2017 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 and embedded peripherals for industrial and enterprise applications. With satisfied customers across the embedded, aerospace and defense, cloud storage markets and more, we have set ourselves apart with a commitment to dependable products and unparalleled service. This has resulted in products, including embedded peripherals, 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

Firmware Team

Our in-house firmware team has years of customization experience. This dedicated team responds quickly and accurately to customer requests and delivers highly reliable tailor-made solutions.

Intellectual Property

With over 62 product design patents, we develop innovative technology that enhances and benefits industrial applications.

Purpose-Built Factory

All Innodisk products are manufactured in our own industrial-grade factory. We utilize advanced production technology in both pre- and post-production stages to improve the protection of components.

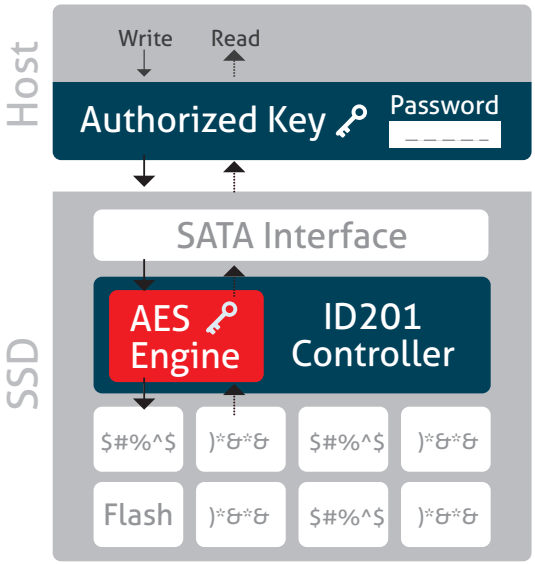
3MG2-P SSD with AES Engine

Enhances Data Security

Data security is critical for many industries in need of protecting their confidential information as well as corporate and national security. Adding encryption has been a common method to ensure the security of data. Currently, the US Government protects their classified data by adopting AES (Advanced Encryption Standard). AES offers an effective way to protect all types of classified data. It is widely used for securing sensitive information throughout various industries such as medical and military. To support the requirements and demands of the market, Innodisk developed the 3MG2-P SSD equipped with an AES 256-bit engine. This product combines a reliable and rugged design with superior performance.

Features

- Equipped with hardware-based AES 256-bit Key
- Instant data erase when destroying the AES key
- TCG OPAL 2.0: independent access control to read/ write/erase
- Capacity up to 2TB
- Exclusive L² architecture
- iData Guard technology for abnormal power failure
- DEVSLP supported for lower power consumption
- Supports wide temperature from -40°C to 85°C



How does Innodisk 3MG2-P AES encryption work ?

After the 3MG2-P receives the data package from the host, the AES engine encrypts the data packets and saves the encrypted data into a NAND flash. This action ensures that there is no unauthorized access to the data in the NAND flash. The 3MG2-P with AES encryption and an ATA security-authorized key can provide advanced security protection for your data with the encryption key being stored in a secured area of the SSD. You can quickly destroy the data on the drive by simply destroying the AES key because without the AES key, the data cannot be unencrypted. This method is faster than a software-based encryption and takes less than 1 second to perform.



SATA 3ME4 Series

Featuring Exclusive L^3 Architecture Firmware and the Marvell NAND Controller

The brand new SATA 3ME4 series, featuring Innodisk's exclusive L^3 Architecture Firmware and the latest Marvell NAND controller, 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.

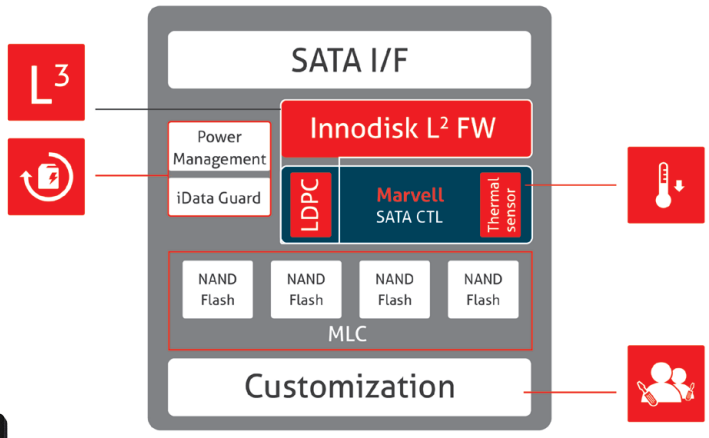
Features

- Innodisk L^3 architecture FW
- Latest LDPC ECC Engine
- Extended product lifespan
- Thermal sensor supported in both standard and wide temperature
- Support iData Guard/TRIM/NCQ/iSMART
- Support hardware write protect*

*optional

L^3 Architecture = L^2 x LDPC

LDPC (Low Density Parity Check), a very powerful ECC technology, is now being used in MLC NAND flash memory to increase endurance and reliability.



Featured Products



SATADOM 3ME4 | CFast 3ME4 | SSD 3ME4 | SATA Slim 3ME4 | mSATA 3ME4 | M.2 P42



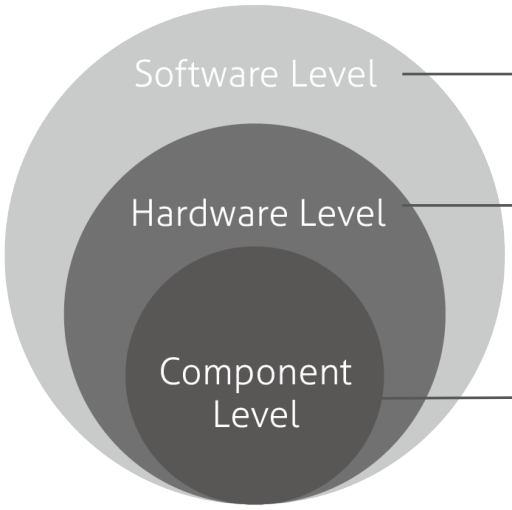
The Absolute Backup & Recovery Kit

Ensures Data Protection at All Levels

Guaranteeing the continuous and safe operation of embedded systems is a vital task nowadays. At the crux of this task is the proper protection of data security in these systems, which may suffer a sudden crash under unpredictable circumstances. Innodisk provides a tailor-made kit for backup and recovery, which effectively minimizes the risk of disk failure. This kit ensures data protection at all levels in a system : component, system hardware and system software.

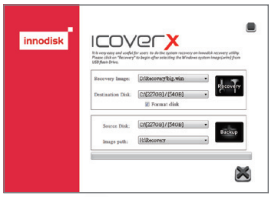
Features

- Industrial-design hardware RAID module is more reliable for use in embedded systems by placing less strain on the kernel.
- Simple UI(user interface) layout allows embedded users to manage backup and recovery at ease.
- More cost effective compared to bulky and expensive RAID solution from PC/Server.



Disaster Recovery Software:

Recovery through one-key or remote access, allowing the system to run with zero downtime.



Compact Flash RAID Module:

Industry's tiniest backup (RAID 1) solution, coupled with iRAID software to monitor real time status and ensure service continuity.

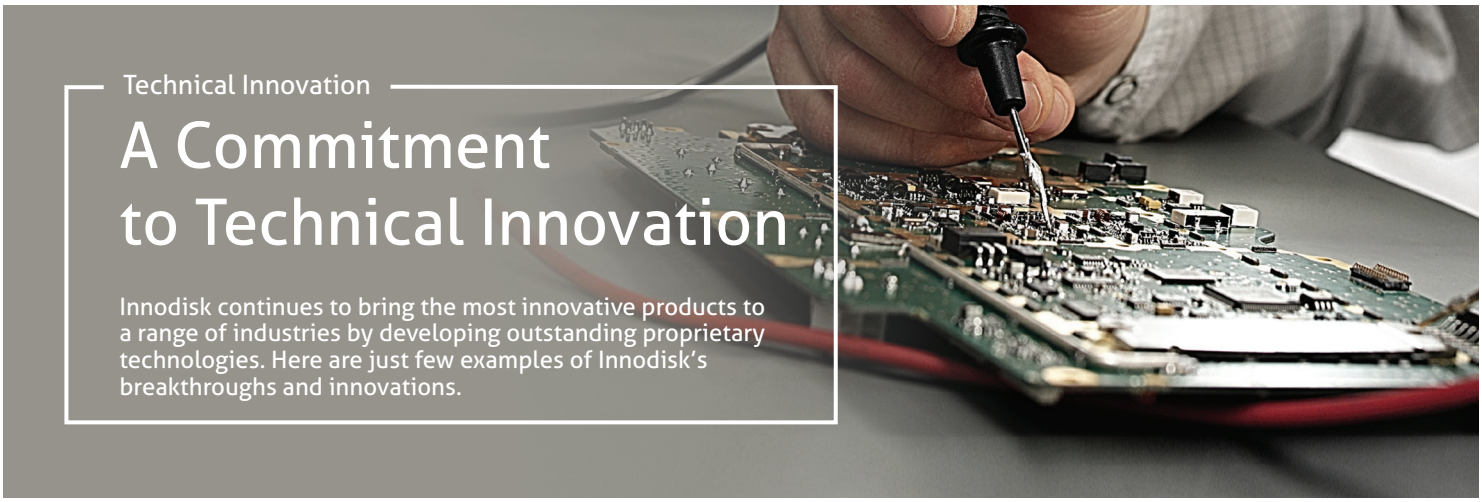


Infallible SSD:

Perfect for PC-based controllers operating under harsh, high-vibration environments.



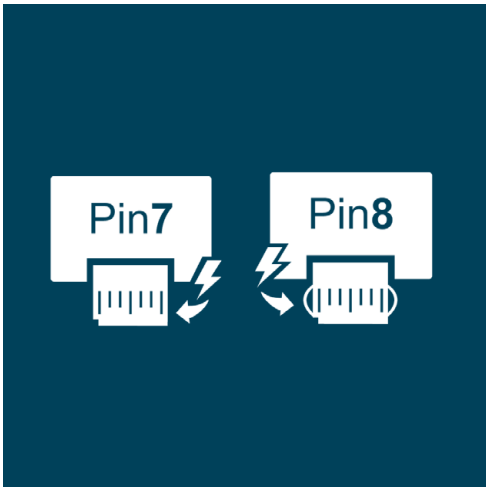




Technical Innovation

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.



Pin 7/Pin 8

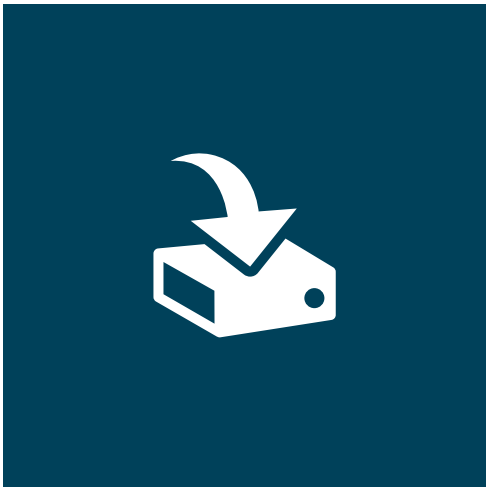
Cable-less SATA Power

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

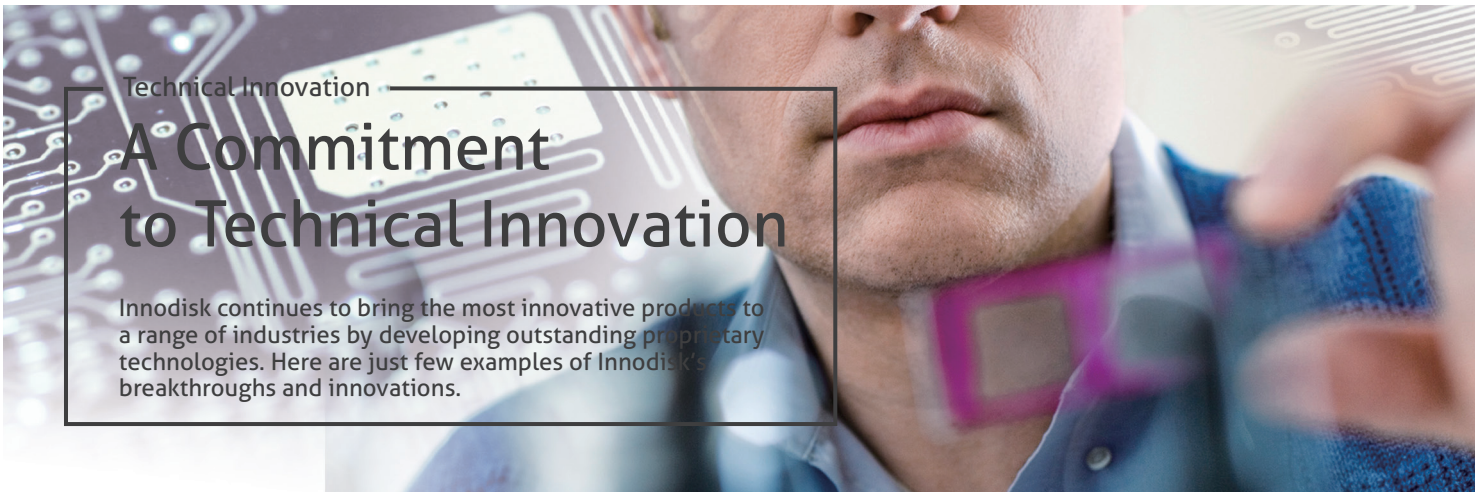
iSMART is a powerful, easy-to-use SSD and HDD health monitoring tool. It allows system integrators to track important disk information, such as temperature, storage space, bad blocks, lifespan and firmware, all under one platform. With iSMART, system integrators can better manage disk usage and know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



Technical Innovation

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.



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.

Power on Protection

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 times, increasing the lifespan to at least 7 times longer than MLC-based solutions.



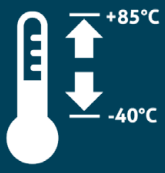
Add-on Value Selections

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.

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 military and industrial application. Wide temperature design is vital in ensuring operation and performance reliability in extreme temperatures.

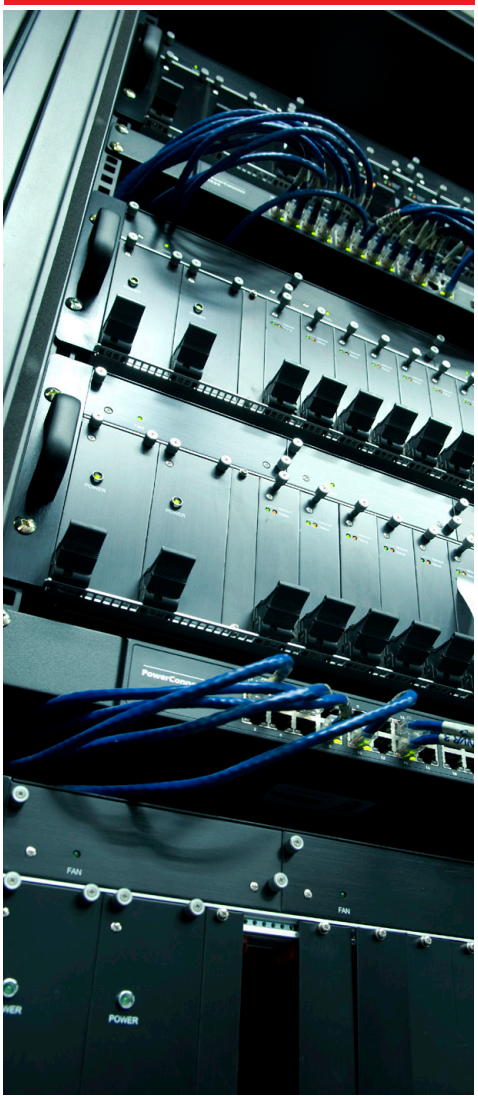
Side Fill



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. It has been tested 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 for these applications: factory automation, defense & aerospace and renewable energy.

