

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

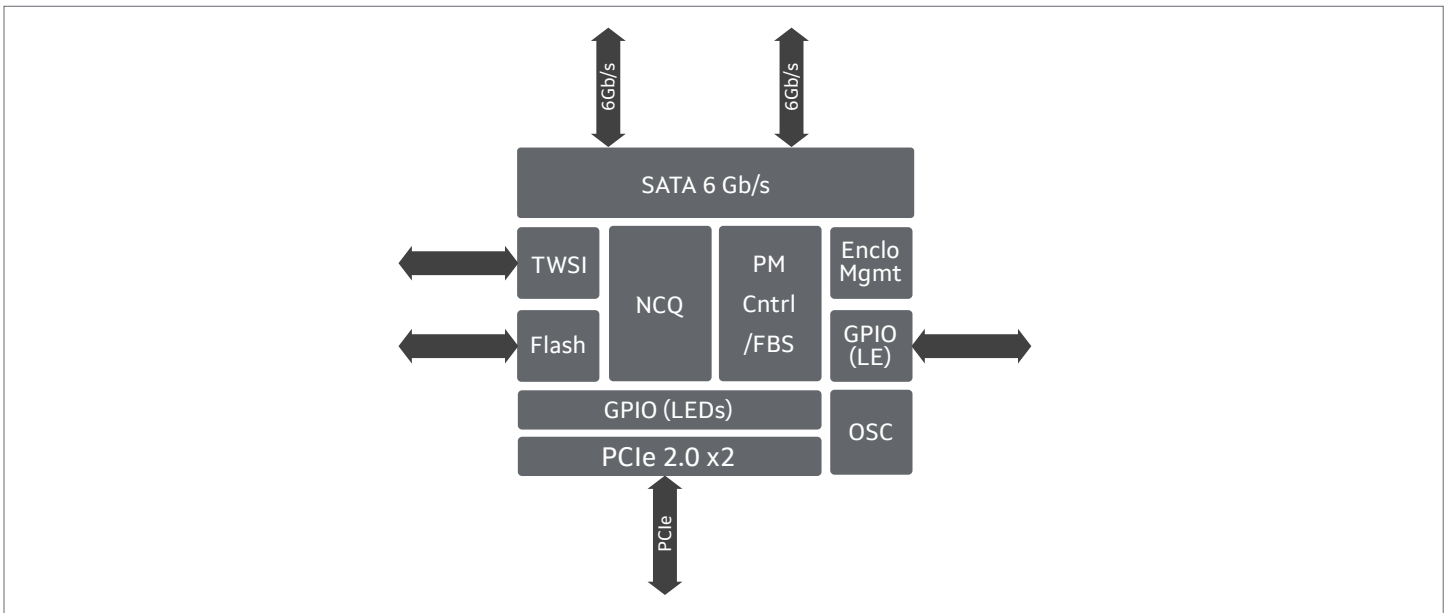


Figure 1. Block Diagram - 88SE9182 PCIe 2.0 to 2 Port 6Gbps SATA I/O Host Controller

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.

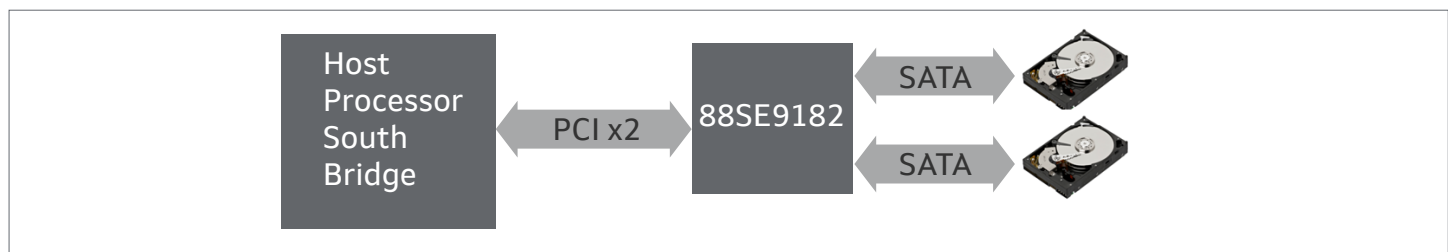


Figure 2. Typical Two Disk Application Example of 88SE9182



To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

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