23 Inches	1.18 Inches
Operating Temperature	-40 ~ 85℃	-40 ~ 85℃
Golden finger 30μ"	√	√
Anti-Sulfuration	√	—
Value-Added Service (Optional)	Conformal Coating / Side Fill	

Series	Wide Temperature Solution		
Module Type	DDR4 WT SODIMM	DDR3 WT SODIMM	DDR2 WT SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s	533 MT/s, 667 MT/s, 800 MT/s
Capacity	4GB/8GB/16GB/32GB	2GB/4GB/8GB	1GB/2GB
Function	Non-ECC Unbuffered Memory		
Pin Number	260pin	204pin	200pin
Width	64Bits	64Bits	64Bits
Voltage	1.2V	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches	1.18 Inches
Operating Temperature	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃
Golden finger 30μ"	√	√	√
Anti-Sulfuration	√	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Wide Temperature Unbuffered DIMM with ECC

Wide Temperature ECC DIMMs are designed for both industrial systems and servers, Innodisk's Wide Temperature DRAM modules are best suited for applications that must work in extreme temperatures. With the ECC function, the Wide Temperature DIMMs also ensure that data is corrected when corrupted data bits are found during data retrieval.

Series	Wide Temperature Solution			
Module Type	DDR4 WT ECC UDIMM	DDR4 WT ECC SODIMM	DDR3 WT ECC UDIMM	DDR3 WT ECC SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	4GB/8GB/16GB/32GB	4GB/8GB/16GB/32GB	2GB/4GB/8GB	2GB/4GB/8GB
Function	ECC Unbuffered Memory			
Pin Number	288pin	260pin	240pin	204pin
Width	72Bits	72Bits	72Bits	72Bits
Voltage	1.2V	1.2V	1.5V/1.35V	1.5V/1.35V
PCB Height	1.23 Inches	1.18 Inches	1.18 Inches	1.18 Inches
Operating Temperature	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃
Golden finger 30μ"	√	√	√	√
Anti-Sulfuration	√	√	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill			

Wide Temperature Registered DIMM

Designed for industrial systems, Innodisk's Wide Temperature DRAM modules are best suited for applications that must work in extreme temperatures. These modules use industrial-grade SDRAM components with 30u" gold finger to ensure that the memory maintains its high-quality signal, even at temperatures as low as -40°C or as high as 85°C.

Series	Wide Temperature Solution	
Module Type	DDR4 WT RDIMM	DDR4 WT RDIMM VLP
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s
Capacity	4GB/8GB/16GB/32GB* 32GB* is only for 2133MT/s and 2400MT/s	4GB*/8GB/16GB 4GB* is only for 2133MT/s and 2400MT/s
Function	Registered Memory with ECC	
Pin Number	288pin	288pin
Width	72Bits	72Bits
Voltage	1.2V	1.2V
PCB Height	1.23 Inches	0.738 Inches
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C
Golden finger 30µ"	√	√
Anti-Sulfuration	√	√
Value-Added Service (Optional)	Conformal Coating / Side Fill	

ECC DIMM

ECC modules are designed to detect and correct single-bit errors that occur during data storage and transmission. ECC modules use Hamming Code or Triple Modular Redundancy for error detection and correction, and manage error corrections on their own, without requesting that the data source resend original data.

Series	ECC Unbuffered DIMM Solution		
Module Type	DDR4 ECC UDIMM	DDR4 ECC SODIMM	DDR4 ECC UDIMM VLP
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s
Capacity	4GB/8GB/16GB/32GB	4GB/8GB/16GB/32GB	4GB/8GB/16GB
Function	ECC Unbuffered Memory		
Pin Number	288pin	260pin	288pin
Width	72Bits	72Bits	72Bits
Voltage	1.2V	1.2V	1.2V
PCB Height	1.23 Inches	1.18 Inches	0.738 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C
Golden finger 30µ"	√	√	√
Anti-Sulfuration	√	√	√
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Series	ECC Unbuffered DIMM Solution		
Module Type	DDR4 ECC SODIMM VLP	DDR3 ECC UDIMM	DDR3 ECC SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	4GB/8GB	2GB/4GB/8GB	2GB/4GB/8GB
Function	ECC Unbuffered Memory		
Pin Number	260pin	240pin	204pin
Width	72Bits	72Bits	72Bits
Voltage	1.2V	1.5V/1.35V	1.5V/1.35V
PCB Height	0.7 Inches	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C
Golden finger 30µ"	√	√	√
Anti-Sulfuration	√	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Series	ECC Unbuffered Memory Solution		
Module Type	DDR3 ECC UDIMM VLP	DDR3 ECC SODIMM ULP	DDR2 ECC UDIMM
Data Rate	1333 MT/s, 1600 MT/s, 1866 MT/s	1333 MT/s, 1600 MT/s	667 MT/s, 800 MT/s
Capacity	2GB/4GB/8GB	2GB/4GB	1GB/2GB
Function	ECC Unbuffered Memory	ECC Unbuffered Memory	ECC Unbuffered Memory
Pin Number	240pin	204pin	240pin
Width	72Bits	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V	1.8V
PCB Height	0.738 Inches	0.709 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√	√
Anti-Sulfuration	—	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Very Low-Profile (VLP) DIMM and Ultra Low-Profile (ULP) DIMM

Very Low-Profile (VLP) DIMM modules and Ultra Low-Profile (ULP) DIMM modules are specialized for use in 1U systems, such as blade server data centers, where the system height is lower than 1.18 inches. The design of these modules improves air flow inside a compact system and reduces thermal impact.

Series	Very Low-Profile (VLP) Solution		
Module Type	DDR4 UDIMM VLP	DDR4 ECC UDIMM VLP	DDR4 SODIMM VLP
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s
Capacity	4GB/8GB/16GB	4GB/8GB/16GB	4GB/8GB
Function	Non-ECC Unbuffered Memory	ECC Unbuffered Memory	Non-ECC Unbuffered Memory
Pin Number	288pin	288pin	260pin
Width	64Bits	72Bits	64Bits
Voltage	1.2V	1.2V	1.2V
PCB Height	0.738 Inches	0.738 Inches	0.7 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	—	√	—
Anti-Sulfuration	√	√	√
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Series	Very Low-Profile (VLP) Solution	
Module Type	DDR4 ECC SODIMM VLP	DDR4 RDIMM VLP
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s, 2666 MT/s
Capacity	4GB/8GB	4GB/8GB/16GB/32GB
Function	ECC Unbuffered Memory	Registered Memory with ECC
Pin Number	260pin	288pin
Width	72Bits	72Bits
Voltage	1.2V	1.2V
PCB Height	0.7 Inches	0.738 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√
Anti-Sulfuration	√	√
Value-Added Service (Optional)	Conformal Coating / Side Fill	

