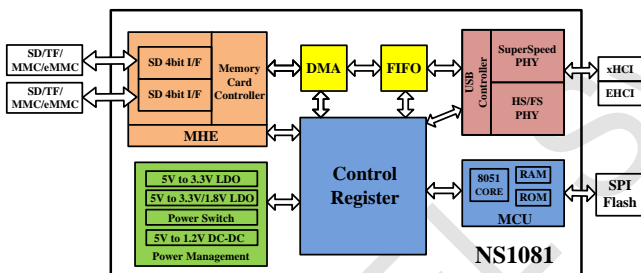


NS1081 USB 3.0 Flash Card Controller

Introduction

NS1081 is a high-performance USB 3.0 Flash Card controller. On one side, it interfaces with the USB interface and is compatible with USB SuperSpeed (5Gbps), Hi-Speed (480Mbps), and Full-Speed (12Mbps). On the other side, it interfaces with various flash memory cards, such as Secure Digital (SD), SDHC, SDXC, miniSD, microSD (T-Flash), MultiMediaCard (MMC), Embedded-MultiMediaCard (eMMC), RS-MMC, MMCmicro, or MMCmobile. It also supports high density memory cards with capacity up to 2TB, and high speed memory cards including SD3.0 UHS-I cards. NS1081 can be configured either as 2-LUN working mode or 2-channel RAID0 working mode for different application requirements.

Block Diagram



Highlights

- Support 2-channel RAID0 operation for significantly increased capacity and data access rate.
- Up to 200MB/s read/write speed.
- Self-developed high-performance USB 3.0 transceivers with low-power and low-jitter. The transceivers have built-in test capabilities for guaranteed functions and performance.
- On-chip high-efficiency 5V to 1.2V DC-DC regulator.
- On-chip 5V to 3.3V and 1.8V regulators.

Features

- Support USB 3.0 Specification Revision 1.0.
- USB 3.0 adaptive receiver equalization for better and reliable Super-Speed operation.
- Support USB Specification Revision 2.0.
- 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 Secure Digital v1.0/v1.1/v2.0 SDHC/SDXC (Capacity up to 2TB).
- Support Secure Digital v3.0 UHS-I (Ultra High Speed): SDR12/SDR25/SDR50/DDR50/SDR104.
- Support MultiMediaCard (MMC) and Embedded MultiMediaCard (eMMC) specification v4.41 x1/x4 bit data bus and DDR x4 bit data transfer mode.
- Built-in variable sampling clock generator to determine correct sampling point for SD UHS card SDR104 mode.
- Support user data locking, providing a privacy protection solution.
- Support SD Lock/Unlock Function.
- 25MHz external crystal.
- Support SPI and I2C interface for firmware and Vendor VID/PID customization.
- On-chip high efficiency 5V to 1.2V DC-DC regulator.
- On-chip 5V to 3.3V and 1.8V regulators.
- External Serial Flash memory interface.
- Support ISP (In System Programming) for firmware upgrade to external SPI Flash or I2C EEPROM via USB port.
- On-chip power MOSFETs for supplying flash media card power.
- Support Win8/ Win7/Vista/XP/2000/Me, Linux and Mac OS 9.x/10.x.
- Support two dedicated LED controllers.
- Package available in 48-pin 6mm x 6mm QFN.

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