

## OXU3101, USB SuperSpeed 3.0 to SATA Controller with Encryption

### Highlights

#### ■ General Features

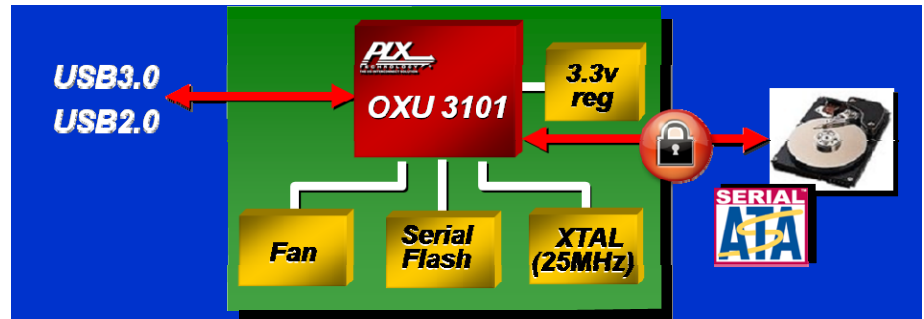
- High performance USB SuperSpeed 3.0 to SATA storage controller with Encryption

#### ■ Key Features

- High performance USB 3.0 to SATA storage controller with Encryption
- Integrated USB 3.0 / USB 2.0 PHY
- Integrated SATA II compliant core and PHY
  - Supports 3.0Gbps and 1.5Gbps interfaces
- Integrated hardware cipher engine supporting 128- and 256-bit AES encryption / decryption:
  - Support for AES-ECB and AES-CBC algorithms
  - Support for AES-XTS as defined by IEEE P1619
  - Host software and driver supplied for password application for PCs
- Support for UAS/UASP (USB attached SCSI Protocol) delivering maximum throughput
- Support for BOT (Bulk only Transport)
- Support for USB Mass Storage Class
- SPI interface for serial flash
- Secondary SPI for simple interface to external system components such as LCD display
- 9 GPIOs allow easy product customization
- In-field update of firmware via USB
- 3.3V supply voltage
  - Internal regulator for core voltage

*The OXU3101 is a high performance storage controller bridging between USB SuperSpeed 3.0 and a SATA hard disk.*

The OXU3101 delivers best-in-class performance and enables a range of secure and non-secure personal storage applications. Fully compliant with the USB 3.0 Specification, the OXU3101 supports a range of power saving features, making it the ideal solution for bus powered external enclosures.



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.

The OXU3101 is supported by a comprehensive support package that includes evaluation boards, reference designs, and software development kit.

### USB SuperSpeed 3.0

The embedded USB 3.0 PHY supports SuperSpeed, High Speed and Full Speed modes, using either bulk-only transport Mass Storage Class device protocol or the new USB Attached SCSI Protocol (UASP). Its fast read and write transfers ensure that the maximum possible host performance is maintained.

### SATA Interface

The embedded 3GHz SATA host interfaces supports the latest revisions of the SATA II specifications. Interface speeds of 3GHz and 1.5GHz deliver maximum performance with minimum latency for external SATA storage.

### Power Management

The OXU3101 provides OEMs with a range of power saving modes to ensure minimal power consumption in all configurations, including:

- USB 3.0 U0 – U3 power states
- USB 2.0 standby / suspend states
- SATA Interface Power Management (IPM)

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### Embedded Processor

The on-chip RISC processor enables a whole new series of standalone consumer electronic product to be developed in a simple C programming environment.

### Encryption

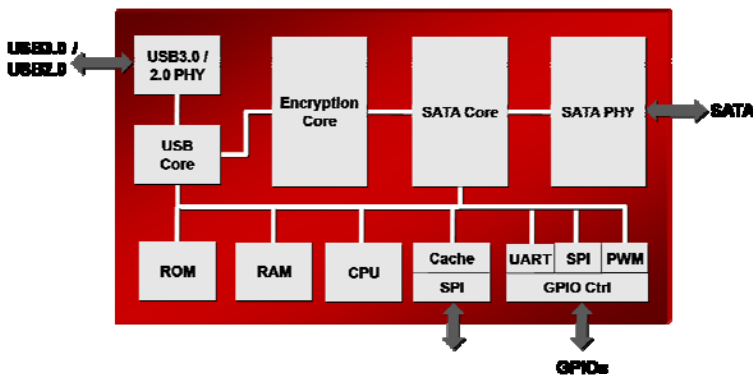
The integrated hardware cipher engine supports real-time, on-the-fly encryption / decryption of the data to the Advanced Encryption Standard (AES), providing a means whereby a users' data can be securely stored, and made unavailable to unauthorized users.

The cipher engine can be configured for the following AES algorithms:

- ECB – Electronic Code Book
- CBC – Cipher Block Chaining
- XTS – XEX-based Tweaked CodeBook with CipherText Stealing

In addition to a high-performance cipher engine, the OXU3101 is complemented by robust authentication solutions, including software password. A customizable host application is provided for hosts to:

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



OXU3101 Block Diagram

### Development Support

For external PC storage solutions, PLX Technology offers a comprehensive support package including:

- Reference designs comprising both hardware and software components
- Evaluation boards with pre-built application firmware
- Software Development Kit (SDK) comprising source code and debug boards
- Extensive range of application notes to shorten learning curves and simplify implementation

### Product Ordering Information

Part Number	Description
OXU3101-AANC G	USB 3.0 to SATA controller with Encryption

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