Marvell® 88SE9170 / 88SE9171 / 88SE9182

PCIe 2.0 to 6Gbps SATA I/O Host Controller

Overview

The Marvell® 88SE917X and 88SE9182 host controllers offer cost effective solutions for connecting Serial ATA (SATA) devices to a PCI Express (PCIe) 2.0 host. The SE889170 and the 88SE9171 each have a one-lane PCIe end-point interface at 5Gb/s. The 88SE9170 offers two SATA3 host ports, while the 88SE9171 offers a single SATA3 host port. All SATA ports support 6Gb/s, 3Gb/s and 1.5Gb/s interface speeds. The 88SE9182 device offers the same Dual SATA interface as the 88SE9170, but has a two-lane PCIe interface for additional host bandwidth. All devices feature a standard AHCI interface and inbox driver support (Windows 7/8/10, Linux, and MAC) for ease of use and fast time-to-market.

Block Diagram

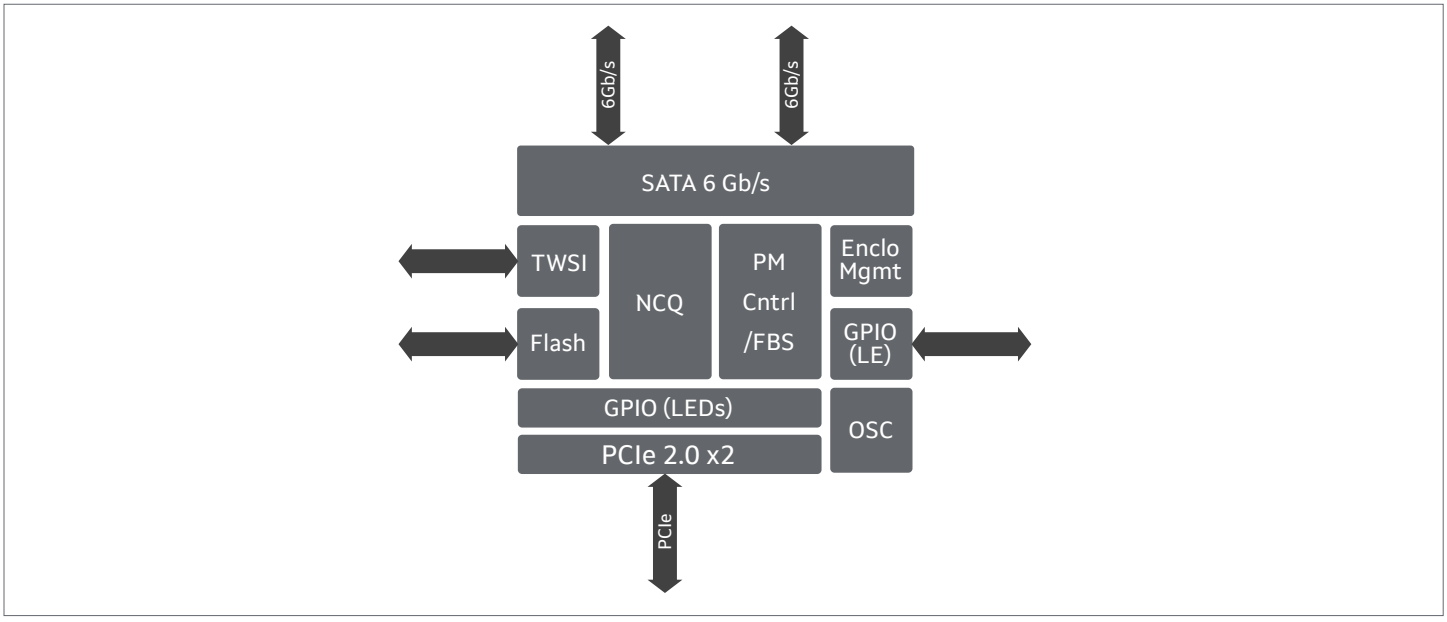


Figure 1. Block Diagram - 88SE9182 PCIe 2.0 to 2 Port 6Gbps SATA I/O Host Controller

Key Features

	88SE9170	88SE9171	88SE9182
SATA Ports	• Dual 6Gbps SATA ports	• Single 6Gbps SATA port	• Dual 6Gbps SATA ports
Port Multiplier Support	• Yes	• Yes	• Yes
PCIe Interface	• PCIe2.0 x1	• PCIe2.0 x1	• PCIe2.0 x2
Status Monitoring	• GPIO pins for SATA link status and activity LEDs		
Native Command Queuing	• 32 outstanding commands per SATA port for high performance		
AHCI Driver Support	• Yes		
SPI Flash Interface	• External flash containing configuration and/or Legacy/UEFI BIOS		
On-Chip Oscillator	• Low-cost crystal support		
Automotive Temperature	• Yes	• Yes	• Yes
Package	• 7mm x 7mm 56pin QFN		
Power Consumption	• <1W		
Power Regulation	• Internal LDO voltage regulator for low cost system design		

Target Applications

The Marvell® 88SE917X and 88SE9182 host controllers are ideal solutions for small embedded systems needing SATA connectivity or systems with special temperature or power requirements. These SATA controllers allow a PCIe-based host system to control up to two 6Gb/s SATA devices via direct connection. Built-in support for SATA port multipliers with FIS based switching ensures system scalability with maximum performance.

The small footprint of the device and the very few required external components occupy a minimal amount of board space, easing system design and reducing cost. The devices are available with optional industrial and automotive temperature grade certification opening up a broad range of applications requiring flexible storage solutions in harsh environments.



Figure 2. Typical Two Disk Application Example of 88SE9182

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