Absolutely On Board

⊓ Automotive

innodisk

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Showcased Products

The Features of Our Products

- **Golden Finger 30μ"**
- **RoHS Compliant**
- **Thermal Sensor**
- **CMTL Certified**
- **High Capacities, up to 128GB**
- **High Data Transfer Performance**
- **JEDEC Compliant**

DRAM Products Features

Flash Products Features

- **Customizable Firmware, Designed In-House**
- **Powerful Boot Drives**
- **Small Form Factors**
- **High Performance - SATA III Speeds up to 520/420 MB/s**
- **High Capacities up to 2TB**
- **iSMART Tool Included**

Innodisk is an industrial DRAM solutions provider dedicated to server applications delivering capacities up to 128GB. These memory modules are based on a variety of IC configurations in order to meet different demands and scopes of network and telecommunication applications. They are not only CMTL-certified, but also supported by a majority of current motherboard and system manufacturers, including Supermicro, Gigabyte, ASUS, and Intel. Please verify compatibility with your provider.

innodisk

ADVANCED CMTL® cmtlabs.com TESTED

A conformal coating can protect DRAM modules from

- Heat
- Static electricity
- Moisture
- Electrical or thermal conduction
- Corrosion
- Dust
- Environmental contaminants

Conformal Coating

Wide temperature feature for extended temperature DRAM modules designed to ensure operations, performance, and stability under extreme environmental temperatures.

Wide temperature range design has extended the existing JEDEC standard from 0ºC–85ºC to -40ºC–105ºC

+85°C
−40°C
Wide Temperature

"Rugged" is a term used to refer to Innodisk's innovation in DRAM hardware design and is key for solving technical issues during the design process and ensuring reliability in extreme conditions. This customized design is highly resistant to shock and vibration, providing a more reliable performance for applications.

Shock Vibration

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 also eliminating the need for power cables for 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.

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.

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.

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.

2.5" SSD 3ME3

Features

- 2.5" SATA III solution for industrial field
- 7mm height mechanical design
- iSMART disk health monitoring
- High IOPS to enhance boot up timing
- DRAM-less, 100% data integrity
- iData Guard Protection

Optional
Conformal
Coating

Specifications	
Model Name	2.5" SATA SSD 3ME3
Interface	SATA III 6.0 Gb/s
Type	2.5"
Flash Type	MLC
Capacity	8GB~512GB
Max. Channels	4
Sequential R/W (MB/sec, max.)	415/200
Max. Power Consumption	2.1 W (5V x 428 mA)
Thermal Sensor	ST- Optional / WT- Default
External DRAM Buffer	N
ATA Security	Y
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	69.85 x 100.1 x 7.0
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

2.5" SSD 3MR3-P

Features

- Compliant with MIL-STD-810-F/G
- Compliant with E-Mark/SAE J113/ISO 7637-2
- Data security (QEraser/ SEraser/ Destroy/ Write Protect)
- High random R/W performance
- iSMART disk health monitoring
- Intelligent error recovery system
- Enhanced power cycling management
- iCell technology for data protection

Optional Conformal Coating

Specifications

Model Name	2.5" SATA SSD 3MR3-P
Interface	SATA III 6.0 Gb/s
Type	2.5"
Flash Type	MLC
Capacity	32GB~512GB
Max. Channels	4
Sequential R/W (MB/sec, max.)	500 / 260
Max. Power Consumption	5 W (5V x 1A)
Thermal Sensor	Y
External DRAM Buffer	Y
ATA Security	Y
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	70.0 x 100.0 x 9.2
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

2.5" SSD 3MG2-P w/iCell

Features

- 2.5" SATA III solution for industrial field
- 7mm and 9.5mm height Mechanical design
- High IOPS
- DEVSLP supported
- Intelligent error recovery system
- iSMART disk health monitoring
- iData Guard for abnormal power failure
- iCell technology for data protection

Optional Conformal Coating

Specifications

Model Name	2.5" SATA SSD 3MG2-P
Interface	SATA III 6.0 Gb/s
Type	2.5"
Flash Type	MLC
Capacity	8GB~2TB
Max. Channels	4
Sequential R/W (MB/sec, max.)	520 / 480
Max. Power Consumption	6 W (5V x 1.2A)
Thermal Sensor	Y
External DRAM Buffer	Y
ATA Security	Y
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	70.0 x 100.0 x 6.8 (8GB-1TB) / 70.0 x 100.0 x 9.5 (2TB)
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

mSATA 3MG2-P

Features

- SATA III 6.0Gb/s interface
- JEDEC MO-300 standard dimension
- Intelligent error recovery system
- iSMART disk health monitoring
- Higher IOPS with external DRAM buffer
- iData Guard for abnormal power failure
- Zero mechanical interference
- DEVSLP supported

