ADATA®

INDUSTRIAL PRODUCT CATALOG

About ADATA

Global Memory and Storage Leader

Founded in May, 2001 by Chairman and CEO Mr. Simon Chen, ADATA Technology Co., Ltd. is a world leading provider of memory modules and flash memory products, which is the No.2 branded SSD and Module manufacturer in market share worldwide in 2017. Building on its technical expertise, state-of-the-art manufacturing facilities, and premium customer service, ADATA grew rapidly to become a Taiwan Top 20 global brand.

Total Commitment to Compatibility and Reliability

ADATA has a well-earned reputation for manufacturing quality and reliable products. Driven by our unwavering dedication to the highest quality standards and product specifications, ADATA offers a comprehensive portfolio of industrial memory and storage products, including DRAM modules, memory cards and durable solid state drives. All products are designed and tested for harsh environments where they may be exposed to extreme enviromental temperatures, shock, vibration, dust, and more. Each product is manufactured in accordance with the most stringent industrial and environmental standards. ADATA is ISO 14001-accredited and our commitment to responsible manufacturing assures quality while protecting the environment.

A Complete User Experience

ADATA has manufacturing and sales locations in various parts of the world, so customers can make the most of their investment in ADATA products thanks to long warranty periods and close support. Flexible ADATA design and engineering services allow us to take on custom orders, tailoring platforms to specific needs and deployments. This allows users greater access to useful solutions compared to a strictly off the shelf approach. At the same time, ADATA prides itself on personalized service with customers. We are not a monolithic mega corporation and we remain close to our roots as technology enthusiasts. No account is too big or too small, too close, or too far: we liaise with all clients closely to ensure that our products perform to allow for their work life to be easier.

Quality, Safety and Environmental Certifications

•ISO 9001 •IECQ QC080000 •ISO 14001 •OHSAS 18001

Innovating the Future

RELIABLE
EMBEDDED STORAGE
PROVIDER

SSD

PCIe Gen3x4 M.2 2280 SSD

DDR4 DRAM Module

Anti-Sulfuration Technology

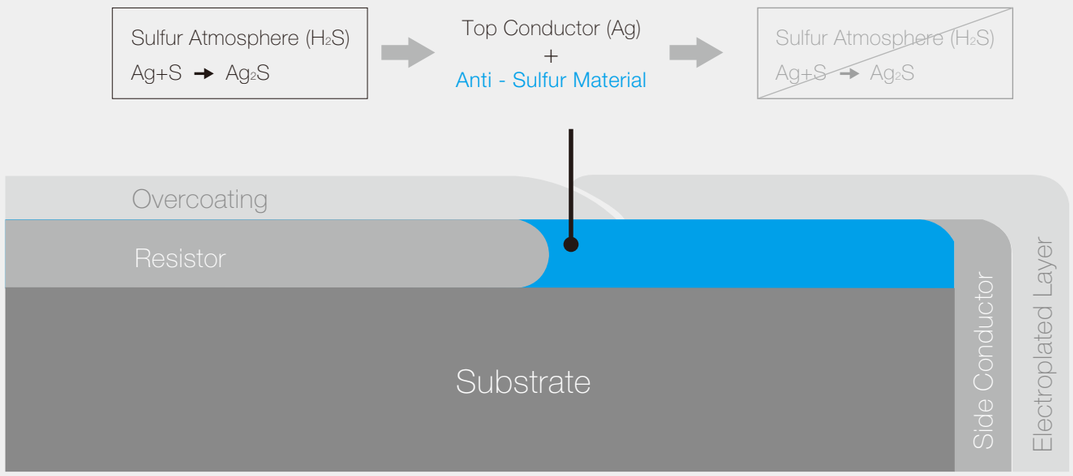
The First Line of Defense Against Environmental Contaminants

As environmental pollution becomes more widespread, the application of anti-sulfuration technology is becoming more common, including for industrial equipment, electrical systems, network applications, and outdoor electronic equipment. To avoid short-circuiting caused by silver sulfide and to ensue normal operation of modules, ADATA applies anti-sulfuration technology to its industrial-grade solid-state drives (SSD) and DDR4 DRAM modules to counter corrosion and enhance the stability and service life of these products.

Components with anti-sulfuration technology are screened for reliability and resilience to sulfuration:

- Subjected to high sulfur, high temperatures (105°C), and high humidity (91%-93%)
- Tested continuously for over 45 days
- Meets ASTM B809-95 anti-sulfuration requirements

ADATA anti-sulfuration technology is effective in preventing the negative impact of silver sulfide on NAND flash products and DRAM product, making them more reliable and durable when used in environments with excessive sulfur.



ADATA applies anti-sulfuration technology to its industrial-grade solid-state drives (SSD) and DDR4 DRAM modules to counter corrosion and enhance the stability and service life of these products.

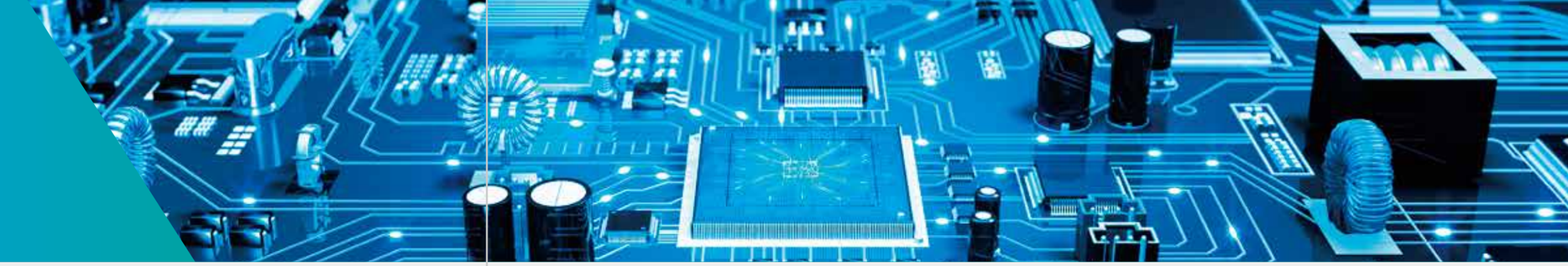
In addition to this, ADATA has also upgraded the speed of its industrial-grade DDR4 DRAM modules to 3200MHz, boosting performance to meet the growing demands for high-performance and energy-efficient DRAM and SSDs for demanding industrial applications.

The ADATA Solution

Form Factor	Product	
2.5” SSD	ISSS333	
	ISSS332	
M.2 2280 SSD	IM2S3328E	
	IM2S3338	
mSATA SSD	IMSS332	
M.2 2242 SSD	IM2S3334	
	IM2S3134N	
CFast Card	ISC3E	

Conformal Coating

Firmware Customization



Protecting Electronic Components from Corrosion

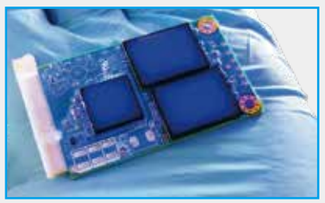
Conformal Coating is a polymer film designed to protect a variety of electronic components on PCBs. Serving as a defensive layer for PCBs, it safeguards electronic components from impact and corrosion due to harsh environmental conditions.

Addressing the increasing demands for reliable and durable DRAM and Flash modules for use in harsher conditions, more emphasis is being placed on utilizing effective protective measures. Conformal Coating is a simple yet effective solution to protect devices from unwanted damage, such as corrosion and short-circuiting due to the impact of dust, liquid, and pollution.

The ADATA Solution

Form Factor	Product	
M.2 2280 SSD	IM2S3328E	
	IM2S3338	
mSATA SSD	IMSS332	
M.2 2242 SSD	IM2S3334	
	IM2S3134N	

Item	ADATA Criteria
Coating Model Name	DOWSIL™ 1-2577
Coating glue thickness	50um-210um
Reliability Verification Test	IPC-A-610E
(Sulfuration / Waterproof)	J-STD-001
(Ref. documents)	IPC-CC-830
Color (Cured)	Translucent (Clear)
Active Temperature	-40°C ~ 200°C
Shieded Part	Two screw holes, Gold Finger
Environmental Protection	DOWSILTM 1-2577
Standard	Coating glue containing halogen



Customized Firmware to Meet Diverse Industrial Application Requirements

Thanks to its strong R&D capability, ADATA is able to customize firmware for different applications, such as automation, POS, and data centers to name a few. By adjusting firmware functionality, customers can enjoy the benefits of sustained performance, power-loss protection, and longer product lifespans.

