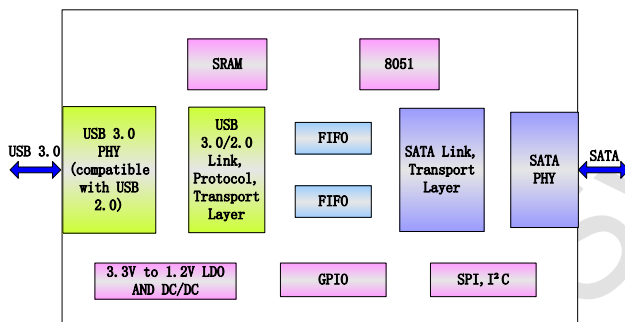


NS1066/NS1066X USB 3.0 to SATA Bridge Controller

Introduction

NS1066/NS1066X is a versatile high-performance and low power USB 3.0 to SATA bridge controller. On one side, it interfaces with the USB interface and is compatible with USB Super-speed (5Gbps), High-speed (480Mbps), and Full-speed (12Mbps). On the other side, it interfaces with hard drive or SSD devices through the SATA interface. NS1066 and NS1066X are pin-to-pin compatible. NS1066 supports SATA I (1.5Gbps) and SATAII (3Gbps). NS1066X also supports SATA III (6Gbps).

Block Diagram



Highlights

- Self-developed high-performance, low-jitter, and low-power USB 3.0 and SATA transceivers with built-in test capabilities for guaranteed functions and performance.
- Integrated adaptive equalization circuit (patent pending) for the USB Super-speed (5Gbps) receiver which automatically compensates for the USB 3.0 connector and cable signal degradation.
- Configurable on-chip voltage regulators (patent pending), pin selectable LDO or DC/DC allowing users to make trade-offs between power and cost.
- Dedicated LED controllers which provide versatile LED control functions without the intervention of 8051 MCU or firmware.

Features

- Support USB 3.0 Specification Revision 1.0.
- USB 3.0 adaptive receiver equalization for better and more reliable Super-speed operation. (patent pending)
- Support USB Specification Revision 2.0.
- Support USB Super-speed/High-speed/Full-speed (5Gbps/480Mbps/12Mbps) data transfer rates.
- Support USB Mass Storage Class, Bulk-Only Transport Specification.
- Support USB 3.0 U0/U1/U2/U3 (P0/P1/P2/P3) and USB 2.0 L0/L1/L2 power saving modes.
- Support Gen1i/Gen1m/ Gen2i/Gen2m of Serial ATA Specification Revision 2.6.
- Support Gen3i of Serial ATA Specification Revision 3.0 (NS1066X only).
- Support ATA/ATAPI PACKET command set.
- Support ATA/ATAPI LBA48 addressing mode.
- Support SPI and I²C interface for firmware and Vendor VID/PID customization.
- Support three dedicated LED controllers. Additional LEDs are supported via GPIO pins and the customized firmware.
- Support two dedicated Button on/off controllers. Additional button input functions are supported via GPIO pins and the customized firmware.
- Support hard drive power down control pin.
- Support 8 GPIO pins.
- The functions of all digital pins, including the Button in, LED, GPIO and hard drive power down control pins are programmable by the firmware.
- Support one-button disk backup.
- Support Win7/Vista/XP/2000/Me, Linux and Mac OS 9.x/10.x.
- 25MHz external crystal.
- Integrated 3.3V to 1.2V voltage regulators, pin selectable LDO or DC/DC. (patent pending)
- QFN48 (6x6) package.

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