Series	Very Low-Profile (VLP) Solution		
Module Type	DDR3 UDIMM VLP	DDR3 ECC UDIMM VLP	DDR3 SODIMM VLP
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s	1333 MT/s, 1600 MT/s, 1866 MT/s	1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	2GB/4GB/8GB	2GB/4GB/8GB	2GB/4GB/ 8GB
Function	Non-ECC Unbuffered Memory	ECC Unbuffered Memory	Non-ECC Unbuffered Memory
Pin Number	240pin	240pin	204pin
Width	64Bits	72Bits	64Bits
Voltage	1.5V/1.35V	1.5V/1.35V	1.5V/1.35V
PCB Height	0.738 Inches	0.738 Inches	1.0 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃
Golden finger 30μ"	—	√	—
Anti-Sulfuration	—	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Series	Ultra Low-Profile (ULP) Solution	Very Low-Profile (VLP) Solution
Module Type	DDR3 ECC SODIMM ULP	DDR3 RDIMM VLP
Data Rate	1333 MT/s, 1600 MT/s	1333 MT/s, 1600 MT/s, 1866 MT/s
Capacity	2GB/4GB	4GB/8GB
Function	ECC Unbuffered Memory	Registered Memory with ECC
Pin Number	204pin	240pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	0.709 Inches	0.738 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃
Golden finger 30μ"	√	√
Anti-Sulfuration	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill	

Mini DIMM

All Mini DIMMs are targeted for high speed, high density, high performance telecommunication and cloud systems. The 0.72 inch high ULP Mini DIMM module is specifically designed for networking applications. They are compliant with JEDEC standards and are designed to improve airflow and thermal resistance. With the ECC function, the Mini DIMMs also ensure that data is corrected when corrupted data bits are found during data retrieval.

Series	Mini DIMM Solution	
Module Type	DDR4 Mini ECC VLP	DDR4 Mini RDIMM VLP
Data Rate	2133MT/s, 2400 MT/s	
Capacity	4GB/8GB/16GB	4GB/8GB
Function	ECC Unbuffered Memory	Registered Memory with ECC
Pin Number	288pin	
Width	72Bits	
Voltage	1.2V	1.2V
PCB Height	0.738 Inches	0.738 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃
Golden finger 30μ"	√	√
Anti-Sulfuration	√	√
Value-Added Service (Optional)	Conformal Coating / Side Fill	

Series	Mini DIMM Solution		
Module Type	DDR3 Mini DIMM ECC ULP	DDR3 Mini DIMM RDIMM	DDR3 Mini RDIMM VLP
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s		
Capacity	2GB/4GB	8GB	2GB/4GB
Function	ECC Unbuffered Memory	Registered Memory with ECC	Registered Memory with ECC
Pin Number	244pin		
Width	72Bits		
Voltage	1.5V/1.35V	1.5V/1.35V	1.5V/1.35V
PCB Height	0.7 Inches	1.18 Inches	0.738 Inches
Operating Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃
Golden finger 30μ"	√	√	√
Anti-Sulfuration	—	—	—
Value-Added Service (Optional)	Conformal Coating / Side Fill		

Special / Customized

XR-DIMM

In order to meet the high standards of the aerospace and defense industry, our XR-DIMM comes equipped with several advantages which will satisfy your expectation for robust DRAM modules. We offer three densities of DDR4 XR-DIMM, 4GB, 8GB & 16GB, both with an integrated error checking and correction function. With its 300-pin socket connector, Innodisk's XR-DIMM exceeds the pin number standard established by the SFF Special Interest Group (SFF-SIG), ensuring a firm connection between the CPU and DRAM module. This customized design enables XRDIMM to be highly resistant to shock and vibration, providing a more reliable performance for the aerospace and defense vertical market.

Series	XR-DIMM Solutions			
Module Type	DDR4 XR-DIMM		DDR3 XR-DIMM	
Data Rate	2400 MT/s		1600MT/s, 1866 MT/s	
Capacity	8GB/16GB		4GB/8GB	
Function	ECC Unbuffered Memory	Non-ECC Unbuffered Memory	ECC Unbuffered Memory	Non-ECC Unbuffered Memory
Pin Number	300pin		300pin	
Width	72Bits	64Bits	72Bits	64Bits
Voltage	1.2V		1.5V/1.35V	
PCB Height	1.18 Inches		1.49 Inches	
Anti-sulfuration	√	√	—	—
Mounting Hole	2	2	2	2
Value-Added Service (Optional)	Conformal Coating / Side Fill/Wide Temperature			

Embedded Peripheral Modules

Embedded Peripheral Modules provide LAN, PoE, CANBus, DIO, Serial Port, Storage, RAID and Display functionality to embedded systems. In order to enrich industrial customer's embedded solutions with flexibility at the best TCO (Total Cost of Ownership), we are dedicated to creating expandable, space-efficient expansion modules.

Innodisk is experienced with the most common interface which include PCIe, USB, SATA and is able to provide this functionality in the wide range of space-saving form factors available today. Just like Innodisk's esteemed memory solutions, our Standard PCIe, mPCIe, 2.5" SSD and M.2(NGFF) modules fit perfectly into any industrial system.

Innodisk Efficient Modular Expansion

When it comes to motherboards, adding additional input/ output ports will often require costly re-design. Innodisk can offer solutions that allow for easily implemented expansions on already existing motherboards, saving the system integrator from costly and time-consuming re-design. In other words, using a standard motherboard as a basis, Innodisk can assist you in creating various products according to different specifications.

Traditional scenario : Standard mother board with different fixed I/O
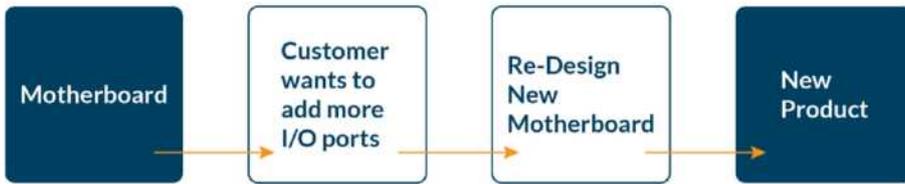
Innodisk Solution: Standard motherboard with Innodisk Efficient Modular Expansion

Benefits
1. One motherboard for multiple products
2. Efficient components sharing
3. Accelerate the process of new products to the market
4. Significantly reduce development costs

Product Categories and I/O Descriptions

Through expansion slots such as PCIe, M.2, mPCIe, SATA and USB pin header Innodisk modules can easily expand to various I/O devices.
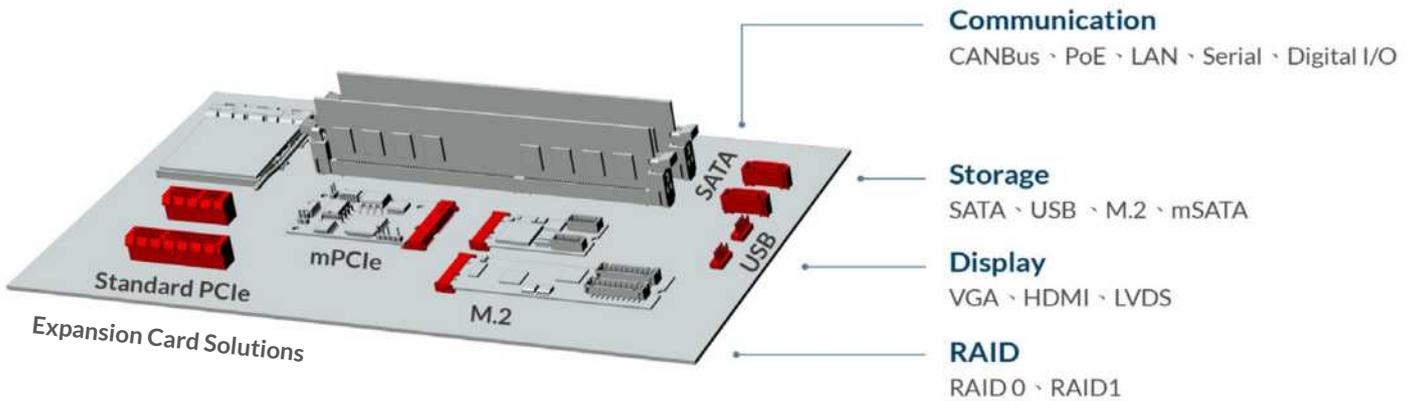
Industrial design

