USB/1394/SATA to Dual SATA Bridge

Overview

The INIC-1615 provides an advanced solution to connect two SATA devices to USB 2.0 or FireWire 400/800 or SATA Host with integrated CPU and embedded SRAM. To provide high performance and cost effective solution, the INIC-1615 integrates USB-PHY Mass Storage Class Bulk-Only USB function, FireWire 400/800 link core, SATA link/PHY core and microprocessor into a single ASIC. SATA to SATA HID also supported. The INIC-1615 provides the high speed data transfer connecting to a 1.5Gb/s SATA interface.

Feature Summary

- Integrate USB2.0 PHY IP core.
- Data transfer rate of up to 60 MBytes/sec on USB 2.0 side, 100 MBytes/sec on 1394b/FireWire 800 side, and 150 MBytes/sec on SATA side.
- IEEE Std 1394-1995/2000 and 1394a/1394b Compliant.
- 1394a/b side implements SBP-2 stack engine to optimize the performance
- 1394a/b side support industry standard 1394a PHY and 1394b PHY
- 1394a/b side support asynchronous transfers at 100, 200, 400, and 800Mb/s.
- Support 1394b packet queuing acceleration
- Integrate internal Turbo 8051 uP with 32KB embedded SRAM.
- Program Flash In-Line (Firmware download mechanism, USB direct for MFG Test, write .bta firmware file).
- Local Bus Interface to Serial Peripheral Interface (SPI) Flash.
- Up to 17 GPIO pins.

- Support USB HID.
- Provide software utilities for downloading the upgraded firmware code under USB.
- Supports SATA (bridged SATA) Hard Disk drives, CD-RW devices, DVDs, Removable media devices, BD (Blu-ray Disc) drive.
- USB 1.1 and USB 2.0 compliant.
- USB Mass Storage Class Bulk-Only Transport Specification Compliant.
- Serial ATA Revision 2.5 specification Compliant (Hot Plug is supported).
- Support SATA to SATA pass through with HID
- Support ATA/ATAPI device DMA and PIO mode.
- 8k bytes of data buffer for data transfer.
- Two SATA channels support.
- Supports 3Gbps SATA HDD connection
- Support SATA BIST through USB and SATA buses
- Built-in internal 3.3V to 1.8V voltage regulator
- 100 pin LQFP

Firmware/Software Support

- USB Mass Storage Class Bulk-Only Transport support
- SBP-2 protocol support.
- Provide software utilities for downloading the upgraded firmware code through USB

Devices Support

- Hard disk drives
- CD-RW devices
- DVDs
- Removable media devices
- BD(Blu-ray Disc) Drive

Block Diagram