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Is there a high-performance RAID controller that can deliver data protection and high availability?

Intel® RAID Controller SRCU42X Product Brief

The Intel® RAID Controller SRCU42X, a PCI-X, dual-channel, Ultra320 SCSI RAID controller based on Intel® XScale® technology.

Intel® RAID Controller SRCU42X

High-availability, high-capacity applications require a delicate blend of power and flexibility. Embedded systems, complex networking solutions, and other I/O-intensive applications demand a storage solution delivering generous throughput rates and data protection for high-availability server environments.

That solution is the Intel® RAID Controller SRCU42X, which offers dual-channel Ultra320 SCSI technology along with the advanced I/O processing technology of the Intel® IOP321 I/O processor. This makes the RAID Controller SRCU42X one of the few RAID controllers in the industry to offer integrators the remarkably high throughput supported by a PCI-X interface as well as the performance, power efficiency, and flexibility of the Intel® XScale® technology.

With its 133MHz PCI-X interface, the RAID Controller SRCU42X achieves up to 1 GB per second maximum throughput. Its 400MHz Intel® IOP321 processor offers a maximum throughput of up to 1.6 GB per second and also supports up to 1 GB of PC1600 ECC DDR SDRAM. In addition, a new software suite based on PCI-X simplifies configuration, diagnostics, and firmware updates and enables integrators to offer a full set of RAID options at entry-level price points.

The Intel® RAID Controller SRCU42X ships with 128 MB of memory.

For even greater data reliability, add the optional battery-backup unit.

Intel® RAID Controller SRCU42X

External channels: two 68-pin VHDC LVD connectors

Internal channels: two 68-pin UHD LVD connectors

Support for up to 1GB PC1600 ECC DDR SDRAM, ships with 128MB DIMM installed

Audible alarm

Two-channel Ultra320 SCSI controllers

Intel® IOP321 I/O processor

64-bit/133MHz 3.3V PCI-X bus interface

Features	Benefits
Intel® IOP321 I/O processor	Outstanding RAID performance
Two-channel Ultra320 SCSI with support for up to 30 drives	High I/O bandwidth (up to 320 MB/sec per SCSI channel) and I/O expandability
64-bit/133MHz PCI-X interface	Rapid data-transfer rate, high availability and flexibility
Support for RAID levels 0, 1, 5, 10, 50, and JBOD	Flexibility for optimizing performance and fault tolerance in a variety of solutions
128MB PC1600 ECC DDR SDRAM DIMM included (supports 32MB–1GB of PC1600 ECC DDR SDRAM)	Data integrity, performance
New software suite: Intel® RAID BIOS Console, Intel® RAID Web Console, Intel® RAID Command Tool, Intel® RAID Diagnostics, Intel® RAID Flash Utilities	Ease of management, monitoring, reporting, and diagnostics
Background initialization and instant availability	Immediate accessibility to the host operating system, short build time
Online capacity expansion and RAID-level migration	Availability and flexibility
Remote event monitoring via SNMP	Manageability and availability
SAF-TE-compliant	Reliability with hot-plug and hot-spare support
Microsoft* Server Clustering Support	High availability
Optional battery-backup unit	Data reliability
Three-year limited warranty	Peace of mind

Complete Your Server Platform with the Following Intel® Server Building Blocks

Intel® Server Boards are designed, tested, and validated to help meet the non-stop demands of business in the Internet economy. Built-in performance, scalability, and availability make the boards ideal for e-Business.

Intel® Server Chassis are specifically designed for Intel® server boards. Intel server chassis are easy to service, versatile, and expandable, and they feature built-in monitoring to simplify server management for you and your customers alike.

Intel® Xeon™ Processors, based on Intel® NetBurst® microarchitecture and featuring Hyper-Threading Technology, can slice through the toughest business problems facing dynamic start-ups, large enterprises, and everything in between.