Industrial temperature (-40 ℃ to 85 ℃)

Up to ESD contact 8KV and air 15KV protection

Up to 2.5 KV isolation to prevent damage your system

Fulfilling the Needs of Various Vertical Markets

Transportation

Transportation includes interfaces such as Power over Ethernet (PoE), CANbus and LAN. With Innodisk expansion cards, the system integrator can facilitate seamless connectivity and data safety for in-vehicle systems.

CAN bus | PoE | LAN

Medical

Medical industrial devices link to a variety of other devices, such as: VOIP phones, web cameras, high quality speakers, MSR and bar code scanners. These devices commonly use USB and serial interfaces. A RAID solution offers strong data integrity for critical applications.

Serial | LAN | RAID
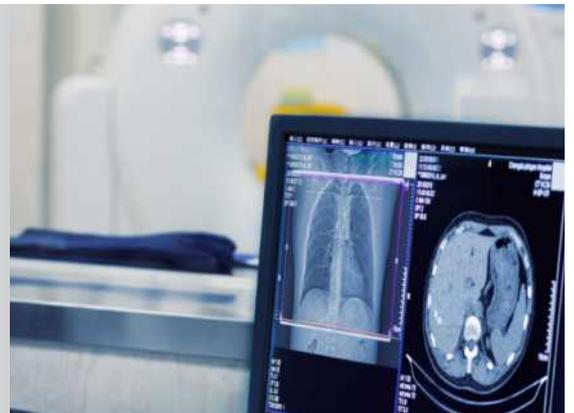
Automation

Industrial control units using RS422/485 signals to control devices requires solid Ethernet network extensions. HMI devices are used to display important data regarding ongoing operations.

Serial | LAN | Display

Retail

Retail industry includes point-of-sales, kiosk and digital signage products. This kind of equipment runs on Serial and USB expansions. In addition, digital signage usually need to support multi-screen, can use Innodisk's display expansion card which supports up to three screens at the same time.

Serial | USB | Display

innodisk

Communication

Innodisk expansion modules aim to provide flexible connectivity and bandwidth to industrial systems. With our mPCIe GbE LAN, PoE, CANBus and serial communication modules, users can expand the existing system to meet dynamic connectivity under IoT.

1-1 CANbus

CANBus (Controller Area Network) is a type of serial communication that is widely used in automation, embedded systems and the automotive industry. Innodisk has developed the EMUC-B202 CANbus expansion card specifically to fulfill these needs. It provides dual-port CAN 2.0B/J1939 connectivity with an isolation design, and supports a wide temperature range in order to enhance system security and reliability.

Based on an inbuilt Linux CDC-ACM, the Innodisk EMUC-B202 uses a custom-made SocketCAN network driver that allows two ports on a single card. Thus, it provides maximum compatibility for customers when developing programs. Other than SocketCAN, Innodisk also provides complete Windows/Linux software API, test utility and sample code for traditional character drivers.

| SocketCAN | CAN 2.0A/2.0B | Galvanic Isolation | SAE J1939 |

Complete Software Support

API Sample Code
By using GUI or Command base test utility the user can easily verify modules

Test Utility
Provides C/C++/C# sample code to speed up program integration

Platform Support
API can be used in Windows, Linux and QNX. Other than x86 system, a cross-compiler service for ARM system is also available.

Model Name	EMUC-B202	EGPC-B201
Module Type	USB to dual isolated CANbus 2.0B/J1939 Module	M.2 to dual isolated CANbus 2.0B/J1939 Module
Key Features	1. CANbus 2.0B backward compatible with 2.0A 2. Support baud rate 100/125/250/500(default)/800/1000K 3. Support CAN message acceptance filter 4. Keep configuration after hardware reboot 5. Up to 6000 CAN messages per second (receive data) 6. Support Listen-only mode 7. Additional driver to support Linux SocketCAN 8. Support SAE J1939 high layer protocol (Optional) 9. Termination resistor enabled/disabled by jumper 10. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation 11. Complies with EN61000-4-5 2.5kV Surge protection 12. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection 13. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 14. Industrial temperature -40 ℃ to 85 ℃	1. Alternative M.2 2260 or 2280 B-M key 2. CANbus 2.0B backward compatible with 2.0A 3. Support baud rate 100/125/250/500(default)/800/1000K 4. Support CAN message acceptance filter 5. Keep configuration after hardware reboot 6. Up to 6000 CAN messages per second (receive data) 7. Support Listen-only mode 8. Additional driver to support Linux SocketCAN 9. Support SAE J1939 high layer protocol (Optional) 10. Termination resistor enabled/disabled by jumper 11. Complies with EN61000-4-5 2.5kV Surge protection 12. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection 13. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 14. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mPCIe	M.2 2260/2280
Input I/F	USB 2.0	PCI Express 2.0
Input Connector	mPCIe or 5Pin Header	M.2 B-M
Output I/F	CANbus 2.0B/J1939 x 2	CANbus 2.0B/J1939 x 2
Output Connector	DB-9 x 2	DB-9 x 2
Dimension (WxLxH/mm)	30 x 50.9 x 6.1	22 x 60 x 6.1 22 x 80 x 6.1
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Info.	EMUC-B202-W1 (CAN 2.0B) EMUC-B202-W2 (J1939)	EGPC-B201-W1 (2280, CAN2.0B) EGPC-B201-W2 (2280, J1939) EGPC-B201-W3 (2260, CAN2.0B) EGPC-B201-W4 (2260, J1939)

1-2 Power over Ethernet (PoE)

The Industrial-grade Power over Ethernet (PoE) series complies with IEEE 802.3af and 802.3at, ensuring reliable power and data transfer. These expansion cards feature isolated, wide temperature design and are certified to withstand HiPOT and surge occurrences, making it the optimal choice for operation in extreme conditions.