Different Applications

Innodisk focuses on providing reliable memory products and technologies for mission-critical applications. We understand the importance of quality in industrial embedded flash and DRAM storage products. Therefore, we manufacture all of of our products in our own purpose-built memory production facility to meet the individual needs of each application. Our experienced in-house firmware development team delivers fast turnaround and knowledgable support whenever firmware customization is required.



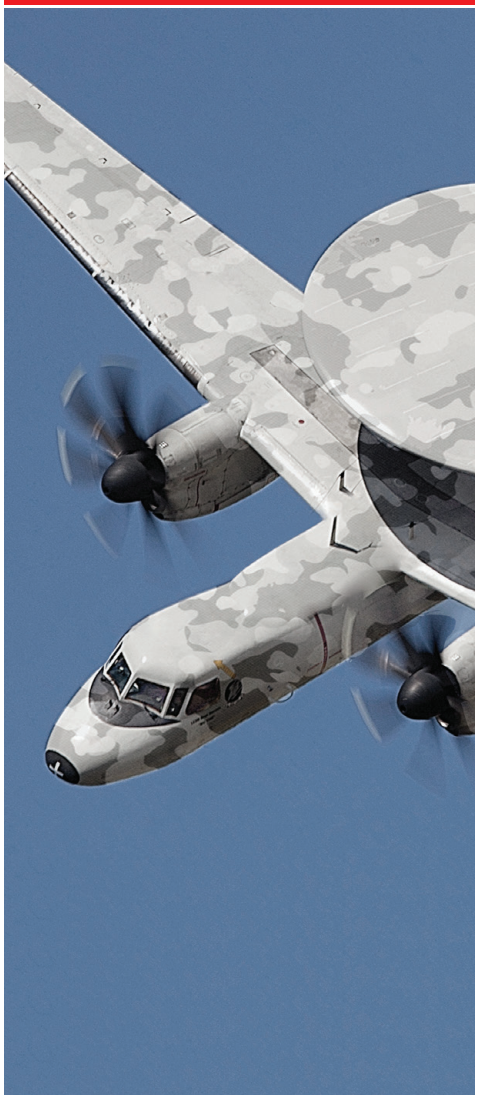
Embedded & Server Boot-up Solution

SATADOM™ is the best boot-up solution for industrial and server applications. Due to its tiny form factor, SATADOM™ frees up a precious bay for other storage options. Specialized as a 1U design within an exclusive Pin8/Pin7 design, it exemplifies true plug & play and eliminates messy cables.



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.

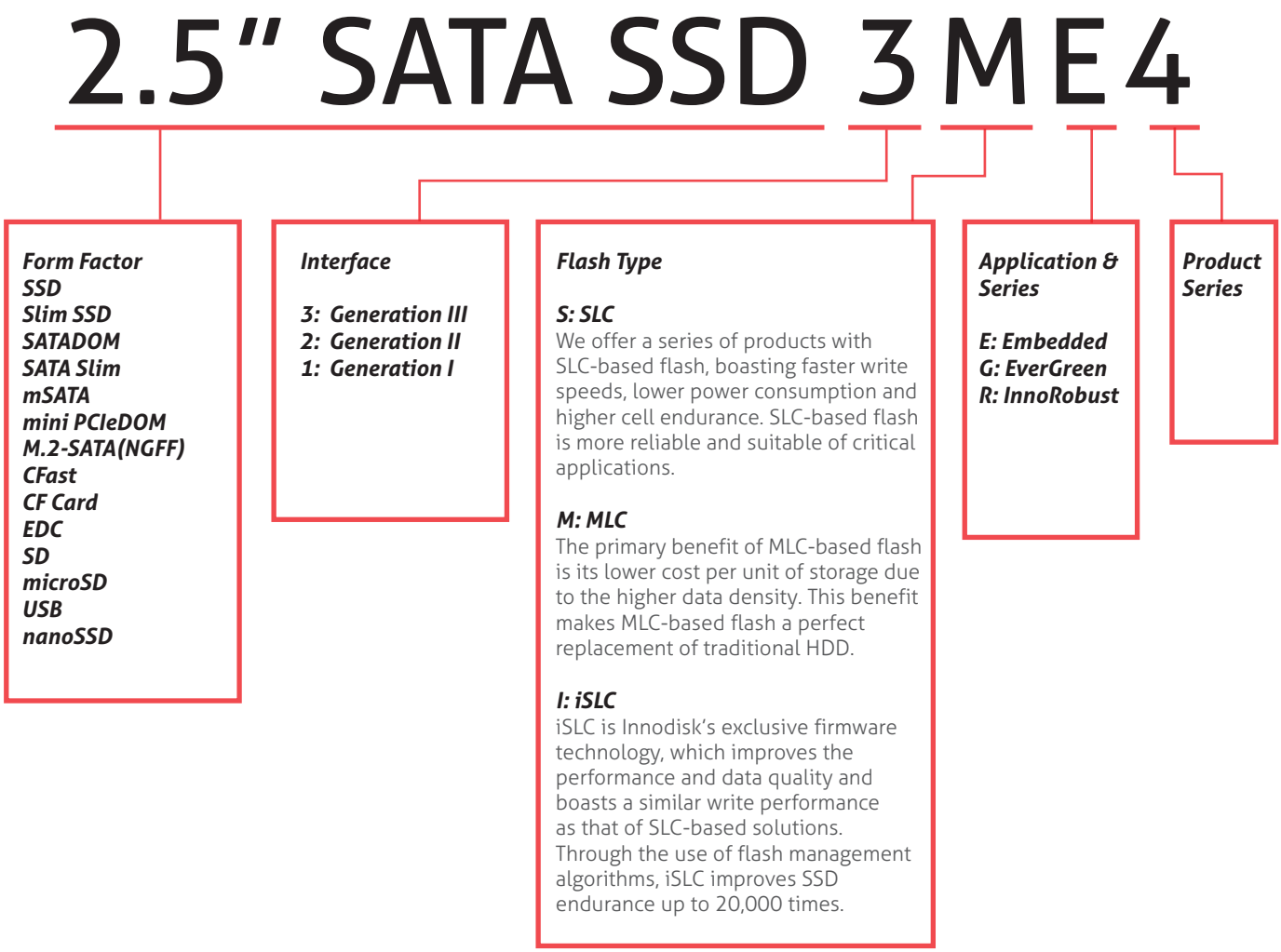


Aerospace and Defense

When it comes to aerospace and defense applications, Innodisk offers the most rugged and robust memory products on the market. Our products not only meet the industries' stringent standards, but also exceed many critical performance requirements, such as reliability and data security.

*For more information on data security, please refer to our Aerospace and Defense Applications brochure.

New Flash Product Naming Rule



G: EverGreen
EverGreen Series is applied with an evolved L^2 Architecture which significantly improves SSD random data transfer rates and lifespan. These features are suitable for specific applications and are best suited for data file sizes smaller than or equal to 128KBytes. When used in this manner, the lifespan of EverGreen can be extended to over 30 times longer than general MLC-based SSDs.

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-810F/G 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.

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.

Table of Contents

Flash Memory Products

M.2-SATA 15

M2DOM 16

nanoSSD 17

SSD 18

SATADOM™ 20

SATA Slim 23

mSATA 24

Mini PCIeDOM 25

EDC 25

CFast 26

CF Card 26

ServerDOM 27

USB 28

SD/micro SD 29

iSMART 30

iService™

iService™ 32

iCover 34

DRAM Module Products

Embedded 36

Server 40

Wide Temperature 42

Special / Customized 43

Embedded Peripheral Modules

Communication 47

Storage 51

Disk Array 52

Display Card 53

Flash Memory

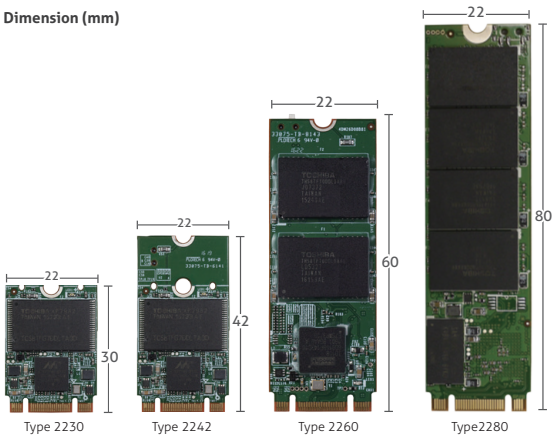
Innodisk flash memory products are designed to be highly reliable and stable, and provide longer life cycles for the embedded and industrial systems in which they are used. Innodisk offers the industry's widest selection of flash memory form factors, including standard 1.8" and 2.5" Industrial SSDs, SATADOM—the smallest high-speed SATA storage in the industry, CompactFlash Cards, mSATA , SATA Slim, and USB Flash Drives. Our products are available in single-level cell (SLC) and multi-level cell (MLC) flash types.

M.2-SATA

M.2 (NGFF) stands for Next Generation Form Factor which is comprised of several interface and the corresponding system interconnect based on 67pin edge card connectors. Innodisk M.2 offers wide range capacities in several standard form factors to fulfill different applications, including type 2230, type 2242, type 2260 and type 2280.

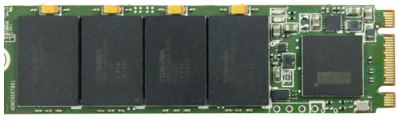
Benefit

- Small form factor : save 40% PCB space compared to Mini PCIe card
- Wide range of form factors and dimensions available, including type 2230/2242/2260/2280
- Fully compliant with industrial standards
- Suitable for ultra-thin or compact devices



Features

- SATA III 6.0 Gb/s interface, compliant with M.2 (NGFF) type 2242 and 2280
- Excellent data transfer speed in small form factor
- iCell technology for data protection
- Supports iSMART disk health monitoring



M.2-2280



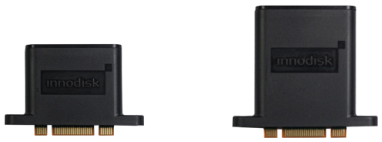



Model Name	M.2 (S42) 3SE3	M.2 (S80) 3SE3	M.2 (S42) 3ME4	M.2 (S80) 3ME4
Key Features	1. Type 2242-D2-B-M 2. High quality SLC-based solution 3. iData Guard Protection	1. Type 2280-D2-B-M 2. High quality SLC-based solution 3. iData Guard Protection	1. Type 2242-D2-B-M 2. Designed with LDPC ECC Engine 3. iData Guard Protection 4. Budget-friendly MLC-based solution	1. Type 2280-D2-B-M 2. Designed with LDPC ECC Engine 3. iData Guard Protection 4. Budget-friendly MLC-based solution
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	SLC	SLC	MLC	MLC
Capacity	4GB~32GB	8GB~128GB	8GB~256GB	8GB~256GB
Max. Channel	2	4	2	2
Sequential R/W (MB/sec, max.)	210/110	380/220	530/210	530/210
Max. Power Consumption	1.2 W (3.3V x 366mA)	1.96W (3.3V x 594mA)	1.4W (3.3V x 422mA)	1.4W (3.3V x 422mA)
Thermal Sensor	STD : N , W/T : 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)	22.0 x 42.0 x 3.5	22.0 x 80.0 x 3.5	22.0 x 42.0 x 3.2	22.0 x 42.0 x 3.2
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours			
Standard Temp. OP (0°C~+70°C)	DEM24-XXXD09SC***	DEM28-XXXD08SC***	DEM24-XXXM41BC***	DEM28-XXXM41BC***
Wide Temp. OP (-40°C~+85°C)	DEM24-XXXD09SW***	DEM28-XXXD08SC***	DEM24-XXXM41BW***	DEM28-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) 3MG2-P	M.2 (S80) 3MG2-P	M.2 (S42) 3ME3	M.2 (S60) 3ME3	M.2 (S42) 3IE3
Key Features	1. Type 2242-D2-B-M 2. High Sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection	1. Type 2280-D2-B-M 2. High Sequential/IOPS performance 3. Support DEVSLP 4. iData Guard Protection	1. Type 2242-D2-B-M 2. High IOPS 3. iData Guard Protection	1. Type 2260-D2-B-M 2. High IOPS 3. iData Guard Protection	1. Type 2242-D2-B-M 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC 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	SATA III 6.0Gb/s
Flash Type	MLC	MLC	MLC	MLC	iSLC
Capacity	32GB~256GB	32GB~1TB	8GB~128GB	32GB~512GB	8GB~64GB
Max. Channel	4	4	2	4	2
Sequential R/W (MB/sec, max.)	530/340	530/430	220/80	380/200	240/170
Max. Power Consumption	1.09 W (3.3V x 330mA)	4.6W (3.3V x 1.4A)	1.3W (3.3V x 370mA)	1.3W (3.3V x 370mA)	1.3W (3.3V x 370mA)
Thermal Sensor	STD : N , W/T : Y				
External DRAM Buffer	Y	Y	N	N	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)	22.0 x 42.0 x 3.5	22.0 x 80.0 x 3.5	22.0 x 42.0 x 3.2	22.0 x 60.0 x 3.5	22.0 x 42.0 x 3.2
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours				
Standard Temp. OP (0°C~+70°C)	DGM24-XXX-D81%C***	DGM28-XXXD81%C***	DEM24-XXXD09%C***	DEM26-XXXD08%C***	DHM24-XXXD09%C***
Wide Temp. OP (-40°C~+85°C)	DGM24-XXX-D81%W***	DGM28-XXXD81%W***	DEM24-XXXD09%W***	DEM26-XXXD08%W***	DHM24-XXXD09%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				

M2DOM



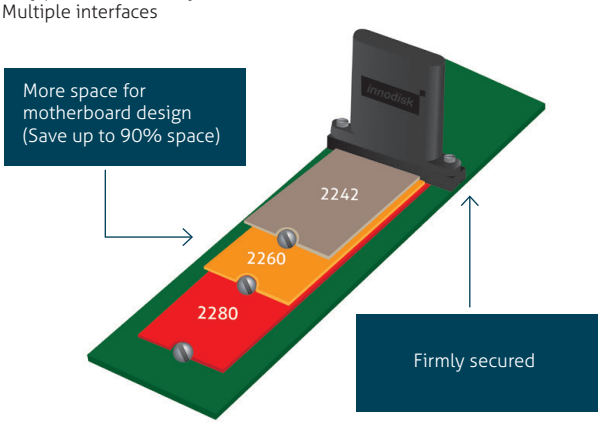
Model Name	M2DOM S20 3ME4	M2DOM S30 3ME4
Key Features	1. Vertical type M.2 storage 2. Standard M.2 pinout 3. Enhanced anti-shock/vibration 4. Less space occupancy (20% of M.2)	
Interface	SATA III 6.0Gb/s	
Flash Type	MLC	MLC
Capacity	8GB~64GB	32GB~128GB
Max. Channel	1	2
Sequential R/W (MB/sec, max.)	210/75	530/200
Max. Power consumption	0.5W (3.3V x 150mA)	1.2 W (3.3V x 366mA)
Thermal Sensor	STD : Y , W/T : Y	
External DRAM Buffer	N	
iData Guard	Y	
iCell	N	
TRIM	Y	
ATA Security	Y	
S.M.A.R.T	Y	
Dimension (WxLxH/mm)	35 x 5.6 x 22.3	35 x 5.6 x 31.3
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours	
Standard temp. OP (0°C~+70°C)	DEMD2-XXXM41SC***	DEMD3-XXXM41SC***
Wide temp. OP (-40°C~+85°C)	DEMD2-XXXM41SW***	DEMD3-XXXM41SW***
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)	

Innovative Design : M2DOM™



Benefit

- M.2 interface-based SSD modules
- Up to 90% space saving!
- Reliable fixed mechanism
- Easy placement and layout
- Multiple interfaces

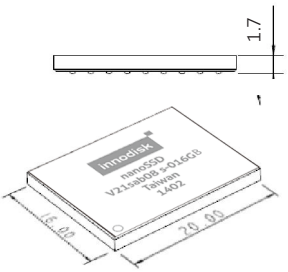


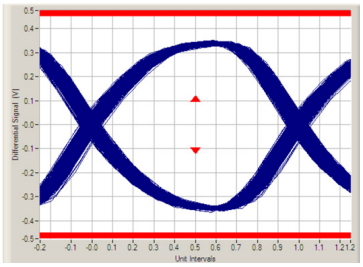
nanoSSD

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.