Intel® Server Management monitors key server components and solves many problems automatically, which helps keep your customers up and running. Intel Server Management offers several key high-availability features including: integrated remote management, event alerting and logging, and proactive fault management.

Intel® PRO Server Adapters, including Fast Ethernet and Gigabit Ethernet server adapters, help to reduce bottlenecks and improve availability with industry-leading performance and advanced server features.

Intel server building blocks are validated to work together, saving you R&D, validation, and support expenses —reducing your time to market.

Deliver industry-leading server technology and world-class customer support. With Intel, you can.
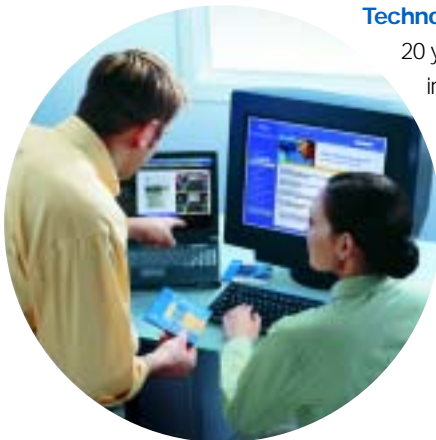
Technology leadership. Take advantage of Intel's 20 years of experience designing and engineering industry-leading server building blocks such as the Intel Xeon processor.

Unsurpassed quality. Intel spends 10,000+ hours testing and validating every piece of an Intel server stack. Uncompromising quality standards translate into high reliability, few repairs, and great customer satisfaction.

World-class technical support. Intel offers 24x7 phone and Web-based technical support, Advanced Warranty Replacement, a three-year limited warranty, spares kits, and extensive technical training. Integrators also have access to a wealth of sales and marketing support in the form of sales tools, videos, and high-quality images for advertising. For more information on Intel® server building blocks please visit: www.intel.com/go/serverbuilder.

With Intel, you can give your customers access to the latest server technologies, exceptional quality, and highly responsive technical support.

Intel® RAID Controller SRCU42X Specifications

Hardware	
Processor	Intel® IOP321 I/O processor: based on Intel® XScale® technology, with hardware XOR
Memory	Supports 32MB–1GB of PC1600 ECC DDR SDRAM (ships with 128MB DIMM installed)
PCI	64-bit/133MHz PCI-X interface (PCI 2.2 and PCI-X 1.0 compliant), 3.3V adapter, backward compatible to 33MHz and 66MHz
SCSI	Two-channel Ultra320 SCSI with support for up to 30 drives (15 per channel), each channel has one internal 68-pin connector (UHD LVD), and one external 68-pin connector (VHDC LVD)
Form Factor	Half-length, full-height PCI: 175mm x 107mm (6.875" x 4.2")
Status Indicators	Audible alarm, LEDs

Software	
	Intel® RAID BIOS Console, Intel® RAID Web Console, Intel® RAID Command Tool, Intel® RAID Diagnostics, Intel® RAID Flash Utilities
RAID Levels Supported	0, 1, 5, 10, 50, and JBOD
Scalability	Online RAID-level migration and capacity expansion without reboot
Configuration Flexibility	Variable data stripe size—configurable per array, configurable JBOD enclosure support, support for non-hard-disk-drive SCSI devices (for example, tape, CD-ROM), and read/write controller and disk caching
Availability	Instant availability and background initialization, automatic rebuild with private (dedicated) or pooled (global) hot-fix (spare) drives, hot-plug drive support, and drive roaming

Operating-System Support [1,2]	
Standard Validation	Microsoft* Windows 2003 Enterprise Server; Microsoft Windows 2000 Advanced Server, Service Pack 4; Microsoft Windows XP; Novell* NetWare* 6.0; SCO OpenServer* 5.0.7 from Caldera*; Red Hat* Linux 8.0; Red Hat Linux 9.0; Red Hat Linux Enterprise Server 2.1; Caldera UnixWare* 7.1.3; SuSE Linux 8.1 Professional; SuSE Linux Enterprise Server 8

