

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

Quality Assurance

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

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)

Compliance and Associations



SFD

SATA Flash Module



- Capacity: SLC 4GB~240GB, MLC 16GB~2TB, 3D TLC 30GB-960GB
- SATA 3 (6 Gbit/s) interface
- Global wear-leveling technology and flash bad-block management
- Built-in ATA Secure Erase, CoreSecurity, and S.M.A.R.T. functions
- Supports DEVSLP (optional)
- Supports wide temperatures
- TRIM and NCQ commands available
- Built-in thermal sensor
- Supports TCG Opal (optional)
- Supports CorePower (optional)

SDM

SATA Disk Module



- Capacity: 7pin SLC 1G-32G, MLC 4GB~256GB; 22pin SLC 1GB~32GB, MLC 8GB~64GB
- 7pin/22pin connector
- Global wear-leveling technology and flash bad-block management
- Built-in ATA Secure Erase and S.M.A.R.T. functions
- Supports wide temperatures and TRIM command
- Power cable-less solution
- Apacer Multi-Power Path technology (optional for 7pin SDM)
- Supports Thermal Throttling (optional)
- Intelligent power failure recovery

Industrial microSD

Industrial microSD & SD Card



- Capacity SD Card : SLC 256MB~32GB , MLC 4GB~128GB
- microSD Card: SLC 256MB~8GB, MLC 4GB~128GB
- Compliant with SD3.0 and SD2.0 specifications
- Supports SD and SPI modes
- Global wear-leveling technology and flash bad-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

mSATA



- Capacity: SLC 2GB~128GB, MLC 8GB~512GB, 3D TLC 30GB-960GB
- Global wear-leveling technology and flash bad-block management
- Built-in ATA Secure Erase, CoreSecurity, and S.M.A.R.T. functions
- Wide temperatures and thermal sensor supported
- Supports DEVSLP (optional)
- TRIM command available
- Supports TCG Opal (optional)

μSDC

Micro SATA Disk Chip



- Capacity: MLC 8GB~128GB
- Compliant with MO-267 standard (16 x 20 x 1.4 mm)
- SoC (System on Chip)/SiP (System in Package) technology
- Built-in S.M.A.R.T. function
- Supports DEVSLP and wide temperatures
- TRIM command available

Industrial CF

Industrial CompactFlash



- Capacity: SLC 256MB~64GB, MLC 4GB~128GB
- Compliant with CFA6.0 specification
- Global wear-leveling technology and flash bad-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)

M.2 (NGFF)



- Capacity: 2242 MLC 8GB~256GB; 2280 MLC 32GB~512GB; 3D TLC (2242) 30GB~480GB; (2280) 30GB~960GB
- SATA 3 (6 Gbit/s) interface
- Global wear-leveling technology and flash bad-block management
- Built-in ATA Secure Erase and S.M.A.R.T. functions
- TRIM command available
- Single-side (applicable)
- M.2 (NGFF) connector
- Global wear-leveling technology and flash bad-block management
- Built-in Hyper Cache Technology and Power Failure Management
- Supports TCG Opal (optional)
- Supports Thermal Throttling (optional)

UDM

USB Disk Module



- Capacity: SLC 128MB~32GB, MLC 8GB~128GB
- Compliant with standard USB specifications
- Compact size, available in various form factors
- Supports Linux/WinCE/WinXP Embedded/Win7 Embedded/Win8 or later
- Shock 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

CFast

CFast Card



- Capacity: SLC 2GB~64GB, MLC 8GB~256GB, 3D TLC 30GB-480GB
- Compliant with CFast 2.0 specification
- Global wear-leveling technology and flash bad-block management
- Built-in ATA Secure Erase and S.M.A.R.T. functions
- Intelligent power failure recovery
- TRIM command available
- Supports DEVSLP
- HW write-protect switch (optional)
- Support CorePower technology (optional)
- SLC-lite technology (Optional)
- Supports wide temperatures

