

## TerabyteStream™

HighPoint's Intelligent Data Cache algorithm distinguishes multiple concurrent data streams and manages the data from the controller cache offering blazing RAID performance for high bandwidth applications.

### Intelligent Data Caching

HighPoint's intelligent data caching algorithm efficiently manages multiple concurrent data streams where performance and data protection are needed for real-time server environments. The most frequently requested data blocks are processed in the Cache minimizing the needs to access the disks.

The firmware implements an optimized cache flushing policy to fully utilize the hardware bandwidth and minimize the performance impact during cache flushing operation. The firmware also combines the efficiency of Cache algorithm and hardware acceleration to parallel process I/O request from disk.

### Adaptive Read Ahead

TerabyteStream™ continually reevaluates whether to transfer data from disk to its local cache in increments equal to the stripe-unit size or in increments equal to the system I/O request size using a method called Adaptive Read Ahead.

The algorithm intelligently anticipates data blocks that will be requested in the future and read them into controller cache. This will improve overall performance for sequential reads as the number of cache hits will reduce the seek operations on the disk.

### Intelligent I/O Scheduling

The overall performance of a disk drive is affected by how efficiently the I/O requests are scheduled. Performance optimization is achieved by re-ordering the I/O requests in a most efficient elevator algorithm. Working together with the native command queuing feature in SATA II, TerabyteStream™ boosts the random access performance by minimizing the total seek time on all drives.

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