

### OXU310x Series Highlights

- **OXU3102 Vitals**
  - SuperSpeed USB 3.0 to Dual SATA host controller
    - Integrated hardware RAID engine supporting RAID0, RAID 1 & JBOD
  - 10 x 10mm<sup>2</sup>, 88-pin QFN package
  
- **OXU3101 Vitals**
  - SuperSpeed USB 3.0 to SATA host controller with AES encryption
    - Integrated cipher engine supporting 128-bit and 256-bit AES
  - 8 x 8mm<sup>2</sup>, 64-pin QFN package
  
- **OXU3100 Vitals**
  - SuperSpeed USB 3.0 to SATA host controller
  - 8 x 8mm<sup>2</sup>, 64-pin QFN package
  
- **OXU310x Key Features**
  - **Standards Compliant**
    - USB 3.0 Spec, r1.0
    - Serial ATA Spec, r2.6
    - USB Mass Storage Class Spec, r1.3
    - USB Attached SCSI, r4.0
    - Microsoft DTM ready
  - **High Performance**
    - Support UAS for highest throughput
      - >270MB/s on 3101 /3100
      - >314MB/s on 3102
    - Best-in-class with standard BOT drivers
      - >212 MB/s on 3101 /3100
    - Hardware accelerated data paths
    - Real-time encryption
  - **Advance Power Management**
    - SATA Interface Power Management
    - Supports all USB 3.0 power states
    - Supports USB 2.0 Suspend
    - Dynamic Clock Management
    - Auto-power
  - **Hardware cipher engine (3102 and 3101)**
    - 128-bit and 256-bit encryption keys
    - AES-XTS, AES-CBC and AES-EBC algorithms
    - NIST Approved
  - **Integrated 8051 CPU**



### Application:

#### **Direct Attached Storage (DAS)**

### PLX Products:

#### **OXU310x Series – SuperSpeed USB 3.0 to SATA Controllers**

### Key Benefit:

#### **Using Large Capacity External Drives with Windows XP**

*Hard drive disk manufacturers continue to push the capacity envelope and 2010 saw the launch of the first 3TB desktop drives. This is great news for users with a voracious appetite for capacity, as long as they are running the latest operating systems. For the >45% of users still loyal to the tried and tested Windows XP platform, using external storage >2TB can prove problematic.*

Problems arise for users of Windows XP as the operating system cannot address disk space beyond 2TB, meaning that almost one third of a 3TB drive cannot be used. This 2TB limit is due to the 32-bit address structure of the Master Boot Record (MBR) partitioning scheme, used by traditional Basic Input/Output System (BIOS) architectures.

#### **Breaking the 2TB limit on Windows XP**

Until recently the only way to break through the Windows XP 2TB limit was to format disks using an advanced partitioning scheme like GUID Partition Table (GPT). However GPT is not a solution for all Windows XP platforms since GPT uses 64-bit addressing, and therefore cannot be used with 32-bit versions of Windows XP.

Now with the hard disk industry rolling out Advanced Format drives which natively use 4K byte sectors for low level formatting, instead of the legacy 512 bytes sector size, users of 32-bit Windows XP systems are able to use the latest 3TB HDDs.

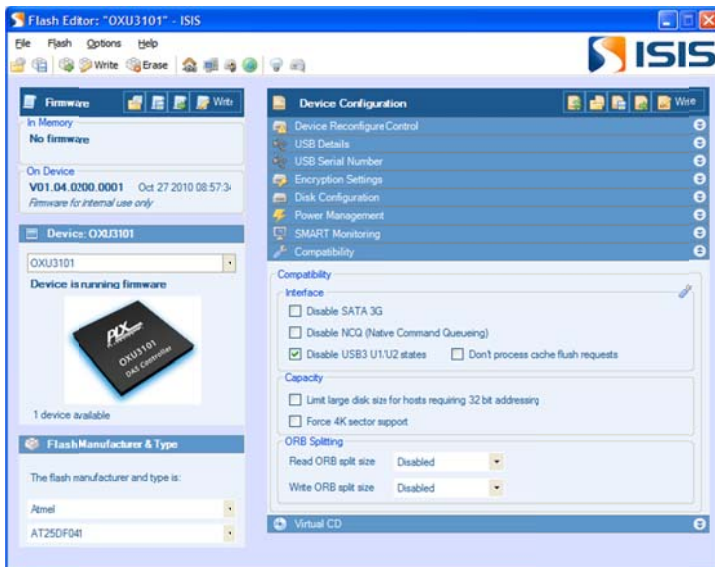
### OXU310x: Intelligent Support for Advanced Format HDDs

The OXU310x series of SuperSpeed USB 3.0 to SATA controllers support both Advanced (4K byte sector) and Standard (512 byte sector) format hard disks.

For ease-of-use the controller firmware auto-detects the format of the drive at run-time and presents the sector size to the host as defined by the disk.

However, Advanced format disks also support 512 byte emulation mode, and if the disk is set to default to this mode then in a Windows XP system the drive capacity above 2TB may not be usable.

To workaroud this issue, the OXU310x can be configured to always present 4K sectors to the host PC irrespective of the capabilities of the drive -- i.e. emulate 4K sector support. The firmware can be quickly configured for this mode through PLX's ISIS software by selecting the "Force 4K sector Support" in the Compatability field in the Flash Editor tool, see the screenshot below



### Development Tools & Custom Solutions

PLX offers a comprehensive development & support package for the OXU310x 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
- ISIS Gateway for rapid device configuration and password verification



#### Software Development Kit (SDK)

- Full source code to facilitate product differentiation and customization
- Debug hardware
- Drivers, programming utilities and complete documentation

#### Additional PLX Advantages

- Superior consumer storage expertise
- Robust and market-proven storage system solutions
- Schematic and Layout Design Reviews
- Signal integrity testing
- Regional support teams for fast time-to-market

#### Available on PLX Website:

Product Brief, Databook, Design-in Guidelines, Schematics, OrCAD symbols, Application Notes and more

- OXU3102 [www.plxtech.com/3102](http://www.plxtech.com/3102)
- OXU3101 [www.plxtech.com/3101](http://www.plxtech.com/3101)
- OXU3100 [www.plxtech.com/3100](http://www.plxtech.com/3100)