Optional
Conformal Coating

Specifications	
Model Name	mSATA 3MG2-P
Interface	SATA III 6.0 Gb/s
Type	Standard
Flash Type	MLC
Capacity	8GB~512GB
Max. Channels	4
Sequential R/W (MB/sec, max.)	520 / 355
Max. Power Consumption	2.8 W (3.3 V x 0.86 A)
Thermal Sensor	Y
External DRAM Buffer	Y
H/W Write Protect	Optional
ATA Security	Y
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	29.85 x 50.8 x 3.6
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

M.2 (S42) 3ME3

Features

- SATA III 6.0Gb/s interface
- iSMART disk health monitoring
- Intelligent error recovery system
- Excellent data transfer speed
- Zero mechanical interference
- Anti-vibration mechanical design

Optional
Conformal
Coating

Specifications

Model Name	M.2 (S42) 3ME3
Interface	SATA III 6.0 Gb/s
Type	Standard
Flash Type	MLC
Capacity	8GB~128GB
Max. Channels	2
Sequential R/W (MB/sec, max.)	200 / 80
Max. Power Consumption	0.77 W (3.3V x 234 mA)
Thermal Sensor	ST- Optional / WT- Default
External DRAM Buffer	N
H/W Write Protect	N
ATA Security	Y
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	22.0 x 42.0 x 3.2
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

CFast 3ME3

Features

- Innovative Firmware Algorithm
- DRAM-less, 100% data integrity
- Excellent random performance
- Wide Temperature: -40℃~85 ℃
- Supports TRIM/NCQ/SMART
- Built in iData Guard

Conformal Coating (Optional)

Specifications

Model Name	CFast 3ME3
Interface	SATA III 6.0 Gb/s
Type	Standard
Flash Type	MLC
Capacity	8GB~256GB
Max. Channels	2
Sequential R/W (MB/sec, max.)	220/130
Max. Power Consumption	1.1W
Thermal Sensor	ST- Optional / WT- Default
H/W Write Protect	Optional
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x 3.6
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

CFast 3IE3

Features

- Innovative Firmware Algorithm
- DRAM-less, 100% data integrity
- Excellent random performance
- Wide Temperature: -40℃~85 ℃
- Supports TRIM/NCQ/SMART
- Built in iData Guard

Optional
Conformal Coating

Specifications

Model Name	CFast 3IE3
Interface	SATA III 6.0 Gb/s
Type	Standard
Flash Type	iSLC
Capacity	8GB~128GB
Max. Channels	2
Sequential R/W (MB/sec, max.)	240/160
Max. Power Consumption	1.1W
Thermal Sensor	ST- Optional / WT- Default
H/W Write Protect	Optional
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x 3.6
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

CFast 3SE

Features

- SATA III 6.0Gb/s interface
- Extremely low power consumption
- iSMART disk health monitoring
- Intelligent error recovery system
- Excellent data transfer speed
- Hardware write protect
- Enhanced power cycling management

Conformal Coating (Optional)

Specifications	
Model Name	CFast 3SE
Interface	SATA III 6.0 Gb/s
Type	Standard
Flash Type	SLC
Capacity	1GB~64GB
Max. Channels	4
Sequential R/W (MB/sec, max.)	470 / 250
Max. Power Consumption	1W
Thermal Sensor	ST- Optional / WT- Default
H/W Write Protect	Y
S.M.A.R.T.	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x 3.6mm
Vibration	20G@7~2000Hz
Shock	1500G@0.5ms
MTBF	>3 million hours
Storage Temperature	-55°C ~ +95°C
Operation Temperature	Standard Grade: 0°C ~ +70°C; Industrial Grade: -40°C ~ +85°C

EMUC-B201

Features

- CANbus 2.0B (DB-9 x 2) backward compatible with 2.0A
- Complies with EN61000-4-5 2.5kV Surge protection
- Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection
- Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
- Supports -40°C to +85°C
- Supports 3rd mounting hole and USB Pin header for out-of-minicard installation
- Support native CDC-ACM driver in Linux
- LED indicator Power/Error/Active/Link
- Support baud rate 50/125/250/500/1000K
- 30μ " golden finger, 3 years warranty
- Industrial design, manufactured in Innodisk Taiwan

Specifications	
Model Name	EMUC-B201
Form-Factor	mPCIe
Input I/F	USB 2.0
Output I/F	Isolated CANbus 2.0B
Output connector	2 x DB-9
TDP	1.62W (3.3V, 490mA)
Dimensions(W x L x H/mm)	30 x 50.9 x 6.1
Temperature	Operation: W/T temp: -40°C ~ +85°C
	Storage: -55°C ~ +95°C
Environment	Vibration: 5G @7~2000Hz
	Shock: 50G @ 0.5ms
Notes	Please download driver and API(C code Library) from MyInnodisk website. Windows: XP(32bit), 7(32/64bit), 8/8.1(32/64bit)
	Linux: Native CDC-ACM
	API Support for Windows and Linux based on x86 platforms.

