

Marvell 88SE9170 / 88SE9171 / 88SE9182

PCIe 2.0 to 6Gbps SATA I/O Host Controller

PRODUCT 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

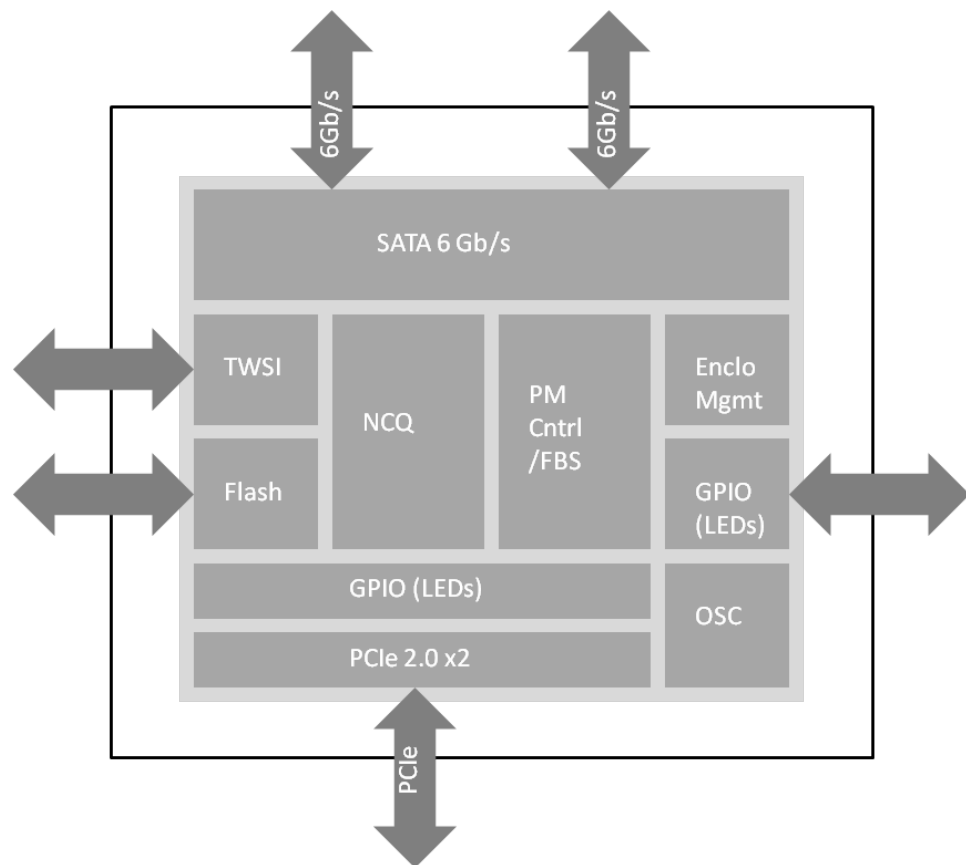


Fig 1. Block Diagram - 88SE9182 PCIe 2.0 to 2 Port 6Gbps SATA I/O Host Controller

KEY FEATURES

| FEATURES | 88SE9170 | 88SE9171 | 88SE9182 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------|
| SATA Ports | <ul style="list-style-type: none"> Dual 6Gbps SATA ports | <ul style="list-style-type: none"> Single 6Gbps SATA port | <ul style="list-style-type: none"> Dual 6Gbps SATA ports |
| Port Multiplier Support | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> Yes |
| PCIe Interface | <ul style="list-style-type: none"> PCIe2.0 x1 | <ul style="list-style-type: none"> PCIe2.0 x1 | <ul style="list-style-type: none"> PCIe2.0 x2 |
| Status Monitoring | <ul style="list-style-type: none"> GPIO pins for SATA link status and activity LEDs | | |
| Native Command Queuing | <ul style="list-style-type: none"> 32 outstanding commands per SATA port for high performance | | |
| AHCI Driver Support | <ul style="list-style-type: none"> Yes | | |
| SPI Flash Interface | <ul style="list-style-type: none"> External flash containing configuration and/or Legacy/UEFI BIOS | | |
| On-Chip Oscillator | <ul style="list-style-type: none"> Low-cost crystal support | | |
| Automotive Temperature | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> Yes |
| Package | <ul style="list-style-type: none"> 7mm x 7mm 56pin QFN | | |
| Power Consumption | <ul style="list-style-type: none"> <1W | | |
| Power Regulation | <ul style="list-style-type: none"> 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.



Fig 2. Typical Two Disk Application Example of 88SE9182