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

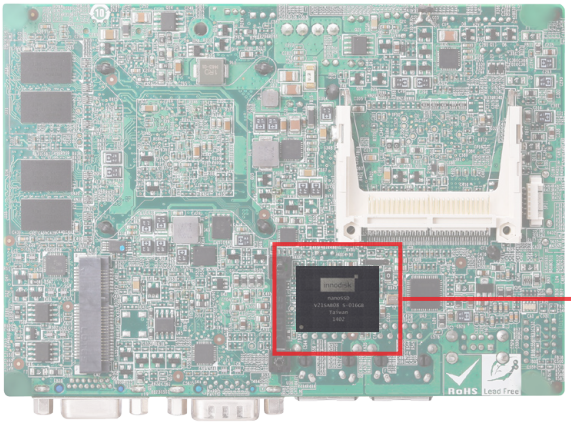


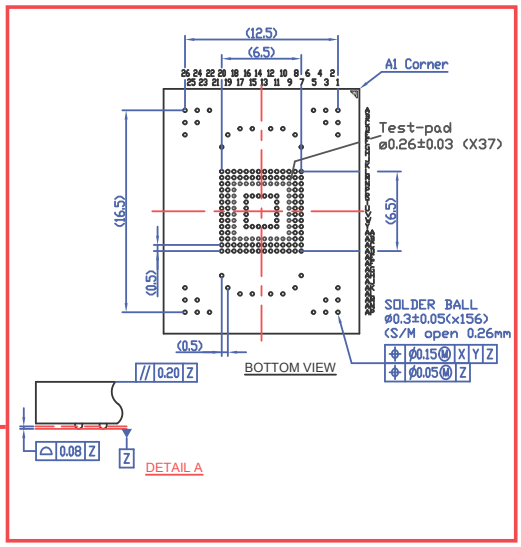


The Innodisk nanoSSD SATA Eye Pattern

Features

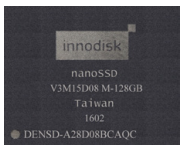
- Integrated NAND Flash controller with Flash in a single chip
- Compliant with JEDEC MO-276 (SATA µSSD) specifications
- SATA III interface with BGA package
- Intelligent Flash management & real time garbage collection

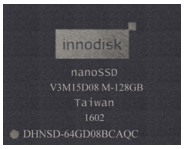




The Innodisk nanoSSD mechanical drawing







Model Name	nanoSSD 3SE	nanoSSD 3ME3	nanoSSD 3IE3
Key Features	1. Controller Flash together in a single chip through utilizing a BGA solution 2. SATA III interface 3. Compliant with JEDEC MO-276 SPEC		
Interface	SATA III 6.0Gb/s		
Flash Type	SLC	MLC	iSLC
Capacity	2GB~16GB	16~128GB	16~64GB
Max. Channel	4		
Sequential R/W (MB/sec, max.)	450/200	410/140	440/260
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***	DENSD-XXXD08BC***	DHNSD-XXXD08BC***
Wide Temp. OP (-40°C~+85°C)	DENSD-XXXD06SW***	DENSD-XXXD08BW***	DHNSD-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 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 3ME4	2.5" SATA SSD 3ME3	2.5" SATA SSD 3MG2-P	2.5" SATA SSD 3MR3-P
Key Features	1. Exclusive L^3 architecture 2. Designed with LDPC ECC engine 3. Excellent IOPS performance	1. High IOPS with DRAM-less design 2. 7mm height mechanical design 3. Low power consumption	1. EverGreen L^2 architecture 2. High Sequential/ IOPS performance 3. Support AES 4. iData Guard Protection	1. Compliant with MIL-STD-810-F/G 2. HW/SW Data Security (Quick Erase/ Destroy/ Security Erase/ Write Protect) 3. iCell supported, 100% data protection
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	MLC	MLC
Capacity	8GB-256GB	16GB-512GB	8GB~2TB	64GB~512GB
Max. Channel	2	4	4	4
Sequential R/W (MB/sec, max.)	530/210	415/200	520/480	490/270
Max. Power Consumption	0.8W (5V x 160mA)	2.73W (5V x 545mA)	6W (5V x 1.2A)	4.5W (5V x 900mA)
Thermal Sensor	Y	STD : N , W/T : Y	Y	STD : N , W/T : Y
External DRAM Buffer	N	N	Y	Y
iData Guard	Y	Y	Y	Y
iCell	N	N	Optional	Y
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y（support iSecurity)
Dimension (WxLxH/mm)	69.8 x 100.1 x 6.9	69.8 x 100.1 x 6.9	69.8 x 100.1 x 6.9 69.8 x 100.0 x 9.5 (2TB)	69.8 x 99.8 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)	DES25-XXXM41%C***	DES25-xXXD09%C*** DES25-XXXD08%C***	DGS25-XXXD81%C***(P) DGS25-XXXD82%C***(P)	DRS25-XXXD70%C***
Wide Temp. OP (-40°C~+85°C)	DES25-XXXM41%W***	DES25-XXXD09%W*** DES25-XXXD08%W***	DGS25-XXXD81%W***(P) DGS25-XXXD82%W***(P)	DRS25-XXXD70%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 3IE3	2.5 SATA SSD 3SE3	2.5" SATA SSD 3SR3-P	1.8" SATA SSD 3SE3-P
Key Features	1.Cost-effective industrial Flash with iSLC 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC	1. Intelligent error recovery system 2. Excellent data transfer speed 3. iData Guard protection	1. Compliant with MIL-STD-810-F/G 2. HW/SW Data Security (Quick Erase/ Destroy/ Security Erase/ Write Protect) 3. iCell supported, 100% data protection	1. High quality SLC-based solution 2. Enhanced power cycling management 3. iSMART disk health monitoring
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	iSLC	SLC	SLC	SLC
Capacity	8GB~256GB	8GB~128GB	8GB~512GB	8GB-512GB
Max. Channel	4	4	4	4
Sequential R/W (MB/sec, max.)	440/240	360/210	490/280	490/230
Max. Power Consumption	4.3W (5V x 870mA)	0.8W (5V x 160mA)	2.65W (5V x 530mA)	1.5 W (5V x 300 mA)
Thermal Sensor	STD : N , W/T : Y			
External DRAM Buffer	N	N	Y	Y
iData Guard	Y	Y	Y	Y
iCell	N	N	Y	N
TRIM	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y（support iSecurity)	Y
Dimension (WxLxH/mm)	69.8 x 100.1 x 6.9	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)	DHS25-XXXD08BC***	DES25-XXXD08SC***	DRS25-XXXD70SC***	DES18-XXXD70SC***
Wide Temp. OP (-40°C~+85°C)	DHS25-XXXD08BW***	DES25-XXXD08SW***	DRS25-XXXD70SW***	DES18-XXXD70SW***
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			





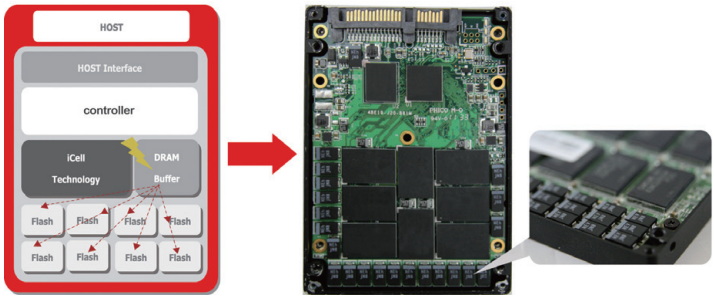






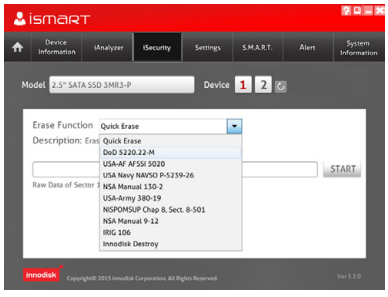
Model Name	1.8" SATA SSD 3MG2-P	1.8" SATA SSD 3MG3-P	PATA 1MG3-P	Slim SSD 3ME3	Slim SSD 3ME4
Key Features	1. Built-in DRAM buffer 2. Intelligent error recovery system 3. Excellent data transfer speed and high IOPS performance 4. iData Guard for abnormal power failure	1. Built-in DRAM buffer 2. Intelligent error recovery system 3. Excellent data transfer speed 4. iData Guard Protection	1. Built-in DRAM buffer 2. Intelligent error recovery system 3. Excellent data transfer speed 4. iData Guard Protection	1.8" housing, 50% space saving	1. 1.8" housing, 50% space saving 2.Exclusive L^3 architecture 3. Designed with LDPC ECC engine
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	PIO Mode 0~4 Ultra DMA 0~5	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	MLC	MLC	MLC	MLC
Capacity	32GB-1TB	8GB~512GB	8GB~512GB	8GB~256GB	8GB~256GB
Max. Channel	4	4	4	4	2
Sequential R/W (MB/sec, max.)	520/450	480/220	90/100	420/140	530/210
Max. Power Consumption	6W (5V x 1.2A)	1.7W (5V x 340 mA)	2W (5V x 400mA)	1.6W (5V x 315mA)	0.8W (5V x 160mA)
Thermal Sensor	Y	STD : N , W/T : Y			Y
External DRAM Buffer	Y	Y	Y	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)	54.0 x 78.5 x 5.0	54.0 x 78.5 x 5.0	69.85 x 99.85 x 9.2	69.85 x 50.0 x 9.0	69.85 x 50.0 x 9.0
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)	DGS18-XXXD81%C***	DGS18-XXXD70%C***	DGP25-XXXD70%C***	DEMLM-XXXD09%C*** DEMLM-XXXD08%C***	DEMLM-XXXM41%C***
Wide Temp. OP (-40°C~+85°C)	DGS18-XXXD81%W***	DGS18-XXXD70%W***	DGP25-XXXD70%W***	DEMLM-XXXD09%W*** DEMLM-XXXD08%W***	DEMLM-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				

What is iCell?



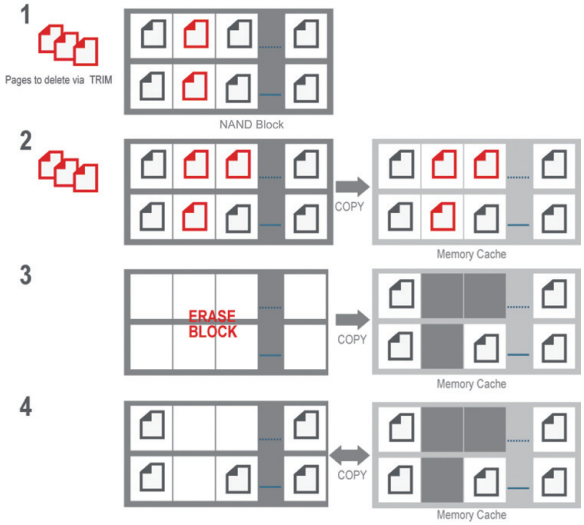
Innodisk's R&D team has integrated iCell Technology into several SSD drives. iCell Technology ensures reliable and accurate data transfers, even in the event of an abnormal power failure.

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, or HDD formats are sent along with the TRIM command to the SSD's controller so the drive can function optimally. TRIM commands clean up garbage data on the SSD that can slow performance down. The TRIM command is generally sent from the OS when the system is idle. This cleans up the blocks with data that need to be erased so that the drive can perform like new.

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."

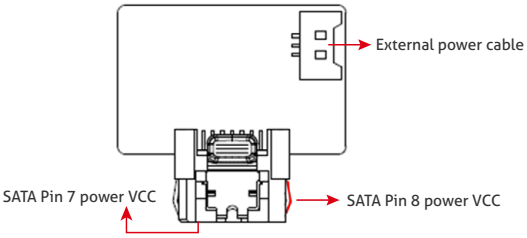
3ME4 series
- High performance
- LDPC
- Low WAI
- SMART supported
- Original MLC designed



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





Model Name	SATADOM-SL 3ME4	SATADOM-SV 3ME4	SATADOM-SH 3ME4	SATADOM-MV 3ME4	SATADOM-ML 3ME4	SATADOM-MH 3ME4
Key Features	1. Vertical and low-profile design for 1U server 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Cable-Less SATA Power Technology	1. Vertical version 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Cable-Less SATA Power Technology	1. Low profile horizontal design 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Cable-Less SATA Power Technology	1. Vertical version. 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Cable-Less SATA Power Technology	1. Vertical and low-profile design for 1U server 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Cable-Less SATA Power Technology	1. Low profile horizontal design 2. Exclusive L^3 architecture 3. Latest LDPC ECC engine 4. High IOPS 5. Cable-Less SATA Power Technology
Interface	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s	SATA III 6Gb/s
Flash Type	MLC	MLC	MLC	MLC	MLC	MLC
Capacity	8GB~64GB	8GB~64GB	8GB~64GB	8GB~128GB	32GB~256GB	32GB~256GB
Max. Channel	2	2	2	2	2	2
Sequential R/W (MB/sec, max.)	340/60	340/60	340/60	400/135	440/200	440/200
Max. Power Consumption	0.74W(5V x 146.9mA)	0.95W(5V x 189mA)	0.95W(5V x 189mA)	0.95W(5V x 180mA)	1.05W(5V x208.7mA)	1.05W(5V x 208.7mA)
Thermal Sensor	Y					
External DRAM Buffer	N	N	N	N	N	N
iData Guard	Y	Y	Y	Y	Y	Y
iCell	N	N	N	N	N	N
TRIM	Y	Y	Y	Y	Y	Y
ATA Security	Y	Y	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	29.6 x 33.06 x 10.5	40.4 x 21.03 x 10.4	32.7 x 18 x 15.15	25.3 x 41.5 x 6.8	31.2 x 36.7 x 10.7	23.5 x 33.6 x 14.8
Environment	3. Latest LDPC ECC engine					
Standard Temp. OP (0°C~+70°C)	DESSL-XXX-M41BC***#	DESSV-XXX-M41BC***#	DESSH-XXX-M41BC***#	DESMV-XXX-M41BC***#	DESML-XXX-M41BC***#	DESMH-XXXM41BC***#
Wide Temp. OP (-40°C~+85°C)	DESSL-XXX-M41BC***#	DESSV-XXX-M41BC***#	DESSH-XXX-M41BC***#	DESMV-XXX-M41BC***#	DESML-XXX-M41BC***#	DESMH-XXXM41BC***#
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) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8 / F=Pin 7)					







Model Name	SATADOM-SL 3ME3 V2	SATADOM-SL 3IE3 V2	SATADOM-SV 3ME3 V2	SATADOM-SV 3IE3 V2	SATADOM-SH 3IE3 V2
Key Features	1. Vertical and low-profile design for 1U server 2. High IOPS 3. Best boot drive solution 4. Lower power consumption 5. Cable-Less SATA Power Technology	1.Compatible with VMware ESXi 6.0.0 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC 4. Cable-Less SATA Power Technology	1. Vertical version 2. High IOPS 3. Best boot drive solution 4. Cable-Less SATA Power Technology	1.Compatible with VMware ESXi 6.0.0 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC 4. Cable-Less SATA Power Technology	1. Low profile horizontal design 2. High IOPS 3. Cable-Less SATA Power Technology
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	MLC	iSLC	MLC	iSLC	iSLC
Capacity	8GB~128GB	8GB~64GB	8GB~128GB	8GB~64GB	8GB~64GB
Max. Channel	2	2	2	2	2
Sequential R/W (MB/sec, max.)	200/80	240/160	200/80	240/160	240/160
Max. Power Consumption	0.65W (5V x 125mA)	0.65W (5V x 125mA)	0.65W (5V x 125mA)	0.65W (5V x 125mA)	0.65W (5V x 126mA)
Thermal Sensor	STD : N , W/T : Y				
External DRAM Buffer	N	N	N	N	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)	30 x 28.4 x 7.4	30 x 28.4 x 7.4	18 x 39.2 x 7.5	18 x 39.2 x 7.5	18.0 x 30.3 x 12.5
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)	DESSL-XXXD09BC***#	DHSSL-XXXD09BC***#	DESSV-XXXD09BC***#	DHSSV-XXXD09BC***#	DHSSH-XXXD09BC***#
Wide Temp. OP (-40°C~+85°C)	DESSL-XXXD09BW***#	DHSSL-XXXD09BW***#	DHSSL-XXXD09%W***(F)	DHSSV-XXXD09BW***#	DHSSH-XXXD09BW***#
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) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8 / F=Pin 7)				









