



Product Brief

Intel® Server Board SE7520AF2

- Support for Dual Intel® Xeon™ Processors
- Intel® E7520 Chipset and Intel® IOP332 Processor with Intel® XScale® Technology
- PCI Express® I/O Interconnect Technology

Intel® Server Board SE7520AF2

Outstanding performance, excellent data protection, and advanced management for departmental servers



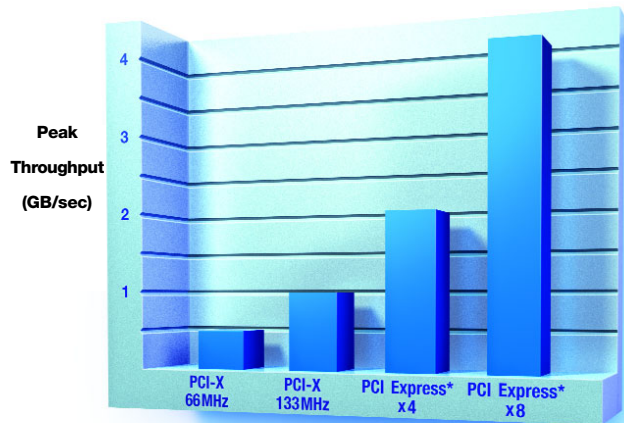
The Intel® Xeon™ processor, with up to 2MB Advanced Transfer Cache, Hyper-Threading Technology, Intel® Extended Memory 64 Technology (Intel® EM64T)¹, and Enhanced Intel SpeedStep® technology², provides remarkable levels of performance for growing businesses.

Intel® Server Board SE7520AF2

Successfully meeting the demands of e-business, departmental line-of-business applications, or a workgroup database requires a server board that is equal parts performance, data protection, and manageability. Intel addresses businesses with such requirements through the Intel® Server Board SE7520AF2, which is designed with industry-leading processing power and memory options and the data-storage and management subsystems to robustly support a business and provide room to grow.

The Intel Server Board SE7520AF2 supports dual Intel® Xeon™ processors with an 800MHz system bus, Registered ECC DDR2 400 memory, and fully integrated Intel® RAID (optional) and includes an updated version of the powerful Intel® Server Management 8 solution for advanced management of business-critical servers. Based on the new Intel® E7520 chipset, the Server Board SE7520AF2 also includes a dual-channel Ultra320 SCSI controller, two Intel® PRO/1000 Server Network Connections, two PCI Express* slots, and seven independent PCI buses.

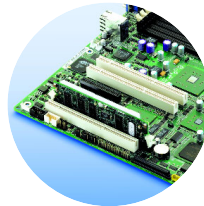
In addition, the Intel Server Board SE7520AF2 provides a wealth of scalability features. Among them is the option to increase data protection through an integrated Intel® RAID controller enabled by the Intel® RAID Activation Key, through an Intel® Portable Cache Module that provides battery backup for the RAID cache, or through an upgrade to an Intel® Management Module. In addition, the Server Board SE7520AF2 boasts a number of technologies designed to protect data integrity and simplify management, enabling businesses to focus support resources on enhancing system functionality and boosting user productivity.