DDR4 Conformal Coated LONG DIMM

Available

Golden finger 3γ"

Conformal Coating (Optional)
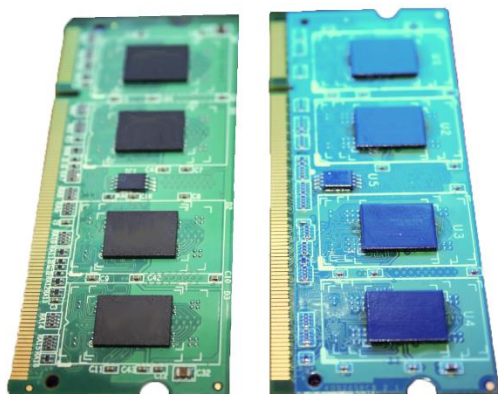
Before *After*

Features

- JEDEC standard 1.2V(1.26V~1.14V) Power Supply
- JEDEC Standard 288-pin Dual In-Line Memory Module
- 8 bit pre-fetch
- On Die Termination with ODT pin
- Bi-directional Differential Data Strobe
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Gold Finger 3μ"
- RoHS Compliant

Conformal Coated Features:

Conformal coating protects DRAM modules from...

- Electrical / Thermal Conduction
- Heat / Dust / Moisture / Corrosion
- Environmental Contaminants

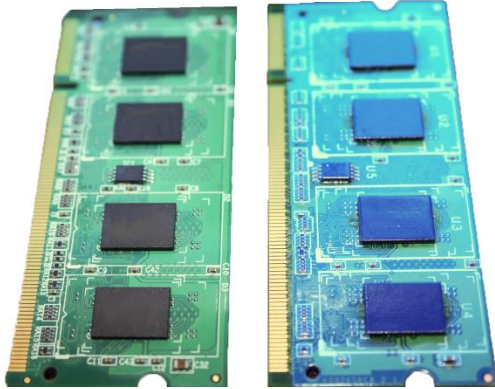| Specifications	
Series	Standard
Module Type	DDR4 LONG DIMM
Frequency	2133MHz/2400MHz
Capacity	4GB/8GB/16GB
Function	Non-ECC Unbuffer Memory
Pin Number	288pin
Width	64Bits
Voltage	1.2V
PCB Height	1.23 Inches
Operation Temperature	0°C ~ +85°C

DDR3 Conformal Coated SODIMM

Available

Golden finger 3μ"

Conformal Coating (Optional)

Before   *After*

Features

- JEDEC standard 1.35V(1.28V~1.45V) Power Supply
- 1.5V(1.425V~1.575V) Power Supply
- JEDEC Standard 204-pin Dual In-Line Memory Module
- 8 bit pre-fetch
- On Die Termination with ODT pin
- Bi-directional Differential Data Strobe
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Gold Finger 3μ"
- RoHS Compliant

Conformal Coated Features:

Conformal coating protects DRAM modules from...

- Electrical / Thermal Conduction
- Heat / Dust / Moisture / Corrosion
- Environmental Contaminants

Specifications	
Series	Standard
Module Type	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz
Capacity	1GB/2GB/4GB/8GB/16GB
Function	Non-ECC Unbuffer Memory
Pin Number	204pin
Width	64Bits
Voltage	1.5V/1.35V
PCB Height	1.18 Inches
Operation Temperature	0°C ~ +85°C

DDR4 WT LONG DIMM

Available

Golden finger 30μ"

Conformal Coating (Optional)

Wide Temperature +85°C ~ -40°C

Features

- JEDEC standard 1.2V(1.26V~1.14V) Power Supply
- JEDEC Standard 260-pin Dual In-Line Memory Module
- 8 bit pre-fetch
- On Die Termination with ODT pin
- Bi-directional Differential Data Strobe
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Gold Finger 30μ"
- RoHS Compliant
- Conformal Coating (Optional)

Specifications	
Series	Wide Temperature
Module Type	DDR4 Long DIMM
Frequency	2133MHz/2400MHz
Capacity	4GB/8GB/16GB
Function	Non-ECC Unbuffer Memory
Pin Number	288pin
Width	64Bits
Voltage	1.2V
PCB Height	1.18 Inches
Operation Temperature	-40°C ~ +85°C

DDR4 WT SODIMM

Available

Features

- JEDEC standard 1.2V(1.26V~1.14V) Power Supply
- JEDEC Standard 260-pin Dual In-Line Memory Module
- 8 bit pre-fetch
- On Die Termination with ODT pin
- Bi-directional Differential Data Strobe
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Gold Finger 30µ"
- RoHS Compliant
- Conformal Coating (Optional)