Model Name	SATADOM-SL 3SE3	SATADOM-SV 3SE3	SATADOM-SH 3SE3	SATADOM-SH type C 3SE3	SATADOM-ML 3SE3
Key Features	1. Vertical and low-profile design for 1U server 2. High IOPS 3. Best boot drive solution 4. Lower power consumption 5. Cable-Less SATA Power Technology	1. Vertical version 2. High IOPS 3. Best boot drive solution 4. Lower power consumption 5. Cable-Less SATA Power Technology	1. Low profile horizontal design 2. Only protrudes 12mm on the motherboard 3. High IOPS 4. Cable-Less SATA Power Technology	1. Low profile horizontal design	1. Vertical and low-profile design for 1U server 2. High IOPS 3. Write protect 4. Cable-Less SATA Power Technology
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	SLC	SLC	SLC
Capacity	4GB~32GB	4GB~32GB	4GB~32GB	4GB~32GB	4GB~64GB
Max. Channel	2	2	2	2	4
Sequential R/W (MB/sec, max.)	220/110	220/110	220/110	220/110	400/210
Max. Power Consumption	0.65W(5V x 125mA)	0.33W(5V x 66.7mA)	0.33W(5V x 66.7mA)	0.62W(5V x 124mA)	1.1W(5V x221mA)
Thermal Sensor	STD : N , W/T : Y				
External DRAM Buffer	N	N	N	N	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)	29.6 x 33.06 x 10.5	40.4 x 21.03 x 10.4	32.7 x 18 x 15.15	32.7 x 18 x 14.65	31.2 x 36.7 x 10.7
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)	DESSL-XXXD09SC***#	DESSV-XXXD09SC***#	DESSH-XXXD09SC***#	DESSC-XXXD09SC***#	DESML-XXXD08SC***#
Wide Temp. OP (-40°C~+85°C)	DESSL-XXXD09SW***#	DESSV-XXXD09SW***#	DESSH-XXXD09SW***#	DESSC-XXXD09SW***#	DESML-XXXD08SW***#
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) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8 / F=Pin 7)				









Model Name	SATADOM-ML 3MG2-P	SATADOM-SL 3ME3	SATADOM-SV 3ME3	SATADOM-SH Type C 3ME3
Key Features	1. Vertical and low-profile design for 1U server 2. High IOPS 3. Write protect 4. High performance SATADOM	1. Vertical and low-profile design for 1U server 2. High IOPS 3. Best boot drive solution 4. Lower power consumption	1. Vertical version 2. High IOPS 3. Best boot drive solution	1. Low profile horizontal design 2. High IOPS
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	MLC	MLC
Capacity	32GB-256GB	4GB-128GB	4GB~128GB	4GB~128GB
Max. Channel	4	2	2	2
Sequential R/W (MB/sec, max.)	560/180	200/75	200/75	200/75
Max. Power Consumption	2.68W(5V x 535mA)	0.65W(5V x 125mA)	0.65W(5V x 125mA)	0.65W (5V x 125mA)
Thermal Sensor	Y	N	N	N
External DRAM Buffer	Y	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)	37.17 x 31.5 x 12.6	32.9 x 29.5 x 8.0	20.9 x 39.5 x 7.9	18.0 x 30.3 x 12.5
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)	DGSML-XXXD81BC***#	DESSL-XXXD09SC***#	DESSV-XXXD09SC***#	DESSC-XXXD09SC***#
Wide Temp. OP (-40°C~+85°C)	DGSML-XXXD81BW***#	DESSL-XXXD09SW***#	DESSV-XXXD09SW***#	DESSC-XXXD09SW***#
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) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8 / F=Pin 7)			








Model Name	SATADOM-SH Type D 3ME3	SATADOM-MV 3ME3	SATADOM-ML 3ME3	SATADOM-MH 3ME3
Key Features	1. Low profile horizontal design 2. High IOPS	1. Vertical version. 2. High IOPS 3. Write protect 4. Supports TRIM	1. Low-profile design for 1U server 2. High IOPS 3. Write protect	1. Horizontal design 2. High IOPS 3. Write protect
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	MLC	MLC
Capacity	4GB~128GB	16GB-128GB	16GB-256GB	8GB-128GB
Max. Channel	2	4	4	2
Sequential R/W (MB/sec, max.)	200/75	355/135	355/135	200/75
Max. Power Consumption	0.65W(5V x 125mA)	1W(5V x 200mA)	1W(5V x 200mA)	1W(5V x 200mA)
Thermal Sensor	STD : N , W/T : 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)	30.0 x 27.5 x 12.0	25.3 x 41.5 x 6.8	35.5 x 30 x 9.5	40.0 x 30.0 x 12.3
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)	DESSF-XXXD09SC***#	DESMV-XXXD09SC***# DESMV-XXXD08SC***#	DESML-XXXD08SC***#	DESMH-XXXD09SC***#
Wide Temp. OP (-40°C~+85°C)	DESSF-XXXD09SW***#	DESMV-XXXD09SW***# DESMV-XXXD08SW***#	DESML-XXXD08SW***#	DESMH-XXXD09SW***#
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) #=power supply method(A=pin 8+ external power cable / B=Pin 7+ Pin 8 / F=Pin 7)			

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 3IE3	SATA Slim 3SE3	SATA Slim 3MG2-P
Key Features	1. Cost-effective industrial Flash with iSLC 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC	1. Half Slim, space saving 2. Compatible with JEDEC MO-297 3. Excellent data transfer speed and IOPS	1. EverGreen L² architecture 2. High Sequential/IOPS performance 3. Support AES 4. iData Guard protection
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	iSLC	SLC	MLC
Capacity	8GB~128GB	8GB~128GB	8GB~256GB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max.)	440/220	370/220	520/290
Max. Power Consumption	1.6W (5V x 310mA)	2W (5V x 400mA)	2.6W (5V x 520mA)
Thermal Sensor	STD : N , W/T : 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)	54.0 x 39.0 x 4.0	54.0 x 39.0 x 4.0	54.0 x 39.8 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-XXXD08%C***	DESLM-XXXD08%C***	DGSLM-XXXD81%C***
Wide Temp. OP (-40°C~+85°C)	DHSLM-XXXD08%W***	DESLM-XXXD08%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		




Model Name	SATA Slim 3ME3	SATA Slim 3ME4
Key Features	1. Half Slim, space saving 2. High random performance 3. Budget -friendly MLC-based solution 4. Compatible with JEDEC MO-297	1. Exclusive L³ architecture 2. Designed with LDPC ECC engine 3. Compatible with JEDEC MO-297
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	MLC
Capacity	8GB~256GB	8GB~256GB
Max. Channel	4	2
Sequential R/W (MB/sec, max.)	420/140	530/210
Max. Power Consumption	1.6W (5V x 310mA)	0.8W (5V x 160mA)
Thermal Sensor	STD : N , W/T : 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)	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-XXXD09%C*** DESLM-XXXD08%C***	DESLM-XXXM41%C***
Wide Temp. OP (-40°C~+85°C)	DESLM-XXXD09%W*** DESLM-XXXD08%W***	DESLM-XXXM41%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 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 3SE-P	mSATA 3SE3	mSATA 3ME4	mSATA 3ME3
Key Features	1. Excellent data transfer speed and IOPS 2. Support TRIM command 3. Built-in DRAM buffer	1.Excellent data transfer speed and IOPS 2. High quality SLC-based solution 3. High capacity	1. LDPC technology secures SSD reliability 2. DRAM-less, high-level data integrity	1. Excellent data transfer speed and IOPS 2. Budget- friendly MLC-based solution
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	SLC	SLC	MLC	MLC
Capacity	8GB~64GB	4GB~128GB	8GB~256GB	8GB~512GB
Max. Channel	4	4	2	4
Sequential R/W (MB/sec, max.)	490/260	385/220	530/210	400/200
Max. Power Consumption	1.2 W (3.3V x 360mA)	0.5 W (3.3V x 180 mA)	0.6W (3.3V x 200mA)	1.4W (3.3V x 434mA)
Thermal Sensor	STD : N , W/T : Y		Y	STD : N , W/T : Y
External DRAM Buffer	Y	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)	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.3	29.8 x 50.8 x 3.7	29.8 x 50.8 x 3.3
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-XXXD67SC***	DEMSR-XXXD09SC*** DEMSR-XXXD08SC***	DEMSR-XXXM41BC***	DEMSR-XXXD09BC*** DEMSR-XXXD08BC***
Wide Temp. OP (-40°C~+85°C)	DEMSR-XXXD67SW***	DEMSR-XXXD08SW*** DEMSR-XXXD09SW***	DEMSR-XXXM41BW***	DEMSR-XXXD09BW*** DEMSR-XXXD08BW***
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 3IE3	mSATA 3MG2-P	mSATA mini 3ME4	mSATA mini 3ME3	mSATA mini 3IE3
Key Features	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	1. High IOPS by on-board DRAM design 2. Featuring L² architecture, expanding the lifespan 3. DEVSLP supported	1. LDPC technology secures SSD reliability 2. DRAM-less, high-level data integrity	1. Half mSATA 50% space saving 2. Low power consumption	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
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	iSLC	MLC	MLC	MLC	iSLC
Capacity	8GB~256GB	8GB~512GB	8GB~128GB	8GB~128GB	8GB~64GB
Max. Channel	4	4	2	2	2
Sequential R/W (MB/sec, max.)	450/260	520/860	470/125	220/80	230/170
Max. Power Consumption	1.4 W (3.3V x 434mA)	2.8 W (3.3 V x 860mA)	0.6 W (3.3V x 190 mA)	0.5W (3.3V x 150mA)	0.6 W (3.3V x 190 mA)
Thermal Sensor	STD : N , W/T : Y	Y	Y	STD : N , W/T : Y	
External DRAM Buffer	N	Y	N	N	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 3.3	29.85 x 50.8 x 3.6	30 x 26.8 x 3.4	29.8 x 26.8 x 3.7	29.8 x 26.8 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)	DHMSR-XXXD08BC*** DHMSR-XXXD09BC***	DGMSR-XXXD81BC***	DEMSM-XXXM41BC***	DEMSM-XXXD09BC***	DHMSM-XXXD09BC***
Wide Temp. OP (-40°C~+85°C)	DHMSR-XXXD08BW*** DHMSR-XXXD09BW***	DGMSR-XXXD81BW***	DEMSM-XXXM41BW***	DEMSM-XXXD09BW***	DHMSM-XXXD09BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= 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	8GB~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°C ~ +95°C/MTBF: >3 million hours	
Standard Temp. OP (0°C~+70°C)	DEEDM-XXXJ30AC***	DEEDM-XXXD09BC***
Wide Temp. OP (-40°C~+85°C)	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)	0.8W (5V x 160mA) 0.5W (3.3V x 160mA)	0.8W (5V x 160mA) 0.5W (3.3V x 160mA)
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°C ~ +95°C/MTBF: >3 million hours			
Standard Temp. OP (0°C~+70°C)	DE0H-XXXD41AC*** DE4H-XXXD41AC***	DE0P%-XXXD41AC*** DE4P%-XXXD41AC***	DEE4H-XXXD53BC***	DEE4%-XXXD53BC***
Wide Temp. OP (-40°C~+85°C)	DE0H-XXXD41AW*** DE4H-XXXD41AW***	DE0P%-XXXD41AW*** DE4P%-XXXD41AW***	DEE4H-XXXD53BW***	DEE4%-XXXD53BW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code), %=Horizonyal type(A,B,C,D,E,F)			

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 530 MB/sec and of sequential write up to 210MB/sec.









Model Name	CFast 3SE3	CFast 3ME3	CFast 3ME4	CFast 3IE3
Key Features	1. Compliant with CFast 2.0 standard 2. Excellent IOPS performance 3. Supports hardware write protect	1. Compliant with CFast 2.0 satndard 2. Buget friendly MLC-based solution 3. Excellent IOPS performance 4. Supports hardware write protect	1. Exclusive L^3 architecture 2. Designed with LDPC ECC engine 3. Excellent IOPS performance 4. Supports hardware write protect	1. Cost-effective industrial Flash with iSLC 2. Lifespan 7 times longer than MLC 3. Performance and data quality congruent to SLC 4. Supports hardware write protect
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Connector	7pin+17pin	7+17pin	7pin+17pin	7+17pin
Flash Type	SLC	MLC	MLC	MLC
Capacity	4GB~64GB	8GB~256GB	8GB~256GB	8GB~128GB
Max. Channel	4	2	2	2
Sequential R/W (MB/sec, max.)	330/180	220/130	530/210	240/160
Max. Power Consumption	1.1W (3.3V x 360mA)	1.5W (3.3V x 470mA)	1.3W (5V x 250mA)	1.5W (3.3V x 470mA)
Thermal Sensor	STD : N W/T : Y		Y	STD : N W/T : 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)	42.8 x 36.4 x 3.6	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°C ~ +95°C/MTBF: >3 million hours			
Standard Temp. OP (0°C~+70°C)	DECFA-XXXD08SC***	DECFA-XXXD09BC***	DECFA-XXXM41BC***	DHCFA-XXXD09BC***
Wide Temp. OP (-40°C~+85°C)	DECFA-XXXD08SW***	DECFA-XXXD09BW***	DECFA-XXXM41BW***	DHCFA-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			

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	1.05W (5V x 210mA) 0.76W (3.3V x 230mA)	0.75W (5V x 150mA) 0.5W (3.3V x 150mA)	0.8W (5V x 160mA) 0.5W (3.3V x 160 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°C ~ +95°C/MTBF: >3 million hours		
Standard Temp. OP (0°C~+70°C)	DC1M-XXXD71AC***	DC1M-XXXD41AC***	DECFC-XXXD53BC***
Wide Temp. OP (-40°C~+85°C)	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 (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code) % =Flash Type		

ServerDOM

Innodisk ServerDOM is dedicated to the future of server design. By using ServerDOM as a boot drive, there is more space for hot-swappable data storage.






