

OXUFS936x Series Highlights

- High performance Universal Interface (FireWire800, FireWire400, USB2.0 or eSATA) to SATA storage controllers with integrated RAID
- Support for up to 4 SATA II ports (OXUFS936QSE)
- On-chip hardware RAID engine supporting
 - RAID 0, and spanning (all devices)
 - RAID 1 (OXUFS936DS and OXUFS936DSE only)
 - RAID 3, RAID 5 and RAID 10 (OXUFS936QSE only)
- Capable of supporting burst data transfer rates at up to 300GByte/s with sustained transfer rates in excess of 240MByte/s
- Automatic RAID set rebuilding on new disk insertion at rates of up to 200GB/hr
- On-chip cipher engine for added data protection
- Flexible RAID User Agent to communicate status and health of RAID set



Application:

Direct Attached Storage (DAS) – External RAID Enclosures

PLX Product:

OXUFS936x Series RAID Controllers

Key Benefit:

Enterprise data protection at consumer price points

The explosion in digital content is well documented with ever increasing numbers of people creating, purchasing, and downloading digital content (video, photo, and music). This content has both a monetary and an emotional value, and as such consumers demand storage appliances that ensure the long term security and protection of this often irreplaceable content.

Today the primary consumer appliance of choice for long term storage of digital content is an external hard disk drive (HDD) connected to the host PC or MAC via a high-speed serial interface such as USB, FireWire™ (1394) or eSATA. External HDDs have grown in popularity due to the low cost of ownership and the simplicity of the usage model, however they have one drawback, and that is HDDs are mechanical items which contain rotating parts and overtime these mechanisms can wear out. The lifespan of a typical HDD is 5 years, which although is greater than the lifetime of a consumer PC, but it can be significantly less than the lifetime of an external storage appliance purchased for backup of home video or photos.

Data Protection and RAID

When a hard disk failure occurs, data corruption is almost inevitable. The damage may just be limited to a single file, but it could mean all data is inaccessible with the only possibility for recovery being to use an expensive data recovery service with no guarantee of success.

To ensure that valuable data is never lost, businesses simply keep multiple copies or backups. Backup applications are the first line of defense but what if the backup disk fails? - Enter RAID (Redundant Array of Independent Disks) systems. Enterprises have long exploited RAID technology to protect against the data loss that can occur as a result of a HDD failure. After all, if the data is stored twice, you won't lose anything if one system fails!

The basic idea of RAID is to combine multiple disk drives into an array of disk drives to deliver greater fault tolerance through the use of data redundancy. This may also yield greater performance than a single disk drive. The most common redundant RAID modes are listed below, with each mode protecting from data loss in the event of a single disk failure.

- RAID 1: Disk mirroring provides the highest level of data integrity with 100% data redundancy and only requires 2 disks to support. As the name suggests, the 2nd disk is an exact mirror of the data on the 1st. This can be implemented with just 2 disks.
- RAID 3 and RAID 5: Disk striping with Parity provides the perfect balance between very high performance and data integrity. This requires a minimum of 3 disks to implement RAID 3 or 5.
- RAID 10: Mirrored stripe provides 100% data redundancy like RAID 1 with the added benefit of increased performance by striping across 2 disks. Requires a minimum of 4 disks to implement.

OXUFS936x: Consumer Storage optimized RAID controllers

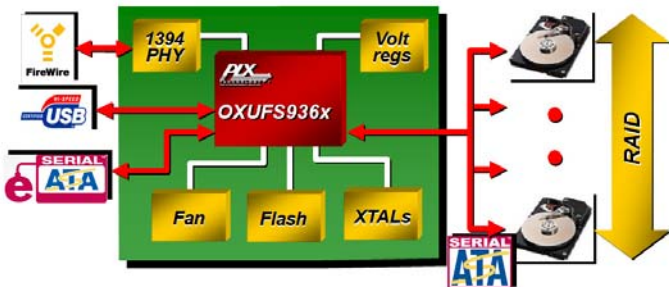
Consumers can also take advantage of RAID technology to ensure that valuable data is always safe and secure by selecting multi-disk external enclosures that provide tailored RAID functionality.

The PLX OXUFS936x series of SATA controllers bridges from USB2.0, FireWire or eSATA to either 2 or 4 SATA ports. Each controller integrates a hardware RAID engine which is capable of running at line rate, with the maximum achievable throughput of 300MBytes/s.

- The 2-port controllers -- OXUFS936DS and OXUFS936DSE -- support RAID 0, RAID 1 as well as spanning.
- The 4-port OXUFS936QSE supports RAID 0, RAID 3, RAID 5, RAID 10 as well as spanning.

In the event of a disk failure, rebuilds are automatically started when a failed HDD is replaced. While the system is rebuilding there is no redundancy in the system, so it is critical that the rebuild finishes as quickly as possible. All OXUFS936x controllers also provide hardware accelerated rebuilds at rates up to 200GB/hr.

Optimized for consumer storage applications, the OXUFS936x series of controllers boast the highest level of integration and require no external DRAM, thereby keeping the BOM costs to a minimum.

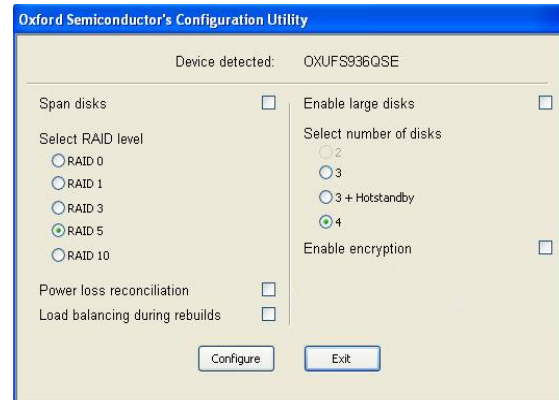


Optimized Firmware and Flexible User Agent

PLX DAS controllers are supplied with fully featured, optimized firmware tailored to the target application. The base firmware for the OXUFS936x controllers includes all standard features that are required to deploy a multi-disk RAID enclosure including enclosure management and advance power management.

One of the unique features of the OXUFS936x is the flexible user agent which provides the method to configure the RAID system and communicate the status to the end user. PLX

provides a sample GUI application as well as a customizable framework to allow OEMs to tailor the user interface to their specification.



RAID Configuration GUI

Development Tools & Custom Solutions

PLX offers a comprehensive development & support package for the OXUFS936x series including:

Rapid Development Kit (RDK)

- Evaluation board with pre-built firmware application for product demo and evaluation
- Reference design schematics for reduced time-to-market
- Product documentation & application notes

Software Development Kit (SDK)

- Full source code to facilitate product differentiate and customization
- De-bug hardware
- Compilers, drivers, programming utilities and complete documentation

Additional PLX Advantages

- Superior storage expertise
- Robust and market-proven storage system solutions with full feature set
- Schematic and Layout Design Reviews
- Regional support teams for fast time-to-market

Available on PLX Website:

Product Brief, Databook, Application Notes, technical support
<http://www.plxtech.com/products/consumer/#das>