Mass Storage with USB 2.0 support

Reference Designs
CY4610 & CY4611

PRODUCT OVERVIEW

Cypress' EZ-USB families of chips provide an ideal interface for developing a USB Mass Storage Device. Our full featured reference designs provide single chip solutions for the following interfaces:

- USB to ATA - ATAPI:
  - CD-R/W, CD-R, CD ROM, DVD-RAM, DVD-ROM, ZIP, LS120, Tape drives
- USB to ATA - IDE:
  - Hard drives
- USB to Compact Flash

We offer 2 versions of the ATAPI/IDE solution:

USB 2.0 version based on the EZ-USB *FX2* chip supports: - High speed (480 Mbps) - Full speed (12 Mbps)	USB 1.1 version based on the EZ-USB *FX* and EZ-USB chips support: - Full speed (12 Mbps)

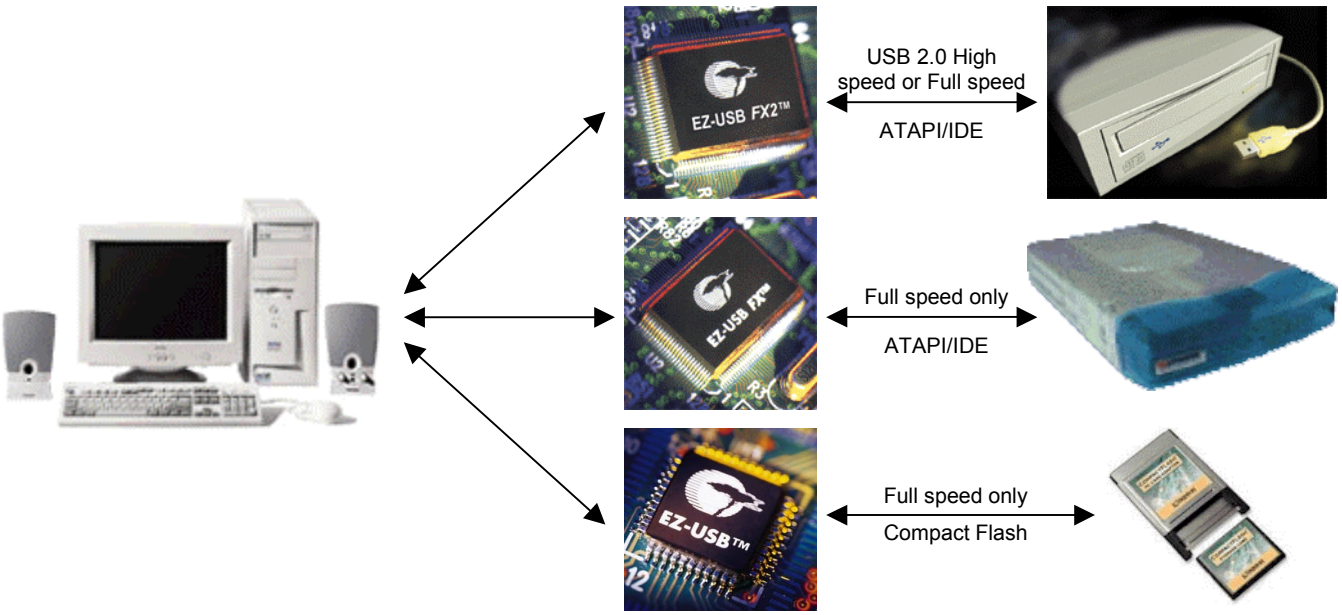
With these reference designs, a mass storage device can easily be configured to communicate over USB. Our EZ-USB families offer a simple interface to produce low cost, flexible and high performance solutions. The 8 bit data path of our EZ-USB and the 16 bit General Programmable Interface of our FX and FX2 provides a glueless interface to the attached device to reduce external components and keep costs down. Take full advantage of the speed of USB 2.0 with a solution based on our next generation EZ-USB FX2.

Our Reference Design Kits include a fully functional demonstration board as well as all of the design materials you will need to expedite the development of your custom product. By including a Windows 98 driver and firmware for ATAPI, IDE, and Compact Flash, development time is reduced to a minimum. Cypress provides faster time-to-market and the lowest overall system cost with our Mass Storage Reference Design.

FEATURES	BENEFITS
• USB 2.0 and USB 1.1 specification compliant	• Compatible with industry standards • Backward and forward USB compatibility
• Single chip solutions	• Small footprint and low cost solution
• Downloadable firmware	• Easy field upgrades • Low support cost
• ATAPI/IDE and Compact Flash firmware included • Hardware schematics included	• Minimize development time and NRE cost • Get to market quicker and gain larger market share
• USB 1.1 design compliant with ATA PIO Mode 0 ▪ Full Speed sustained transfer rates of 1MB/s • USB 2.0 design implements PIO and UDMA modes through ***UDMA Mode 5 (UDMA/100)*** ▪ High Speed sustained transfer rate limited only by USB 2.0 bandwidth	• Highest performance achievable over USB
• Compatible Windows and Mac OS class drivers • Windows 98 driver included	• Plug N Play with no driver development
• RAM based architecture	• Quick firmware changes for faster development time
• Excellent Flexibility	• Easily customize your solution to differentiate your product in the market place

For ordering information contact your local sales representative,
call toll-free in the US (800)-858-1810, or visit our web site at www.cypress.com

System Architecture



Reference Design Kit (CY4610 / CY4611)

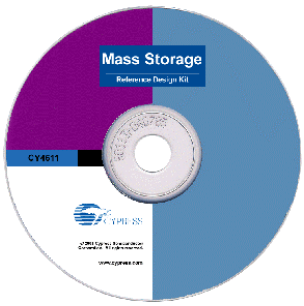
The Mass Storage Reference Design Kits are a complete resource for developers to utilize and customize in the development of their own product.

CY4611 (USB 2.0) kit includes:

- *FX2* based ATAPI/IDE demonstration board
- Complete documentation hard copies
  - Design Notes (ATAPI/IDE)
  - Demo board operating instructions
  - Release Notes

CY4610 (USB 1.1) kit includes:

- *FX* based ATAPI/IDE demonstration board
- Complete documentation hard copies
  - Design Notes (ATAPI/IDE & Compact Flash)
  - Demo board operating instructions
  - Release Notes



- The CD-ROM common to both kits includes the design materials for all variations of the Mass Storage design:
  - Source Code
  - Windows 98 driver
  - Documentation
  - Schematics
  - Orcad Source File
  - Bill of Materials
  - Datasheets
  - Complete copy of Development Kit software

Order Information

Note: Modifications to the firmware will require the appropriate Development Kit along with a full 8051 C compiler from Keil or other 3rd party vendors.

Application	Reference Design Kit	Based on part…	Development Kit
ATAPI/IDE (USB 2.0 High/Full speed)	CY4611	CY7C68013-56PVC	CY3681
ATAPI/IDE (Full speed only)	CY4610	CY7C64613-80NC	CY3671
Compact Flash (Full speed only)	CY4610	AN2136SC	AN2131-DK001

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