Complete Form factor
· Compact and easily integrated form factors: PCIe / mPCIe / M.2 2280

Flexible Expansion
· Supports 12~24V power input via internal 4 pin header or external DC Jack
· Supports alternative fixed approach of mounting hole or bracket for daughter board
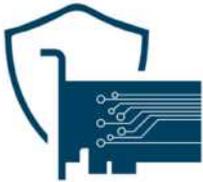
Industrial Design
· Supports wide temperature -40° ~ +85°C
· Complies with EN61000-4-2 (ESD) Air up to 15kV, Contact up to 8kV
· Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 HiPOT protection
· Complies with EN61000-4-5 Surge protection

Model Name	EMPL-G2P1	EMPL-G2P2	EGPL-G2P1	ESPL-G4P1
Module Type	mPCIe to dual Isolated PoE Module	mPCIe to dual Isolated PoE+ Module	M.2 to dual Isolated PoE Module	PCIe to four isolated PoE/PoE+ Module
Key Features	1. Supports dual isolated GbE LAN ports 2. Two independent PSE channels 3. Supports 12V~24V power input via 4pin header or DC-Jack 4. Complies with IEEE 802.3af, up to 15.4W at 48V per PoE port 5. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 1.7KV HiPOT protection 6. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 7. Industrial temperature -40 ℃ to 85 ℃	1. Supports dual isolated GbE LAN ports 2. Two independent PSE channels 3. Supports 19V~24V power input via 4pin header 4. Complies with IEEE 802.3at, up to 25.5W at 52V per PoE port 5. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 1.7KV HiPOT protection 6. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 7. Industrial temperature -40 ℃ to 85 ℃	1. Supports dual isolated GbE LAN ports 2. Two independent PSE channels 3. Supports 12V~24V power input via 4pin header or DC-Jack 4. Complies with IEEE 802.3af, up to 15.4W at 48V per PoE port. 5. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 1.7KV HiPOT protection 6. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 7. Industrial temperature -40 ℃ to 85 ℃	1. Supports four isolated GbE LAN ports 2. Four independent PSE channels 3. Complies with IEEE 802.3af, up to 15.4W at 48V per PoE port 4. Complies with IEEE 802.3at, up to 25.5W at 54V per PoE port 5. Supports 12V~24V power input via 6pin PCIE-ATX 6. Supplies total power up to 75W 7. Complies with EN61000-4-5 2kV Surge protection 8. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection
Form-Factor	mPCIe	mPCIe	M.2 2280	Standard PCIe
Input I/F	PCI Express 2.1	PCI Express 2.1	PCI Express 2.1 x 1	PCI Express 2.1
Input Connector	mPCIe	mPCIe	M.2 B-M	PCIe x 4
Output I/F	PoE x 2	PoE+ x 2	PoE x 2	PoE/PoE+ x 4
Output Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 4
Dimension (WxLxH/mm)	30 x 50.9 x 7.6	30 x 50.9 x 7.6	22 x 80 x 7.1	169.55 x 111.15 x 19.6
Operating Temperature	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C
Order Infomation	EMPL-G2P1-C1 (Mounting hole, 4pin header) EMPL-G2P1-W1 (Mounting hole, 4pin header) EMPL-G2P1-C2 (Bracket, 4pin header) EMPL-G2P1-W2 (Bracket, 4pin header) EMPL-G2P1-C3 (Mounting hole, DC Jack) EMPL-G2P1-W3 (Mounting hole, DC Jack) EMPL-G2P1-C4 (Bracket, DC Jack) EMPL-G2P1-W4(Bracket, DC Jack)	EMPL-G2P2-C1 (Mounting hole, 4pin header) EMPL-G2P2-W1 (Mounting hole, 4pin header) EMPL-G2P2-C2 (Bracket, 4pin header) EMPL-G2P2-W2 (Bracket, 4pin header)	EGPL-G2P1-C1 (Mounting hole, 4pin header) EGPL-G2P1-W1 (Mounting hole, 4pin heade) EGPL-G2P1-C2 (Bracket, 4pin heade) EGPL-G2P1-W2 (Bracket, 4pin header) EGPL-G2P1-C3 (Mounting hole) EGPL-G2P1-W3 (Mounting hole, DC Jack) EGPL-G2P1-C4 (Bracket, DC Jack) EGPL-G2P1-W4 (Bracket, DC Jack)	ESPL-G4P1-C1 ESPL-G4P1-W1

innodisk

1-3 GbE LAN

mPCIe and M.2 based GbE LAN cards using Intel Ethernet chip provide high performance 10/100/1000 Mbps network connectivity with an isolation design, and supports a wide temperature range in order to enhance system security and reliability. Small form factor with flexible daughter board can be suitable for smaller industrial computer by using alternative terminal mounting hole of bracket.

Model Name	EMPL-G101	EMPL-G201	EMPL-G102	EMPL-G202
Module Type	mPCIe to single isolated GbE LAN Module	mPCIe to dual isolated GbE	mPCIe to single isolated GbE LAN horizontal Module	mPCIe to dual isolated GbE LAN horizontal Module
Key Features	1. Single isolated GbE LAN ports 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible daughter board with cable to fit into different system 6. Supports mounting terminal or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃	1. Dual isolated GbE LAN ports 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible daughter board with cable to fit into different system 6. Supports mounting terminal or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃	1. Single isolated GbE LAN port 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible daughter board with cable to fit into different system 6. Optional terminal mounting hole or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃	1. Dual isolated GbE LAN port 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible daughter board with cable to fit into different system 6. Optional terminal mounting hole or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mPCIe	mPCIe	mPCIe	mPCIe
Input I/F	PCI Express 2.1	PCI Express 2.1	PCI Express 2.1	PCI Express 2.1
Input Connector	mPCIe	mPCIe	mPCIe	mPCIe
Output I/F	GbE LAN x 1	GbE LAN x 2	GbE LAN x 1	GbE LAN x 2
Output Connector	RJ45 x 1	RJ45 x 2	RJ45 x 1	RJ45 x 2
Dimension (WxLxH/mm)	30 x 50.9 x 7.6	30 x 50.9 x 7.6	30 x 50.9 x 5.8	30 x 50.9 x 5.8
Operating Temperature	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃
Order Infomation	EMPL-G101-C1 EMPL-G101-W1 EMPL-G101-C2 (with bracket) EMPL-G101-W2 (with bracket)	EMPL-G201-C1 EMPL-G201-W1 EMPL-G201-C2 (with bracket) EMPL-G201-W2 (with bracket)	EMPL-G102-C1 (Terminal mounting hole, Standard Temp.) EMPL-G102-W1 (Terminal mounting hole , Wide Temp.) EMPL-G102-C2 (Bracket, Standard Temp.) EMPL-G102-W2 (Bracket, Wide Temp.)	EMPL-G202-C1 (Terminal mounting hole, Standard Temp.) EMPL-G202-W1 (Terminal mounting hole , Wide Temp.) EMPL-G202-C2 (Bracket, Standard Temp.) EMPL-G202-W2 (Bracket, Wide Temp.)

