

## Industrial SSD & DRAM Solutions for Healthcare Applications



The integrity and immediacy of the data stored in medical devices is also closely related to the diagnosis, monitoring and treatment of a disease. Apacer's featured technologies are based on four key considerations: data integrity, data security, reliability & endurance and longevity to help healthcare applications meet the challenging standards of their industry.

### Featured Technologies for Medical Devices



#### CoreSnapshot

Full backup and recovery of SSD data can be performed in 1 second, which can instantly eliminate catastrophic system issues and prevent data damage or downtime from translating into operational risks and losses.



#### ESD Protection

Excellent electrostatic protection which has passed the test conditions of IEC 61000-4-2. Provides a high standard of protection for electromagnetic susceptibility (EMS) that meets the medical equipment standard EN60601-1-2.



#### Data Integrity

- End-to-end Data Protection
- Smart Read Refresh™



#### Data Security

- Bidirectional Security Identification
- Signed Firmware
- TCG Opal 2.0



#### Reliability & Endurance

- Conformal Coating
- ESD Protection
- SLC-liteX



#### Longevity

- CoreSnapshot
- SSDWidget 2.0
- Fixed BOM
- 6+6 PCN/EOL Policy

### Recommended Industrial SSD solutions

| Model                                | SV250-25  | SV250-M280       | SV250-M242       | UH110-UFD1      | UV110-UFD5                | UV110-UFD1                            |
|--------------------------------------|---|------------------|------------------|-----------------|---------------------------|---------------------------------------|
| <b>Features</b>                      | High Endurance w/ Smart Read Refresh™ & CoreSnapshot Technologies |                  |                  | High Endurance  | ESD Protection            | Bidirectional Security Identification |
| <b>Form Factor</b>                   | 2.5"  | M.2 2280         | M.2 2242         | USB Flash Drive | USB Flash Drive           | USB Flash Drive                       |
| <b>Interface</b>                     | SATA 3.2 (6Gb/s)  | SATA 3.2 (6Gb/s) | SATA 3.2 (6Gb/s) | USB 3.1 Gen1    | USB 3.1 Gen1              | USB 3.1 Gen1                          |
| <b>Connector</b>                     | (7+15) pin male   | M.2 B & M key    | M.2 B & M key    | USB Type A Plug | USB Type A Plug           | USB Type A Plug                       |
| <b>NAND Flash Type</b>               |   |                  |                  | 3D TLC          |                           |                                       |
| <b>Capacity</b>                      | 30~960 GB   | 30~960 GB        | 30~480 GB        | 16~64GB         | 64~256 GB                 | 16~256 GB                             |
| <b>External DRAM</b>                 | No  | No               | No               | No              | No                        | No                                    |
| <b>Max. R/W Performance (MB/sec)</b> | 560/520   | 560/520          | 560/515          | 265/125         | 255/120                   | 260/125                               |
| <b>Standard Operating Temp. (°C)</b> | 0 ~ +70   | 0 ~ +70          | 0 ~ +70          | 0 ~ +70         | 0 ~ +70                   | 0 ~ +70                               |
| <b>Wide Temp. (°C)</b>               | -40 ~ +85   | -40 ~ +85        | -40 ~ +85        | -40 ~ +85 *     | -40 ~ +85                 | -40 ~ +85 *                           |
| <b>MTBF (Hours)</b>                  | >3,000,000  | >3,000,000       | >3,000,000       | >3,000,000      | >3,000,000                | >3,000,000                            |
| <b>Recommended Applications</b>      | General Medical Applications                                      |                  |                  |                 | Mobile Diagnostic Machine | X-ray Machine                         |

