

OXUF936DSE, Universal Interface to Dual SATA RAID Controller with Encryption

Highlights

■ General Features

- o High performance Universal Interface (eSATA, FireWire800, FireWire400 or USB2.0) to dual SATA storage controller with Encryption

■ Key Features

- o High performance Universal Interface (eSATA, FireWire800, FireWire400 or USB2.0) to dual SATA storage controller
- o Integrated hardware RAID controller supporting:
 - Disk striping (RAID0) for maximum performance
 - Disk mirroring (RAID 1) for maximum data protection
 - Disk spanning for large capacity single volume
- o Hardware RAID rebuild engine (up to HDD transfer rate)
- o Integrated hardware cipher engine supporting AES-128 encryption / decryption over USB, FireWire and eSATA
 - Support for biometric (fingerprint) and software password authentication
 - Host software and drivers supplied for Password Application for PC and Mac
- o Supports SATA II Gen2m specification and 3.0Gbps and 1.5Gbps interfaces
- o Sustained transfer rates in excess of 150Mbytes/s (limited only by HDD or interface transfer rates)
- o Flexible RAID User Agent (LED & LCD support)
- o 24 GPIO plus up to 24 secondary GPIO pins
- o Integrated PWMs
- o Integrated Fan-Tachometer control
- o USB mass-storage class compliant

The OXUF936DSE is a Universal Interface (eSATA, FireWire800, FireWire400, USB2.0) to dual SATA storage controller with integrated hardware RAID engine and integrated encryption engine. Delivering best-in-class performance across all interfaces, the OXUF936DSE enables a range of external secure storage applications, including dual disk RAID configurations.

The integrated hardware RAID controller supports maximum performance (RAID 0), maximum data protection (RAID 1) or spanning over USB, 1394 and eSATA.

The integrated cipher engine provides advanced encryption and decryption capabilities in hardware and enables OEMs to rapidly deploy full disk encryption solutions, providing end users with peace-of-mind that their private content is safe and secure in the event of theft or loss.

Integrating an eSATA device port, IEEE1394b link, USB2.0 device and dual SATA host controllers the OXUF936DSE requires a minimal number of external components and reduces total system BOM cost.

Embedded ARM Processor

By managing the data flow, the on-chip ARM7 processor enables a whole new series of standalone consumer electronic product to be developed in a simple C/C++ programming environment.

USB2.0

The embedded USB2.0 PHY supports both full and high speed, using bulk-only transport Mass Storage Class device protocol. Its fast read and write transfers ensure that the maximum possible host performance is maintained.

No additional USB host drivers are required, for either Windows® or Mac® operating systems, for standard storage, button notification or GPIO control applications

FireWire

The 1394 link layer supports both FireWire800 and FireWire400 and complies with the 1394-1995 and 1394-2000 specifications.

No additional 1394 host drivers are required, for either Windows® or Mac® operating systems for standard storage applications.

SATA Interface

The embedded 3GHz SATA host interfaces supports the latest revisions of the SATA II specifications. In addition the eSATA device port also supports the Gen2m interface. Interface speeds of 3GHz and 1.5GHz deliver maximum performance with minimum latency for external SATA storage.



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RAID

The chip supports several RAID functions, including:

- o Striping (RAID 0) delivers the highest performance but provides no data integrity or redundancy.
- o Mirroring (RAID 1) provides the highest level of data integrity with 100% data redundancy.
- o Spanning (concatenation) presents all drives as a single large volume.

Encryption

The integrated hardware cipher engine supports real-time, on-the-fly encryption / decryption of the data to the Advanced Encryption Standard (AES), providing a means whereby a users' data can be securely stored, and made unavailable to unauthorized users.

In addition to a high-performance cipher engine, the OXUF936DE is complemented by robust authentication solutions, including software password. A customizable host application, the Oxford Semiconductor Authenticator, is provided for both PCs and Mac hosts to:

- o Define and manage up to 10 passwords
- o Authenticate and mount the drive
- o Safely de-authenticate and unmount the drive.



Development Tools

For external Mac and PC storage solutions, Oxford Semiconductor offers a comprehensive support package including:

- o Reference designs comprising both hardware and software components
- o Evaluation boards and application notes
- o Software Development Kit (SDK) comprising source code and debug boards

Product Ordering Information

Part Number	Description
OXUF936DSE-FBAG	Universal Interface to Dual SATA RAID Controller with Encryption

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