Model Name	EGPL-G101	EGPL-G201	EGPL-G102	EGPL-G202
Module Type	M.2 to single isolated GbE LAN Module	M.2 to dual isolated GbE LAN Module	M.2 to single isolated GbE LAN Module	M.2 to dual isolated GbE LAN Module
Key Features	1. Single isolated GbE LAN port 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible daughter board with cable to fit into different system 6. Optional terminal mounting hole or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃	1. Dual isolated GbE LAN ports 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible daughter board with cable to fit into different system 6. Optional terminal mounting hole or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃	1. Single isolated GbE LAN port 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible and small daughter board with cable to fit into different system 6. Optional terminal mounting hole or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃	1. Dual isolated GbE LAN ports 2. Complies with EN61000-4-5 2kV Surge protection 3. Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Flexible and small daughter board with cable to fit into different system 6. Optional terminal mounting hole or bracket for daughter board 7. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	M.2 2280	M.2 2280	M.2 2242	M.2 2242
Input I/F	PCI Express 2.1 x 1	PCI Express 2.1	PCI Express 2.1 x 1	PCI Express 2.1 x 1
Input Connector	M.2 B-M	M.2 B-M	M.2 B-M	M.2 B-M
Output I/F	Gbe LAN x 1	GbE LAN x 2	Gbe LAN x 1	GbE LAN x 2
Output Connector	RJ45 x 1	RJ45 x 2	RJ45 x 1	RJ45 x 2
Dimension (WxLxH/mm)	22 x 80 x 7.1	22 x 80 x 7.1	22 x 42 x 9.15	22 x 42 x 9.15
Operating Temperature	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃
Order Infomation	EGPL-G101-C1 EGPL-G101-W1 EGPL-G101-C2 (with bracket) EGPL-G101-W2 (with bracket)	EGPL-G201-C1 EGPL-G201-W1 EGPL-G201-C2 (with bracket) EGPL-G201-W2 (with bracket)	EGPL-G102-C1 EGPL-G102-W1	EGPL-G202-C1 EGPL-G202-W1

1-4 Serial Port

Various mPCIe-expanded serial cards provide the combination of 2/4/8 ports RS232/RS422/RS485 with PCIe or USB input and ISOLATION/ESD provides efficient system expansions. Software switches that can help switch the serial port RS232/RS422/485 without the need to open system chassis.
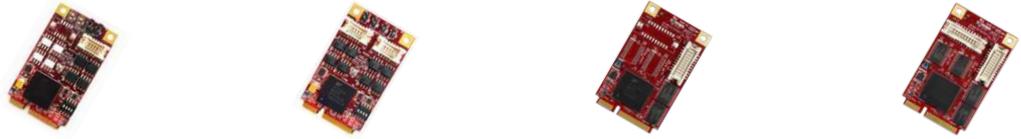
Model Name	EMP2-X202	EMP2-X402	EMP2-X203	EMP2-X403
Module Type	mPCIe to dual RS-422/485 Module	mPCIe to four RS-422/485 Module	mPCIe to dual RS-232 Module	mPCIe to four RS-232 Module
Key Features	1. PCIe 2.0 compliant. RS-422/485 mode configurable by switch. Supports 485HD(Half Duplex) and 485FD (Full Duplex) 2. Up to 25 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Flexible design with DB-9 connectors and cable. 4. Termination Resistor by jumper setting. 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Industrial temperature -40 ℃ to 85 ℃	1. PCIe 2.0 compliant. RS-422/485 mode configurable by switch. Supports 485HD(Half Duplex) and 485FD (Full Duplex) 2. Up to 25 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Flexible design with DB-9 connectors and cable 4. Termination Resistor by jumper setting 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Industrial temperature -40 ℃ to 85 ℃	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 1 Mbps serial data rate. 16550 compatible. 256-byte FIFOs 3. Flexible design with DB-9 connectors and cable 4. Supports CTS/RTS hardware flow control 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Industrial temperature -40 ℃ to 85 ℃	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 1 Mbps serial data rate. 16550 compatible. 256-byte FIFOs 3. Flexible design with DB-9 connectors and cable 4. Supports CTS/RTS hardware flow control 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mPCIe	mPCIe	mPCIe	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0
Input Connector	mPCIe	mPCIe	mPCIe	mPCIe
Output I/F	RS-422/485 x 2	RS-422/485 x 4	RS-232 x 2	RS-232 x 4
Output Connector	DB-9 x 2	DB-9 x 4	DB-9 x 2	DB-9 x 4
Dimension (WxLxH/mm)	30 x 50.9 x 8.2	30 x 50.9 x 8.2	30 x 50.9 x 6.7	30 x 50.9 x 6.7
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Infomation	EMP2-X202-W1	EMP2-X402-W1	EMP2-X203-W1	EMP2-X403-W1

| Model Name	EMP2-X404	EMP2-X801	EMU2-X1S1	EMU2-X2S1
Module Type	mPCIe to four RS-232/422/485 Module	mPCIe to eight RS-232/422/485 Module	USB to single Isolated RS-232 Module	USB to dual Isolated RS-232 Module
Key Features	1. PCIe 2.0 compliant. RS-232/422/485 mode configurable by software 2. Up to 25 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Full RS-232 functions with DB9 connector 4. Termination resistor enabled/disabled by DIP switch 5. RI/5V/12V output switched by Jumper 6. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 7. Industrial temperature -40 ℃ to 85 ℃	1. PCIe 2.0 compliant. RS-232/422/485 mode configurable by software 2. Up to 25 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Flexible design with cable and daughter board x 8 (with DB-9 connectors) 4. Termination Resistor and 5V/12V output by jumper setting on daughterboard 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Industrial temperature -40 ℃ to 85 ℃	1. USB specification Rev. 2.0 compliant 2. Up to 1 Mbps serial data rate. 512-byte FIFOs 3. Full RS232 functions with DB9 connector 4. Supports port-to-port and port-to-computer isolation, complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Power LED, UART TX/RX access LED 7. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation 8. Industrial temperature -40 ℃ to 85 ℃	1. USB specification Rev. 2.0 compliant 2. Up to 1 Mbps serial data rate. 512-byte FIFOs 3. Full RS232 functions with DB9 connector 4. Supports port-to-port and port-to-computer isolation, complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection 5. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 6. Power LED, UART TX/RX access LED 7. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation 8. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mPCIe	mPCIe	mPCIe	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	USB 2.0	USB 2.0
Input Connector	mPCIe	mPCIe	mPCIe or 5Pin Header	mPCIe or 5Pin Header
Output I/F	RS-232/422/485 x 4	RS-232/422/485 x 8	RS-232 x 1	RS-232 x 2
Output Connector	DB-9 x 4	DB-9 x 8	DB-9 x 1	DB-9 x 2
Dimension (WxLxH/mm)	30 x 50.9 x 6.1	30 x 50.9 x 6.1	30 x 50.9 x 6.1	30 x 50.9 x 6.1
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Infomation	EMP2-X404-W1	EMP2-X801-W1	EMU2-X1S1-W1	EMU2-X2S1-W1

innodisk

| Model Name	EMP2-X4S1	EMP2-X4S2	EGP2-X401
Module Type	mPCIe to four Isolated RS-485 Module	mPCIe to dual Isolated RS-422 & RS-485 Module	M.2 to four RS-232/422/485 Module
Key Features	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 10 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Supports port-to-computer isolation, complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Termination Resistor by switch setting 6. Industrial temperature -40 ℃ to 85 ℃	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 10 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Supports port-to-computer isolation, complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. Termination Resistor by switch setting 6. Industrial temperature -40 ℃ to 85 ℃	1. PCIe 2.0 compliant. RS-232/422/485 mode configurable by software 2. Up to 25 Mbps serial data rate. 16C550 compatible. 256-byte FIFOs 3. Alternative vertical or horizontal connector 4. Full RS-232 functions with DB9 connector 5. Termination resistor enabled/disabled by DIP switch 6. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 7. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mPCIe	mPCIe	M.2 2242
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0 x 1
Input Connector	mPCIe	mPCIe	M.2 B-M
Output I/F	RS-485 x 4	RS-422 x 2, RS-485 x 2	RS-232/422/485 x 4
Output Connector	DB-9 x 4	DB-9 x 4	DB-9 x 4
Dimension (WxLxH/mm)	30 x 50.9 x 12.55	30 x 50.9 x 12.55	Vertical : 22 x 42 x 6.45 Horizontal : 22 x 42 x 7.65
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Infomation	EMP2-X4S1-W1	EMP2-X4S2-W1	EGP2-x401-W1 (Vertical connector) EGP2-x401-W2 (Horizontal connector)

