About Apacer

Apacer is a global leader in digital storage solutions devoted to innovative storage technology and services. After 20 years in the industry, we remain dedicated to our belief in "persistence in doing the right things." Our core values, as always, continue to revolve around reliability and innovation.

The company focuses on embedded applications for a variety of vertical markets, including military, medical, gaming, and industrial, and has become an integration expert in digital storage, innovative applications, and value-added services. Apacer is known for its advanced technologies and product quality and was ranked by Gartner as the top industrial SSD supplier for five consecutive years from 2012 to 2016. In addition, Apacer is committed to making a positive impact on societal issues and has joined the **Responsible Business Alliance (RBA)**, which is formerly known as Electronic Industry Citizenship Coalition (EICC), a coalition promoting **corporate social responsibility (CSR)** within the global electronics supply chain. We believe that the success of a corporation is marked not by profit but by how we benefit others, whether by caring for the environment or making contributions to society.

Apacer's Commitments

Sales, Service, and Technical Support

- Fixed BOM and long-term supply
- Well-trained sales people with fast response times
- Experienced technical staff ready to assist with issues
- Our factory offers 24/7 flexible and quick delivery services
- Worldwide FAE support

Customization

- Product verification according to custom and procedures
- Configuration of product parameters based on custom requirements
- Customization of internal serial number
- Security features tailored to individual needs
- Customized markers

Comprehensive Testing

- 4-Corner Testing on max-min values of temperature and input voltage
- Strict Reliability Demonstration Test(RDT)
- Cold soak power cycle testing
- Temperature cycle testing
- Thermal shock testing
- Stringent Ongoing Reliability Test (ORT)

Quality Assurance

- Experienced hardware, software and firmware R&D team
- Complete design review and verification
- Strict inspection system
- Quality feedback system

Compliance and Associations

RoHS

JEDEC   SD   CFA Compact Flash Association

PCI SIG   REACH

UL   Serial ATA   nvm EXPRESS   USB

VCCI   FC   CE

Apacer For Industrial

SFD — SATA Flash Drive

MO-297 / 2.5" Mini / 2.5" SATA SSD

- Capacity: SLC 8GB - 240GB, MLC 32GB - 2TB, 3D TLC 30GB-1920GB
- SATA 3 (6 Gbit/s) interface
- Global wear-leveling technology and block management
- Built-in ATA Secure Erase, CoreSecurity, and S.M.A.R.T. functions
- Supports DEVSLP
- Supports wide temperatures
- TRIM and NCQ commands available
- Hyper Cache Technology available*
- Supports Over-Provisioning Technology*
- Built-in thermal sensor
- Supports TCG Opal (optional)
- Support CorePower (optional)
- Supports End-to-End Data Protection*

SDM — SATA Disk Module

22PIN/90D / 22PIN/7D / SDM 7-M / 7PI 90D LP2

- Capacity: SLC 1G-32G, MLC 8GB - 256GB, 3D TLC 30GB-240GB
- 7pin - SLC 1 G-32G, MLC 8GB - 256GB, 3D TLC 30GB-240GB
- 22pin - SLC 8GB - 32GB, MLC 8GB - 64GB
- 7pin/22pin connector   ■ Intelligent power failure recovery
- Global wear-leveling technology and block management
- Built-in ATA Secure Erase and S.M.A.R.T. functions
- Supports wide temperatures   ■ TRIM command
- Power cable-less solution
- Apacer Multi-PowerPath technology (optional for 7pin SDM)

microSDHC

- Capacity: SLC 256MB - 32GB, MLC 4GB - 128GB
- SD Card: SLC 256MB - 32GB, MLC 4GB - 128GB, 3D TLC 30GB-256GB
- microSD Card: SLC 256MB - 4GB, MLC 4GB - 128GB, 3D TLC 32GB-256GB
- Compliant with SD3.0 and SD2.0 specifications
- Supports SD and SPI modes
- Global wear-leveling technology and flash block management
- Low power consumption
- Read disturb management
- Auto Read Refresh
- SLC-lite Technology (optional)
- Supports wide temperatures
- S.M.A.R.T. function supported
- Intelligent power failure recovery

Industrial micro SD & SD Card — Industrial microSD & SD Card

mSATA — mSATA

MO-300 / MO-300B

- Capacity: 3D TLC 120GB-480GB
- MO-300: SLC 2GB - 128GB, MLC 8GB - 512GB, 3D TLC 30GB-960GB
- MO-300B: SLC 1GB-32GB, MLC 8GB - 256GB, 3D TLC 30GB-240GB
- Global wear-leveling technology and block management
- Built-in ATA Secure Erase, CoreSecurity, and S.M.A.R.T. functions
- Wide temperatures and thermal sensor supported
- Support DEVSLP (optional)   ■ TRIM command available
- Support TCG Opal (optional)   ■ Hyper Cache Technology available*
- Support to End-to-End Data Protection*
- Supports Over-Provisioning Technology*

uSDC — Micro SATA Disk Chip

MO-276

- Capacity: MLC 8GB - 128GB, 3D TLC 30GB-120GB
- Compliant with MO-297 standard (16 x 20 x 1.4 mm)
- SoC (System on Chip) / SiP (System in Chip) technology
- Built-in S.M.A.R.T. function
- Supports DEVSLP and wide temperatures
- Hyper Cache Technology available*
- Supports Over-Provisioning Technology*   ■ TRIM command available