PCI Express* Offers Outstanding Data Throughput

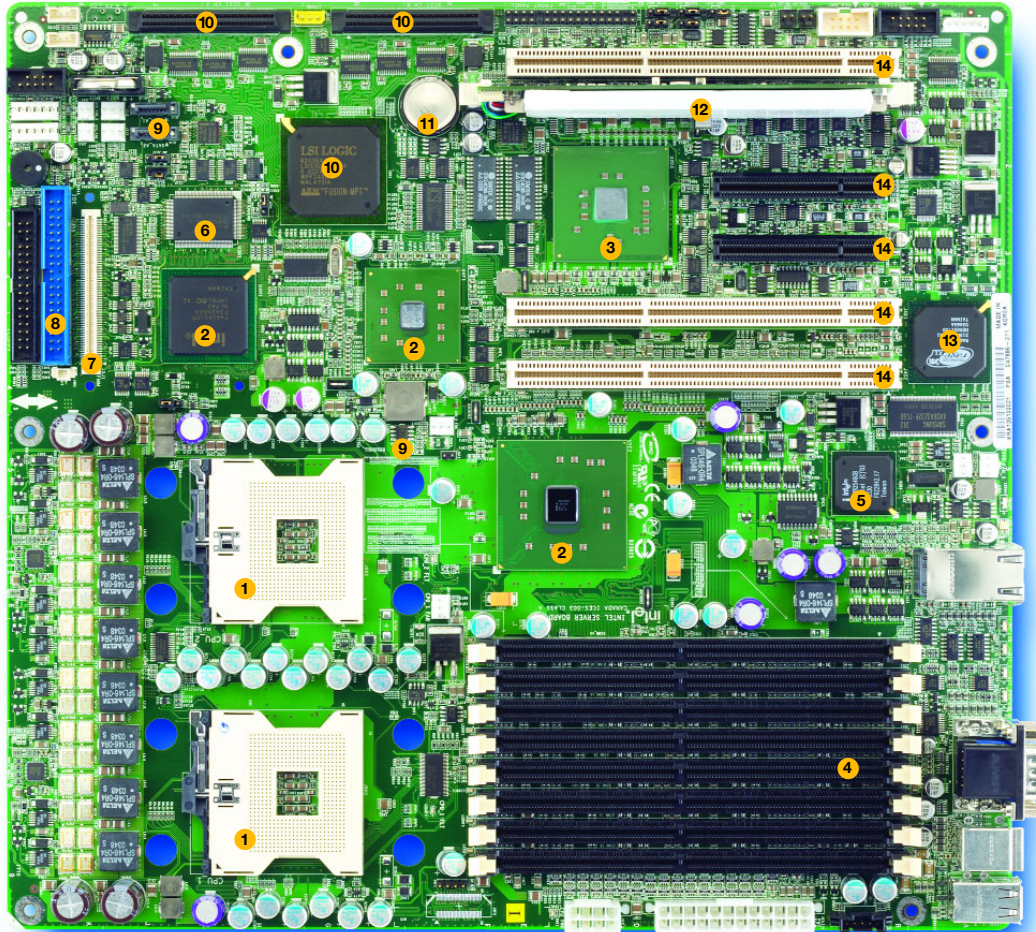
In the Intel® Server Board SE7520AF2, the PCI Express x8 slot provides up to eight times the throughput of PCI-X 66MHz. Calculations are based on maximum theoretical throughput. Individual results may vary.*

The Intel® Server Board SE7520AF2 features an integrated Intel® IOP332 processor with Intel® XScale® technology to provide the dedicated RAID processing that is vital for protecting data in departmental applications.



Intel® Server Board SE7520AF2 Features and Benefits

Features	Benefits
Support for one or two Intel® Xeon™ processors with an 800MHz system bus	Processing power and scalability to meet the demands of departmental workloads
Support for Hyper-Threading Technology, Intel® Extended Memory 64 Technology ¹ , and Enhanced Intel SpeedStep® technology ²	Compatibility with 64-bit-capable operating systems and applications; reduced power consumption for lower-cost operation
Intel® E7520 chipset and Intel® IOP332 processor with Intel® XScale® technology	Enterprise performance and memory reliability in a purpose-built server chipset; dedicated RAID processing, through an integrated IOP for the RAID subsystem
Dual memory-channel architecture with support for 16 GB of Registered ECC DDR2 400 SDRAM	High-performance, reliable memory subsystem with capacity to support a wide range of server tasks
Eight DIMM sockets	Flexibility to configure memory to suit customer needs
Dual-channel integrated Ultra320 SCSI controller, optional integrated full-featured Intel® RAID, and support for the optional Intel® Portable Cache Module, which provides battery backup of the RAID cache	High-performance storage and SCSI drive reliability, outstanding data protection
Seven independent PCI buses and five adapter slots: one PCI Express* x8, one PCI Express x4, two PCI-X 133MHz, and one PCI-X 100MHz	Elimination of data bottlenecks to provide the bandwidth necessary for intensive I/O; flexibility and scalability



