JMB320 Port Multiplier Chip

Overview

JMicron JMB320 is a single chip. It integrated three independent SATA channels and a micro-processor. With proper setting, the chip can be configured as an 1 to 2-ports Serial ATA II Port Multiplier or a 2 to 1-port Serial ATA II Port Selector.

JMB320 contains 15 GPIOs which can be configured as various standard interfaces. It also has the capability to load external firmware code to extend its functionality.

Compliance, Features

Compliance

- Compliant with *Serial ATA II Port Multiplier Spec. Revision 1.2*
- Compliant with *Serial ATA II Port Selector Spec. Revision 1.0*
- Compliant with *Serial ATA II PHY Electrical Spec. Revision 1.0*
- Compliant with *Serial ATA High Speed Serialized AT Attachment Spec. Revision 2.5*

General

- Integrated 3-port SATA II PHY
- Integrated PLL for SATA II interface
- Total three independent SATA channel
- Integrated uP, PROM and SRAM for firmware programming
- Fabricated in 0.13um CMOS Standard Logic Process
- 1.3V core and 3.3V I/O power supply
- Available in 48-pin QFN package

SATA

- Supports 3-port 3.0Gbps SATA II interface
- Supports SATA II Gen2i and Gen2m (External SATA Connection, eSATA)

- Output swing control and automatic impedance calibration for SATA II PHY
- Supports asynchronous signal recovery
- Supports spread spectrum clocking
- Supports partial / slumber power saving mode
- Automatically speed negotiation for 3 Gbps or 1.5 Gbps
- Supports BIST and loopback mode
- Supports staggered spin-up
- Supports ATAPI drives
- Supports Native Command Queue (NCQ)
- Supports Hot-Plug
- Supports Asynchronous Notification
- Supports PM aware and non-PM aware host

GPIO

- Supports 15 GPIOs
- Supports I2C interface
- Supports ISA interface
- Supports SPI interface
- Supports firmware extension

Functional Description

JMB320 is a highly integrated single chip. It integrates three high-speed Serial I/O's, three SATA upper layers, a microprocessor, SRAM, PROM, a highly efficient data bus and other control logic into the chip. JMB320 can work as an 1 to 2-ports Port Multiplier or 2 to 1-port Port Selector using internal embedded firmware without extra external flash needed. But it also can use external flash interface and with proper firmware programming to extend its capability.

Block Diagram

Figure Function View of JMB320
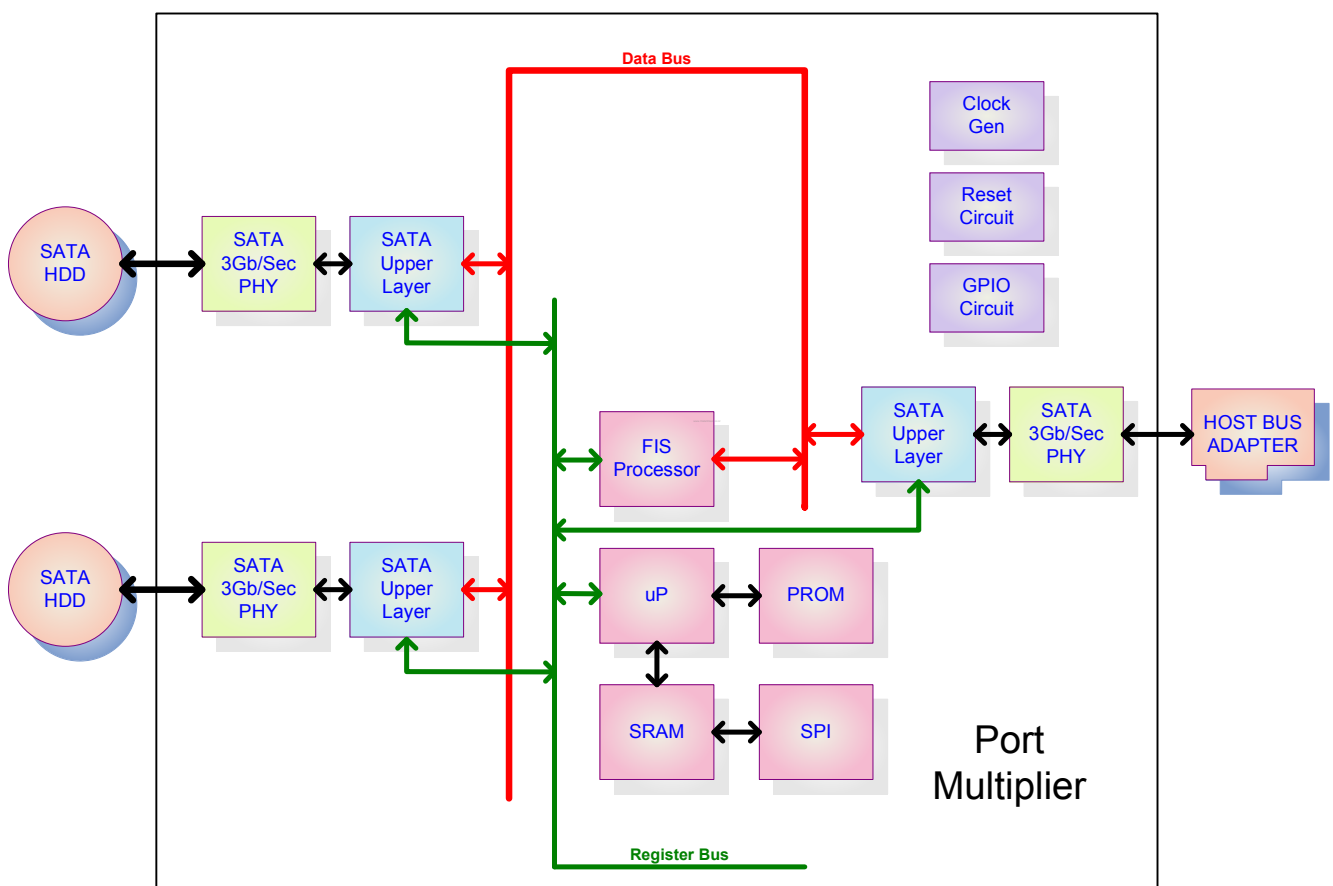
Supporting Document

1	Product Brief
2	Data Sheet
3	Hardware Design Guide
4	Application Schematic

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