CFast — CFast Card

- Capacity: SLC 4GB - 64GB, MLC 8GB - 256GB, 3D TLC 30GB-480GB
- Advanced wear-leveling technology and flash block management
- Built-in ATA secure erase and S.M.A.R.T. functions
- TRIM command available
- Supports DEVSLP (Optional)
- Support CorePower Technology (optional)
- Supports LDPC ECC
- Supports End-to-End Data Protection*

Industrial CF — Industrial CompactFlash

H/W write-protect switch

- Capacity: SLC 256MB - 64GB, MLC 4GB - 128GB
- Compliant with CF4.0 specification
- Advanced wear-leveling technology and flash block management
- Built-in ATA secure erase and S.M.A.R.T. functions
- Intelligent power failure recovery
- Lock switch design for write-protection (CF6-VA only)
- Supports wide temperatures
- SLC-lite Technology (Industrial CF6A-SL only)

PCIe SSD — CFexpress card

- Capacity:
- Compliant with CFexpress 1.0 Type B
- Compliant with NVMe 1.3 and PCIe Gen 3x2
- Global Wear Leveling and flash block management
- Built-in LDPC ECC and S.M.A.R.T. functions
- Hyper Cache Technology
- Built-in Hyper Cache Technology and Power Failure Management
- Built-in End-to-End Data Protection and Thermal Management Technique

PCIe SSD — M.2

- Capacity: 2242   2280
- 2242: 3D TLC Single side - 60GB, Double side - 120 - 480GB
- 2280: 3D TLC Single side: 120-240GB, Double side: 480 - 960GB
- 2280 - 2D MLC Single side 64-128GB, Double side 256-512GB
- Compliant with NVMe 1.3 and PCIe Gen 3 x 2 interface
- M.2 2280 connector
- Global Wear Leveling & flash block management
- Built-in LDPC ECC and S.M.A.R.T. functions
- Built-in Hyper Cache Technology and Power Failure Management
- Built-in End-to-End Data Protection and Thermal Management Technique

M.2 (NGFF)

M242   2280

- Capacity: 2242 - MLC 8GB - 256GB, 3D TLC 30GB-480GB
- 2280 - MLC 3 XGB - 1TB, 3D TLC 30GB-960GB
- SATA 3 (6 Gb/s) interface   ■ M.2 (NGFF) connector
- Global wear-leveling technology and flash block management
- Built-in ATA Secure Erase and S.M.A.R.T. functions
- TRIM command available   ■ Supports TCG Opal (optional)
- Single -side (applicable)   ■ Supports Thermal Throttling (optional)
- Supports Error Detection and Correction   ■ Hyper Cache Technology available*

USB Drive — USB Disk Module

USB2.0   USB3.0

- Capacity: SLC 256MB - 32GB, MLC 4GB - 128GB
- Compliant with USB2.0 / 3.0 specifications
- Built-in ECC engine and S.M.A.R.T. functions
- Supports wide temperatures
- Power saving implemented
- Features advanced wear-leveling algorithms
- Chip-On-Board technology-rate(moisture, dust and shock resistant) (EH16-3-M only)

UDM — USB Disk Module

UDM   UDM 1U

- Capacity: SLC 128MB - 32GB, MLC 8GB - 128GB
- Compliant with standard USB specifications
- Supports Linux / WinCE / WinXP Embedded / Win7 Embedded / Win8 or later
- Stock resistance, anti-vibration design and low power consumption
- Supports wide temperatures
- Built-in S.M.A.R.T. function (UDM 1U only)
- Pitch size 2.00 mm and 2.54 mm supported
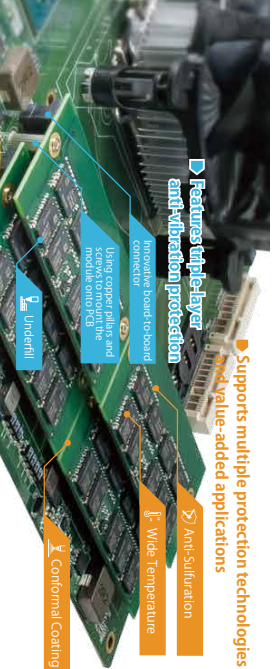
*3D NAND Solutions Only

DOC 20190201

XR-DIMM
Extremely rugged

· Designed for shock and vibration environments
· Innovative design with highly rugged 300-pin connector and mounting holes
· Improved the stability of signal transmission
· Applicable for transportation, defense and aeronautical equipment

Features triple-layer anti-vibration protection

- Using copper pillars and screws to mount the module onto PCB
- Innovative board-to-board connector

Supports multiple protection technologies and value-added applications

- Underfill
- Wide Temperature
- Anti-Sulfuration
- Conformal Coating

Model	DDR4 XR-DIMM
Module Type	XR-DIMM
Memory Technology	DDR4
Frequency	2133/2400
Density	8G/16G
Voltage	1.2v
Pin Count	300-Pin
Width	72-Bit
PCB Height	1.466"
Operation Temperature	TC=0°C to 85°C / -40°C to 85°C

Anti-Sulfuration

Anti-sulfuration memory modules are mainly used in equipment exposed in highly contaminated environment.

