MAX72024C

Generation II Enhanced 6.0Gbps 24-PHY SAS Expander

Industry's Most Advanced 6.0Gbps SAS Expander

This product is Not Recommended for New Designs. Some versions may be No Longer Available or being discontinued and subject to Last Time Buy, after which new orders can not be placed.

Description

The MAX72024C is a next-generation enhanced 24-PHY, serial-attached SCSI-2 (SAS-2)-compatible expander that operates at 1.5Gbps, 3.0Gbps, and 6.0Gbps (on a PHY-by-PHY basis). This device is used for server and enclosure applications for midrange- and enterprise-storage systems requiring active SAS port expansion.

This device offers an evolutionary upgrade path for systems that currently employ parallel SCSI technology and rely heavily on SCSI-centric software or management solutions. By combining industry-leading I/O, embedded enclosure functions, and a high-performance internal switching architecture, this device provides all the features needed to design, develop, and deploy high-performance SAS storage solutions.

Key Features

- 1.5Gbps, 3.0Gbps, and 6.0Gbps 24-PHY, Self-Configuring SAS Expander
- ANSI T10 SAS-2.1/SAS Protocol Layer (SPL) Compliant
- Automatic Input-Signal Equalization Including Decision Feedback Equalization (DFE)
- Multiple Programmable Output-Deemphasis Levels
- Multiple Programmable Output-Voltage Levels
- Embedded Multicontext MIPS® 4KEc® 32-Bit Microprocessor Used for Local Control and Expander or Vendor-Unique Enclosure Management Functions
- On-Chip Trace Buffer
- Internal ECC-Protected User Data SRAM
- Standard EJTAG Processor Debug Interface
- Software Compatible with Other Maxim Enclosure Management Processors
- Two Operating Modes for External Program Memory: Parallel Memory and Serial Peripheral Interface (SPI™) Memory
- SPI Interface for Accessing an External Serial Flash Memory Device with Optional Dual/Quad I/O SPI Support
- Auxiliary SPI Port for Access to Peripheral SPI Devices (Manual Access Only)
- Integrated PHY Snooping on multiple channels
- Flexible SAS-2 Compliant Address-Based Zoning
- Supports Table Routing to Destination Addresses
- Supports SAS-2 Table-to-Table Routing

- SMP and SSP Virtual PHY Target/Initiator Capability
- STP/SATA Bridging Supporting Multiple Affiliations (One Per PHY)
- STP Initiator Capability
- SAS-2.1/SPL Optical Link Mode
- SAS-2.1/SPL Power Management
- LPC Interface for Trusted Platform Modules
- Unlimited Variable Wide-Port Capability
- Extensive Diagnostic and Built-In Self-Test (BIST) Capabilities
- Multimaster I²C Interfaces—I²C High-Speed and 10-Bit Device ID Support
- Multirate UARTs with Modem Control
- 10/100 Ethernet Media-Access Controllers (MACs) with Reduced Media-Independent Interface (RMII)
- Flexible General-Purpose Input/Output (GPIO) for LEDs, Fan Tachometer, and Other Functions
- SFF-8485 Serial I/O Support
- Analog-to-Digital Converters (ADCs)
- Digital Temperature Monitor
- 75MHz or 150MHz LVTTL/LVPECL Reference Clock
- 1.0V DC, 1.8V DC, and 3.3V DC External Power Supplies
- Low Power CMOS
- 35mm x 35mm, 924-Pin FCBGA Package with Heat Spreader (1.0mm Pin Pitch)
- RoHS-Compliant Package

Applications/Uses

- Enterprise-Storage Environments
- Fabric-Attached Storage (FAS) Systems
- Fixed-Content Storage Systems
- JBOD Arrays
- Near-Line Storage-Replacement Systems
- Network-Attached Storage (NAS) Systems
- Rack-Mounted Servers with RAID
- Storage-Area Network (SAN) Appliances

Part Number	Package
MAX72024C#W	FCBGA; 924Pin; 1225mm²
MAX72024C#	FCBGA; 924Pin; 1225mm²
MAX72024C+	HSBGAF; 924Pin

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