Intel® Server Board SE7520AF2

1. Support for two Intel® Xeon™ processors with an 800MHz system bus
2. Intel® E7520 chipset
3. Intel® IOP332 processor with Intel® XScale® technology
4. Support for up to eight DIMMs of Registered ECC DDR2 400 SDRAM
 - Dual memory channels
5. Two Intel® PRO/1000 Server Network Connections, on PCI-X bus
6. Intel® Server Management 8
 - Onboard Platform Instrumentation
7. Intel® Management Module upgrade connector
 - Support for Intel® Management Module Professional Edition and Intel® Management Module Advanced Edition (optional upgrades)
8. Single-channel ATA 100
9. Dual-channel Serial ATA supporting RAID 0 and 1
10. Integrated dual-channel Ultra320 SCSI supporting RAID 0 and 1
11. Optional integrated full-featured Intel® RAID controller enabled via the optional Intel® RAID Activation Key and supporting RAID 0, 1, 5, 10, and 50
12. RAID cache DIMM socket supporting the optional Intel® Portable Cache Module, which provides battery backup of the RAID cache
13. Integrated graphics
14. Seven independent PCI buses and five adapter slots:
 - One PCI Express® x8
 - One PCI Express x4
 - Two PCI-X 133MHz
 - One PCI-X 100MHz



Intel® RAID Activation Key



RAID Cache DIMM Socket

Intel® Server Board SE7520AF2 – I/O Panel Features



1. Keyboard/mouse connector
2. Ethernet connectors
3. USB connectors
4. Video connector
5. Serial-port connector
6. Status/system-fault LED
7. Post-code diagnostic LEDs

The Intel® Server Board SE7520AF2 Supports Technologies That Define Innovation³

A number of Intel server technologies work together in the Intel Server Board SE7520AF2 to meet the needs of organizations requiring performance, data protection, and advanced management capabilities in their server solution. To reinforce the performance afforded by the server board's support of the Intel® Xeon™ processor and help to protect it over the long term, the Server Board SE7520AF2 features **Intel® Power and Thermal Headroom**. This technology provides sufficient power supply and thermal protection to maintain performance levels throughout the life of the server. **Intel® Active Airflow Control** works in concert to monitor temperatures and adjust fans accordingly.

Data protection is addressed by the **Intel® Validation Stress Test Suite**, which means the Server Board SE7520AF2 has passed some of industry's most rigorous stress testing before it is deployed into a server solution. **Intel® Multi-Path Boot** provides added redundancy protection for the processor during boot.

Advanced management capabilities in the Intel Server Board SE7520AF2, which start with the board's support of Intel® Server Management 8 and Intel® Management Module upgrades, are enhanced by support for the optional **Intel® Local Control Panel**⁴. This technology enables monitoring and control of the server from the front panel to simplify server administration and management.

Management is further supported with the help of technologies focusing on maintenance and availability. **Intel® Light-Guided Diagnostics** simplifies troubleshooting to enable easier servicing and faster recovery. **Intel® One-Boot Update** supports remote BIOS and firmware updates to ease server maintenance and optimize uptime.



Intel server technologies provide powerful capabilities designed to make server systems more reliable, more available, and easier to service. Seamlessly integrated into the latest generation of Intel® Server Products, these technologies work in concert to complement the capabilities of the most current Intel processor and chipset technologies.