Automation

Points of Sale

Data Centers

Casino Gaming Machines

In-Car Systems

Surveillance

Key Component Sorting

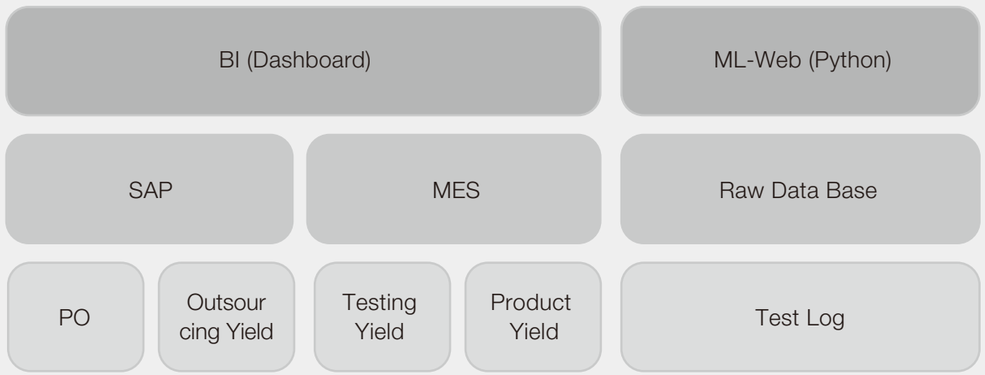
Automated Production

In-house Auto Sorting for NAND Flash IC

- Auto function and I/O performance test
- Basic P/E infant mortality screening out
- NAND capacity guaranteed
- Wide temperature NAND sorting

ADATA Sorting Criterions	Quality Check	Sorting Result
Exclude unstable IC	100%	✔ Implement on ADATA products
Exclude early retirement blocks	<100%	Eliminated
Operate instruction verification		

- Auto SPI for Solder Paste Inspection
- Auto AOI for PCBA Inspection
- Auto Labeling for Traceability
- Auto In-Circuit-Testing
- Auto PCB Routing
- Auto Picker



*ADATA has successfully implemented BI (Business Intelligence) systems in its factories and realized “Smart Manufacturing”.

ATE Testing Automatic Test Equipment

SSD ToolBox ADATA Proprietary Free Software

- Open, Short and DC testing
- Function testing
- Voltage/Frequency Corner testing
- Timing testing

Module ATE

ATE (Automatic Test Equipment) is used for DRAM specification testing. Testing capability equals that of semiconductor industry-level machinery. This guarantees ADATA modules meet DRAM specifications including function, DC, AC, timing, and frequency.

– Open, short, and continuous tests

– DC test (leakage, IDD, VREF)

– Function test (H/L VDD, refresh, self-refresh, write/read operation, data mask, OTF)

– Speed test (timing parameter check, data BGR check)

ADATA SSD ToolBox provides multiple ways for users to obtain disk information and change settings easily. Additionally, it speeds up your SSD and improves its lifespan.

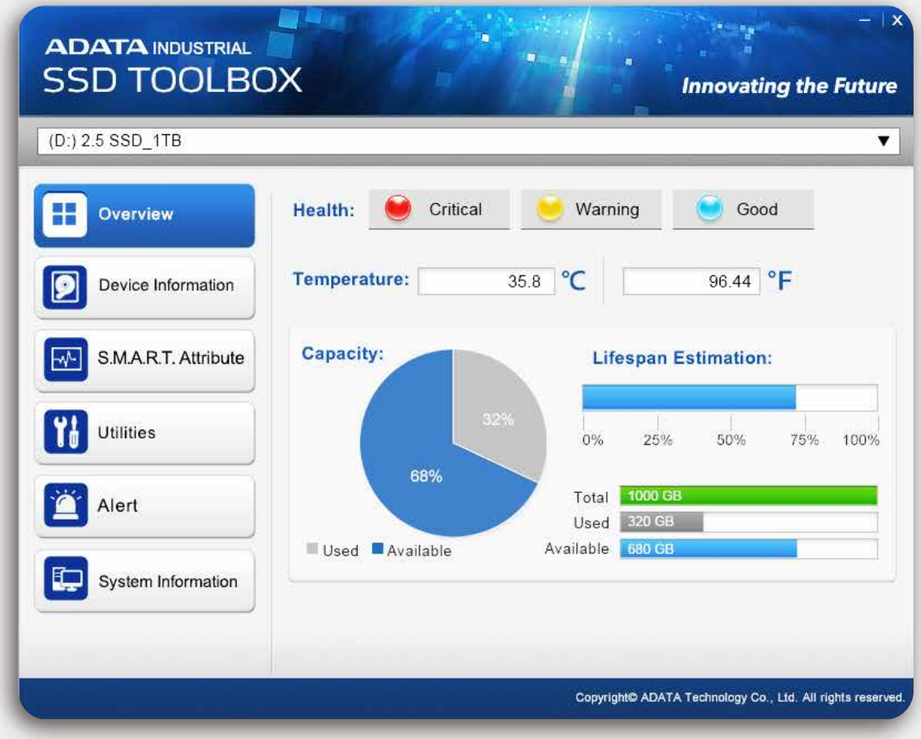
Drive Info
Get assigned drive information.

Utilities
Includes secure erase, firmware update, SSD Toolbox upgrade, and export log.

Diagnostics
Includes quick diagnostics and full diagnostics.

System Optimization
Provides simple settings for SSD optimization.

System Info
Displays current system information.



ADATA SSD Validation

Total Solution Customer Service

Advances in technology have led to a jump in demand for NAND Flash SSDs. Compared to standard HDD, SSDs offer high speed, low power consumption and exceptional shock resistance. A variety of small form-factors are supported as well, making them far more flexible than HDDs. The evolution of production processes, however, has exposed NAND Flash's weakness in service life and stability. ADATA SSD Validation uses a rigorous testing process to guarantee SSD product functionality, performance and reliability. The validation consists of two parts: Functionality & Performance Test and Reliability Validation

Functionality & Performance Test

Quality products are made from quality components. Large numbers of reads and writes are carried out under harsh testing conditions over a long period of time in multi-tasking mode. ADATA not only selects the best quality components, but has also implemented over 500 tests in 19 categories of Performance test and Compatibility test for SSD products to ensure full compliance.

Reliability Validation

Apart from testing under high-low temperatures and ±10% voltage, ADATA has developed burn-in software to simulate errors under different usage. Random repeated testing is also carried out to ensure the reliability of SSD products. ADATA uses Reliability Demonstration Test (RDT) to calculate the Mean Time Between Failure (MTBF). This ensures the best product quality and a high level of reliability.

Product Change Notice Policy

ADATA endeavors to notify customers of any substantial changes that may affect the manufacturing or sale of products, including but not limited to appearance, dimensions, quality certifications, functions, features, and reliability/durability indicators. Prior to implementing such changes or modifications, ADATA will do its utmost to issue a PCN to customers in accordance.

End-of-Life Policy

ADATA delivers the most advanced, optimized, and industry-leading products it can produce to customers. In order to best perform this duty, older products may need to be discontinued so that resources can be best utilized on more relevant and beneficial solutions. When the decision has been made to retire a product, ADATA will issue an EOL notice to customers.