PCIe SSD

M.2



- Capacity : Single side 3D TLC 120GB~240GB; Double side 480GB~960GB
- Compliant with NVMe 1.2 and PCIe Gen 3 x 2 interface
- M.2 (NGFF) connector
- Global wear-leveling technology and flash bad-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
- TRIM command available
- Supports TCG Opal 2.0 (optional)

USB Drive

USB Disk Module



- 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: water/moisture, dust and shock resistant (EH163-M only)

mPCIe

CAN Card



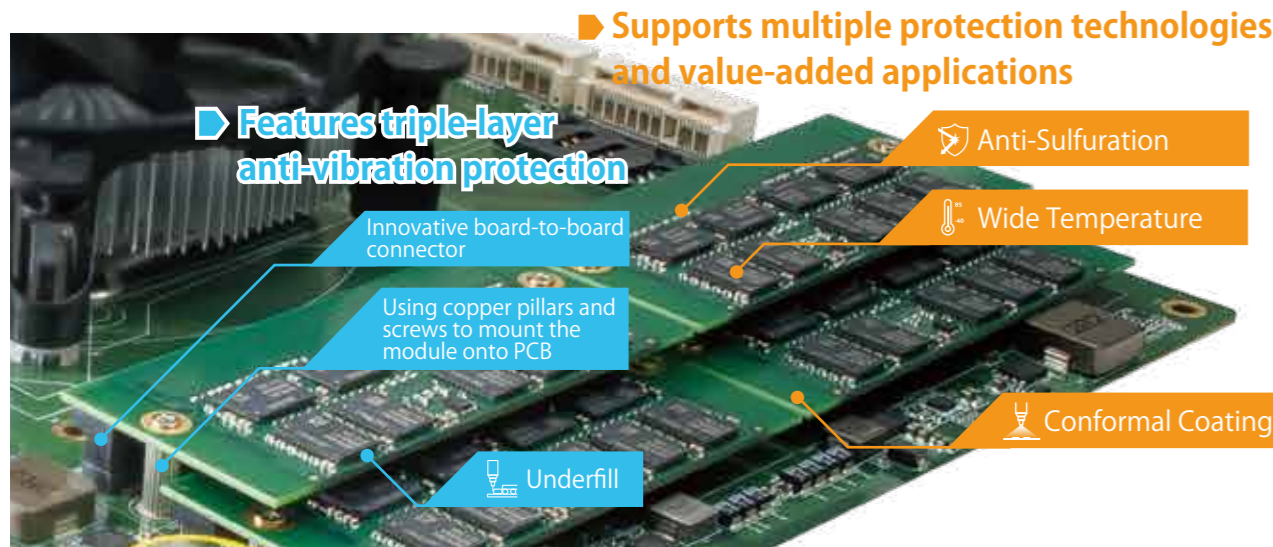
- Full or half mini PCI Express card compliant with CAN 2.0 A/B specifications
- 2-channel individual CAN and 1-Channel J1708 interface
- Baud rate setting: 125/250/500/800/1000Kbps
- Vehicle communication protocols: OBD-II, J1939, and J1708
- Built-in programmable CAN identifier filtering
- Integrated sensors: 3D gyroscope and 3D accelerometer
- Supports GNSS and Dead Reckoning (optional)
- Supports Linux SocketCAN driver
- SDK for Quick System Integration

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

| 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 ingress 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 high 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, DDR-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 & IPC/Gaming
- Value-Added: Underfill technology, Conformal Coating technology

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 & IPC/Gaming/Healthcare
- Value-Added: Underfill technology, Conformal Coating technology

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, DDR-266/333/400
- Density: DDR4-4G~16G, DDR3-1G~16G, DDR2-512M~4G, DDR-512M~1G
- 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

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~32G, 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

VLP (Very Low Profile) & Mini DIMM

- Support UDIMM/SODIMM/RDIMM/ECC UDIMM
- Frequency: DDR4-2133/2400, 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

Specialty

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



The Most **Reliable** Solutions For Industries



Industrial SSD & DRAM Solutions