Intel® Power and Thermal Headroom



Intel® Active Airflow Control



Intel® Validation Stress Test Suite



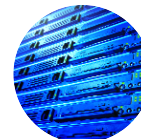
Intel® Multi-Path Boot



Intel® Local Control Panel



Intel® Light Guided Diagnostics



Intel® One-Boot Update

For more information on these technologies, please visit:
<http://developer.intel.com/design/servers/technologies/>

Intel® Server Board SE7520AF2 Boxed Contents

The Intel Server Board SE7520AF2 comes with all the board components required to help build a high-performance departmental server.



1. One Intel® Server Board SE7520AF2
2. Quick Start User Guide
3. Intel® Server Management 8 CD Pack containing:
 - Intel® Server Deployment Toolkit with Intel® Express Installer, Intel® Server Maintenance and Reference Training (SMaRT) Tool Software, server product information, technical documentation, customer support information, drivers and utilities, and Web links
 - CD-ROM with Intel® Server Manager 8 family of software
4. Cable kit
5. I/O shield
6. Board-configuration label

The Intel® Server Board SE7520AF2 is Part of a Family of Server Boards⁵ for Pedestal Solutions and Supporting the Intel® Xeon™ Processor with an 800MHz System Bus.

Product	Market	Positioning	PCI Configuration	Integrated Storage	Integrated Networking	Memory Support	Management Solution
SE7520AF2	Business-critical database and departmental applications	Outstanding performance, excellent data protection, and advanced management for departmental servers	Seven independent PCI buses and five total slots: 1 PCI Express* x8 1 PCI Express x4 2 PCI-X 133MHz 1 PCI-X 100MHz	Dual-channel Ultra320 SCSI with optional integrated Intel® RAID supporting RAID 0, 1, 5, 10, and 50 and support for the Intel® Portable Cache Module; also includes dual-channel SATA with support for RAID 0 and 1, single-channel IDE	Dual Intel® PRO/1000 Server Network Connections	Eight DIMMs, up to 16 GB of ECC DDR2 400	Intel® Server Management 8: Support for Intel® Management Module upgrade (Professional and Advanced Editions)
SE7520BD2	Workgroup application, file, and messaging servers	Powerful processing, high bandwidth, and scalable management for general-purpose servers	Six independent PCI buses and six total slots: 1 PCI Express x8 1 PCI Express x4 1 PCI-X 133MHz 2 PCI-X 100MHz 1 PCI 32-bit/33MHz (x8 not included on SE7520BD2V)	Dual-channel Ultra320 SCSI (SE7520BD2SCSI), also available with single-channel Ultra320 SCSI (SE7520BD2V) and without SCSI (SE7520BD2); all board models include dual-channel SATA with support for RAID 0 and 1 and dual-channel IDE	Dual Gigabit Ethernet connections	Six DIMMs, up to 12 GB of ECC DDR 266/333	Intel Server Management 8: Support for Intel Management Module upgrade (Professional and Advanced Editions)
SE7525GP2	Workstations	Extreme I/O and graphics bandwidth support with flexibility for servers and workstations	Four independent PCI buses and six total slots: 1 PCI Express x16 1 PCI Express x4 2 PCI-X 66MHz 2 PCI 32-bit/33MHz	Dual-channel SATA with support for RAID 0 and 1, dual-channel IDE	Single Intel PRO/1000 Server Network Connection	Four DIMMs, up to 8 GB of ECC DDR 266/333	Intel Server Management 8
SE7320SP2	Entry-level general-purpose, file/print, and Web servers	Real server features that provide room-to-grow for small business server solutions	Four independent PCI buses and five total slots: 1 PCI Express x4 2 PCI-X 66MHz 2 PCI 32-bit/33MHz	Dual-channel SATA with support for RAID 0 and 1, dual-channel IDE	Single Gigabit Ethernet connection	Four DIMMs, up to 8 GB of ECC DDR 266/333	Intel Server Management 8

See <http://www.intel.com/go/serverbuilder> for details on specific Intel® Server Board configurations.

Compatible Products for Comprehensive Solutions

The following table provides a list of key compatible products for the Intel® Server Board SE7520AF2. Please see <http://support.intel.com/support/motherboards/server/se7520af2> for the most recent and comprehensive product compatibility list.