2.5-inch SSD

The ADATA 2.5 inch SATA-III 6Gb/s Solid State Drives (SSD) utilizes the best quality Flash components for sturdy performance and provides comprehensive easy-to-use management tools to maximize usability. All of these products comply with JEDEC specifications and feature low-power designs for industrial, embedded and enterprise applications. In addition, support for NCQ and TRIM functions allow for higher IOPS and better sequential performance. ADATA SSDs also benefit from the company's advanced A+ Testing Methodology and SSD Validation processes, ensuring that the highest quality, compatibility and reliability. The ADATA rigorous quality system guarantees longevity and stability for the intended application usage.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
ISSS316	●	–	–	●	●	●	●	●	●	●	●
ISSS332	●	●	–	●	●	●	●	●	●	●	●
ISSS333	●	●	–	●	●	●	●	●	●	●	●

● Supported

ISSS316

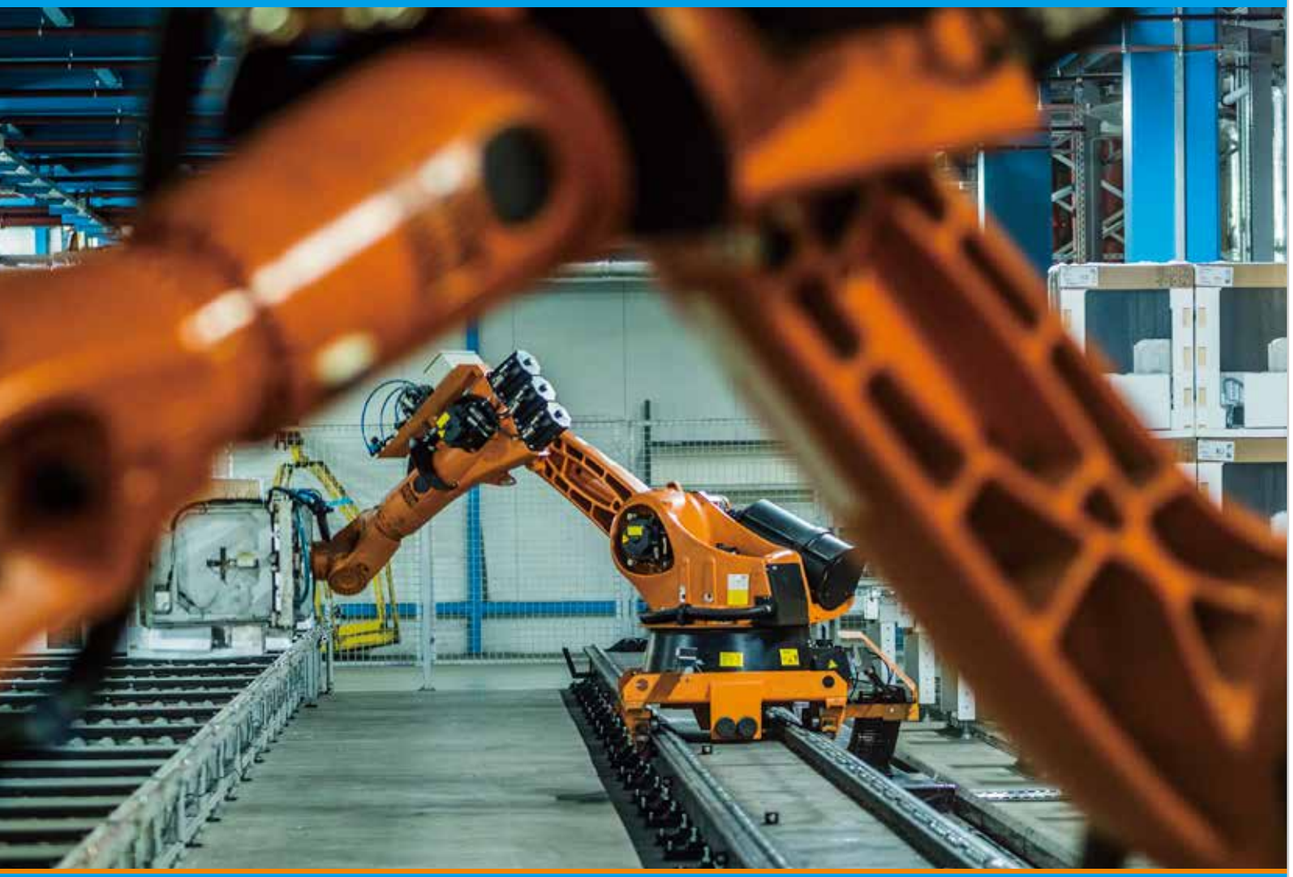
ISSS333

ISSS332

ISSS332

Model		ISSS316	ISSS333	ISSS332	
Capacity		32GB - 1TB	64GB - 2TB	8GB - 256GB	16GB - 1TB
Operating Voltage		5V	5V	5V	5V
Flash Type		3D TLC	3D TLC	SLC	MLC
Sequential Read (Max.)		550MB/s	560MB/s	560MB/s	560MB/s
Sequential Write (Max.)		520MB/s	520MB/s	450MB/s	450MB/s
Interface		SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps
Operating Temperature	Commercial	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC
	Industrial	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC
Operating Humidity		5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)		1.79W	3.96W	4.6W	4.6W
MTBF (Million Hours)		2	2	2	2
Vibration Resistance		20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)	20G (80-2000Hz)
Shock Resistance		1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)		100.25 x 69.85 x 7mm	100.25 x 69.85 x 7mm	100.45 x 69.85 x 7mm	100.45 x 69.85 x 7mm
S.M.A.R.T.		Supported	Supported	Supported	Supported
ESD and EMI Safe		Supported	Supported	Supported	Supported
H/W PLP Function		—	Optional	Optional	Optional
A+ SLC Mode		—	—	Optional	Optional
Features		· NCQ and TRIM Command · DEVSLP · LDPC ECC Engine · Wear Leveling · H/W Power Detector and Flash Protection	· Complies with ATA-8 Standard · NCQ and TRIM Command · DEVSLP · LDPC ECC Engine · SLC Cache & DRAM Buffer · Data Shaping for increased data reliability · Wear Leveling · H/W Power Detector and Flash Protection	· Complies with ATA-8 Standard · NCQ and TRIM Command · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection	
Applications		Transport, Industrial PC, Automation, IoT-related applications, Cloud computing, Networking, Medical application, Military, Aerospace			

M.2 2280 SSD



ADATA makes M.2 2280 SSDs in diverse capacities utilizing enterprise-class 3D NAND Flash. They are optimized for industrial and commercial applications, designed for extreme temperatures, and employ robust controllers. Depending on the model selected, features can include Power Loss Protection, TRIM, NCQ, DEVSLP and more for assured non-stop reliability.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
IM2P33F8	●	–	–	–	●	●	●	●	●	●	●
IM2P33E8	●	●	–	●	●	●	●	●	●	●	●
IM2S3168	●	–	–	●	●	●	●	●	●	●	●
IM2S3338	●	●	–	●	●	●	●	●	●	●	●
IM2S3328E	●	●	●	●	●	●	●	●	●	●	●

● Supported

IM2P33F8 | IM2P33E8 | IM2S3168 | IM2S3338 | IM2S3328E

Model	IM2P33F8	IM2P33E8	IM2S3168	IM2S3338	IM2S3328E
Capacity	128GB - 512GB	256GB - 2TB*	64GB - 1TB	64GB - 1TB	32GB - 1TB
Operating Voltage	3.3V	3.3V	3.3V	3.3V	3.3V
Flash Type	3D TLC	3D TLC	3D TLC	3D TLC	MLC
Sequential Read (Max.)	2000MB/s	3500MB/s	550MB/s	560MB/s	560MB/s
Sequential Write (Max.)	1500MB/s	3200MB/s	500MB/s	520MB/s	450MB/s
Interface	PCIe Gen3x4	PCIe Gen3x4	SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps
Operating Temperature (Commercial)	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC
Operating Temperature (Industrial)	—	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC
Operating Humidity	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)	2.8W	6.2W	1.58W	2.31W	3W
MTBF (Million Hours)	2	2	2	2	2
Vibration Resistance	20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)	80 x 22 x 2.25mm	80 x 22 x 2.25mm	80 x 22 x 3.5mm	80 x 22 x 3.5mm	80 x 22 x 3.5mm
S.M.A.R.T.	Supported	Supported	Supported	Supported	Supported
ESD and EMI Safe	Supported	Supported	Supported	Supported	Supported
H/W PLP Function	—	Optional	—	—	Optional
A+ SLC Mode	Optional	Optional	Optional	Optional	Optional
Features	· PCIe Gen3x4 · NVMe 1.3 support · Host Memory Buffer(HMB) · RAID Engine · End-to-End Data Protection · Slim single-sided design · Wear Leveling function · H/W Power Detector and Flash Protection	· PCIe Gen3x4 · NVMe 1.3 support · RAID Engine · End-to-End Data Protection · Wear Leveling · H/W Power Detector and Flash Protection · AES-256 and TCG Opal supported *2TB: Commercial Temp. only	· NCQ Command · TRIM Command · DEVSLP support · LDPC ECC Engine · Supports SLC Cache · Supports Data Shaping · Wear Leveling · H/W Power Detector and Flash Protection	· NCQ Command · TRIM Command · DEVSLP support · LDPC ECC Engine · Supports SLC Cache & DRAM Buffer · Supports Data Shaping · Wear Leveling · H/W Power Detector and Flash Protection	· NCQ Command · TRIM Command · DEVSLP support · Wear Leveling · H/W Power Detector and Flash Protection
Applications	Transport, Industrial PC, Automation, IoT-related applications, Cloud computing, Networking, Medical application, Military, Aerospace				