- **World's first anti-sulfuration memory modules**
- **Solves corrosion problems effectively and increases overall system lifespan**
- **Ensures product reliability and durability**
- **Widely recognized and awarded patents in many countries**

Conformal Coating

Enhances reliability of products by applying coatings on the surface of printed circuit boards.
The protective film can safeguard devices from dust ingression and liquid immersion.

- **Uses automated spraying to maintain precise coating thickness**
- **Enhances product reliability**
- **Prolongs DRAM modules lifespan**

Underfill

Apacer underfill technology ensures products continue to operate normally in highly vibration and in extreme environmental conditions.

- **Strengthens the solder joints between solder balls and printed circuit board**
- **Increases the product's resistance against shock and vibration**
- **Reduces thermal stress damage**
- **Complies with MIL-STD-810G**
- **Increases product reliability and lifespan**

Wide Temperature

Especially designed for harsh climates and special environmental conditions.

- **Operating temperature range: -40°C ≤ TC ≤ 85°C**
- **All industrial-grade components (DRAM, resistors and capacitors) ensure stability and reliability**
- **High/Low temp. test/Temp. cycling test**
- **Power cycling test**

UDIMM (Unbuffered DIMM)
- Frequency: DDR4-2133/2400/2666, DDR3-1066/1333/1600/1866, DDR2-533/667/800, DDR4-266/333/400
- Density: DDR4-2G~16G, DDR3-1G~16G, DDR2-512M~4G, DDR-512M~1G
- Operation Temperature: Standard 0°C~85°C, Industrial -40°C~85°C
- Application: Embedded & PC/Gaming
- Value-Added: Underfill technology, Conformal Coating technology

DDR4 UDIMM
DDR3 UDIMM

SODIMM (Small Outline DIMM)
- Frequency: DDR4-2133/2400/2666, DDR3-1066/1333/1600/1866, DDR2-533/667/800, DDR-266/333/400
- Density: DDR4-2G~16G, DDR3-1G~16G, DDR2-512M~4G, DDR-256M~1G
- Operation Temperature: Standard 0°C~85°C, Industrial -40°C~85°C
- Application: Transportation/Embedded & PC/Gaming/Health care
- Value-Added: Underfill technology, Conformal Coating technology

DDR4 SODIMM
DDR3 SODIMM

ECC UDIMM (ECC Unbuffered DIMM)/ECC SODIMM (ECC Small Outline DIMM)
- Frequency: DDR4-2133/2400/2666, DDR3-1066/1333/1600/1866, DDR2-533/667/800
- Density: DDR4-4G~16G, DDR3-1G~16G, DDR2-512M~4G
- Operation Temperature: Standard 0°C~85°C, Industrial -40°C~85°C
- Application: Cloud Computing/Transportation/Embedded & IPC/Healthcare
- Value-Added: Underfill technology, Conformal Coating technology, Thermal Sensor

DDR4 ECC UDIMM
DDR3 ECC UDIMM

RDIMM (ECC Registered DIMM)/LRDIMM (Load Reduced DIMM)
- Frequency: DDR4-2133/2400/2666, DDR3-1066/1333/1600/1866, DDR2-533/667/800
- Density: DDR4-4G~64G, DDR3-1G~16G, DDR2-512M~4G
- Operation Temperature: Standard 0°C~85°C, Industrial -40°C~85°C
- Application: Cloud Computing/Healthcare
- Value-Added: Underfill technology, Conformal Coating technology, Thermal Sensor

DDR4 LRDIMM
DDR4 ECC RDIMM

VLP (Very Low Profile) & Mini DIMM
- Support UDIMM/SODIMM/RDIMM/ECC UDIMM
- Frequency: DDR4-2133/2400/2666, DDR3-1066/1333/1600, DDR2-533/667
- Operation Temperature: Standard 0°C~85°C, Industrial -40°C~85°C
- Applicable for space-constraint systems and systems that require high stability, such as blade servers, 1U rack servers and various embedded systems.
- Value-Added: Underfill technology, Conformal Coating technology, Thermal Sensor

DDR4 VLP Mini RDIMM
DDR4 VLP SODIMM
DDR3 VLP SODIMM

Specialty
- XR-DIMM (Extremely Rugged)-DDR4
- Anti-Sulfuration Memory Modules-DDR4
- 32-Bits SODIMM-DDR4/DDR3
- SODIMM (Small Outline ECC Registered DIMM)-DDR4/DDR3/DDR2
- Rugged SODIMM-DDR3/DDR2

XR-DIMM
DDR3 Rugged SODIMM

Apacer
For Industrial

The Most **Reliable** Storage For Industries

Industrial SSD & DRAM Solutions

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