Intel Building Block	Product Name(s)	Product Order Code(s)
Intel® Server Board	Intel® Server Board SE7520AF2	SE7520AF2
Intel® Server Chassis	Intel® Server Chassis SC5300	SC5300BASE SC5300BASENA SC5300BRP SC5300BRPNA SC5300LX SC5300LXNA
Intel® PRO Server Adapter	Intel® PRO/1000 MT Server Adapter	PWLA8490MT
Intel® RAID Controllers	Intel® RAID Controller SRCU42E Intel® RAID Controller SRCU42X Intel® RAID Controller SRCS16	SRCU42E SRCU42X SRCS16
Intel® Management Modules	Intel® Management Module Professional Edition Intel® Management Module Advanced Edition	AXXIMMPRO AXXIMMADV
Intel® Server Accessories	Intel® RAID Activation Key Intel® Portable Cache Module Intel® Local Control Panel [†] Six-Drive SATA Hot-Swap Drive Bay Kit Four-Drive SCSI Hot-Swap Drive Bay Kit Six-Drive SCSI Hot-Swap Drive Bay Kit	AXXRAKU42E AXXRPCM1 AXXLCPPED AXX6SATADB AXX4SCSIDB AXX6SCSIDB

The Intel® Server Chassis SC5300 is designed to support the Intel® Server Board SE7520AF2, providing an ideal server solution for businesses requiring maximum performance, data protection, and scalability.



Intel® Server Board SE7520AF2 Specifications

Processor

One or two Intel® Xeon™ processors with an 800MHz system bus; for the latest processor support information, visit <http://support.intel.com/support/motherboards/server/se7520af2>

System Memory

For the latest information on memory support, visit <http://support.intel.com/support/motherboards/server/se7520af2>

Capacity	Eight DIMM sockets for up to 16 GB of Registered ECC DDR2 400 memory (first DIMM may be populated singularly; additional memory must be populated in pairs)
Type	Registered ECC DDR2 400 SDRAM 72-bit, 240-pin gold-plated DIMMs
Reliability Features	ECC memory support to correct single-bit errors and detect double-bit errors; supports Intel® Single Device Data Correction (SDCC), scrubbing, retry on uncorrectable errors, memory sparing, memory mirroring

Integrated Onboard

Chipset	Intel® E7520 chipset
Intel® Server Network Connections	Dual Intel® PRO/1000 Server Network Connections, (Intel® 82546GB controller) supporting 10BASE-T, 100BASE-TX, and 1000BASE-T; RJ45 connector
I/O Processor	Intel® IOP332 processor with Intel® XScale® technology
Super I/O Controller	National Semiconductor® PC87427
Integrated Management Controller	National Semiconductor PC87431M mini-Baseboard Management Controller
Graphics	ATI® RAGE® XL SVGA PCI video controller with 8 MB of video memory

Integrated Storage Support

Parallel ATA	Single-channel ATA 100 (single connector) supporting two IDE devices
Serial ATA	Dual-channel SATA 150 (two connectors) supporting integrated RAID 0 and 1
Ultra320 SCSI	LSI Logic® 53C1030 Dual-Channel: two Ultra320/LVD channels (connected via two internal 68-pin-wide connectors); maximum data transfer 320 MB/sec on each Ultra320/LVD channel; supporting entry-level RAID functionality (LSI Logic Integrated Mirroring® and Integrated Striping*)

Integrated RAID	Integrated Intel® RAID controller based on the onboard Intel IOP332 processor, resident firmware, and drivers when enabled via optional Intel RAID Activation Key and RAID memory and supporting RAID 0, 1, 5, 10, and 50; support for the Intel® Portable Cache Module, which provides battery backup of the RAID cache
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Input/Output