Model Name	ServerDOM-L 3ME3	ServerDOM-L 3IE3	ServerDOM-L 3SE	ServerDOM-H 3ME3
Key Features	1. Vertical and low-profile design for server 2. High Capacity 3. Best boot drive solution	1. Vertical and low-profile design for server 2. Cost-effective industrial Flash with iSLC 3. Best boot drive solution 4. Lifespan 7 times longer than MLC 5. Performance and data quality congruent to SLC	1.Vertical and low-profile design for server 2. High performance 3. Extreme lifespan	1. Low profile horizontal design for server 2. High Capacity 3. Best boot drive solution
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	MLC	iSLC	SLC	MLC
Capacity	16GB-128GB	16GB-64GB	2GB~16GB	16GB-128GB
Max. Channel	4	4	4	4
Sequential R/W (MB/sec, max.)	410/140	440/260	450/200	410/140
Max. Power Consumption	2.3W	2.3W	2.5W	2.3W
Thermal Sensor	N	N	N	N
External DRAM Buffer	N	N	N	N
iData Guard	Y	Y	Y	Y
iCell	N	N	N	N
TRIM	Y	Y	N	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	25.0 x 29.4 x 7.7	25.0 x 29.4 x 7.7	25.0 x 29.4 x 7.7	25.0 x 21.7 x 14.8
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours			
Standard Temp. OP (0°C~+70°C)	DESNL-XXXD08BC***#	DHSNL-XXXD08BC***#	DESNL-XXXD06SC***#	DESNH-XXXD08BC***#
Wide Temp. OP (-40°C~+85°C)	DESNL-XXXD08BW***#	DHSNL-XXXD08BW***#	DESNL-XXXD06SW***#	DESNH-XXXD08BW***#
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, A28=128GB) ***= flash configuration (internal control code) #=power supply type			







Model Name	ServerDOM-H 3IE3	ServerDOM-H 3SE	ServerDOM-V 3ME3	ServerDOM-V 3IE3	ServerDOM-V 3SE
Key Features	1. Low profile horizontal design for server 2. Cost-effective industrial Flash with iSLC 3. Best boot drive solution 4. Lifespan 7 times longer than MLC 5. Performance and data quality congruent to SLC	1. Low profile horizontal design for server 2. High performance 3. Extreme lifespan	1. Vertical version with housing for server 2. High Capacity 3. Best boot drive solution	1. Vertical version with housing for server 2. Cost-effective industrial Flash with iSLC 3. Best boot drive solution 4. Lifespan 7 times longer than MLC 5. Performance and data quality congruent to SLC	1. Vertical version with housing for server 2. High performance 3. Extreme lifespan
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	iSLC	SLC	MLC	iSLC	SLC
Capacity	16GB-64GB	2GB~16GB	16GB-128GB	16GB-64GB	2GB~16GB
Max. Channel	4	4	4	4	4
Sequential R/W (MB/sec, max.)	440/260	450/200	410/140	440/260	450/200
Max. Power Consumption	2.3W	2.5W	2.3W	2.3W	2.5W
Thermal Sensor	N	N	N	N	N
External DRAM Buffer	N	N	N	N	N
iData Guard	Y	Y	Y	Y	Y
iCell	N	N	N	N	N
TRIM	Y	N	Y	Y	N
ATA Security	Y	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y	Y
Dimension (WxLxH/mm)	25.0 x 21.7 x 14.8	25.0 x 21.7 x 14.8	20.2 x 30.7 x 8.7	20.2 x 30.7 x 8.7	20.2 x 30.7 x 8.7
Environment	Shock: 1500G@0.5ms/Storage Temperature: -55°C ~ +95°C/MTBF: >3 million hours				
Standard Temp. OP (0°C~+70°C)	DHSNH-XXXD08BC***#	DESNH-XXXD06SC***#	DESNV-XXXD08BC***	DHSNV-XXXD08BC***	DESNV-XXXD06SC***
Wide Temp. OP (-40°C~+85°C)	DHSNH-XXXD08BW***#	DESNH-XXXD06SW***#	DESNV-XXXD08BW***	DHSNV-XXXD08BW***	DESNV-XXXD06SW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, A28=128GB) ***= flash configuration (internal control code) #=power supply type				

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	Industrial Nano USB	USB Drive 3SE	USB Drive 3ME	USB Drive 2SE	USB Drive 2ME
Key Features	1. Only expose 5mm height on the motherboard when applying in practical 2. Smallest USB drive for industrial application 3. Very low power consumption	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 2.0	USB 3.0		USB 2.0	
Connector	Type A	Type A		Type A	
Flash Type	SLC	SLC	MLC	SLC	MLC
Capacity	1GB~8GB	4GB~32GB	8GB~64GB	512MB~16GB	8GB~64GB
Max. Channel	1	1	1	1	1
Sequential R/W (MB/sec, max.)	19/17	110/85	105/50	28/24	26/10
Max. Power Consumption	0.45W (5V x 90mA)	0.70W (5V x 140mA)		0.85W (5V x 170mA)	
Dimension (WxLxH/mm)	15.4 x 19.4 x 6.9	16.5 x 45.8 x 7.4		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)	DEUN-XXXS24AC***	DEUA1-XXXI61SC***	DEUA1-XXXI61%C***	DEUA1-XXXI72AC***	DEUA1-XXXI72%C***
Wide Temp. OP (-40°C~+85°C)	DEUN-XXXS24AW***	DEUA1-XXXI61SW***	DEUA1-XXXI61%W***	DEUA1-XXXI72AW***	DEUA1-XXXI72%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)				







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	26/10	28/24	26/10
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-XXXI61%C***	DEUH1-XXXI72AC*** DEUH2-XXXI72AC***	DEUH1-XXXI72%C*** DEUH2-XXXI72%C***	DEUV1-XXXI72AC***	DEUV1-XXXI72%C***
Wide Temp. OP (-40°C~+85°C)	DEUV1-XXXI61SW***	DEUV1-XXXI61%W***	DEUH1-XXXI72AW*** DEUH2-XXXI72AW***	DEUH1-XXXI72%W*** DEUH2-XXXI72%W***	DEUV1-XXXI72AW***	DEUV1-XXXI72%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)					

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.





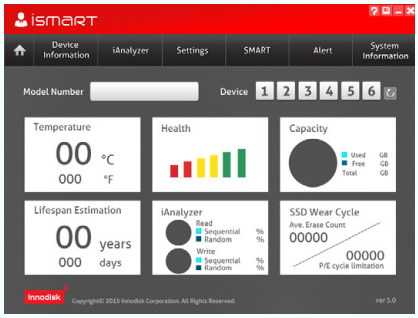


Model Name	Industrial micro SD Card	MicroSD 3ME	Industrial SD Card
Key Features	Enhanced power cycling management	Support Class 10 with UHS-I	1. Designed for industrial applications 2. High reliability 3. Customizeable 4. Power fail mangement
Interface	SD 1.01/2.0	SD 3.0	SD 3.0
Flash Type	SLC	MLC	SLC/MLC
Capacity	1G~8GB	8GB~64GB	SLC: 128MB~32GB MLC: 8GB~128GB
Max. Channel	1	1	1
Sequential R/W (MB/sec, max.)	20/16	44/34	SLC: 23/21 MLC: 54/18
Max. Power Consumption	0.17W (3.3V x 50mA)	0.4W (3.3V x 125mA)	0.22W (3.3V x 69mA)(SLC) 0.34W (3.3V x 105mA)(MLC)
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	11.0 x 15.0 x 1.0	11.0 x 15.0 x 1.0	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 (-20°C~+85°C)	DS2M-XXXI81AC***	DESDM-XXXS27SEASN	DESDC-XXXY81BC***
Wide emp. OP (-40°C~+85°C)	DS2M-XXXI81AW***	NA	DESDC-XXXY81BW***
Note	XXX = density (02GB=02G, 04GB=04G, 08GB=08G) *** = flash configuration (internal control code) %=Flash Type		

Download our iSMART to monitor the health of storage

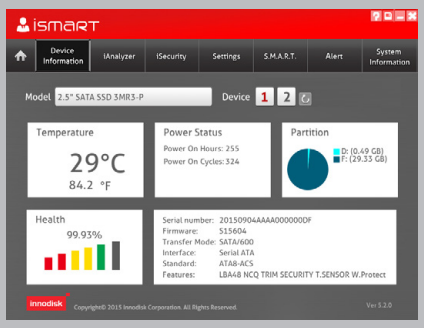
iSMART 5.1.6 is designed to simplify the SMART information and provide and easy to read interface for all our users. The iSMART tool monitors the health and lifespan of Innodisk's SSDs as well as providing details on usage patterns and setting up alert settings before total failure. With iSMART, our customers are able to properly integrate Innodisk's SSDs into their solutions by carefully monitoring the behavior and lifespan during development, integration, and mass production.

Dashboard



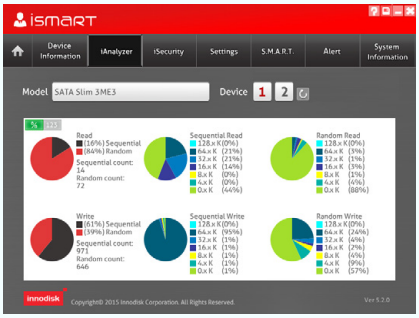
The Dashboard's home tab aims to provide a summary or quick snapshot of each installed disks in the system. This page offers accurate data information regarding Temperature, Health, Capacity, Lifespan, iAnalyzer, and Notifications.

Device Information



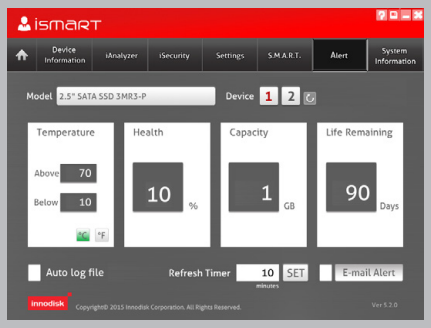
The Device Information page provides additional functions, such as Power Status, Partitions, and detailed information of the device such as Serial Number, Firmware Vision, Interface, and Features. To learn more about SMART information, go to SMART values and refer to the SMART tab.

iAnalyzer



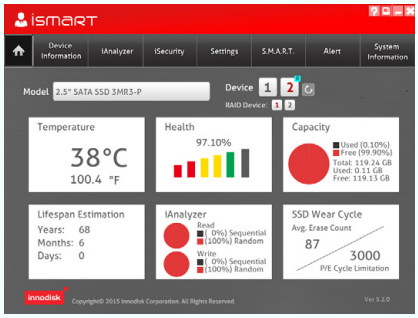
When activated, the iAnalyzer tab displays the read/write behaviors of the SSD in real time. This allows the user to understand their application usage of the SSD. Sequential and Random I/Os are easily broken down into percentages making them easy to read.

Alert



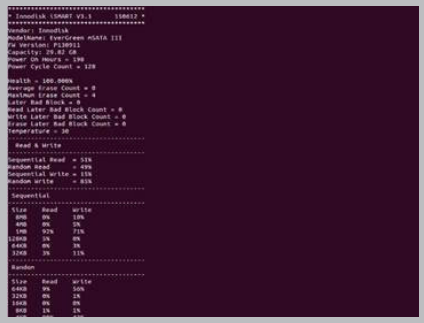
The Alert tab helps the user set trigger points with Temperature, Health percentage, Remaining Capacity or Life Remaining. If these trigger points exceed their boundaries, the iSMART utility can send a warning and email to the user notifying them that something may fail.

RAID Support



iSMART crosses the RAID bridge by utilizing an API implement, thus giving you quick and easy access to the individual SMART attributes of every connected device.

iSMART for Linux



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

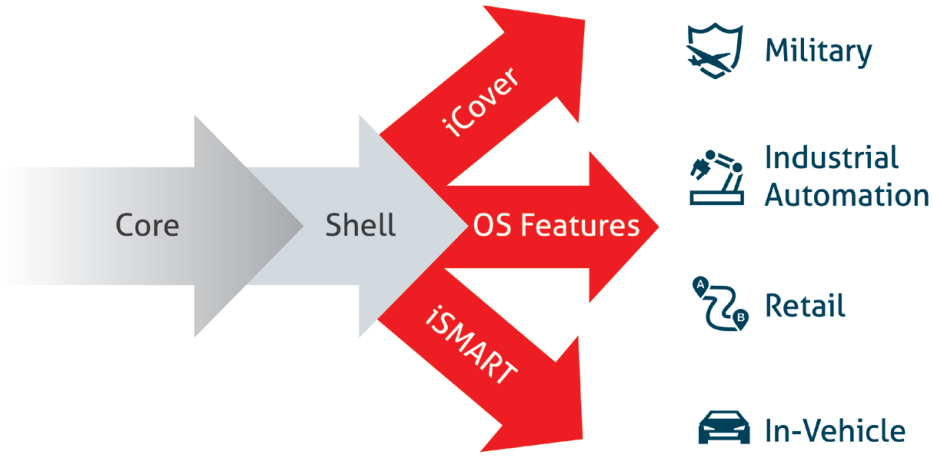
iService™

An Optimization of Your Systems

iService™ is a one-step service that meets customers' requirement at every stage of storage implementation by offering flexible customization and a commitment of customer-centric service. It provides a total software solution and monitors every step of the implementation process through use of product identification, design and development, and tailor-made maintenance for storage devices. This pre-loaded software service is a value added feature with our SSD hardware. With our software support, Innodisk accelerates the lead-time of the customer's product development. Through our software service support, Innodisk helps to provide a more polished look to the overall packaging presentation of the product.

iService™

Innodisk's iService combines hardware and software to match the ever-increasing integration demands of industrial computers. In our software building process, we provide services for operating systems(OS), Shell, and Applications. iService comprises three components: building, design and product monitoring, allowing for an intelligent optimization and enhancement of your system.

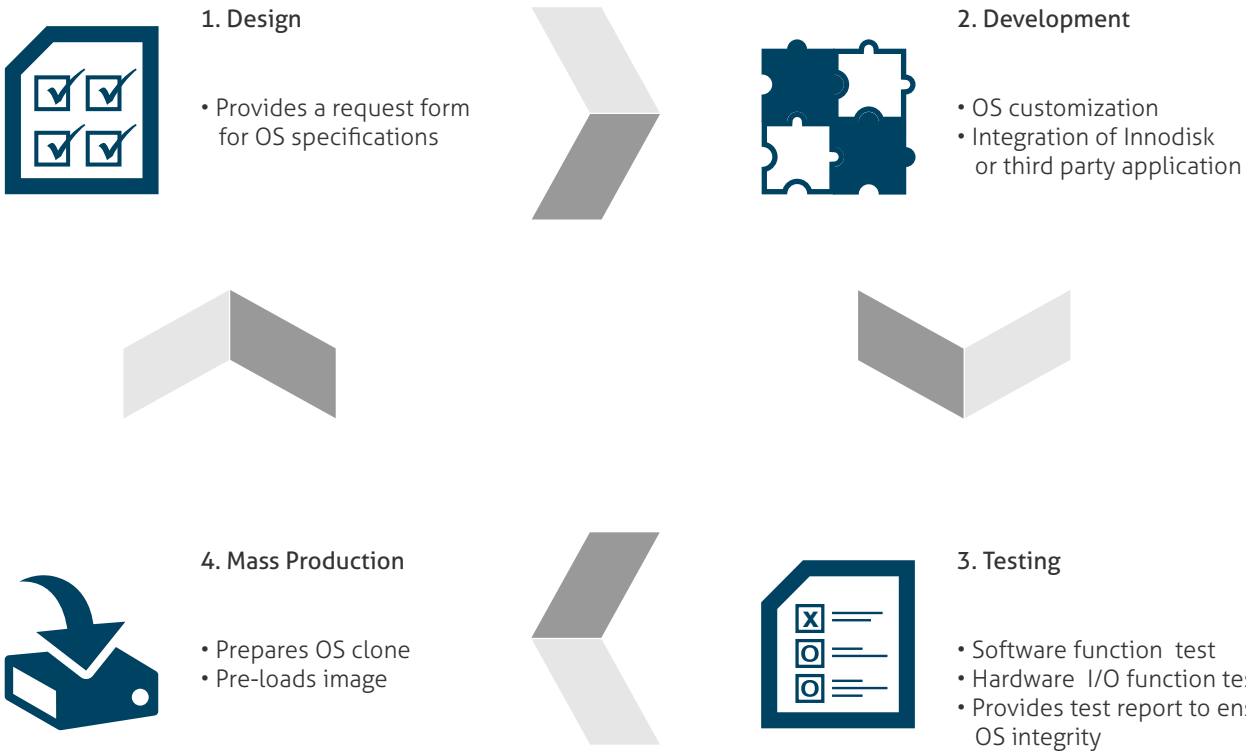


Operating System Building Services

Innodisk has the capability to customize an operating system exclusively for your hardware platform. Through our operating system building services, we can recommend programs suitable for an embedded system that optimizes the performance of your system.