Specifications	
Series	Wide Temperature
Module Type	DDR4 SODIMM
Frequency	2133MHz/2400MHz
Capacity	4GB/8GB/16GB
Function	Non-ECC Unbuffer Memory
Pin Number	260pin
Width	64Bits
Voltage	1.2V
PCB Height	1.18 Inches
Operation Temperature	-40°C ~ +85°C

DDR4 LONG DIMM

Available

Features

- JEDEC standard 1.2V(1.26V~1.14V) Power Supply
- JEDEC Standard 288-pin Dual In-Line Memory Module
- 8 bit pre-fetch
- On Die Termination with ODT pin
- Bi-directional Differential Data Strobe
- Average Refresh Period 7.8us at lower than TCASE 85℃, 3.9us at 85℃ < TCASE ≤ 95℃
- Gold Finger 3μ"
- RoHS Compliant
- **Conformal Coating (Optional)**

Specifications	
Series	Standard
Module Type	DDR4 LONG DIMM
Frequency	2133MHz/2400MHz
Capacity	4GB/8GB/16GB
Function	Non-ECC Unbuffer Memory
Pin Number	288pin
Width	64Bits
Voltage	1.2V
PCB Height	1.23 Inches
Operation Temperature	0℃ ~ +85℃

DDR4 SODIMM

Available

Features

- JEDEC standard 1.2V(1.26V~1.14V) Power Supply
- JEDEC Standard 288-pin Dual In-Line Memory Module
- 8 bit pre-fetch
- On Die Termination with ODT pin
- Bi-directional Differential Data Strobe
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Support registered function
- Gold Finger 3μ"
- RoHS Compliant
- Conformal Coating (Optional)
- Rugged Design (Optional)

Specifications

Series	Standard
Module Type	DDR4 SODIMM
Frequency	2133MHz/2400MHz
Capacity	4GB/8GB/16GB
Function	Non-ECC Unbuffer Memory
Pin Number	260pin
Width	64Bits
Voltage	1.2V
PCB Height	1.18 Inches
Operation Temperature	0°C to +85°C

Mounting Rugged SODIMM

Available

Golden finger 30μ"

Conformal Coating (Optional)

Wide Temperature +85°C / -40°C

Features

- JEDEC standard 1.8V +/- 0.1V Power Supply
- JEDEC Standard 200-pin
- 4 bit pre-fetch
- OCD (Off-Chip Driver Impedance Adjustment)
- Programmable Burst Length 4 / 8 with both sequential and interleave mode
- Auto refresh and self refresh supported
- Wide Temperature SDRAM operating temperature range -40°C ≤ TA ≤ +85°C
- Gold Finger 30μ"
- Mounting hole for rugged environment
- RoHS Compliant
- Conformal Coating (Optional)

Specifications

Series	Rugged DIMM (Wide Temp.)
Module Type	DDR2 SODIMM
Frequency	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB
Function	Non-ECC Unbuffer Memory
Pin Number	200pin
Width	64Bits
Voltage	1.8V
PCB Height	1.57 Inches
Operation Temperature	-40°C ~ +85°C

XR-DIMM
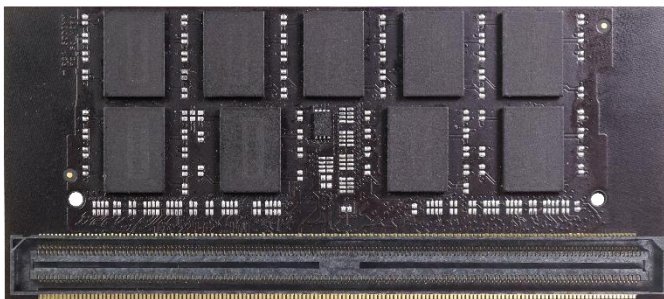
Available

Wide Temperature

Key Features

• Highly rugged interface to CPU using pin connector and mounting hole which providing enhanced resistance to shock and vibration
• Special rugged designs that offer proven reliability in extreme conditions include shock, vibration, dust, humidity, and temperature
• The XR-DIMM pin definition follows the DDR4 SODIMM pin definition to ease the implementation of CPU designs which supports both unbuffered (RS-UDIMM) and registered (RS-RDIMM) versions.
• No memory socket : a more rugged and compact version compared with regular SODIMM
• Tiny 83 mm x 36 mm form factor
• High capacity : 8GB & 16GB
• Integrated thermal sensor
• High reliability and endurance
• Wide temperature and low power consumption
• Great data transfer quality
• Brand new full DDR4 implementation with ECC support

Interface	300 Pin
ECC	Yes
Dimension	83 mm x 36 mm
Memory Type	DDR4
Capacity	8GB/16GB
Max power consumption	1.8W
Thermal sensor	Onboard
Working Temperature	-40~85 ℃