1-5 DIO

Digital I/O (Digital Input and Output). Digital Inputs allow a host system to detect logic states, and Digital Outputs allow a host system to output logic states. Innodisk digital input/output expansion cards aim to fulfil the IoT communication needs of industrial systems. We provide API, which supports Windows and Linux as well as test utilities and sample codes. Users can quickly verify the functionality of the card and easily integrate it into their applications.

The Utility Console

Programmable DIO

Configurable Input / Output

Status Setting

Supports External Interrupt

Input Status Change Notification

Model Name	EMUI-0D01
Module Type	USB to 32bit Digital I/O Module

Key Features	1. 32bit digital I/O in 4 ports(each port 8bit)
	2. Programmable I/O
	3. Selectable VCCIO 3.3V or 5V by DIP switch
	4. Buffered I/O
	    (Output 5V, 32mA source, 32mA sink)
	    (Output 3.3V, 24mA source, 24mA sink)
	5. 4 external interrupts with rising/falling edge on port D
	6. Keep configuration after hardware reboot
	7. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation
	8. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
	9. Industrial temperature(-40 ℃ to 85 ℃) operation

Form-Factor	mPCIe
Input I/F	USB 2.0
Input Connector	mPCIe or 5Pin Header
Output I/F	32bit Digital I/O
Output Connector	40pin 1.25mm (40DP-1.25) with DB37 male cable
Dimension (WxLxH/mm)	30 x 50.9 x 8.2
Operating Temperature	Wide temp : -40°~85°C
Order Infomation	EMUI-0D01-W1

Disk Array

Innodisk provides RAID (Redundant Array of Independent Disks) modules to combine multiple types of embedded flash for the purposes of data redundancy or capacity aggregation.

| Model Name	EMSS-32R1	EMPS-32R1	EGSS-32R1
Module Type	mPCIe to dual SATA III RAID module	mPCIe to dual SATA III RAID module	M.2 2242 to SATA RAID module
Key Features	1. Supports SATA to dual SATA III Port Multiplier 2. Supports H/W RAID 0/1 over SATA 3. optional USB 2.0 to dual SATA III 4. Industrial temperature -40 ℃ to 85 ℃	1. PCIe to dual SATA III ports 2. Supports AHCI, Port-Multiplier 3. Supports Hardware RAID 0, RAID1 4. Industrial temperature -40 ℃ to 85 ℃	1. Supports SATA to dual SATA III Port Multiplier 2. Supports H/W RAID 0/1 over SATA 3. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mSATA	mPCIe	M.2 2242
Input I/F	SATA III	PCI Express 2.0	SATA III
Input Connector	mPCIe	mPCIe	M.2 B-M
Output I/F	SATA III	SATA III	SATA III
Output Connector	SATA 7 Pin x 2	SATA 7 Pin x 2	SATA 7 Pin x 2
Dimension (WxLxH/mm)	29.8 x 50.8 x 11.5	30.0 x 50.9 x 10.7	22.0 x 42.0 x 10.8
Operating Temperature	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C
Order Infomation	EMSS-32R1-C1 EMSS-32R1-W1	EMPS-32R1-C1 EMPS-32R1-W1	EGSS-32R1-C1 EGSS-32R1-W1

Model Name	E2SS-32R1	E2SS-32R2	ELPS-32R1
Module Type	2.5" SSD to dual mSATA RAID module	2.5" SSD to dual M.2 RAID Module	PCIe x 4 to dual M.2 RAID Module
Key Features	1. 2.5" SSD to dual mSATA slots 2. Supports SATA III to SATA III port multiplier 3. Supports H/W RAID 0/1 over SATA 4. Excellent data transfer speed	1. 2.5" SSD to dual M.2 slots. 2. Supports M.2 Key-B 2242/2260/2280 3. Supports SATA III to SATA III Port Multiplier. 4. Supports H/W RAID 0/1 over SATA 5. Excellent data transfer speed	1. PCIe x 4 to dual M.2 ports. 2. Supports M.2 Key-B 2242/2260/2280/22110 3. Support wide temp 4. Supports AHCI, Port-Multiplier. 5. Supports Native Command Queuing 6. Support Hardware RAID 0, RAID 1
Form-Factor	2.5" SSD	2.5" SSD	Low Profile PCIe
Input I/F	SATA III	SATA III	PCI Express 2.0 x 2
Input Connector	SATA 7+15 Pin	SATA 7+15 Pin	PCIe x 4
Output I/F	SATA III	SATA III	SATA III
Output Connector	mSATA x 2	M.2 Key-B x 2	M.2 Key-B x 2
Dimension (WxLxH/mm)	69.85 x 100.1 x 11.0	69.85 x 100.1 x 11.0	130.35 x 68.9 x 12.0
Operating Temperature	STD temp : 0°~70°C	STD temp : 0°~70°C	STD temp : 0°~70°C Wide temp : -40°~85°C
Order Infomation	E2SS-32R1-C1	E2SS-32R2-C1	ELPS-32R1-C1 ELPS-32R1-W1

iRAID

Simplifying the configuration and management of innodisk's RAID controller

Innodisk's iRAID is a Redundant Array of Independent Disks (RAID) management tool that enables system integrators to configure, monitor, and manage RAID 0 and RAID 1 storage configurations on Solid State Drives (SSDs). When used in combination with innodisk's RAID cards and compatible SSDs, iRAID becomes a powerful monitoring tool that provides detailed Self-Monitoring, and Reporting Technology information (SMART info).

We provide RAID card for embedded flash modules in standard PCIe, 2.5" and minicard form factor, alongside the software "iRAID" dedicated to the management and configuration of RAID volume.
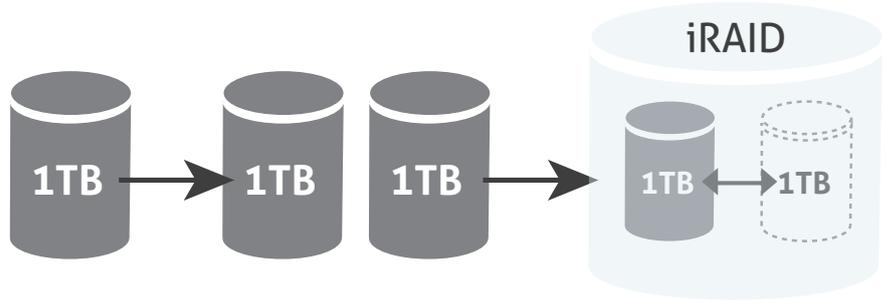
Features

- Monitor RAID status
- Change RAID mode
- Get S.M.A.R.T information
- Notification by Email
- Supports Windows and Linux

Display Card

Innodisk's embedded graphic card features a 2D graphic engine and supports resolutions up to 1920 x 1080. With a fanless design, our mPCIe graphic cards can operate at temperatures ranging from -40°C to 85°C. With support for both Windows and Linux drivers, Innodisk's Display Cards are suitable for a wide variety of industrial platforms.