M.2 2242 SSD

The compact M.2 2242 form factor is smaller and more power-efficient than mSATA. ADATA makes M.2 SSDs in diverse capacities utilizing enterprise-class 3D NAND Flash. They are optimized for industrial and commercial applications, designed for extreme temperatures, and employ robust controllers. Depending on the model selected, features can include Power Loss Protection, TRIM, NCQ, DEVSLP and more for assured non-stop reliability.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
IM2S3334	●	●	●	●	●	●	●	●	●	●	●
IM2S3134N	●	●	●	●	●	●	●	●	●	●	●
IM2S3164	●	–	–	●	●	●	●	●	●	●	●

● Supported

IM2S3334

IM2S3134N

IM2S3164

Model	IM2S3334	IM2S3134N	IM2S3164
Capacity	64GB - 512GB	64GB - 256GB	64GB - 512GB
Operating Voltage	3.3V	3.3V	3.3V
Flash Type	3D TLC	MLC	3D TLC
Sequential Read (Max.)	560MB/s	550MB/s	560MB/s
Sequential Write (Max.)	520MB/s	320MB/s	510MB/s
Interface	SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps
Operating Temperature (Commercial)	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC
Operating Temperature (Industrial)	-40ºC to +85ºC	-40ºC to +85ºC (by request)	-40ºC to +85ºC
Operating Humidity	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)	2.3W	2.4W	1.75W
MTBF (Million Hours)	2	2	2
Vibration Resistance	20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)	42 x 22 x 3.5mm	42 x 22 x 3.5mm	42 x 22 x 3.5mm
S.M.A.R.T.	Supported	Supported	Supported
ESD and EMI Safe	Supported	Supported	Supported
H/W PLP Function	—	—	—
A^+ SLC Mode	—	Optional	—
Features	· LDPC ECC Engine · SLC Cache & DRAM Buffer · NCQ and TRIM Command · DEVSLP · Wear Leveling · H/W Power Detector and Flash Protection	· NCQ and TRIM Command · DEVSLP · Wear Leveling · H/W Power Detector and Flash Protection	· NCQ and TRIM Command · TCG Opal supported · LDPC ECC Engine · SLC Cache · Data Shaping for increased data reliability · Wear Leveling · H/W Power Detector and Flash Protection
Applications	Transport, Industrial PC, Automation, IoT-related applications, Cloud computing, Networking, Medical application, Military, Aerospace		

mSATA / Half-Slim SSD

The ADATA mSATA and Half-Slim SSDs are subjected to ADATA's advanced A+ Testing Methodology and SSD Validation to ensure that each SSD meets the exact requirements of industrial applications. The mSATA product series utilize the mSATA connector and comply with JEDEC (MO-300) specifications, which can be used with desktops, thin clients, industrial computers and embedded products. And the Half-Slim SSDs come with 22-pin SATA interface (MO-297), which are suitable for servers, thin clients, industrial computers and embedded devices.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
IMSS332	●	●	●	●	●	●	●	●	●	●	●
IMSS316	●	–	–	●	●	●	●	●	●	●	●
ISM31	●	–	–	●	●	●	●	●	●	●	●

● Supported

IMSS332

IMSS316

ISM31

Model		IMSS332	IMSS316	ISM31
Form Factor		mSATA (MO-300A)	mSATA (MO-300A)	SATA 22Pin (MO-297)
Capacity		16GB - 1TB	64GB - 1TB	32GB - 256GB
Operating Voltage		3.3V	3.3V	5V
Flash Type		MLC	3D TLC	MLC
Sequential Read (max.)		550MB/s	550MB/s	500MB/s
Sequential Write (Max.)		450MB/s	500MB/s	320MB/s
Interface		SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps
Operating Temperature	Commercial	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC
	Industrial	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC
Operating Humidity		5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)		3.35W	2.5W	2W
MTBF (Million Hours)		2	2	1
Vibration Resistance		20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance		1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	2000G/0.5ms, Half Sine Wave
Dimensions (L x W x H)		50.80 x 29.85 x 4.5mm	50.80 x 29.85 x 4.85mm	54 x 39 x 4mm
S.M.A.R.T.		Supported	Supported	Supported
Write Protect		Optional	—	—
ESD and EMI Safe		Supported	Supported	Supported
H/W PLP Function		Optional	—	—
A+ SLC Mode		Optional	Optional	—
Features		· Supports Intel SRT (Smart Response Technology) · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection	· NCQ and TRIM Command · DEVSLP · LDPC ECC Engine · Wear Leveling · H/W Power Detector and Flash Protection	· Complies with ATA-8 Standard · NCQ and TRIM Command · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection
Applications		Networking, Industrial PC, Embedded system, Medical application, Military		Industrial control system, Embedded system, Networking, IoT-related applications, Cloud computing, Medical application

DOM (Disk On Module)

ADATA DOM products support both SATA and USB interfaces. All products in the series are fully tested by ADATA's A+ Testing Methodology. Rigorous testing ensures outstanding quality and satisfies industrial computers' requirements for performance and reliability. ADATA DOM's are compact in size and are suitable for desktops, miniaturized computers, embedded system implementation, making it a premier choice for industrial control applications.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
USB DOM IUMU23C	●	–	–	–	–	–	–	●	●	–	●
USB DOM IUM3M	●	–	–	–	–	–	–	●	●	–	●
SATA DOM ISMS331	●	–	–	●	●	●	●	●	●	●	●

● Supported

IUMU23C

IUM3M

ISMS331

Model		IUMU23C		IUM3M		ISMS331			
Form Factor		USB 10PIN (w/connector pitch: 2.54mm & 2.00mm)	USB 10PIN (w/connector pitch: 2.54mm & 2.00mm)	USB 10PIN (w/connector pitch: 2.54mm & 2.00mm)	USB 10PIN (w/connector pitch: 2.54mm & 2.00mm)	SATA 7PIN	SATA 7PIN	SATA 7PIN	SATA 7PIN
		Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
Capacity		512MB - 4GB	512MB - 4GB	8GB - 32GB	8GB - 32GB	4GB - 32GB	4GB - 32GB	8GB - 128GB	8GB - 128GB
Operating Voltage		5V	5V	5V	5V	5V	5V	5V	5V
Flash Type		SLC	SLC	MLC	MLC	SLC	SLC	MLC	MLC
Sequential Read (Max.)		19MB/s	19MB/s	27MB/s	27MB/s	260MB/s	260MB/s	300MB/s	300MB/s
Sequential Write (Max.)		18MB/s	18MB/s	17MB/s	17MB/s	260MB/s	260MB/s	180MB/s	180MB/s
Interface		USB 2.0	USB 2.0	USB 2.0	USB 2.0	SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps
Operating Temperature	Commercial	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC
	Industrial	—	—	—	—	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC
Operating Humidity		5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)		1W	1W	0.9W	0.9W	1.56W	1.56W	1.56W	1.56W
MTBF (Million Hours)		2	2	1	1	2	2	1	1
Vibration Resistance		20G (80-2000Hz)	20G (80-2000Hz)	20G (80-2000Hz)	20G (80-2000Hz)	20G (80-2000Hz)	20G (80-2000Hz)	20G (80-2000Hz)	20G (80-2000Hz)
Shock Resistance		1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)		2.54mm: 36.9 x 26.6 x 5.0 mm	2.54mm: 45.4 x 26.6 x 5.3 mm	2.54mm: 36.9 x 26.6 x 8.7 mm	2.54mm: 45.4 x 26.6 x 5.3 mm	With Housing : 34.8 x 25.1 x 7 mm	With Housing : 40.7 x 25.1 x 7 mm	With Housing : 34.8 x 25.1 x 7 mm	With Housing : 40.7 x 25.1 x 7 mm
		—	—	2.0mm: 36.9 x 26.6 x 5.75 mm	—	Without Housing : 32.8 x 23.6 x 17 mm	Without Housing : 38.6 x 23.6 x 8.7 mm	Without Housing : 32.8 x 23.6 x 17 mm	Without Housing : 38.6 x 23.6 x 8.7 mm
S.M.A.R.T.		—	—	—	—	Supported	Supported	Supported	Supported
Write Protect		Supported	Supported	Supported	Supported	Optional	Optional	Optional	Optional
Features		· Available with standard 2.54/ 2.0mm pitch connectors · Data read/write protection switch · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection		· Available with standard 2.54/ 2.0mm pitch connectors · Data read/write protection switch · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection		· 2 Types of connector design · Connector latch design · Self-diagnostics and flash protection · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection · Supports H/W Write Protect Switch or Jumper			
Applications		Industrial control system, Embedded system, Networking, IoT-related applications, Cloud computing, Medical application							