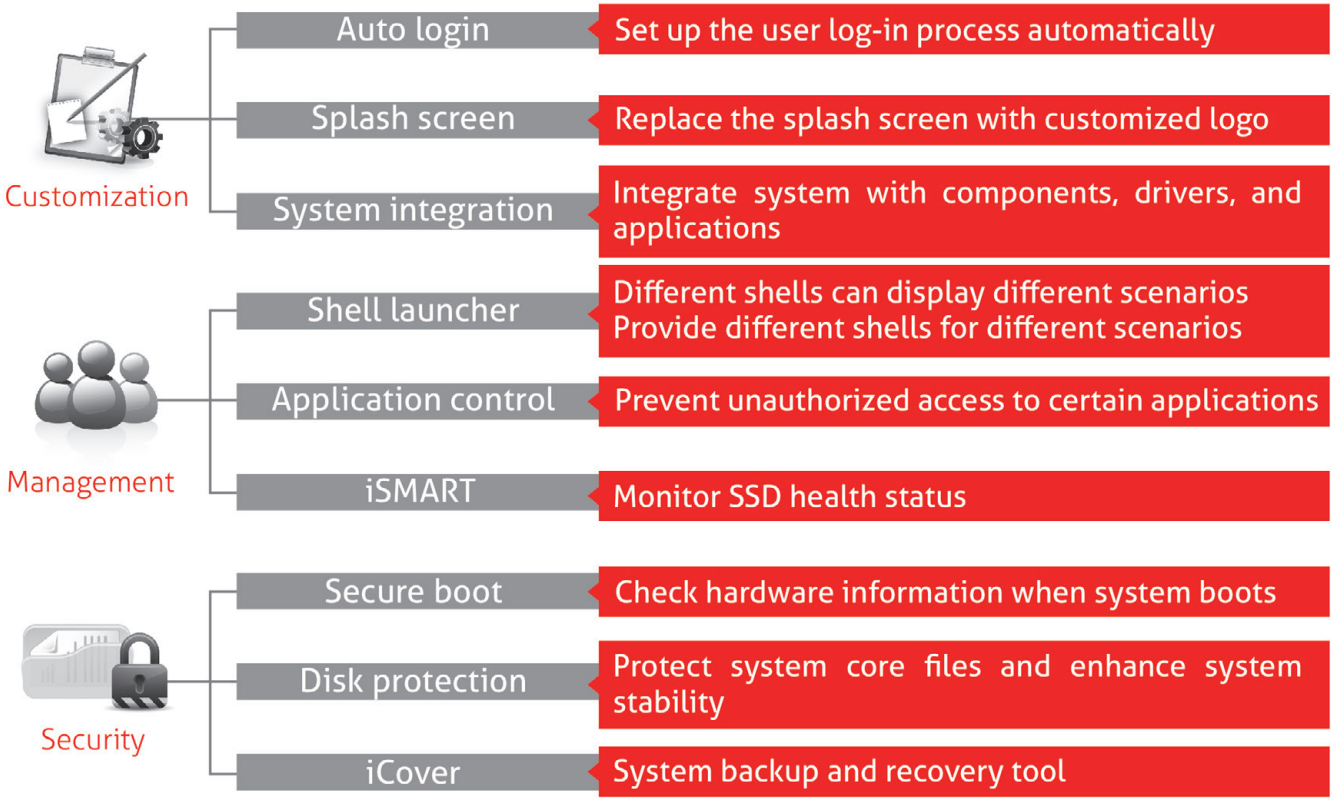
1. Bidding Process

OS development is done in 4 stages : 「Design」、「Development」、「Testing」、「Mass production」.



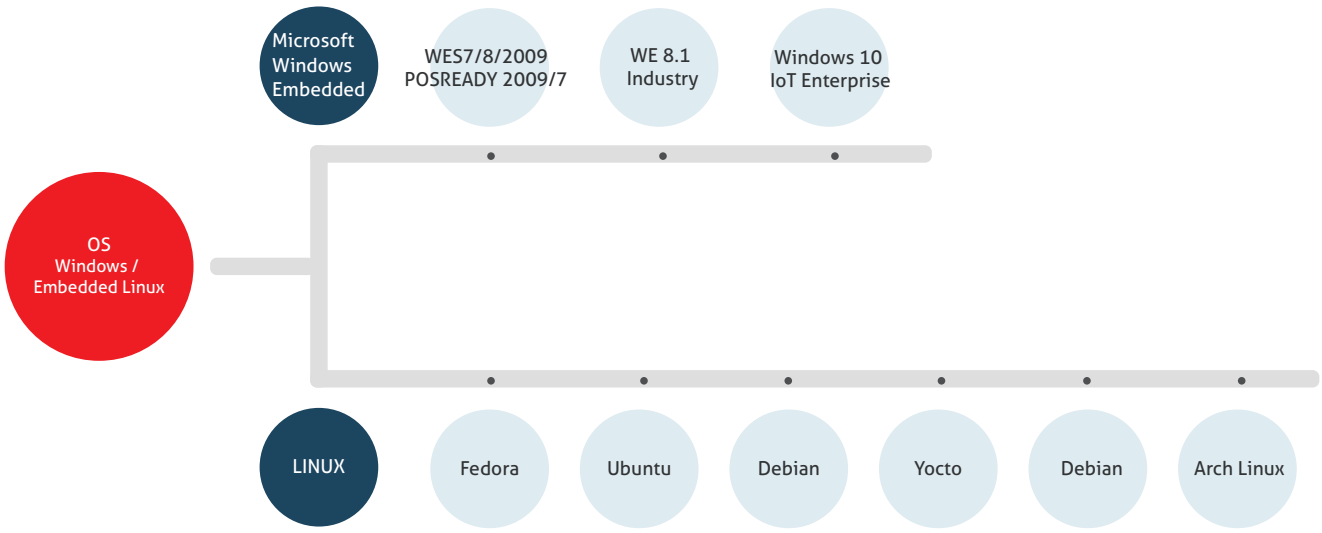
2. OS Features

Since different markets have different OS feature requirements, Innodisk provides three design elements to develop the system, including "Customization", "Management", and "Security". This ensures the stability and security of the application.



3. OS Support

Through iService Innodisk offers full support for Windows and Linux systems, ensuring the best optimization of your system.



iCover V1.20

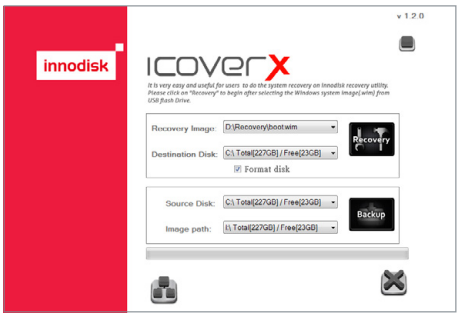
• The best backup and recovery for your industrial system
• Intuitive and simple one-key user experience

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.

Why You Need iCover

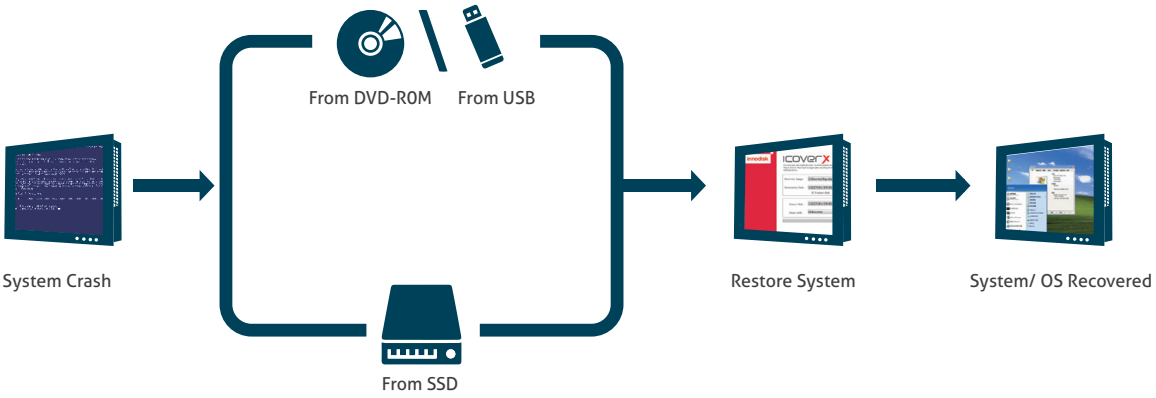
In an industrial setting, systems may need to operate continuously, and downtime is not an option.
A rapid restore mechanism to keep your system running as consistently as possible is valuable.
This quick recovery tool will restore it to its original state.





iCover	Name	iCoverX
Recovery	Function	Recovery and Backup
USB/DVD/SSD	Media	USB/SSD
Windows & Linux	Support OS	Windows & Linux
NTFS, FAT32, EXT2,EXT3, EXT4	File system	NTFS, FAT32 ,EXT2, EXT3, EXT4

Workflow



Key feature

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

Device lockdown

Lock down the Mac address ID to avoid illegal duplication

GPIO trigger

Switch between user mode and recovery mode with the touch of a button

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 LR-DIMM, registered DIMM, conformal coated DRAM, and side filled DRAM.

Embedded

Embedded Long-DIMM

Long-DIMM 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	Standard Solution
Module Type	DDR4 LONG DIMM	DDR3 LONG DIMM
Data Rate	2133MT/s, 2400 MT/s, 2666 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s
Capacity	4GB/8GB/16GB	1GB/2GB/4GB/8GB/16GB
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°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating	





Series	Standard Solution	Standard Solution
Module Type	DDR2 LONG DIMM	DDR LONG DIMM
Data Rate	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s	266 MT/s, 333 MT/s, 400 MT/s
Capacity	512MB/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	1.25 Inches
Operating Temperature	0 ~ 85°C	0 ~ 70°C
Value-Added Service (*Optional)	*Conformal Coating	

Embedded SO-DIMM

Small-outline DIMMs (SO-DIMM) 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	Standard Solution	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*	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s
Capacity	2GB/4GB/8GB/16GB	1GB/2GB/4GB/8GB/16GB	512MB/1GB/2GB/4GB
Function	Non-ECC Unbuffer 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°C	0 ~ 85°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating		





Series	Standard Solution	Standard Solution
Module Type	DDR SODIMM	SDRAM SODIMM
Data Rate	266 MT/s, 333 MT/s, 400 MT/s	PC100/PC133
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°C	0 ~ 70°C
Value-Added Service (*Optional)	*Conformal Coating	

*1866 MT/s only support 1.35V

Embedded Low-Profile DIMM

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





Series	Very Low-Profile (VLP) Solution	Very Low-Profile (VLP) Solution
Module Type	DDR4 LONG DIMM	DDR4 SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	2133 MT/s, 2400 MT/s
Capacity	4GB/8GB/16GB	4GB/8GB
Function	Non-ECC Unbuffered Memory	
Pin Number	288pin	260pin
Width	64Bits	64Bits
Voltage	1.2V	1.2V
PCB Height	0.72 Inches	0.72 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating / *Sidefill	





Series	Very Low-Profile (VLP) Solution	Very Low-Profile (VLP) Solution
Module Type	DDR3 LONG DIMM	DDR3 SODIMM
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s
Capacity	1GB/2GB/4GB/8GB/16GB	1GB/2GB/4GB/8GB
Function	Non-ECC Unbuffered Memory	
Pin Number	240pin	204pin
Width	64Bits	64Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	0.72 Inches	1.0 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating / *Sidefill	



Series	Very Low-Profile (VLP) Solution
Module Type	DDR2 LONG DIMM
Data Rate	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s
Capacity	512MB/1GB/2GB
Function	Non-ECC Unbuffered Memory
Pin Number	240pin
Width	64Bits
Voltage	1.8V
PCB Height	0.72 Inches
Operating Temperature	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating / *Sidefill

Embedded Unbuffered DIMM with ECC

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




Series	Unbuffered w/ ECC Solution	Unbuffered w/ ECC Solution
Module Type	DDR3 LONG DIMM	DDR3 SODIMM
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s*
Capacity	1GB/2GB/4GB/8GB/16GB	2GB/4GB/8GB/16GB
Function	With ECC Unbuffered Memory	
Pin Number	240pin	204pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√
Value-Added Service (*Optional)	*Conformal Coating	




Series	Unbuffered w/ ECC Solution	Unbuffered w/ ECC Solution
Module Type	DDR2 LONG DIMM	DDR2 SODIMM
Data Rate	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s
Capacity	512MB/1GB/2GB	512MB/1GB/2GB
Function	With ECC Unbuffered Memory	With ECC Unbuffered Memory(PLL)
Pin Number	240pin	200pin
Width	72Bits	72Bits
Voltage	1.8V	1.8V
PCB Height	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating	

*1866 MT/s only support 1.35V

Server

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	Server Solution
Module Type	DDR4 LONG DIMM/DDR4 VLP LONG DIMM	DDR3 LONG DIMM/DDR3 VLP LONG DIMM
Data Rate	2400 MT/s, 2666 MT/s	1600 MT/s, 1333 MT/s, 1066 MT/s
Capacity	4GB/8GB/16GB/32GB/64GB*/128GB*	1G/2G/4G/8G/16G/32G
Function	Registered DIMM W/ECC	
Pin Number	288pin	240pin
Width	72Bits	72Bits
Voltage	1.2V	1.5V/1.35V
PCB Height	1.23 Inches/0.738 Inches	1.18 Inches/0.738 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√

*Depends on chipset and platform support

Server LR-DIMM

Load-reduction DIMM modules are designed with a special buffer to reduce heavy-load data to single-load data (up to 8-rank DIMM). In addition, these modules allow more DIMMs to be added per channel in order to reduce power levels and increase memory capacity and system speed.





Series	Server Solution	Server Solution
Module Type	DDR4 Load reduced DIMM	DDR3 Load reduced DIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666 MT/s	1333 MT/s, 1600 MT/s
Capacity	32GB/64GB/128GB	32GB
Function	Registered & DB	IMB
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°C	0 ~ 85°C
Golden finger 30μ"	√	√

Server Unbuffered DIMM with ECC

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




Series	Unbuffered w/ ECC Solution	Unbuffered w/ ECC Solution
Module Type	DDR3 LONG DIMM	DDR3 SODIMM
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s*
Capacity	1GB/2GB/4GB/8GB/16GB	2GB/4GB/8GB
Function	With ECC Unbuffered Memory	
Pin Number	240pin	204pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√
Value-Added Service (*Optional)	*Conformal Coating	




Series	Unbuffered w/ ECC Solution	Unbuffered w/ ECC Solution
Module Type	DDR2 LONG DIMM	DDR2 SODIMM
Data Rate	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s
Capacity	512MB/1GB/2GB	1GB/2GB
Function	With ECC Unbuffered Memory	With ECC Unbuffered Memory(PLL)
Pin Number	240pin	200pin
Width	72Bits	72Bits
Voltage	1.8V	1.8V
PCB Height	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating	

*1866 MT/s only support 1.35V

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°C or as high as 85°C.




Series	Wide Temperature	Wide Temperature
Module Type	DDR4 LONG DIMM	DDR3 LONG DIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s
Capacity	4GB/8GB/16GB	1GB/2GB/4GB/8GB/16G
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°C	-40 ~ 85°C
Golden finger 30μ"	√	√
Value-Added Service (*Optional)	*Conformal Coating / Wide Temperature / *Sidefill	

Wide Temperature Unbuffered SO-DIMM

Designed for industrial systems, Innodisk's Wide Temperature DRAM modules are the best choice 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	Wide Temperature	Wide Temperature	Wide Temperature
Module Type	DDR4 SODIMM	DDR3 SODIMM	DDR2 SODIMM	DDR SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s, 1866 MT/s*	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s	266 MT/s, 333 MT/s, 400 MT/s
Capacity	4GB/8GB/16GB	1GB/2GB/4GB/8GB/16G	512MB/1GB/2GB	512MB/1GB
Function	Non-ECC Unbuffered Memory			
Pin Number	260pin	204pin	200pin	200pin
Width	64Bits	64Bits	64Bits	64Bits
Voltage	1.2V	1.5V/1.35V	1.8V	2.6V
PCB Height	1.18 Inches	1.18 Inches	1.18 Inches	1.18 Inches
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Golden finger 30μ"	√	√	√	√
Value-Added Service (*Optional)	*Conformal Coating / Wide Temperature / *Sidefill			

*1866 MT/s only support 1.35V, and provide 2GB/4GB/8GB module.