Environmental / Electrical	
Voltage Requirements	3.3V (±5% tolerance)
Power Requirements	3.3V, 5V, 12V, -12V
Ambient Temperature	Operating: 0°C to 55°C, non-operating: −40°C to +105°C
Relative Humidity	5% to 90% non-condensing

Safety and EMC Regulatory Compliance (Class A) EMC regulatory compliance is based on integration with a validated Intel server board and configuration as outlined in the RAID Controller SRCU42X subassembly guide.

Country	Certification Safety and/or EMC	Regulatory Marks Safety and/or EMC
Australia and New Zealand	Not required / AS/NZS 3548	C-Tick
Canada	CSA/UL 60950 / ICES-003	cULus or NRTL Marking / ICES
Europe	European Directives	CE
International	IEC 60950 / CISPR	Not required
Korea	Not required / RRL	MIC
Taiwan	Not required / BSMI CNS	BSMI
United States	CSA/UL 60950 / FCC	cULus or NRTL Marking / FCC

Intel® RAID Controller Products

Intel® RAID Controller	Intel® RAID Controller SRCU42X *High-performance dual-channel Ultra320, PCI-X RAID controller*	Intel® RAID Controller SRCU42L *Affordable high-performance Ultra320 RAID controller*	Intel® RAID Controller SRCU32 *Full-featured high-performance RAID controller with PCI hot-plug support*	Intel® RAID Controller SRCZCR *Economical Modular ROMB (RAID on motherboard) controller for RAIDIOS-enabled motherboards*	Intel® RAID Controller SRCS14L *Full-featured four-port Serial ATA RAID controller*
Order Code	SRCU42X	SRCU42L	SRCU32U	SRCZCR	SRCS14L
Processor	Intel® IOP321 IOP 400MHz	Intel® 80303 IOP 100MHz	Intel® 80303 IOP 100MHz	Intel® 80303 IOP 100MHz	Intel® 80303 IOP 100MHz
XOR	Hardware	Hardware	Hardware	Hardware	Hardware
Memory	Supports up to 1 GB of PC1600 ECC DDR SDRAM (ships with 128MB DIMM)	Embedded 64 MB of PC100 ECC SDRAM	Supports 64-256 MB of unbuffered PC133 ECC SDRAM (memory not included)	Embedded 32 MB of PC100 ECC SDRAM	Embedded 64 MB of unbuffered PC100 ECC SDRAM
PCI Bus	64-bit/133MHz PCI-X (PCI 2.2 and PCI-X 1.0 compliant)	PCI 2.2 64-bit/66MHz	PCI 2.2 64-bit/66MHz	PCI 2.2 64-bit/66MHz	PCI 2.2 64-bit/66 MHz
Channels	2 x Ultra320 SCSI	2 x Ultra320 SCSI (one internal, one external)	2 x Ultra160 SCSI	2 x Ultra320/160 SCSI	4 x Serial ATA
Form Factor	Standard PCI	Low-profile PCI	Standard PCI	Low-profile PCI	Low-profile PCI
RAID Levels	0, 1, 5, 10, 50, and JBOD	0, 1, 4, 5, 10, and JBOD	0, 1, 4, 5, 10, and JBOD	0, 1, 4, 5, 10, and JBOD	0, 1, 4, 5, and 10
PCI Hot-Plug	Q1 2004	Yes	Yes	No	Yes
Battery Backup	Yes (optional), order code AXXRBBU1	No	No	No	No
Cluster Support	Yes	No	No	No	No
Availability	Now	Now	Now	Now	Now

1. For information on the latest operating-system support, please visit http://support.intel.com.
2. Operating-system support is contingent on the operating-system support of the motherboard in which this controller is installed.

For the most current product information on Intel® server building blocks, visit: www.intel.com/go/serverbuilder