CFast Card

ADATA CFast cards combine the form-factor of a CF card with the high-speed SATA interface for both high reliability and secure operation. Combining these two industrial standards, devices using the CFast specification can replace existing hard drives and CF cards in applications that require small form factors, removability and long lifespans. They are highly shock resistant, vibration resistant and can withstand extreme temperatures from -40ºC to +85ºC. The ADATA CFast operates at a low 3.3 volts and comes with a full range of features including S.M.A.R.T., Error Correcting Code (ECC), and Wear Leveling.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
ISC3E	–	●	–	●	▲	●	●	●	●	●	●
ICFS331	–	●	–	●	▲	●	●	●	●	●	●

● Supported ▲ By Request

ISC3E

ICFS331

Model		ISC3E		ICFS331
Form Factor		7+17 pin SATA	7+17 pin SATA	7+17 pin SATA
Capacity		4GB - 64GB	8GB - 256GB	8GB - 128GB
Operating Voltage		3.3V	3.3V	3.3V
Flash Type		SLC	MLC	MLC
Sequential Read (Max.)		180MB/s	500MB/s	550MB/s
Sequential Write (Max.)		160MB/s	300MB/s	150MB/s
Interface		SATA III 6.0Gbps	SATA III 6.0Gbps	SATA III 6.0Gbps
Operating Temperature	Commercial	0ºC to +70ºC	0ºC to +70ºC	0ºC to +70ºC
	Industrial	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC
Operating Humidity		5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)		1.1W	1.1W	1.1W
MTBF (Million Hours)		2	2	2
Vibration Resistance		20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance		1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)		36.4 x 42.8 x 3.6mm	36.4 x 42.8 x 3.6mm	36.4 x 42.8 x 3.6mm
S.M.A.R.T.		Supported	Supported	Supported
A^+ SLC Mode		—	Optional	Optional
Features		· Compatible with CFast 2.0 specifications · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection		· Compatible with CFast 2.0 specifications · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection · Support H/W Write Protect Function
Applications		Gaming, Networking, POS, Kiosk, Industrial PC, Medical application, Military, Aerospace		

CompactFlash Card

ADATA's industrial-grade CompactFlash card provides durability, reliability, removability and convenience all in one card. The form factor as well as the connector are highly suitable for embedded and industrial systems. ADATA's industrial CF cards come in both commercial (0ºC to +70ºC) and industrial (-40ºC to +85ºC) temperature ranges, providing long-term reliability for a broad range of applications. Functions supported include S.M.A.R.T., Error Correcting Code (ECC), and Wear Leveling.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
IPC17	–	–	–	●	–	–	–	●	●	–	●
IPC39	–	–	–	●	–	–	–	●	●	●	●

● Supported

IPC17

IPC39

Model	IPC17	IPC39
Form Factor	50 pin CF (ATA)	50 pin CF (ATA)
Capacity	512MB - 8GB	8GB - 128GB
Operating Voltage	3.3V / 5V	3.3V / 5V
Flash Type	SLC	MLC
Sequential Read (Max.)	45MB/s	120MB/s
Sequential Write (Max.)	25MB/s	100MB/s
Interface	PIO Mode 0~6 | Multi-Word DMA Mode 0~4 Ultra DMA Mode 0~4	PIO Mode 0~6 | Multi-Word DMA Mode 0~4 Ultra DMA Mode 0~7
Operating Temperature (Commercial)	0ºC to +70ºC	0ºC to +70ºC
Operating Temperature (Industrial)	-40ºC to +85ºC	-40ºC to +85ºC
Operating Humidity	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)	0.5W	1W
MTBF (Million Hours)	2	1
Vibration Resistance	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance	1500G/0.5ms,Half Sine Wave	1500G/0.5ms,Half Sine Wave
Dimensions (L x W x H)	36.4 x 42.8 x 3.6mm	36.4 x 42.8 x 3.6mm
S.M.A.R.T.	—	Supported
Features	·Compliant with CF 4.0 specifications ·Flash Management ·Error Correcting Code (ECC) ·Wear Leveling ·H/W Power Detector and Flash Protection	·Compliant with CF 6.0/4.0 specifications ·Flash Management ·Error Correcting Code (ECC) ·Wear Leveling ·H/W Power Detector and Flash Protection
Applications	Gaming, Networking, POS, Kiosk, Industrial PC, Medical application, Military, Aerospace	

SD Card

ADATA's industrial-grade SD cards offer tremendous performance and superior transfer rates with low power consumption. They are suitable for removable storage applications that require security, convenience, and great performance. The industrial-grade temperature (-40°C to +85°C) range is suitable for demanding industrial environments that require high reliability. Industrial SD cards utilize premium components, and provide a number of enhanced features such as S.M.A.R.T., ECC, Wear Leveling, and Flash protection.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
ISDD361	–	–	–	●	–	–	–	●	●	–	●
IDC3B	–	–	–	●	–	–	–	●	●	–	●
ISDD33K	–	–	–	●	–	–	–	●	●	–	●

● Supported

ISDD361

IDC3B

ISDD33K

Model	ISDD361	IDC3B	ISDD33K
Interface	SD 2.0 / 3.0	SD 3.0	SD 5.1
Capacity	256MB - 16GB	8GB - 256GB	32GB - 256GB
Operating Voltage	3.3V ± 5%	DC 2.7V ~ 3.6V	3.3V ± 5%
Flash Type	SLC	MLC	3D TLC
Sequential Read (Max.)	SD 2.0: 20MB/s,SD 3.0: 90MB/s	80MB/s	95MB/s
Sequential Write (Max.)	SD 2.0: 16MB/s,SD 3.0: 60MB/s	50MB/s	70MB/s
Compatibility	SD 2.0 / 3.0	SD 1.1 / 2.0 / 3.0	SD 5.1
Operating Temperature (Commercial)	—	-25°C to +85°C	-25°C to +85°C
Operating Temperature (Industrial)	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Operating Humidity	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)	0.6W	0.95W	0.95W
MTBF (Million Hours)	2	1	1
Vibration Resistance	30G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)	32 x 24 x 2.1mm	32 x 24 x 2.1mm	32 x 24 x 2.1mm
S.M.A.R.T.	Supported	Supported	Supported
Features	· Applicable for dual host voltage (3.3V) · BCH ECC engine · Configurable ECC up to 24-bits(256MB~512MB)/ 40-bits(1GB~16GB) · Enhanced ESD design · Wear Leveling	· Supports SD and SPI modes · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection	· Compliant with SD 5.1 specifications · 3K P/E Cycle · LDPC ECC Engine · End-to-end Data Protection · Flash Management · Wear Leveling · Supports A^+ SLC Mode · H/W Power Detector and Flash Protection
Applications	GPS, Handheld Device, Video Recorder, High-end Digital Camera, Road Monitoring System	GPS, Handheld Device, Video Recorder, High-end Digital Camera, Road Monitoring System	POS Terminal, Medical, Handheld device, Surveillance, Gaming

microSD Card

ADATA's industrial-grade SD cards offer tremendous performance and superior transfer rates with low power consumption. They are suitable for removable storage applications that require security, convenience, and great performance. The industrial-grade temperature (-40°C to +85°C) range is suitable for demanding industrial environments that require high reliability. Industrial SD cards utilize premium components, and provide a number of enhanced features such as S.M.A.R.T., ECC, Wear Leveling, and Flash protection.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
IUDD362	–	–	–	●	–	–	–	●	●	–	●
IDC3B	–	–	–	●	–	–	–	●	●	–	●
IUDD33H	–	–	–	●	–	–	–	●	●	–	●
IUDD33K	–	–	–	●	–	–	–	●	●	–	●