Special / Customized

32-Bit

32-Bit DRAM modules are customized for the non-x86 design system and work especially well on Advanced RISC Machines (ARM), base tablet PCs and mobile devices.





Series	32 bits	32 bits	32 bits
Module Type	DDR4 SODIMM	DDR3 SODIMM	DDR2 SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s
Capacity	2GB/4GB/8GB	1GB/2GB/4GB	256MB/512MB/1GB
Function	Non-ECC Unbuffered Memory		
Pin Number	260pin	204pin	200pin
Width	32Bits	32Bits	32Bits
Voltage	1.2V	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C

Mini DIMM

DDR4 Mini DIMM and Mini RDIMM now availeble! 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-VLP	Mini RDIMM-VLP	Mini R-DIMM-VLP	Mini DIMM-VLP	Mini DIMM-ULP	Mini R-DIMM
Module Type	DDR4 SODIMM	DDR4 SODIMM	DDR3 SODIMM	DDR3 SODIMM	DDR3 SODIMM	DDR3 SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666MT/s	2133 MT/s, 2400 MT/s, 2666MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s
Capacity	4GB/8GB/16GB	4GB/8GB	1GB/2GB/4GB	8GB	1GB/2GB/4GB	1GB/2GB/4GB 8GB/16GB
Function	with ECC Unbuffered Memory		Registered Memory	with ECC Unbuffered Memory		Registered Memory
Pin Number	288pin	288pin	244pin	244pin	244pin	244pin
Width	72Bits	72Bits	72Bits	72Bits	72Bits	72Bits
Voltage	1.2V	1.2V	1.35V / 1.5V	1.35V / 1.5V	1.35V / 1.5V	1.35V / 1.5V
PCB Height	0.738 Inches	0.738 Inches	0.738 Inches	0.738 Inches	0.72 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√	√	√	√	√
Value-Added Service (*Optional)	*Conformal Coating / *Sidefill					

Rugged

Rugged DIMM modules are designed with a pair of mounting holes for more a secure mounting on the CPU board. Resistant to shock and vibration, they allow stable system operation for automobile and harsh environment applications. In addition, these modules are compliant with JEDEC standards, with dimensions extended by 10 mm.





Series	Rugged DIMM	Rugged DIMM	Rugged DIMM
Module Type	DDR4 SODIMM	DDR3 SODIMM	DDR2 SODIMM
Data Rate	2133 MT/s, 2400 MT/s, 2666MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s	400 MT/s, 533 MT/s, 667 MT/s, 800 MT/s
Capacity	4GB/8GB/16GB	1GB/2GB/4GB/8GB/16GB	512MB/1GB/2GB
Function	Non-ECC Unbuffered Memory		
Pin Number	260pin	244pin	200pin
Width	64Bits	64Bits	64Bits
Voltage	1.2V	1.35V / 1.5V	1.8V
PCB Height	1.18 Inches	1.18 Inches	1.57 Inches
Operating Temperature	-40 ~ 85°C	0 ~ 85°C	0 ~ 85°C
Golden finger 30μ"	√	√	√
Value-Added Service (*Optional)	*Conformal Coating / Mounting Pad / Wide Temperature / *Sidefill		

Single Side

Single Side modules are often used in small form factor (SFF) systems that require a high-density module to be installed in a strictly limited space. The Innodisk-designed low-profile PCB with a JEDEC standard connector requirement fits into any SFF system—something that most standard modules cannot do—without any modification to the hardware design. Single Side modules deliver excellent thermal resistance and help make systems more reliable.




Series	Single DIMM(Front Side)	Single DIMM(Back Side)
Module Type	DDR3 SODIMM	DDR3 SODIMM
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s	1066 MT/s, 1333 MT/s, 1600 MT/s
Capacity	1GB/2GB/4GB	1GB/2GB/4GB
Function	Non-ECC Unbuffered Memory	
Pin Number	204pin	204pin
Width	64Bits	64Bits
Voltage	1.35V / 1.5V	1.35V / 1.5V
PCB Height	1.18 Inches	1.18 Inches
Operating Temperature	0 ~ 85°C	0 ~ 85°C
Value-Added Service (*Optional)	*Conformal Coating	

Registered SO-DIMM

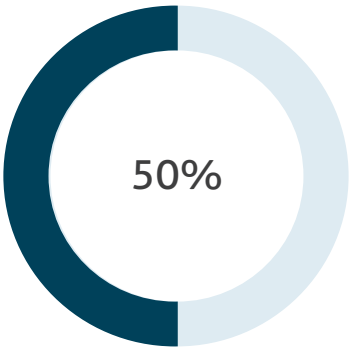
Registered SO-DIMM modules are designed to ensure data integrity at both the device- and system level of server applications with space limitations. In addition, these modules are tested for a 24-hour period in our special-built factory to ensure stable performance.



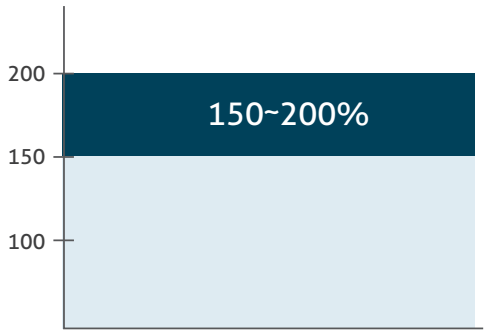
Series	Registered SO-DIMM
Module Type	DDR3 SODIMM
Data Rate	1066 MT/s, 1333 MT/s, 1600 MT/s
Capacity	2GB/4GB/8GB
Function	Registered SO-DIMM Memory
Pin Number	204pin
Width	72Bits
Voltage	1.35V/1.5V
PCB Height	1.18 Inches
Operating Temperature	0 ~ 85°C
Golden finger 30μ"	√
Value-Added Service (*Optional)	*Conformal Coating

iRAM

iRAM is Innodisk's latest and most exclusive testing software. It combines a variety of testing software with optimized test patterns. All Innodisk ECC DIMM & RDIMM products are tested with iRAM prior to being shipped worldwide to customers. Compared with existing testing software in the market, iRAM outperforms with boosted efficiency. Reduced testing time and accelerated return merchandise authorization processes provide customers with more timely after-sales service. The most powerful function of iRAM is detecting failure within each individual IC on the DIMM under an ECC operation. This exclusive technology can be found only with iRAM in the current market.



Reduced Testing Time



iRAM Other software

Increased Test Stringency

Embedded Peripheral Modules

Embedded Peripheral Modules provide LAN, 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.

Communication

The series aim to provide flexible connectivity and bandwidth to industrial systems. With our mPCIe GbE, CANBus and serial communication modules, users can expand the existing system to meet dynamic connectivity under IoT. We also provide an isolated option for each time.





Model Name	EMUC-B201	EMU2-X2S1	EMU2-X1S1
Module Type	USB to dual isolated CANbus 2.0B module	USB to dual isolated RS-232 module	USB to Single isolated RS-232 module
Key Features	1. mPCIe form factor. Two channels CANbus 2.0B (DB-9 x 2) backward compatible with 2.0A 2. Complies with EN61000-4-5 2.5kV Surge protection 3. 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. Supports -40 to +85 degrees 6. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation 7. Supports baud rate 50/125/250/500/1000K 8. Termination resistor enabled/disabled by jumper	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. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation 7. Industrial temperature(-40 °C to 85 °C) operation	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. Supports 3rd mounting hole and USB Pin header for out-of-minicard installation 7. Industrial temperature(-40 °C to 85 °C) operation
Form-Factor	mPCIe	mPCIe	mPCIe
Input I/F	USB 2.0	USB 2.0	USB 2.0
Input Connector	mPCIe or 5Pin Header	mPCIe or 5Pin Header	mPCIe or 5Pin Header
Output I/F	CANbus 2.0B x 2	RS-232 x 2	RS-232 x 1
Output Connector	DB-9 x 2	DB-9 x 2	DB-9 x 1
Dimensions(W*L*H/mm)	30.0 x 50.9 x 8.35	30.0 x 50.9 x 8.25	30.0 x 50.9 x 8.25
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Info.	EMUC-B201-W1	EMU2-X2S1-W1	EMU2-X1S1-W1







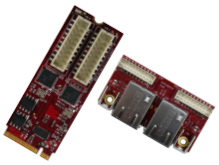
Model Name	EMP2-X203	EMP2-X403	EMP2-X404	EMPL-G101	EMPL-G201
Module Type	mPCIe to two RS-232 module	mPCIe to four RS-232 module	mPCIe to four RS-232/422/485 module	mPCIe to single isolated GbE LAN module	mPCIe to dual isolated GbE LAN module
Key Features	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 1 Mbps serial data rate. 16550 compatible 256-byte FIFOs 3. Industrial temperature (-40 °C to 85 °C) operation 4. Flexible design with DB-9 connectors and cable 5. ESD up to 15KV (Electrostatic Discharge) protection circuit to prevent system damage 6. Supports CTS/RTS hardware flow control	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 1 Mbps serial data rate. 16550 compatible 256-byte FIFOs 3. Industrial temperature (-40 °C to 85 °C) operation 4. Flexible design with DB-9 connectors and cable 5. ESD up to 15KV (Electrostatic Discharge) protection circuit to prevent system damage 6. Supports CTS/RTS hardware flow control	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. Industrial temperature (-40 °C to 85 °C) operation 4. Full DB9 connector without daughter board, can avoid possible mechanical intervention 5. Termination resistor enabled/disabled by DIP switch 6. RI/5V/12V output switched by jumper 7. ESD(Electrostatic Discharge) protection circuit to prevent system damage	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. Optional industrial temperature(-40°C to +85°C) support	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. Optional industrial temperature (-40°C to +85°C) support
Form-Factor	mPCIe	mPCIe	mPCIe	mPCIe	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0	PCI Express 2.1	PCI Express 2.1
Input Connector	mPCIe	mPCIe	mPCIe	mPCIe	mPCIe
Output I/F	RS-232 x 2	RS-232 x 4	RS-232/422/485 x 4	GbE LAN x 1	GbE LAN x 2
Output Connector	DB-9 x 2	DB-9 x 4	DB-9 x 4	RJ45 x 1	RJ45 x 2
Dimensions(W*L*H/mm)	30.0 x 50.9 x 6.7	30.0 x 50.9 x 6.7	30.0 x 50.9 x 8.0	30.0 x 50.9 x 7.6	30.0 x 50.9 x 7.6
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°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 Info.	EMP2-X203-W1	EMP2-X403-W1	EMP2-X404-W1	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)





Model Name	EMP2-X801	EMP2-X202	EMP2-X402
Module Type	mPCIe to eight RS-232/422/485 module	mPCIe to two RS-422/485 module	mPCIe to four RS-422/485 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. Industrial temperature (-40 °C to 85 °C) operation 4. Flexible design with cable and daughter board x 8 (with DB-9 connectors) 5. Termination resistor and 5V/12V output by jumper setting on 」 daughter board 6. ESD(Electrostatic Discharge) protection circuit to prevent system damage	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. Industrial temperature (-40 °C to 85 °C) operation 4. Flexible design with DB-9 connectors and cable 5. Termination Resistor by jumper setting 6. ESD up to 15KV(Electrostatic Discharge) protection circuit to prevent system damage	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. Industrial temperature (-40 °C to 85 °C) operation 4. Flexible design with DB-9 connectors and cable 5. Termination resistor by jumper setting 6. ESD up to 15KV(Electrostatic Discharge) protection circuit to prevent system damage
Form-Factor	mPCIe	mPCIe	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0
Input Connector	mPCIe	mPCIe	mPCIe
Output I/F	RS-232/422/485 x 8	RS-422/485 x 2	RS-422/485 x 4
Output Connector	DB-9 x 8	DB-9 x 2	DB-9 x 4
Dimensions(W*L*H/mm)	30.0 x 50.9 x 8.45	30.0 x 50.9 x 8.2	30.0 x 50.9 x 8.2
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Info.	EMP2-X801-W1	EMP2-X202-W1	EMP2-X402-W1



Model Name	EGPL-G101	EGPL-G201	EGUL-G101	EGUL-G201
Module Type	M.2 2280 to single isolated GbE LAN module	M.2 2280 to dual isolated GbE LAN module	M.2 2260 to single isolated GbE LAN module	M.2 2260 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	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	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. Supports mounting terminal or bracket for daughter board 6. Supports native CDC-ECM driver in Linux, driver auto-install mode in Windows	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. Supports mounting terminal or bracket for daughter board 6. Supports native CDC-ECM driver in Linux, driver auto-install mode in Windows
Form-Factor	M.2 2280	M.2 2280	M.2 2260	M.2 2260
Input I/F	PCI Express 2.1	PCI Express 2.1	USB 3.0	USB 3.0
Input Connector	M.2 B-M	M.2 B-M	M.2 B-Key	M.2 B-Key
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
Dimensions(W*L*H/mm)	30.0 x 50.9 x 7.1	30.0 x 50.9 x 7.1	22.0 x 60.0 x 7.55	22.0 x 60.0 x 7.55
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 Info.	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)	EGUL-G101-C1 EGUL-G101-W1 EGUL-G101-C2 (with bracket) EGUL-G101-W2 (with bracket)	EGUL-G201-C1 EGUL-G201-W1 EGUL-G201-C2 (with bracket) EGUL-G201-W2 (with bracket)



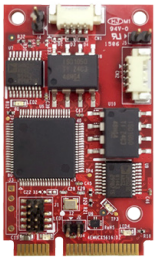


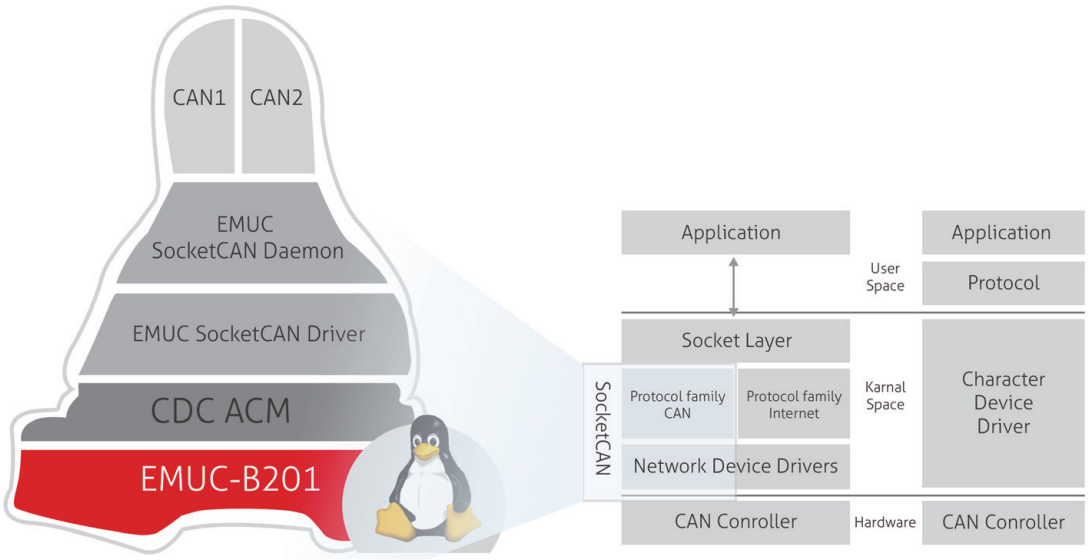

Model Name	EMP2-X4S1	EMP2-X4S2	EMPL-G2P1	EMUI-0D01
Module Type	mPCIe to four Isolated RS-485 Module	mPCIe to two Isolated RS-422 & RS-485 Module	mPCIe to dual Isolated PoE Module	USB to 32bit Digital I/O Module
Key Features	1. PCI-Express specification Rev. 2.0 compliant 2. Up to 10 Mbps serial data 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 °C to 85 °C) operation	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 °C to 85 °C) operation	1. Supports dual isolated GbE LAN ports 2. Two independent PSE channels 3. Supports 12V~24V power input via 4pin header 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 °C to 85 °C	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 °C to 85 °C) operation
Form-Factor	mPCIe	mPCIe	mPCIe	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.1	USB 2.0
Input Connector	mPCIe	mPCIe	mPCIe	mPCIe or 5Pin Header
Output I/F	RS-485 x 4	RS-422 x 2, RS-485 x 2	PoE x 2	32bit Digital I/O
Output Connector	DB-9 x 4	DB-9 x 4	RJ45 x 2	40pin 1.25mm (40DP-1.25) with DB37 male cable
Dimensions(W*L*H/mm)	30.0 x 50.9 x 12.55	30.0 x 50.9 x 12.55	30.0 x 50.9 x 7.6	30.0 x 50.9 x 8.2
Operating Temperature	Wide temp : -40°~85°C	Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C	Wide temp : -40°~85°C
Order Info.	EMP2-X4S1-W1	EMP2-X4S2-W1	•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)	EMUI-0D01-W1

CANBus

CANbus (Controller Area Network) is a type of serial communication that is widely used in automation, embedded systems and the automotive industry. Innodisk designed the EMUC-B201 CANbus expansion card specifically to fulfill these needs. It provides dual-port CAN 2.0B connectivity with an isolation design, and supports a wide temperature range in order to enhance system security and reliability.

