



Storage for Casino Gaming Applications Designed with Data Security

With the increasing popularity of gaming and gambling, there are a growing number of casinos worldwide. To keep up with the demand, gaming manufacturers depend on the latest high-performance computer technology with built-in security for their machines.

AWPs, Arcade games, and slot machines, have extremely high security needs. Local government regulations for the gaming industry ensure a safe and legal market, and add security requirements to data storage used in gaming machines. Government regulations usually include technical standards, and security measures in the design and manufacture of the machines, such as protection of game play data. With continuous play, sensitive algorithms, and high volumes of monetary transactions, manufacturers must ensure that only an authenticated user can access the data.

Innodisk is committed to providing OEMs in the gaming industry the best flash storage solutions to meet the security demands of the gaming industry without sacrificing reliability and performance. Innodisk guarantees a longevity of support for our products to remain compliant with gaming regulations.

Our gaming storage products are suitable for:

- *Slot machines*
- *AWPs*
- *Arcade games*
- *On-line gaming machines*
- *Multiplayer games*

Security Features of SSDs for Gaming Machines



Innodisk storage devices with the write protect security features provide a hardware-based mechanism for data protection. Once a user enables this function, it will prevent anyone from modifying the data. Using the Innodisk exclusive iSMART tool, the write protect function can be enabled/ disabled with the touch of one button.

Our SSDs are outfitted with GPIO, and can include optional functions, such as write protection. There are two ways to trigger write protect: by manually switching on the function, or by triggering it via a jumper and a pin header.

Write Protect on Devices

Partition of Storage

Innodisk provides a Partition of Storage function through our exclusive firmware, designed in-house. This function can solve security, audit, or compliance issues, and enable management of shared storage assets by different groups.

Innodisk SSDs are divided into three parts (with different security functions): Public, ROM and Hidden Area. Through this multiple partition, users can access and read/write to an individual area of the SSD by selecting a specific command.

Innodisk storage devices with security features are not limited to standard products. Innodisk's experienced in-house firmware team is capable of customizing our firmware for particular bits, bytes, fields and code values that are reserved for customer specific purposes. We strive to meet all security demands, and have the ability to adapt our solutions in accordance with local regulations. We take pride in tailoring our storage solutions to a customer's specific requirements.

Tailored to Your Needs

Real-World Applications

Customer Profile: A specialized distributor for casino gaming based in Australia

Application: Slot machines in casinos

Innodisk products needed: iCF4000 (with SLC flash) and 2.5"SATA SSD 3ME(with MLC flash)

Customer Requirements	The Innodisk Solution
An SSD with partition features that can be used by multi-tasking groups with different authorization levels. Unauthorized users cannot read and write to certain areas without a specific password.	Innodisk SSD is segmented into "public", "ROM" and "hidden" areas. Each partition is programmed to use the two security functions. (see figure1)
A tailored solution with 20 bytes of private area, which has an exclusive identification mark, to be recognized by host.	Add an identification code to the SSD to avoid a user error with the device. According to ATA-8 command set, Innodisk firmware customizes words 129-159 to edit the identification code.

Innodisk Secure Partition

Public Area- There is no protection from read/write in this area.

ROM Area- This area can be read only, and the write function is protected by password.

Hidden Area- This area is protected by a password. Unauthorized users cannot read/write to this area without a password.

Public, ROM and Hidden Area

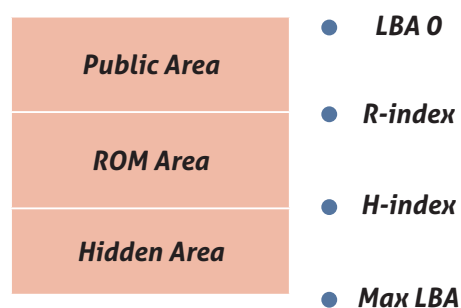


Figure 1

Our Service and Support

We guarantee BOM Control

Gaming data storage applications benefit from a fixed configuration. Fixed-BOM orders ensure product longevity and stability. In a fixed-BOM concept, Innodisk can offer a flexible and customized (fixed) part number. This offer accommodation any future changes necessary for parts of SSDs.

We guarantee the full functionality and reliability of SSDs, we are proud to deliver a fixed-BOM with a fixed-part number service.

We offer a one touch activation of the Write Protect Function via the iSMART tool

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

iSMART's one touch activation mode can save hours of setup and maintenance time, by giving users easy one touch access to the Write Protect feature.



We are dedicated to providing
our customers with the absolute
best service.

Flash Products

Featured here are 6 of Innodisk's advanced products for casino gaming applications.