\* Not supported on 16GB

| Model                                | PV210-M280  | PV220-M280   | PV910-M280      | SH250-M242  | CH710-CF   | CH110-SD        | CV110-SD   |
|--------------------------------------|---|--------------|-----------------|---|--|-----------------|------------|
| <b>Features</b>                      | High Performance, High Capacity                   |              | Signed Firmware | High Endurance w/ SLC-liteX Technologies (Reaching 30,000 P/E cycles) |  | High Endurance  |            |
| <b>Form Factor</b>                   | M.2 2280  | M.2 2280     | M.2 2280        | M.2 2242  | CompactFlash Type I                                  | SDHC/SDXC       | SDHC/SDXC  |
| <b>Interface</b>                     | PCIe Gen3 x4                                      | PCIe Gen3 x4 | PCIe Gen3 x2    | SATA 3.2 (6Gb/s)  | PC Card Memory Mode; PC Card I/O Mode; True IDE Mode | SD 4.0          | SD 4.0     |
| <b>Connector</b>                     | M.2 M Key   | M.2 M Key    | M.2 B & M key   | M.2 B & M key   | 50-pin   | -               | -          |
| <b>NAND Flash Type</b>               |   |              |                 | 3D TLC  |  |                 |            |
| <b>Capacity</b>                      | 240~1920 GB                                       | 120~1920 GB  | 120~960 GB      | 10~160 GB   | 8~64 GB  | 8~64 GB         | 32~256 GB  |
| <b>External DRAM</b>                 | Yes   | No           | No              | No  | No   | -               | -          |
| <b>Max. R/W Performance (MB/sec)</b> | 3100/2630   | 1695/1685    | 1775/1295       | 560/520   | 115/80   | 95/80           | 90/34      |
| <b>Standard Operating Temp. (°C)</b> | 0 ~ +70   | 0 ~ +70      | 0 ~ +70         | 0 ~ +70   | 0 ~ +70  | -25 ~ +85       | -25 ~ +85  |
| <b>Wide Temp. (°C)</b>               | -40 ~ +85   | -40 ~ +85    | -40 ~ +85       | -40 ~ +85   | -40 ~ +85  | -40 ~ +85       | -40 ~ +85  |
| <b>MTBF (Hours)</b>                  | >3,000,000  | >3,000,000   | >3,000,000      | >3,000,000  | >1,000,000   | >3,000,000      | >3,000,000 |
| <b>Recommended Applications</b>      | Computer Tomography, Precise Diagnostic Equipment |              |                 | Ultrasound  |  | Respirator, ECG |            |

### Recommended Industrial DRAM Solutions

| Module Type                        | SODIMM                   | RDIMM                   | ECC UDIMM         | ECC SODIMM        | VLP ECC UDIMM     | VLP ECC SODIMM |
|------------------------------------|--------------------------|-------------------------|-------------------|-------------------|-------------------|----------------|
| <b>Memory Technology</b>           | DDR4                     |                         |                   |                   |                   |                |
| <b>Frequency</b>                   | 2133/2400/2666/2933/3200 |                         |                   |                   |                   |                |
| <b>Density</b>                     | 2GB/4GB/8GB/16GB/32GB    | 4GB/8GB/16GB/B32GB/64GB | 4GB/8GB/16GB/32GB | 4GB/8GB/16GB/32GB | 4GB/8GB/16GB/32GB | 4GB/8GB        |
| <b>Voltage</b>                     | 1.2v                     | 1.2v                    | 1.2v              | 1.2v              | 1.2v              | 1.2v           |
| <b>Pin Count</b>                   | 260-Pin                  | 288-Pin                 | 288-Pin           | 260-Pin           | 288-Pin           | 260-Pin        |
| <b>Width</b>                       | 64-Bit                   | 72-Bit                  | 72-Bit            | 72-Bit            | 72-Bit            | 72-Bit         |
| <b>PCB Height</b>                  | 1.18"                    | 1.23"                   | 1.23"             | 1.18"             | 0.738"            | 0.7"           |
| <b>Operation Temperature. (°C)</b> | TC = 0 ~ +85             | TC = 0 ~ +85            | TC = 0 ~ +85      | TC = 0 ~ +85      | TC = 0 ~ +85      | TC = 0 ~ +85   |
| <b>Value-added Technology</b>      |                          |                         |                   |                   |                   |                |