Model Name	EMPV-1201	EMPV-1202	EGPV-1101
Module Type	mPCIe to dual VGA & HDMI(DVI) module	mPCIe to VGA & 18/24 bit LVDS module	M.2 to to HDMI or DVI & Single/Dual Channel LVDS Module
Key Features	1. mPCIe to dual VGA & HDMI Graphic Card. 2. VGA Output: 1920x1080, up to 75Hz vertical rate. 3. HDMI/DVI up to 1080p, Ultra low power consumption. 4. Optional VGA/HDMI/DVI cable 5. 90°, 180°, and 270° rotation of on-screen images 6. Industrial temperature -40 ℃ to 85 ℃	1. VGA Output up to 1920x1080, up to 75Hz vertical rate 2. LVDS resolution supports up to 1600 x 1200 3. EMPV-1202-C1 supports 18/24 bit JEIDA LVDS 4. EMPV-1202-C2 supports 24 bit VESA LVDS 5. Allow for 90°, 180°, and 270° rotation of on-screen images. 6. Industrial temperature -40 ℃ to 85 ℃	1. Support display output of HDMI 1.4 or DVI-D, single/dual 24bit LVDS channel 2. Single HDMI/DVI-D display resolution up to 4K UHD (3840x2160@30p) 3. Dual LVDS display resolution up to FHD (1920x1080@60p) 4. HW video decoder supports multiple formats H264\AVC\DIVX\XVID\MPEG-4\MPEG-2 5. Built-in 256MB DDR 3 memory. 6. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	mPCIe	mPCIe	M.2 2280
Input I/F	PCI Express 1.0	PCI Express 1.0	PCI Express 2.0 x 2
Input Connector	mPCIe	mPCIe	M.2 B-M
Output I/F	VGA x 2, HDMI x 1(Optional DVI x 1)	VGA, 18/24 bit LVDS	HDMI or DVI-D x 1 , Single & Dual LVDS
Output Connector	40pin 1.25mm x 2 (40DP-1.25)	40pin 1.25mm x 1 (40DP-1.25)	20 pin x 1(HDMI), 20 pin x 2 (LVDS)
Dimensions(W*L*H/mm)	31.5 x 50.9 x 8.2	30.0 x 50.9 x 8.2	30.0 x 50.9 x 8.2
Operating Temperature	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃
Order Infomation	EMPV-1201-C1 EMPV-1201-W1	EMPV-1202-C1, EMPV-1202-W1 EMPV-1202-C2, EMPV-1202-W2	EGPV-1101-C1, EGPV-1101-W1 EGPV-1101-C2, EGPV-1101-W2

Storage

Innodisk specializes in wide range of storage interface including PCIe/SATA/USB/PATA. Our modules allow system integrator to expand or convert those interfaces in embedded system.

Model Name	EMPS-3201	EMPS-3401	EGPS-3401	EMPU-3201
Module Type	mPCIe to dual SATA III module	mPCIe to four SATA III module	M.2 3042 to four SATA module	mPCIe to dual USB 3.0 module
Key Features	1. PCIe 2.0 to dual SATA III ports 2. Low power consumption 3. Supports AHCI, Port-Multiplier 4. Industrial temperature -40 ℃ to 85 ℃	1. PCIe 2.0 to four SATA III ports 2. Supports AHCI, Port-Multiplier 3. Low power consumption 4. Industrial temperature -40 ℃ to 85 ℃	1. PCIe 2.0 to four SATAIII ports 2. Supports AHCI, Port-Multiplier 3. Low power consumption	1. Compliant with PCI Express Base Specification Revision 2.0 2. Compliant with Universal Serial Bus 3.0 Specification Revision 1.0 3. Supports 2 downstream USB 3.0 ports 4. Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV 5. 30μ golden finger, 3 year warranty.
Form-Factor	mPCIe	mPCIe	M.2 3042	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0 x 1	PCI Express 2.0
Input Connector	mPCIe	mPCIe	M.2 B-M	mPCIe
Output I/F	SATA III	SATA III	SATA III	USB 3.0
Output Connector	SATA 7 Pin x 2	SATA 7 Pin x 4	SATA 7 Pin x 4	19 Pin box header x 1
Dimension (WxLxH/mm)	30.0 x 50.9 x 10.7	30.0 x 50.9 x 10.9	30 x 42 x 10.4	30.0 x 50.9 x 8.45
Operating Temperature	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃	STD temp : 0°~70℃ Wide temp : -40°~85℃
Order Infomation	EMPS-3201-C1 EMPS-3201-W1	EMPS-3401-C1 EMPS-3401-W1	EGPS-3401-C1	EMPU-3201-C1 EMPU-3201-W1

Model Name	EMPU-3401	ELPS-3201	ESPS-3401
Module Type	mPCIe to four USB 3.0 module	PCIe x 4 to dual M.2 Module	PCIe to four SATA III card
Key Features	1. PCI Express 2.0 to 4 x USB ports with SuperSpeed (5Gbps) data rate 2. Independent 1.5A overcurrent protection (OCP) for each port 3. Compliant with xHCI 1.0, USB 3.0 Rev 1.0 4. Supports USB Battery Charging Specification Revision 1.2 5. Industrial temperature -40 ℃ to 85 ℃	1. PCIe x 4 to dual M.2 ports 2. Supports M.2 Key-B 2242/2260/2280/22110 3. Supports AHCI, Port-Multiplier 4. Supports Native Command Queuing 5. Industrial temperature -40 ℃ to 85 ℃	1. PCIe 2.0 to four SATA III ports 2. Supports AHCI, Port-Multiplier 3. Low power consumption
Form-Factor	mPCIe	Standard PCIe	Standard PCIe
Input I/F	PCI Express 2.0	PCI Express 2.0 x 2	PCI Express 2.0
Input Connector	mPCIe	PCIe x 4	PCIe x 1
Output I/F	USB 3.0	SATA III	SATA III
Output Connector	19 Pin box header x 2	M.2 Key-B x 2	SATA 7 Pin x 4, mSATA x 1
Dimension (WxLxH/mm)	30.0 x 50.9 x 8.45	130.35 x 68.9 x 12.75	72.1 x 69.8 x 8.3
Operating Temperature	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃ Wide temp : -40°~85℃	STD temp : 0°~70℃
Order Infomation	EMPU-3401-C1 EMPU-3401-W1	ELPS-3201-C1 ELPS-3201-W1	ESPS-3401-C1