Model name	2.5 SATA SSD 3SE	2.5" SATA SSD 3ME	2.5" SATA SSD 3ME3
Key Features	1. Intelligent error recovery system 2. Excellent data transfer speed 3. iData Guard protection	1. 7mm height mechanical design 2. Low cost solution 3. Budget-friendly MLC-based solution	1. High IOPS with DRAM-less design 2. 7mm height mechanical design 3. Low power consumption
Interface	SATA III 6.0Gb/s	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Flash Type	SLC	MLC	MLC
Capacity	8GB-512GB	8GB-512GB	8GB-256GB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max)	490/430	470/260	450/260
Max. Power consumption	2.75W (5V x 550mA)	4.3W (5V x 870mA)	4.3W (5Vx870mA)
Thermal Sensor	STD : N, W/T : Y		
External DRAM Buffer	N	N	N
iCell	N	N	Optional
TRIM	N	N	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 99.8 X 9.2	70.0 X 100.1 X 6.8	69.8 X 100.1 X 6.8
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-XXXD06SC***	DES25-XXXD06%C*** DES25-XXXD07%C***	DES25-XXXD09SC*** DES25-XXXD08SC***
Wide temp. OP(-40°C~+85°C)	DES25-XXXD06SW***	DES25-XXXD06%W*** DES25-XXXD07%W***	DES25-XXXD09SW*** DES25-XXXD08SW***
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=O1T) ***= flash configuration (internal control code), %=flash Type		



Model name	iCF 1SE	CFast 3ME	CFast 3ME3
Key Features	High quality SLC-based solution	1. Excellent data transfer speed 2. Compliant with CFast 2.0 standard 3. Write protect	1. Compliant with CFast 2.0 standard 2. Budget friendly MLC-based solution 3. Support hardware write protect 4. High IOPS
Interface	PATA	SATA III 6.0Gb/s	SATA III 6.0Gb/s
Connector	50pin CF connector	7pin+17pin	7pin+17pin
Flash Type	SLC	MLC	MLC
Capacity	128MB-8GB	4GB-128GB	4GB-128GB
Max. Channel	2	2	2
Sequential R/W (MB/sec, max)	50/40	300/150	300/150
Max. Power consumption	0.75W(5V x 150mA) 0.5W(3.3V x 150mA)	1.1W (3.3V x 320mA)	1.1W (3.3V x 320mA)
Thermal Sensor	STD : N, W/T : Y		
External DRAM Buffer	N	N	N
iCell	N	N	N
TRIM	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 3.6	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)	DC1S-XXXD41AC***	DECFA-XXXD07%C***	DECFA-XXXD09%C***
Wide temp. OP(-40°C~+85°C)	DC1S-XXXD41AW***	DECFA-XXXD07%W***	DECFA-XXXD09%W***
Note	PIO mode 0-6 UDMA mode 0-4	N	N
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12, 1TB=O1T) ***= flash configuration (internal control code), %=flash Type		

DRAM Products

Featured here are 8 of Innodisk's advanced products for casino gaming applications.



Series	Standard Solution	Standard Solution	Standard Solution	Standard Solution
Module Type	DDR4 DIMM	DDR3 DIMM	DDR4 SODIMM	DDR3 SODIMM
Frequency	2133Mhz	1600Mhz/1333Mhz/1066Mhz	2133Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	4GB/8GB	1GB/2GB/4GB/8GB	4GB/8GB	1GB/2GB/4GB/8GB
Function	Non-ECC Unbuffered Memory	Non-ECC Unbuffered Memory	Non-ECC Unbuffered Memory	Non-ECC Unbuffered Memory
Pin Number	288pin	240pin	260pin	204pin
Width	64Bits	64Bits	64Bits	64Bits
Voltage	1.2V	1.5V/1.35V	1.2V	1.5V/1.35V
PCB Height	1.23 Inches	1.18 Inches	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃
Value-Added Service (*Optional)	*Conformal Coating			



Series	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution
Module Type	DDR4 LONG DIMM	DDR3 LONG DIMM	DDR4 SODIMM	DDR3 SODIMM
Frequency	2133Mhz	1600Mhz/1333Mhz/1066Mhz	2133Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	4GB/8GB	1GB/2GB/4GB/8GB	4GB/8GB	1GB/2GB/4GB/8GB
Function	With ECC Unbuffered Memory	With ECC Unbuffered Memory	With ECC Unbuffered Memory	With ECC Unbuffered Memory
Pin Number	288pin	240pin	260pin	204pin
Width	72Bits	72Bits	72Bits	72Bits
Voltage	1.2V	1.5V/1.35V	1.2V	1.5V/1.35V
PCB Height	1.23 Inches	1.18 Inches	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃
Golden finger 30μ"	√	√	√	√
Value-Added Service (*Optional)	*Conformal Coating			

About Innodisk

Innodisk is a service driven provider of flash and DRAM products for the industrial and enterprise applications. Our team has the experience and expertise that comes directly from our focus on the industrial segment, and is bolstered by having our own firmware team and factory. With satisfied customers across the embedded, aerospace and defense, in-vehicle computing 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. The expanded business lines are leading our next step in being a comprehensive solution and service provider in industrial storage industry.

Absolute Service

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

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.

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

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