CY4640 Host Mass Storage Reference Design 1.0

USB EZ-Host Mass Storage Reference Design Kit

Cypress's CY4640 reference design kit demonstrates the capability of mass storage devices seamlessly exchanging data from one point to another without the aid of the PC. In order to eliminate the PC in this manner, applications must operate as a USB Host and support the Mass Storage device class. Utilizing the powerful architecture of Cypress's EZ-Host device, the CY4640 reference design kit minimizes time to market and design effort by providing key development components.

The components of the CY4640 reference design kit address the high demand for host enabled storage devices by providing software IP, hardware, and a demonstrable application. The reference design kit allows users to evaluate our solution and customize their mass storage application to turn out highly capable products with minimal investment time and effort.

Highlights

- **Software IP**
  - USB Host Stack
  - Mass Storage Class Driver
  - FAT 12/16/32 file system support
  - Firmware support
- **EZ-Host Development Board**
- **Adapter for 40-to-44 pin ATA header**
  - For 2.5" drives
- **Complete software source and object code**
- **Design Notes describing build options, code architecture, and integration**
- **EZ-OTG/EZ-Host development tools**
- **Power Supply**
- **USB and serial cables**

Software IP

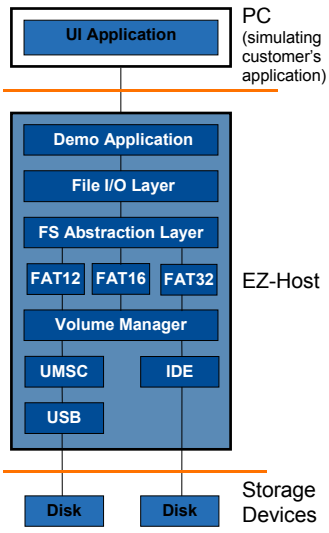
Software is a crucial component of this reference design as we provide a quality software solution with source code. Software modules include:

USB Host Stack (Based on Cypress Frameworks)
Handles USB packet scheduling and manages communication with USB devices

Mass Storage Class Driver
Bulk Only Transport compatible driver for connectivity to USB devices such as hard disk drives, NAND flash drives, MP3 players, Digital Still Cameras, etc.

File System (FAT 12/16/32)
Support for the most common embedded file systems

File System Abstraction Layer
High-level access to files with Open, Close, Read, Write style interface



Volume Manager
Simultaneous support for multiple USB/IDE drives and partitions

IDE Manager
Support for a hard drive directly attached to the EZ-Host IDE interface

Application code
Demonstration application showcasing the features and capabilities of the complete software solution

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Exchanging Data Without The Aid of the PC

Applications

The CY4640 reference design kit supports a wide variety of mass storage applications. It enables connectivity with mass storage devices without the aid of the PC in applications such as these and many others:

Mass Storage Device (Host)	Mass Storage Device (Peripheral)	Usage
Databank	Digital Still Camera (DSC)	Downloading pictures from DSC while “on the road”
MP3 Player	MP3 Player	Moving songs from player to player
Car Stereo	MP3 Player or Flash Drive	Plug flash drive into car stereo to play music
Navigation System	Flash Drive	Update maps or upload routes from directions downloaded from the internet
Photo Printers	Digital Still Camera	Print pictures from camera
Routers or Gateways	Flash Drive	Update firmware in Router or Gateway

Hardware

At the heart of the reference design kit is the EZ-Host development board. This board provides 2 USB ports on SIE 1 and configurable firmware to enable or disable the ports as desired. Additionally, hub support is provided. The onboard UART interface is used for passing commands and responses as part of our demonstration user interface. Finally, the 40-pin ATA header is directly exposed on the board. A simple 40-pin to 44-pin adapter is provided that is ideal for mounting a 2.5” drive.

Documentation

Documentation for the kit is provided, including a Getting Started guide, usage guides for all of the APIs, and hardware design files.

Ordering Information

Kit Order Number	Parts Supported
CY4640	EZ-Host (CY7C67300)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Cypress Semiconductor:
CY4640