

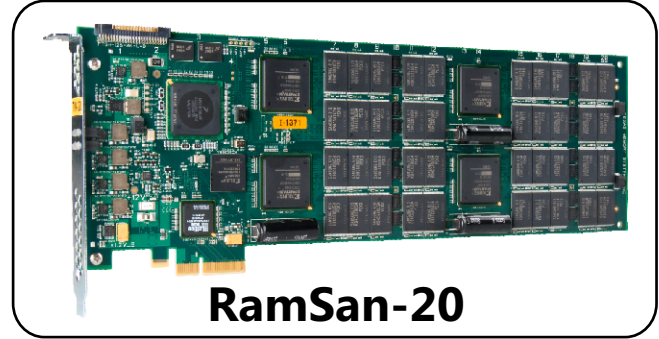


The World's Fastest Storage®

450-GB

# Texas Memory Systems

- **450-GB SLC Flash Storage**
- **120,000 IOPS**
- **700 MB/s Bandwidth**
- **Dual ECC Levels**
- **Embedded CPU Controller**



**RamSan-20**

Direct from Texas Memory Systems (TMS), the RamSan-20 provides Enterprise grade Flash storage for your server. It is a full feature **PCIe (x4)** Flash storage card designed to greatly speedup applications that require larger and faster data buffer areas.

With its fast PCIe connection, the RamSan-20 has a direct low-overhead connection to main memory that eliminates disk controllers, disk cables, and disk chassis. The RamSan-20 PCIe card responds **2-5x quicker** and with a **2-5x faster** data transfer rate than Flash disk drives or controllers. Additionally, it has a comprehensive feature set that includes many new Flash oriented management and reliability features.

### Features

The RamSan-20 has the features you expect from an Enterprise storage card. It was designed for performance, reliability, and simplicity.

- A Storage System on a PCIe card
- Low Overhead, High Performance
- High IOPS, bandwidth, and capacity
- 2 Error checking/correcting methods
- Embedded wear-leveling PowerPC
- Four Flash FPGA controllers
- Includes 2 seconds of extended power
- Quick and Easy to install
- Low Power Requirement

### Automatic Error Checking

Storage data integrity is provided by the use of **SLC** Flash chips with two independent methods of ECC. Each Flash chip incorporates an ECC data field within the chip for initial checking. Additionally, each Flash controller on the RamSan-20 is responsible for 20 Flash chips that are configured as a RAID-5; thereby, eliminating any single chip failure from corrupted data storage. The Flash wear-leveling algorithm is running on the embedded PowerPC providing real-time quality assurance independent of the host computer.

### Applications for a 450-GB PCIe Card

- |                           |                     |
|---------------------------|---------------------|
| <b>Databases</b>          | <b>Hot Files</b>    |
| <b>Video Editing</b>      | <b>Index Files</b>  |
| <b>Lookup Tables</b>      | <b>Rendering</b>    |
| <b>Data Warehousing</b>   | <b>Web Content</b>  |
| <b>Financial Modeling</b> | <b>Check Points</b> |
| <b>Data Acquisition</b>   | <b>Simulations</b>  |

### RamSan-20 Specifications

	<b>Flash Card Capacity</b>	<b>450-GB</b>
	<b>NAND Type</b>	SLC
	<b>Block Size</b>	4-KBytes
<b>IOPS</b>	<b>Random Reads</b>	<b>120,000</b>
	<b>Random Writes</b>	<b>50,000</b>
	<b>Random R/W, R-70%</b>	<b>70,000</b>
<b>Bandwidth</b>	<b>Read Bandwidth</b>	700 MB/sec
	<b>Write Bandwidth</b>	500 MB/sec
	<b>Read Latency (512B)</b>	50 µs
<b>CPU</b>	<b>PowerPC</b>	333 MHz
<b>Life</b>	<b>With 25% Writes</b>	12 years
<b>Size</b>	<b>PCIe (x4)</b>	Full size
	<b>Power Requirement</b>	15 watts

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