innodisk

Testing Tool

Innodisk provides flash storage with different interfaces and form factors. In order to help customers, we also design the signal converter for testing purposes. The customer can test different types of embedded flash modules with one card.
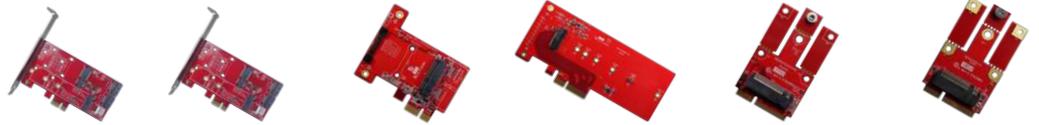
Model Name	ESXS-2301	ESXS-2302	ELPP-0101	ELPP-0102	EMXX-0101	EMXX-0102
Module Type	Multipurpose PCIe to mSATA & M.2 card (Backside mSATA)	Multipurpose PCIe to mSATA & M.2 card (Backside mPCIe)	PCIe x 1 to mPCIe Module	PCIe to M.2 Module	mPCIe to M.2 A-E key module	mPCIe to M.2 B key module
Key Features	1. Supports low profile/ standard PCIe form factor 2. Supports external SATA III and USB 2.0 signal to mSATA & M.2 2242/2260/2280 slot. (Front side) 3. Supports mSATA converted from PCIe signal(Backside)	1. Supports low profile/ standard PCIe form factor 2. Supports external SATA III and USB 2.0 signal to mSATA & M.2 242/2260/2280(Front Side) 3. PCIe to mPCIe pass-through design (BackSide)	1. PCI-Express specification Rev. 2.0 compliant 2. PCIe x1 to mPCIe pass-through design	1. PCI-Express specification Rev. 3.0 compliant 2. PCIe x4 to M.2 pass-through design 3. Supports M.2 Key-M 2221/ 2230/2242/2260/ 2280/22110 4. Low profile PCI Express form factor 5. Industrial temperature -40 ℃ to 85 ℃	1. PCIe and USB signal pass-through design 2. Supports M.2 A-E key wireless module such as 3G, 4G, WLAN, WWAN, Bluetooth 3. Supports M.2 2230/2242 form factor 4. Supports M.2 PCIe Lane #0 & Lane 1 by pin header setting 5. Industrial temperature -40 ℃ to 85 ℃	1. Support M.2 2230/2242 B key form factor 2. Compliant with PCI Express Base Specification 3. Compliant with Universal Serial Bus 2.0 Specification 4. Compliant with SATA III Specification 5. Optional NANO SIM slot on the back side 6. Industrial temperature -40 ℃ to 85 ℃
Form-Factor	Standard PCIe	Standard PCIe	Low profile PCIe	Low profile PCIe	mPCIe	mPCIe
Input I/F	PCI Express 1.0, SATA II, USB 2.0	PCI Express 1.0, SATA II, USB 2.0	PCI Express 2.0	PCI Express 3.0	PCI Express , USB 2.0	PCI Express, USB 2.0, SATA
Input Connector	PCIe x 1	PCIe x 1	PCIe x 1	PCIe x 4	mPCIe	mPCIe
Output I/F	USB 2.0, SATA III(frontside) SATA II(backside)	USB 2.0, SATA III(frontside) PCI Express 1.0(backside)	PCI Express 2.0	PCI Express 3.0	PCI Express , USB 2.0	PCI Express , USB 2.0, SATA
Output Connector	mSATA x 2 (Front and Back) M.2 x 1(2242/2260/2280)	mPCIe x 1(backside), mSATA x 1 M.2 x 1(2242/2260/2280)	mPCIe x 1	M.2 Key-M	M.2 Key-A-E	M.2 Key B
Dimensions(W*L*H/mm)	110.0 x 68.9 x 12.3	110.0 x 68.9 x 12.3	72.1 x 68.9 x 10.2	143.3 x 68.9 x 5.65	30 x 54.4 x 8.15	30 x 54.4 x 6.4
Operating Temperature	STD temp : 0°~70℃	STD temp : 0°~70℃	STD temp : 0°~70℃	Wide temp : -40°~85℃	Wide temp : -40°~85℃	Wide temp : -40°~85℃
Order Infomation	ESXS-2301-C1	ESXS-2302-C1	ELPP-0101-C2	ELPP-0102-W1	EMXX-0101-W1 (M.2 Key-A) EMXX-0101-W2 (M.2 Key-E)	EMXX-0101-W1 EMXX-0101-W2 (SIM slot included)

Product Overview

Form Factor			Output								
			PCIe	SATA	PATA	USB	POE	VGA Display	LAN	CAN BUS DIO	Serial 232/422..
mPCIe (mSATA)	Input	PCIe		EMPS-3401 EMPS-3201 EMPS-32R1		EMPU-3401 EMPU-3201	EMPL-G2P1 EMPL-G2P2	EMPV-1201 EMPV-1202	EMPL-G101 EMPL-G201 EMPL-G102 EMPL-G202		EMP2-X801 EMP2-X402 EMP2-X403 EMP2-X404 EMP2-X4S1 EMP2-X4S2
		SATA		EMSS-32R1							
		USB								EMUI-0D01 EMUC-B202	EMU2-X1S1 EMU2-X1S2
PCIe Standard	Input	PCIe	ESPS-3401 ELPS-3201 ELPS-32R1				ELPS-32R1				
		SATA									
		USB									
M.2 (NGFF)	Input	PCIe	EGPS-3401				EGPL-G2P1	EGPV-1101	EGPL-G101 EGPL-G201 EGPL-G102 EGPL-G202		EGP2-X401
		SATA	EGSS-32R1								
		USB									
2.5"	Input	SATA	E2SS-32R1 E2SS-32R2								
		PATA									

Our Vision

Absolute Integration™

Absolute Integration™ is our envisioned path that moves toward a more interconnected world.

"To us, integration is not merely the combination of hardware, software and firmware; it is a philosophy that assimilates all relevant elements to create an optimal solution."

Headquarters

Innodisk Corporation

5F., No.237, Sec. 1, Datong Rd., Xizhi Dist.,
New Taipei City, 221, Taiwan

T   +886-2-7703-3000

F   +886-2-7703-3555

E   sales@innodisk.com

Branch Offices

Japan

K.I Bldg 2F/4F, 1-1-14,
Nihonbashiningyocho Chuo-ku,
Tokyo 103-0013 Japan

T   +81-3-6667-0161

F   +81-3-6667-0162

E   jpsales@innodisk.com

Europe

Insulindelaan 115A,
5642CV, Eindhoven
The Netherlands

T   +31-(0)40 3045 400

F   +31-(0)40 3045 419

E   eusales@innodisk.com

USA

42996 Osgood Road,
Fremont, CA 94539 USA

T   +1-510-770-9421

F   +1-510-770-9424

E   usasales@innodisk.com

9 Timber Ln, Marlboro NJ 07746

T +1-732-8530455

F +1-732-7846401

China

807, 8 Floor, Building B, Hengyue
Center, Dengliang Road, Nanshan
District, Shenzhen, China

T   +86-0755-2167-3689
      +86-0755-2167-3690

F   +86-0755-2167-3691

E   sales_cn@innodisk.com

Shanghai **T** +86-021-315-93340
          T +86-021-315-93341
Beijing   **T** +86-010-82458120
Chengdu   **T** +86-28-66320052

For more warranty details, please contact the Innodisk Sales Department or visit our website:
www.innodisk.com