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RTS5101

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USB 2.0 Card Reader Controller

General Description

The RTS5101 is a high performance USB 2.0 card reader controller that integrates a USB 2.0 PHY, an SIE (Serial Interface Engine), an 8051 MCU, a ROM, a RAM, and a memory card controller onto a single chip. It supports access to CompactFlash™ (CF), MicroDrive, Memory Stick™ (MS), Memory Stick PRO™ (MS-PRO), SecureDigital™ (SD), MultiMediaCard™ (MMC), SmartMedia™ (SM), xD-Picture Card™ (xD), and NAND Flash Memory. The built-in high-speed USB 2.0 device controller provides a 480Mbps transfer rate and offers backward compatibility with the 12Mbps USB 1.1 specification.

Designed with an enhanced power control circuit, the RTS5101 fully complies with USB power specifications for bus-powered devices. Conforming to the USB Mass Storage Class Specification, the RTS5101 provides "plug and play" convenience without any driver installation.

The RTS5101 has an internal ROM for MCU programs, and provides an external program flash memory interface for firmware update purposes. Firmware code can be downloaded through the USB interface to the RTS5101, and then be written into external flash memory automatically. With the external flash memory interface and the in-system-programming capability, product upgrades are easily realized.

The external serial EEPROM interface provides flexibility in storing a USB Vender ID, a Product ID, and also other vender content such as product information, a revision level, a serial number, etc. The RTS5101 provides an In-System Programming (ISP) capability for manufacturing flexibility; the vender information is programmed into the external EEPROM at production. The four-bit EEPROM interface can be programmed to function as general-purpose I/Os.

With limited external components required, the 128-pin LQFP packaged RTS5101 provides an ideal cost/performance ratio for flexible high-performance USB 2.0 flash memory card reader/writer applications.

Features

- Compliant with Universal Serial Bus Specification Revision 2.0
- Compliant with USB Mass Storage Class Bulk Only Transport Specification Rev. 1.0
- Supports High-speed (480Mbps) and Full-speed (12Mbps) Data Transfer
- Supports USB bus-powered operation
- Supports Control, Bulk, and Interrupt USB data pipes
- Supports the following memory card interfaces:
    - CompactFlash™ (CF), MicroDrive
    - SmartMedia™ (SM)
    - Secure Digital™ (SD), MultiMediaCard™ (MMC)
    - Memory Stick™ (MS), Memory Stick PRO™ (MS-PRO)
    - xD-Picture Card™ (xD)
- Supports hardware ECC (Error Correction Code) function

News

- Realtek introduces a Quad GbE PHY For Customers Designing With BroadLight's Third Generation Processors
- Realtek's Single Chip 5+2-PORT 10/100/1000M Ethernet Switch Controller Receives 'Innovative Product Award 2010'

Quick Links

- RTL810X/RTL8130/ RTL8139(A/B/C/D) PCI Series Drivers
- HD Audio Codec Driver
- Stock Quote from TSE (code: 2379)
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- M.O.P.S.

Ethernet
- 24-Port +
  2-Port
- 24-Port +
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      Codecs
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      - 6-Channel
      - 8-Channel
    - High Definition
      Audio Codecs
      - 2-Channel
      - 6-Channel
      - 8-Channel
  - Consumer Audio Codecs
    - AC'97 Interface

- Supports hardware CRC (Cyclic Redundancy Check) function
- Programmable clock rate for flash memory card interfaces
- Supports MS-PRO 4-bit parallel transfer mode
- Integrated Fast 8051 microprocessor
- External NOR-type flash memory interface: ISP application for microprocessor program coding
- Supports firmware upgrade via USB port
- External serial EEPROM interface
- 12MHz crystal oscillator with integrated PLL
- Single 3.3V operating voltage
- 128-pin LQFP

Applications

- USB 2.0 Card Reader

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    - Card Reader Controllers
  - Clock Generators
    - Solutions for Intel Chipsets
    - Solutions for SiS Chipsets
    - Solutions for VIA Chipsets
  - Class-D Audio Amplifier
- Multimedia ICs
  - Display Solutions
    - LCD Monitor Controllers
    - TV Platform Solutions
      - Analog Video Decoders
      - TV Controllers
      - MPEG Decoders
  - Digital Media Processor

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