● Supported

IUDD362

IDU3A

IUDD33H

IUDD33K

Model		IUDD362	IDU3A	IUDD33H	IUDD33K
Interface		SD 2.0 / 3.0	SD 3.0	SD 3.0	SD 5.1
Capacity		1GB - 8GB	8GB - 64GB	4GB - 16GB	16GB - 256GB
Operating Voltage		3.3V ± 5%	DC 2.7V ~ 3.6V	3.3V ± 5%	3.3V ± 5%
Flash Type		SLC	MLC	MLC	3D TLC
Sequential Read (Max.)		SD 2.0: 20MB/s, SD 3.0: 30MB/s	70MB/s	50MB/s	95MB/s
Sequential Write (Max.)		SD 2.0: 15MB/s, SD 3.0: 25MB/s	30MB/s	10MB/s	40MB/s
Compatibility		SD 2.0 / 3.0	SD 1.1 / 2.0 / 3.0	SD 3.0	SD 5.1
Operating Temperature	Commercial	—	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
	Industrial	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Operating Humidity		5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing	5%~95% RH non-condensing
Power Consumption (Max.)		0.6W	0.5W	0.5W	0.5W
MTBF (Million Hours)		2	1	1	1
Vibration Resistance		30G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)	20G (10-2000Hz)
Shock Resistance		1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Dimensions (L x W x H)		11 x 15 x 1mm	11 x 15 x 1mm	11 x 15 x 1mm	11 x 15 x 1mm
S.M.A.R.T.		Supported	Supported	Supported	Supported
Features		· Supports SD and SPI modes · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection	· Supports SD and SPI modes · Supports Auto Standby and Sleep Mode · Flash Management · Error Correcting Code (ECC) · Wear Leveling · H/W Power Detector and Flash Protection	· 3K P/E Cycle · BCH ECC · End-to-end Data Protection · Flash Management · Wear Leveling · Supports A+ SLC Mode · H/W Power Detector and Flash Protection	· Compliant with SD 5.1 specifications · 3K P/E Cycle · LDPC ECC Engine · End-to-end Data Protection · Flash Management · Wear Leveling · Supports A+ SLC Mode · H/W Power Detector and Flash Protection
Applications		Automation, Data Loggers, Surveillance, In-Vehicle System, Transportation	GPS, Handheld Device, Smartphone, Mobile Computer	POS Terminal, Medical, Handheld device, Surveillance, In-Vehicles	POS Terminal, Medical, Handheld device, Surveillance, In-Vehicles

Portable Storage

ADATA offers two industrial-grade portable storage devices that provide excellent transportability, reliability, and convenience – the IESU317 external SSD and IUFU33B USB flash drive. Both devices feature MLC NAND Flash, P/E (program/erase) cycle of up to 3K for higher durability and come with the USB 3.2 Gen 1 interface for fast data transfers. Not only are they well-suited for servers, networking, embedded systems, industrial PCs, gaming, but also great for on-the-go professionals thanks to their compact form factors.

	30µ Golden Finger	Anti-Sulfur Resistor	Conformal Coating	Wide Temperature Support	Lifetime Monitoring (LTM)	Secure Erase	Temperature Sensor	Power Fail Protection & Recovery	Wear Leveling	TRIM Support	Low Power Consumption
IESU317	–	–	–	–	–	●	●	●	●	●	●
IUFU33B	●	–	–	–	–	–	–	–	–	–	●