PCI	Dual-bridge design, enabling seven independent PCI buses and five adapter slots: one PCI Express® x8, one PCI Express x4, two PCI-X 133MHz, and one PCI-X 100MHz (one-slot and two-slot riser capable)
IDE	Single-channel EIDE for a total of two IDE devices; two SATA channels for a total of two SATA devices
USB	Three USB connectors (optional header for two more)
Serial Ports	External DB9 serial, internal serial header
Floppy Controller	1.44 MB and 2.88 MB, 3-mode support
Keyboard/Mouse	Two PS/2 ports, 8240A-compatible

Intel® Server Management

Integrated Management Type	Onboard Platform Instrumentation
Software Support	Intel® Server Manager 8 family of software; upgradable to support HP Unicenter®, Tivoli®, and LANDesk® Management Suite 8
Intel® Management Module Support	Professional Edition, Advanced Edition
Supported Standards	IPMI, DMI, CIM, SNMP, ICMB

Fully Validated Operating Systems

Microsoft® Windows® Server 2003 Enterprise Edition, Microsoft Windows 2000 Advanced Server, Red Hat® Linux® Enterprise 3.0, SUSE® LINUX® 9.1 Professional, and Novell® NetWare® 6.5

System BIOS

Type	8Mb Flash EEPROM with AMI® BIOS, Multiboot BBS (BIOS Boot Specification) 1.4-compliant
Special Features	Plug and Play, IDE drive autoconfigure, SMBIOS 2.3, ECC/Parity support, multilingual support, enabled for rolling/online BIOS updates
Configuration Utilities	Server Configuration Wizard for system setup of BIOS utilities; Save and Restore System Configuration Utility and initial Intel Server Management configuration

Jumpers

CMOS clear, password clear, BMC boot block write protect, BIOS recovery

Front-Panel Support

Power LED, hard-drive activity LED, system-fault LED, power/sleep switch, server network connection 1 LED, server network connection 2 LED, reset switch, and NMI switch; connection for optional Intel® Local Control Panel for monitoring and control of the server from the front panel

Mechanical

Board Style	SSI Entry E-Bay v3.51
Board Size	12" x 13" (305 mm x 331 mm)

Power Requirements

(typical configuration with PCI adapters)

+5V	16A maximum continuous current
+5V Standby	1.3A minimum continuous current
+12V	40A maximum continuous current
+3.3V	35A maximum continuous current
-5V	0.3A maximum continuous current
-12V	16A maximum continuous current

Environment

Ambient Temperature	Operating (system): 10°C to 35°C; non-operating/storage (system): -40°C to +70°C ambient
Relative Humidity	Non-operating 95%, non-condensing at 30°C

Safety and EMC Regulatory Compliance (Class A)

(EMC Regulatory Compliance is based on a board configured in an Intel host system in which Intel tested the board and found it compliant.)

Country	Certification Safety and/or EMC	Regulatory Mark Safety and/or EMC
Australia/ New Zealand	ACA, MED	C-Tick
Canada	UL / Industry Canada	cURus / ICES
Europe	European Directives	CE
International	CB Report / CISPR	Not applicable
Japan	VCCI (Verification only)	Not applicable
Korea	RRL	MIC
Russia	GOST	GOST
Taiwan	BSMI DOC	BSMI
United States	UL / FCC (Verification only)	cURus

¹ Intel® Extended Memory 64 Technology (Intel® EM64T) requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel EM64T-enabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information.

² Enhanced Intel SpeedStep® technology is available on Intel® Xeon™ processors with an 800MHz system bus at operating frequencies of 3.40 GHz and above.

³ Features may vary depending on system configuration and may require the purchase and installation of an optional Intel® Management Module upgrade.

⁴ The Intel® Local Control Panel requires the purchase and installation of an optional Intel® Management Module upgrade.

⁵ Feature sets may vary by board model. See <http://www.intel.com/go/serverbuilder> for more detail.

For more information on how to make the Intel® Server Board SE7520AF2 part of your server environment, please contact an Intel® Channel Membership Programs participant.



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