EMUC-B201



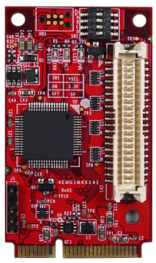


The EMUC-B201 expansion card is based on the Linux built-in CDC-ACM, Innodisk EMUC SocketCAN Network driver and the Linux service that allows two ports on a single card to support SocketCAN application. Thus, it provides maximum compatibility for customers when developing programs.

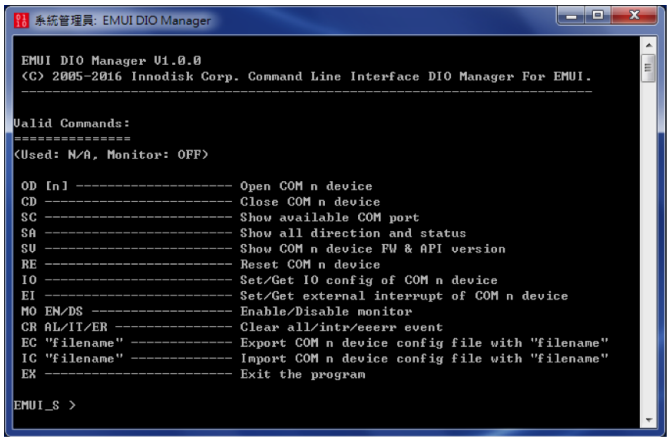
Digital I/O

Digital I/O stands for 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.

EMUI-0D01



The Utility Console



Programmable DIO

- Configurable Input / Output
- Status Setting
- Supports External Interrupt
- Input Status Change Notification

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	EMP4-1101	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 PATA 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. 30µ golden finger, 3 year warranty	1. PCIe 2.0 to four SATA III ports 2. Supports AHCI, port-multiplier 3. Low power consumption 4. 30µ golden finger, 3 year warranty	1. PCIe 2.0 to four SATAIII ports 2. Supports AHCI, port-multiplier 3. Low power consumption 4. 30µ golden finger, 3 year warranty	1. mPCIe form factor with PATA 44pin connector 2. Ultra low power consumption 3. Excellent data transfer speed 4. Golden finger 30µ for high data transfer quality	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-B-M	mPCIe	mPCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0	PCI Express 1.0	PCI Express 2.0
Input Connector	mPCIe	mPCIe	M.2 3042-B-M	mPCIe	mPCIe
Output I/F	SATA III	SATA III	SATA III	PATA	USB 3.0
Output Connector	SATA 7 Pin x 2	SATA 7 Pin x 4	SATA 7 Pin x 4	44pin header x 1	19 Pin box header x 1
Dimensions(W*L*H/mm)	30.0 x 50.9 x 10.7	30.0 x 50.9 x 10.9	30.0 x 42 x 10.4	30.0 x 50.9 x 9.5	30.0 x 50.9 x 8.45
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	STD temp : 0°~70°C	STD temp : 0°C~70°C Wide temp : -40C~85°C
Order Info.	EMPS-3201-C1 EMPS-3201-W1	EMPS-3401-C1 EMPS-3401-W1	EGPS-3401-C1	EMP4-1101-C1	EMPU-3201-C1 EMPU-3201-W1






Model Name	EMPU-3401	ESPP-2401	ESPS-3401	ELPS-3201
Module Type	mPCIe to four USB 3.0 module	PCIe to four mPCIe expansion card	PCIe to four SATA III card	PCIe x 4 to dual M.2 Module
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. 30µ golden finger, 3 year warranty	1. PCI Express base SPEC 2.0 x 1 (backward compatible with SPEC 1.1 & 1.0a) 2. Supports four mPCIe slots 3. Low profile PCI Express card form factor 4. On board power output 5. 30µ golden finger, 3 year warranty	1. PCIe 2.0 to four SATA III ports 2. Supports AHCI, port-multiplier 3. Low power consumption 4. 30µ golden finger, 3 year warranty	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
Form-Factor	mPCIe	Standard PCIe	Standard PCIe	Low Profile PCIe
Input I/F	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0	PCI Express 2.0
Input Connector	mPCIe	PCIe x 1	PCIe x 1	PCIe x 4
Output I/F	USB 3.0 x 4	PCI Express 2.0	SATA III	SATA III
Output Connector	19 Pin box header x 2	mPCIe x 4	SATA 7 Pin x 4, mSATA x 1	M.2 Key-B x 2
Dimensions(W*L*H/mm)	30.0 x 50.9 x 8.45	163.65 x 68.9 x 10.25	72.1 x 69.8 x 8.3	130.35 x 68.9 x 12.75
Operating Temperature	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C	STD temp : 0°~70°C	STD temp : 0°~70°C Wide temp : -40°~85°C
Order Info.	EMPU-3401-C1 EMPU-3401-W1	ESPP-2401-C1	ESPS-3401-C1	ELPS-3201-C1 ELPS-3201-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. 30μ golden finger, 3 year warranty.	1. PCIe to dual SATA III ports 2. Supports AHCI, port-multiplier 3. Supports hardware RAID 0, RAID1	1. Supports SATA to dual SATA III port multiplier 2. Supports H/W RAID 0/1 over SATA
Form-Factor	mSATA	mPCIe	M.2 2242-B-M
Input I/F	SATA III	PCI Express 2.0	SATA III
Input Connector	mPCIe	mPCIe	M.2 2242-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
Dimensions(W*L*H/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 Info.	EMSS-32R1-C1 EMSS-32R1-W1	EMPS-32R1-C1 EMPS-32R1-W1	EGSS-32R1-C1 EGSS-32R1-W1





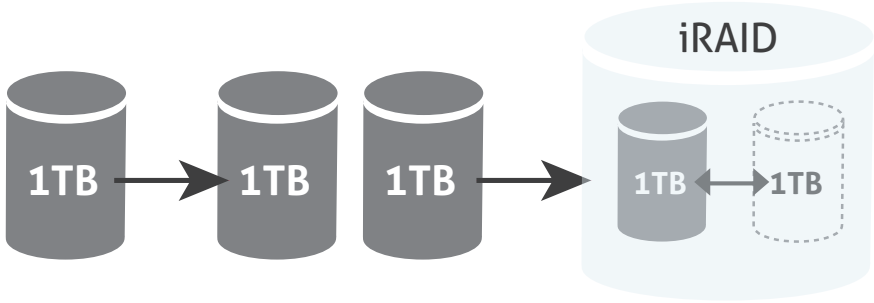
Model Name	E2SS-32R1	E2SS-32R2	ELPS-32R1
Module Type	2.5" SSD to dual mSATA RAID module	2.5" SSD to dual M.2 RAID module	PCIe x 4 to dual M.2 RAID Module
Key Features	1. 2.5" SSD to dual mSATA slots 2. Supports SATA III to SATA III port multiplier 3. Supports H/W RAID 0/1 over SATA 4. Excellent data transfer speed	1. 2.5" SSD to dual M.2 2280 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. 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	Standard PCIe
Input I/F	SATA III	SATA III	PCI Express 2.0
Input Connector	SATA 7+15 Pin	SATA 7+15 Pin	PCIe x 1
Output I/F	SATA III	SATA III	SATA III
Output connector	mSATA x 2	M.2 2242/ 2260/2280 x 2	M.2 Key-B x 2
Dimensions(W*L*H/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 Info.	E2SS-32R1-C1	E2SS-32R2-C1	ESPS-32R1-C1 ESPS-32R1-W1

iRAID

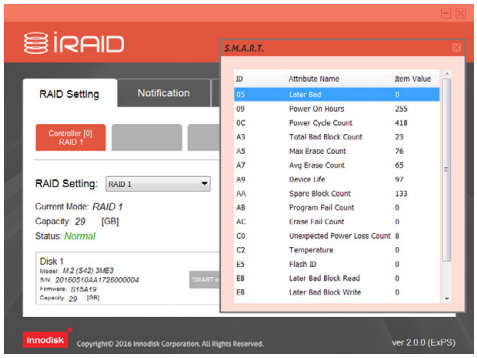
Simplifying the configuration and management of innodisk's RAID controller

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

Innodisk SSD compatibility list

- SATA SSD 3MG-P
- SATA SSD 3MG2-P
- SATA SSD 3MR3-P
- SATA SSD 3ME
- SATA SSD 3ME2
- SATA SSD 3ME3

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.

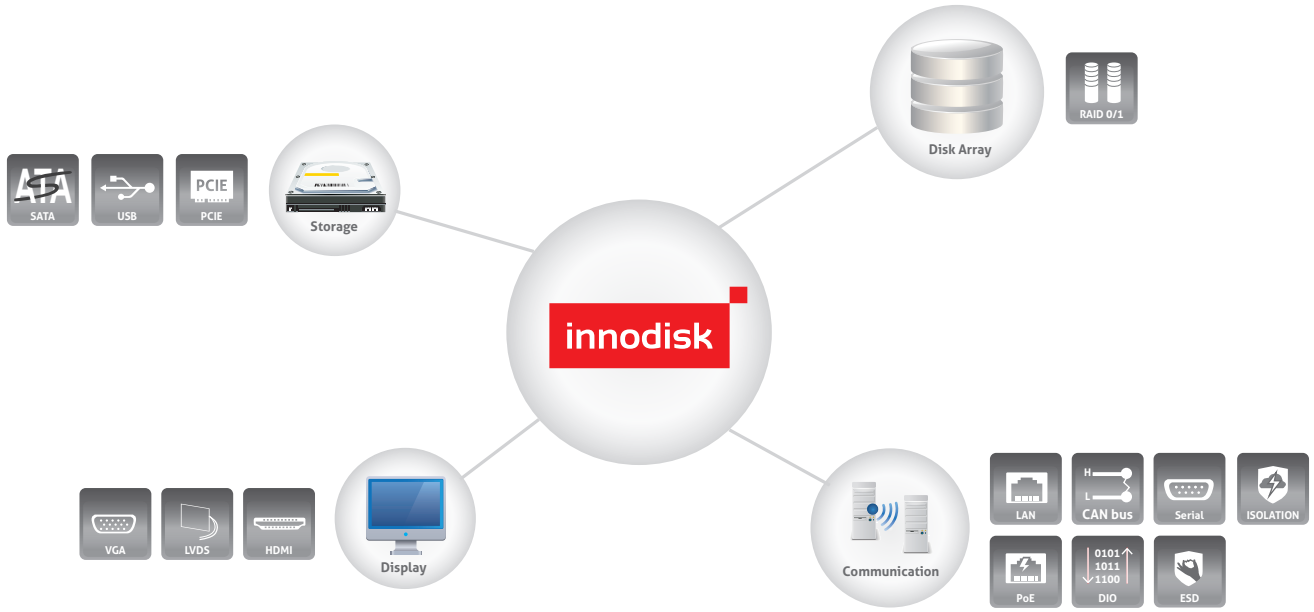




Model Name	EMPV-1201	EMPV-1202
Module Type	mPCIe to dual VGA & HDMI(DVI) module	mPCIe to VGA & 18/24 bit LVDS module
Key Features	1. mPCIe to dual VGA & HDMI graphic card 2. VGA output: 1920x1080, up to 75Hz vertical rate 3. HDMI/DVI up to 1080p, ultra low power consumption 4. Optional VGA/HDMI/DVI cable 5. Allows for 90º, 180º, and 270º rotation of on-screen images	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. Allows for 90º, 180º, and 270º rotation of on-screen images
Form-Factor	mPCIe	mPCIe
Input I/F	PCI Express 1.0	PCI Express 1.0
Input Connector	mPCIe	mPCIe
Output I/F	VGA x 2, HDMI x 1(Optional DVI x 1)	VGA, 18/24 bit LVDS
Output Connector	40pin 1.25mm x 2 (40DP-1.25)	40pin 1.25mm x 1 (40DP-1.25)
Dimensions(W*L*H/mm)	31.5 x 50.9 x 8.2	30.0 x 50.9 x 8.2
Operating Temperature	STD temp : 0°~70°C Wide temp : -40°~85°C	STD temp : 0°~70°C Wide temp : -40°~85°C
Order Info.	EMPV-1201-C1 EMPV-1201-W1	EMPV-1202-C1, EMPV-1202-W1 EMPV-1202-C2, EMPV-1202-W2

Innodisk Embedded Peripheral

Innodisk offers industrial grade, standard embedded modules to help solution providers and system integrators. Innodisk EP extends the I/O functionality with easy-to-use interface and standard form factors. You can find the best suited module for each application by the matrix below.



F/F			Output								
			PCIe	SATA	PATA	USB	POE	VGA Display	LAN	DIO	Serial 232/422..
mPCIe (mSATA)	Input	PCIe	EMPP-0201	EMPS-3401 EMPS-2201 EMPS-3201 EMPS-32R1	EMP4-1101	EMPU-3401 EMPU-3201	EMPL-G2P1	EMPV-1201 EMPV-1202	EMPL-G101 EMPL-G201		EMP2-X801 EMP2-X402 EMP2-X403 EMP2-X404 EMP2-X4S1 EMP2-X4S2
		SATA		EMSS-32R1							
		USB								EMUC-B201 EMUI-0D01	EMU2-X1S1 EMU2-X1S2
PCIe Standard	Input	PCIe	ESXS-2301 ESPP-2401	ESXS-2301 ESPS-3401 ESPS-32R1 ELPS-32R1		ELPU-2401	ESPL-G4P1				
		SATA		ESXS-2301							
		USB				ESXS-2301					
M.2 (NGFF)	Input	PCIe		EGPS-3401					EGPL-G101 EGPL-G201		
		SATA		EGSS-32R1							
		USB							EGUL-G101 EGUL-G201		
2.5"	Input	SATA		E2SS-32R1 E2SS-32R2							
		PATA		E24S-2101							

Service is not just what we do. It's who we are.

Absolute Service

Absolute Service is our pledge and our guide. It infuses everything we do at Innodisk.

Absolute Service is our promise to deliver the most comprehensive service in every situation. It's the philosophy that guides us in all interactions with our customers and business partners. It's the spirit of friendliness and enthusiasm that fills each member of the Innodisk team.

Absolute Service is our absolute commitment to our customers.

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

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