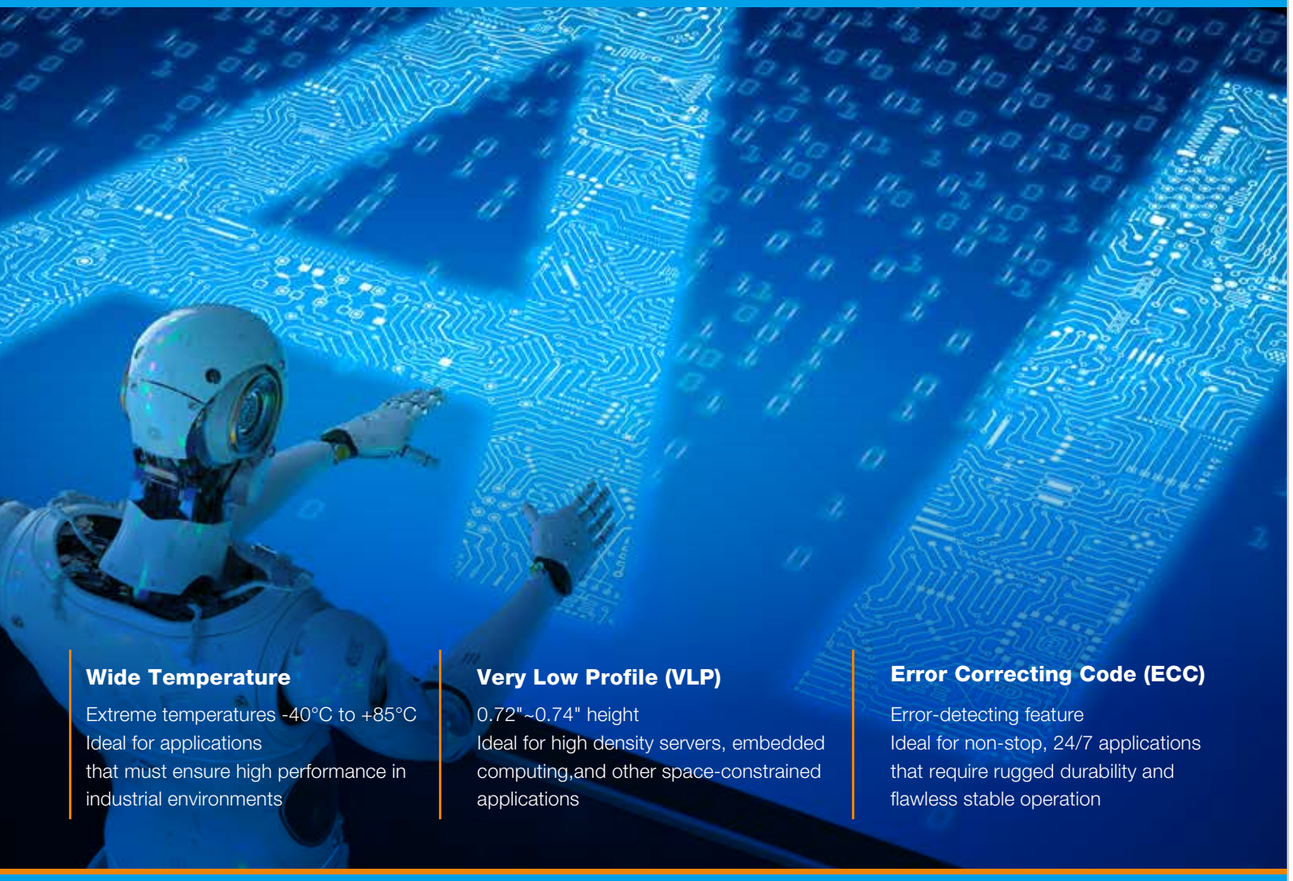
● Supported

IESU317

IUFU33B

Model	IESU317	IUFU33B
Capacity	1TB	128GB
Flash Type	MLC	MLC
Color	Titanium	Black
Dimensions (L x W x H)	120 x 76 x 9.6mm	62 x 19 x 11mm
Weight	190g	13g
Interface	USB 3.2 Gen 1	USB 3.2 Gen 1
Operating System Requirements	Windows XP or later, Mac OS X 10.6 or later, Linux Kernel 2.6 or later	Windows XP or later, Mac OS X 10.6 or later, Linux Kernel 2.6 or later
Operating Voltage	5V	5V
Sequential Read (Max.)	435MB/s	140MB/s
Sequential Write (Max.)	400MB/s	80MB/s
Operating Temperature	5ºC to +50ºC	0ºC to +70ºC
Operating Humidity	5%~+95% RH non-condensing	5%~+95% RH non-condensing
Power Consumption (Max.)	4.5W	2W
MTBF (Million Hours)	2	1
Vibration Resistance	20G(10-2000Hz)	20G(10-2000Hz)
Shock Resistance	1500G/0.5ms, Half Sine Wave	1500G/0.5ms, Half Sine Wave
Features	·Ultra-slim design at just 9.6mm ·Durable metallic enclosure with sandblasted textured surface ·High capacity up to 1TB ·MLC solution with P/E cycle up to 3K ·Supports AES 256-bit encryption	·High-speed USB 3.2 interface ·30µ USB connector for highly-reliable data transfer ·Aluminum-alloy casing to enhance ESD protection ·MLC solution with P/E cycle up to 3K ·The cap can be tucked in the back of the drive casing when in use
Applications	Animation/Movie Production, Industrial Camera, Professional Design Studio, Data Encryption, Data Backup, Data Storage	Industrial/Embedded PCs, Industrial Camera, Data Backup, Data Storage

DRAM Modules



Wide Temperature

Extreme temperatures -40°C to +85°C
Ideal for applications
that must ensure high performance in industrial environments

Very Low Profile (VLP)

0.72"~0.74" height
Ideal for high density servers, embedded computing,and other space-constrained applications

Error Correcting Code (ECC)

Error-detecting feature
Ideal for non-stop, 24/7 applications that require rugged durability and flawless stable operation

ADATA Premier IPC DRAM Modules are designed for Networking, Servers and Embedded systems.They are in compliance with JEDEC specifications and ISO 9001 standards. The Premier series utilizes FBGA (Fine ball grid array) integrated circuit packaging, which successfully reduces the operating temperature and data noise, providing the highest quality and signal integrity. ADATA Premier series offers a full range of memory modules to meet various requirements. ADATA is committed to deliver diversify, high quality and reliable industry and enterprise standard memory that exceed customers expectations.

Features

- Designed for optimized performance and reliability
- Every IC is verified by strict quality controls
- Low power consumption provides high efficiency
- Fast transmission bandwidth
- RoHS compliance

Applications

- Server
- Networking
- Cloud Computing
- Embedded Systems
- Communication

			30µ Golden Finger	Wide Temperature Support	Temperature Sensor
IPC	DDR3	U-DIMM	▲	–	–
		SO-DIMM	▲	–	–
		SO-DIMM (W)	▲	●	●
	DDR4	U-DIMM	▲	–	–
		VLP U-DIMM	▲	–	–
		SO-DIMM	▲	–	–
		SO-DIMM (W)	▲	●	●
Server/IPC	DDR3	R-DIMM	●	–	●
		ECC U-DIMM	●	–	●
		VLP ECC U-DIMM	●	–	●
		ECC SO-DIMM	●	–	●
	DDR4	R-DIMM	●	–	●
		ECC U-DIMM	●	–	●
		VLP ECC U-DIMM	●	–	●
		ECC SO-DIMM	●	–	●

– Not available ▲ By Request ● Supported

DDR4 Benefits

More Efficient
Up to 11% less power
DDR4 (1.2V)

More Speed
33% faster
DDR4 2666+ MT/s

More Density
2x capacity
8Gb DDR4 Component

204/260-Pin SO-DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	2GB	ADDS1600C2G11	1.35V
	4GB	ADDS1600W4G11	1.35V
	8GB	ADDS1600W8G11	1.35V
DDR4 2400	4GB	AD4S2400W4G17	1.2V
	4GB	AD4S2400J4G17	1.2V
	8GB	AD4S240038G17	1.2V
	16GB	AD4S2400316G17	1.2V
DDR4 2666	2GB	AD4S266622G19	1.2V
	4GB	AD4S2666W4G19	1.2V
	4GB	AD4S2666J4G19	1.2V
	8GB	AD4S266638G19	1.2V
	16GB	AD4S2666316G19	1.2V
	16GB	AD4S2666716G19	1.2V
	32GB	AD4S2666732G19	1.2V
DDR4 3200	8GB	AD4S320038G22	1.2V
	16GB	AD4S3200716G22	1.2V
	32GB	AD4S3200732G22	1.2V

Type	DDR3L SO-DIMM Non-ECC	DDR4 SO-DIMM Non-ECC	DDR4 SO-DIMM Non-ECC	DDR4 SO-DIMM Non-ECC
Frequency	1600MHz	2400MHz	2666MHz	3200MHz
Pin Count	204 Pin	260 Pin	260 Pin	260 Pin
Capacity	2GB / 4GB / 8GB	4GB / 8GB / 16GB	2GB /4GB / 8GB / 16GB / 32GB	8GB / 16GB / 32GB
DRAM Configuration	256M x 8 / 512M x 8	512M x 8 / 512M x 16 / 1024M x 8	256M x 16 / 512M x 8 / 512M x 16 / 1024M x 8 / 2048M x 8	1024M x 8 / 2048M x 8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43	22-22-22-52
Voltage	1.35V	1.2V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	3 or 30 micro inch	3 or 30 micro inch	3 or 30 micro inch	3 or 30 micro inch

204/260-Pin SO-DIMM (Wide Temp.)

Speed	Capacity	Model	Voltage
DDR3L 1600	4GB	ADDI1600W4G11	1.35V
	8GB	ADDI1600W8G11	1.35V
DDR4 2400	4GB	AD4I2400W4G17	1.2V
	8GB	AD4I2400W8G17	1.2V
	16GB	AD4I2400316G17	1.2V
DDR4 2666	4GB	AD4I2666W4G19	1.2V
	8GB	AD4I266638G19	1.2V
	16GB	AD4I2666316G19	1.2V
	32GB	AD4I2666732G19	1.2V

Type	DDR3L SO-DIMM (W)	DDR4 SO-DIMM (W)	DDR4 SO-DIMM (W)
Frequency	1600MHz	2400MHz	2666MHz
Pin Count	204 Pin	260 Pin	260 Pin
Capacity	4GB / 8GB	4GB / 8GB / 16GB	4GB / 8GB / 16GB / 32GB
DRAM Configuration	512M x 8	512M x 8 / 1024M x 8	512M x 8 / 1024M x 8 / 2048M x8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43
Voltage	1.35V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	-40ºC to +85ºC	-40ºC to +85ºC	-40ºC to +85ºC
Gold Finger Plating	3 or 30 micro inch	3 or 30 micro inch	3 or 30 micro inch

204/260-Pin ECC SO-DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	2GB	ADDB1600C2G11	1.35V
	4GB	ADDB1600W4G11	1.35V
	8GB	ADDB1600W8G11	1.35V
DDR4 2400	4GB	AD4B2400W4G17	1.2V
	8GB	AD4B240038G17	1.2V
	16GB	AD4B2400316G17	1.2V
DDR4 2666	4GB	AD4B2666W4G19	1.2V
	8GB	AD4B266638G19	1.2V
	16GB	AD4B2666316G19	1.2V
	32GB	AD4B2666732G19	1.2V

Type	DDR3L ECC SO-DIMM	DDR4 ECC SO-DIMM	DDR4 ECC SO-DIMM
Frequency	1600MHz	2400MHz	2666MHz
Pin Count	204 Pin	260 Pin	260 Pin
Capacity	2GB / 4GB / 8GB	4GB / 8GB / 16GB	4GB / 8GB / 16GB / 32GB
DRAM Configuration	256M x 8 / 512M x 8	512M x 8 / 1024M x 8	512M x 8 /1024M x 8 / 2048M x8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43
Voltage	1.35V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	30 micro inch	30 micro inch	30 micro inch

