Apacer

Industrial SSD & DRAM Solutions
for Transportation Applications

As autonomous driving, smart cars and the Internet of Vehicles (IoV) are expected to become early adopters of 5G technology, the application requirements for in-vehicle and transportation data storage will naturally change as a result. From navigation systems, In-Vehicle Infotainment (IVI) and Advanced Driver Assistance Systems (ADAS) to surveillance and intelligent transportation systems outdoors, industrial SSDs and memory modules are increasingly tasked with reliably reading and writing data.

Featured Technologies for Transportation Devices

Anti-Sulfuration

Apacer's world's first patented anti-sulfuration DRAM modules and anti-sulfuration SSDs with the industry's highest level of anti-corrosion ANSI/ISA 71.04 G3 Certification can meet the needs of industrial products facing harsh environments.

SLC-liteX

Apacer's 3D NAND SLC-liteX technology breaks through the limitations of existing technology and provides up to 100,000 P/E cycles, which is 33 times more than MLC or industrial 3D TLC.

Power Stability
· CorePower
· DataDefender™

Longevity
· Over-provisioning
· SLC-liteX
· Fixed BOM
· 6+6 PCN/EOL Policy

Survivability
· Anti-Sulfuration
· Conformal Coating
· Nano Coating (IP57)
· Sidefill
· Wide Temperature
· 30μ Gold Finger

Value-added Applications
· Double-barreled Solution
  - CoreAnalyzer2
  - SSDWidget 2.0

Recommended Industrial SSD Solutions

Model	SV25P-M280	SV25P-25	SV24P-M280	SV24P-25	SH250-25	ST180-25
Features	CorePower	CorePower	CorePower	CorePower	SLC-liteX	High-capacity
Form Factors	M.2 2280	2.5"	M.2 2280	2.5"	2.5"	2.5"
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.1 (6Gb/s)
Connector	M.2 B & M key	(7+15) pin	M.2 B & M key	(7+15) pin	(7+15) pin	(7+15) pin
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~1920GB	120GB~1920GB	120GB~1920GB	120GB~1920GB	40GB~640GB	1TB~16TB
External DRAM	No	Yes	Yes	Yes	No	Yes
Max. R/W Performance (MB/sec)	560/510	560/495	560/495	560/495	550/495	555/520
Standard Operating Temp. (°C)	0 ~ +70	0 ~ +70	0 ~ +70	0 ~ +70	0 ~ +70	0 ~ +70
Wide Temp. (°C)	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85 (16TB not supported)
MTBF (Hours)	>3,000,000	>3,000,000	>3,000,000	>3,000,000	>3,000,000	>3,000,000
Recommendation Applications	Harsh environment with unstable power supplies				Surveillance System Passenger Information System	

Model	PV25P-M280	PV25P-M242	PT160-M280	PH180-uSSD	EH150-eMMC	CH120-MSD
Features	CorePower	CorePower	High-capacity	SLC-liteX	SLC-liteX	SLC-liteX
Form Factors	M.2 2280	M.2 2242	M.2 2280	PCIe BGA SSD (291 Ball)	153 Ball FBGA	microSD
Interface	PCIe Gen4x4	PCIe Gen4x4	PCIe Gen4x4	PCIe Gen4x4	eMMC5.1 HS400	SD 6.1
Connector	Double-sided: M.2 2280 M key	Double-sided: M.2 2242 M key	Double-sided: M.2 2280-M key	-	-	-
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	240GB-960GB	240GB-960GB	4TB ~ 8TB	40GB~320GB	16GB~32GB	16GB~128GB
External DRAM	No	No	Yes	Yes	-	-
Max. R/W Performance (MB/sec)	3,325/3,020	3,740/2,945	6,970/2,310	5,000/4,300	320/245	90/80
Standard Operating Temp. (°C)	0 ~ +70	0 ~ +70	0 ~ +70	-40 ~ +85	-40 ~ +85	-25 ~ +85
Wide Temp. (°C)	-40 ~ +85	-40 ~ +85	-40 ~ +85 (8TB not supported)	-40 ~ +85	-40 ~ +85	-40 ~ +85
MTBF (Hours)	>3,000,000	>3,000,000	>3,000,000	>1,500,000	-	>3,000,000
Recommendation Applications	Harsh environment with unstable power supplies		High capacity for data storage Surveillance System	On-board design for severe shock and vibration environments		Navigation

Recommended Industrial DRAM Solutions
Anti-Sulfuration Memory Modules

Module Type	Anti-Sulfuration UDIMM	Anti-Sulfuration SODIMM	Anti-Sulfuration RDIMM	Anti-Sulfuration ECC UDIMM	Anti-Sulfuration ECC SODIMM
Memory Technology	DDR5				
Frequency	4800/5600	4800/5600	4800/5600	4800/5600	4800/5600
Density	8GB/16GB/32GB/48GB	8GB/16GB/32GB/48GB	16GB/32GB	16GB/32GB/48GB	16GB/32GB/48GB
Voltage	1.1v	1.1v	1.1v	1.1v	1.1v
Pin Count	288-Pin	262-Pin	288-Pin	288-Pin	262-Pin
Width	64-Bit	64-Bit	80-Bit	72-Bit	72-Bit
PCB Height	1.23"	1.18"	1.23"	1.23"	1.18"
Operation Temperature (°C)	TC = 0 ~ +85	TC = 0 ~ +85	TC = 0 ~ +85	TC = 0 ~ +85	TC = 0 ~ +85
Value-added Technology	30μ Gold Finger / Conformal Coating / Underfill	30μ Gold Finger / Conformal Coating / Underfill	Thermal Sensor / 30μ Gold Finger / Conformal Coating / Underfill	Thermal Sensor / 30μ Gold Finger / Conformal Coating / Underfill	Thermal Sensor / 30μ Gold Finger / Conformal Coating / Underfill