

Marvell 88SE1495 / 88SE1485 / 88SE1475

PCIe 3.0 to 16-Port, 12Gbps SAS / 6Gbps SATA I/O Host Controller

PRODUCT OVERVIEW

Marvell® is a leading provider of Serial Attached SCSI (SAS) and Serial ATA (SATA) host controller silicon and software solutions for desktops, workstations, servers, and cold/cloud storage systems. The Marvell 88SE14xx family of I/O controllers delivers eight lanes of PCIe 3.0 and up to 16 ports of 12Gbps SAS or 6Gbps SATA with over 1 million IOPS* performance and industry-leading features. Marvell's advanced PHY technology enables the 88SE14xx products to achieve the best jitter performance and lowest per-port power consumption available. The devices are available with Marvell's Windows and Linux reference drivers to speed product development, as well as a Linux GPL open-source driver.

BLOCK DIAGRAM

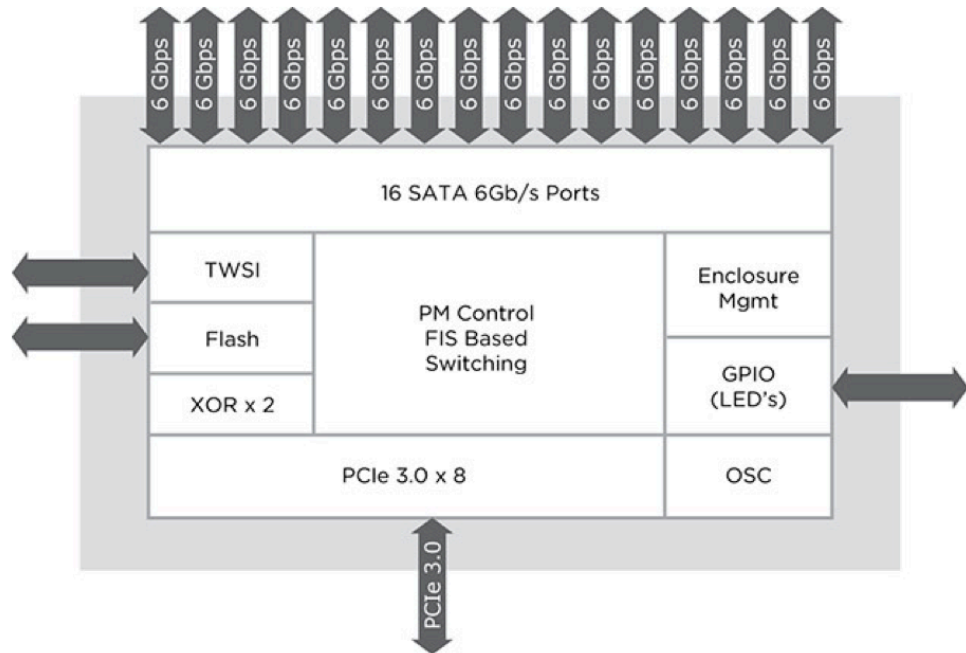


Fig 1. Marvell 88SE14XX Controller Block Diagram

KEY FEATURES

FEATURES	88SE1495	88SE1485	88SE1475
SAS/SATA Ports	<ul style="list-style-type: none"> • 16 12Gbps SAS/ • 6Gbps SATA ports 	<ul style="list-style-type: none"> • 8 12Gbps SAS/ • 6Gbps SATA ports 	<ul style="list-style-type: none"> • 16 6Gbps SATA ports
PCIe Interface	<ul style="list-style-type: none"> • 8 lanes of PCIe 3.0 at 8Gbps per lane. Supports MSI/MSI-X interrupts 		
Port Multiplier Support	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • Yes
Out of Band Enclosure Management	<ul style="list-style-type: none"> • Four SGPIO ports and five I²C busses 		
SPI Bootable Device Support	<ul style="list-style-type: none"> • SPI interface for external Option ROM (legacy or uEFI) bootable controller support 		
LED Support	<ul style="list-style-type: none"> • 16 link status • 16 activity (2 per port) • 2 global LED 	<ul style="list-style-type: none"> • 8 link status • 8 activity (2 per port) • 2 global LED 	<ul style="list-style-type: none"> • 16 link status • 16 activity (2 per port) • 2 global LED
GPIO Support	<ul style="list-style-type: none"> • 32 General Purpose IO ports 		
Dual XOR Engines	<ul style="list-style-type: none"> • Requires customer-developed RAID software 		
NVSRAM Interface	<ul style="list-style-type: none"> • Supports up to 16MB of external x8 or x16 NVSRAM for RAID stack 		
Power	<ul style="list-style-type: none"> • 9.5W 	<ul style="list-style-type: none"> • 7.5W 	<ul style="list-style-type: none"> • 9W
Package	<ul style="list-style-type: none"> • 21x21mm 625 ball HFCBGA 		

TARGET APPLICATIONS

The 88SE1495 and 88SE1475 chips deliver optimal I/O control performance for 16-port SAS/SATA connectivity for both enterprise and entry to mid-level applications in storage server, enclosure system, workstation, cold/cloud storage, and HBA applications. The built-in support of various SATA link rates and SATA Port Multipliers with FIS-based switching enables better performance with highest cost-effectiveness for high-capacity SATA JBOD applications, such as DAS, NAS, DVR, and NVR.

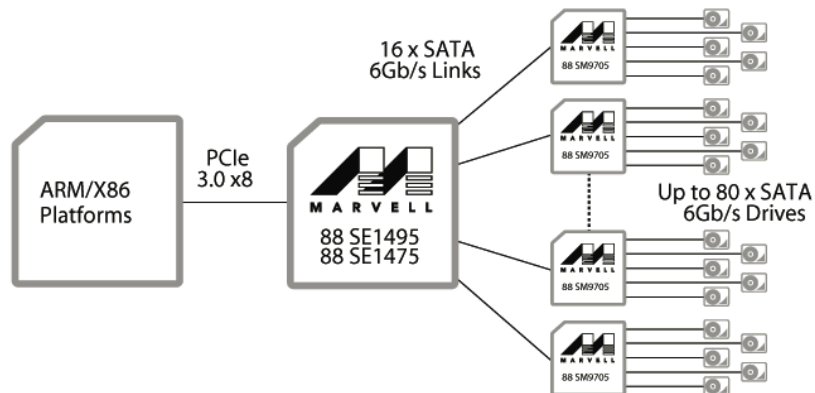


Fig 2. High-Density Cold/Cloud Storage Application Example

* Performance of 1 million IOPS measured with 4KB random reads from 16 SSDs under Windows and Linux



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