240/288-Pin U-DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	2GB	ADDU1600C2G11	1.35V
	4GB	ADDU1600W4G11	1.35V
	8GB	ADDU1600W8G11	1.35V
DDR4 2400	4GB	AD4U2400W4G17	1.2V
	4GB	AD4U2400J4G17	1.2V
	8GB	AD4U240038G17	1.2V
	16GB	AD4U2400316G17	1.2V
DDR4 2666	2GB	AD4U266622G19	1.2V
	4GB	AD4U2666W4G19	1.2V
	4GB	AD4U2666J4G19	1.2V
	8GB	AD4U266638G19	1.2V
	16GB	AD4U2666316G19	1.2V
	16GB	AD4U2666716G19	1.2V
	32GB	AD4U2666732G19	1.2V
DDR4 3200	8GB	AD4U320038G22	1.2V
	16GB	AD4U3200716G22	1.2V
	32GB	AD4U3200732G22	1.2V

Type	DDR3L U-DIMM Non-ECC	DDR4 U-DIMM Non-ECC	DDR4 U-DIMM Non-ECC	DDR4 U-DIMM Non-ECC
Frequency	1600MHz	2400MHz	2666MHz	3200MHz
Pin Count	240 Pin	288 Pin	288 Pin	288 Pin
Capacity	4GB / 8GB	4GB / 8GB / 16GB	2GB / 4GB / 8GB / 16GB / 32GB	8GB / 16GB / 32GB
DRAM Configuration	512M x 8	512M x 8 / 1024M x 8	256M x 16 / 512M x 8 / 1024M x 8 / 2048M x 8	1024M x 8 / 2048M x 8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43	22-22-22-52
Voltage	1.35V	1.2V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	3 or 30 micro inch	3 or 30 micro inch	3 or 30 micro inch	3 or 30 micro inch

240/288-Pin ECC U-DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	2GB	ADDE1600C2G11	1.35V
	4GB	ADDE1600W4G11	1.35V
	8GB	ADDE1600W8G11	1.35V
DDR4 2400	4GB	AD4E2400W4G17	1.2V
	8GB	AD4E240038G17	1.2V
	16GB	AD4E2400316G17	1.2V
DDR4 2666	4GB	AD4E2666W4G19	1.2V
	8GB	AD4E266638G19	1.2V
	16GB	AD4E2666316G19	1.2V
	16GB	AD4E2666716G19	1.2V
	32GB	AD4E2666732G19	1.2V
DDR4 3200	8GB	AD4E320038G22	1.2V
	16GB	AD4E3200716G22	1.2V
	32GB	AD4E3200732G22	1.2V

Type	DDR3L ECC DIMM	DDR4 ECC DIMM	DDR4 ECC DIMM	DDR4 ECC DIMM
Frequency	1600MHz	2400MHz	2666MHz	3200MHz
Pin Count	240 Pin	288 Pin	288 Pin	288 Pin
Capacity	2GB / 4GB / 8GB	4GB / 8GB / 16GB	4GB / 8GB / 16GB / 32GB	8GB / 16GB / 32GB
DRAM Configuration	256M x 8 / 512M x 8	512M x 8 / 1024M x 8	512M x 8 /1024M x 8 / 2048M x 8	1024M x 8 / 2048M x 8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43	22-22-22-52
Voltage	1.35V	1.2V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	30 micro inch	30 micro inch	30 micro inch	30 micro inch

240/288-Pin VLP U-DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	2GB	ADDX1600C2G11	1.35V
	4GB	ADDX1600W4G11	1.35V
	8GB	ADDX1600W8G11	1.35V
DDR4 2400	4GB	AD4X2400W4G17	1.2V
	8GB	AD4X240038G17	1.2V
	16GB	AD4X2400316G17	1.2V
DDR4 2666	2GB	AD4X266622G19	1.2V
	4GB	AD4C2666W4G19	1.2V
	8GB	AD4X266638G19	1.2V
	16GB	AD4X2666316G19	1.2V
	16GB	AD4X2666716G19	1.2V

Type	DDR3L VLP U-DIMM	DDR4 VLP U-DIMM	DDR4 VLP U-DIMM
Frequency	1600MHz	2400MHz	2666MHz
Pin Count	240 Pin	288 Pin	288 Pin
Capacity	2GB / 4GB / 8GB	4GB / 8GB / 16GB	2GB / 4GB / 8GB / 16GB
DRAM Configuration	256M x 8 / 512M x 8	512M x 8 / 1024M x 8 / 2048M x8	512M x 8 / 1024M x 8 / 2048M x8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43
Voltage	1.35V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	3 or 30 micro inch	3 or 30 micro inch	3 or 30 micro inch

240/288-Pin VLP ECC U-DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	4GB	ADDC1600W4G11	1.35V
	8GB	ADDC1600W8G11	1.35V
DDR4 2400	4GB	AD4C2400W4G17	1.2V
	8GB	AD4C240038G17	1.2V
	16GB	AD4C2400316G17	1.2V
DDR4 2666	4GB	AD4C2666W4G19	1.2V
	8GB	AD4C266638G19	1.2V
	16GB	AD4C2666316G19	1.2V

Type	DDR3L VLP ECC DIMM	DDR4 VLP ECC DIMM	DDR4 VLP ECC DIMM
Frequency	1600MHz	2400MHz	2666MHz
Pin Count	240 Pin	288 Pin	288 Pin
Capacity	4GB / 8GB	4GB / 8GB / 16GB	4GB / 8GB / 16GB
DRAM Configuration	512M x 8	512M x 8 / 1024M x 8	512M x 8 / 512M x 16 / 1024M x 8
Timing CL-tRCD-tRP-tRAS	11-11-11-28	17-17-17-39	19-19-19-43
Voltage	1.35V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	30 micro inch	30 micro inch	30 micro inch

288-Pin Registered DIMM

Speed	Capacity	Model	Voltage
DDR4 2400	4GB	AD4R2400W4G17	1.2V
	8GB	AD4R240038G17	1.2V
	16GB	AD4R2400316G17	1.2V
	32GB	AD4R2400432G17	1.2V
DDR4 2666	4GB	AD4R2666W4G19	1.2V
	8GB	AD4R266638G19	1.2V
	16GB	AD4R2666316G19	1.2V
	16GB	AD4R2666716G19	1.2V
	32GB	AD4R2666732G19	1.2V
DDR4 3200	8GB	AD4R320038G22	1.2V
	16GB	AD4R3200716G22	1.2V
	32GB	AD4R3200732G19	1.2V

Type	DDR4 Registered DIMM	DDR4 Registered DIMM	DDR4 Registered DIMM
Frequency	2400MHz	2666MHz	3200MHz
Pin Count	288 Pin	288 Pin	288 Pin
Capacity	4GB / 8GB / 16GB	4GB / 8GB / 16GB / 32GB	8GB / 16GB / 32GB
DRAM Configuration	512M x 8 / 1024M x 8	512M x 8 / 1024M x 8 / 2048M x 8	1024M x 8 / 2048M x 4
Timing CL-tRCD-tRP-tRAS	17-17-17-39	19-19-19-43	22-22-22-52
Voltage	1.2V	1.2V	1.2V
Rank Number	1Rank / 2Rank	1Rank / 2Rank	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC	0ºC to +85ºC	0ºC to +85ºC
Gold Finger Plating	30 micro inch	30 micro inch	30 micro inch

240-Pin Registered DIMM

Speed	Capacity	Model	Voltage
DDR3L 1600	4GB	ADDR1600W4G11	1.35V
	8GB	ADDR1600W8G11	1.35V

Type	DDR3L Registered DIMM
Frequency	1600MHz
Pin Count	240 Pin
Capacity	4GB / 8GB
DRAM Configuration	512M x 8
Timing CL-tRCD-tRP-tRAS	11-11-11-28
Voltage	1.35V
Rank Number	1Rank / 2Rank
Operating Temp.	0ºC to +85ºC
Gold Finger Plating	30 micro inch

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