

A guide for technically qualified persons

Intel® Server Board

S815EBM1

Quick Start Guide

Before You Begin	2
Memory	3
Installation Notes	4
Installation Process Quick Reference	4
Server Board Components	5
Back Panel Connectors	7
Front Panel Connectors	8
Jumpers	9
Installation Procedures	10
Installing Processors	10
Memory	13
Install the I/O Shield.....	14
Install the Server Board	15
Connecting the IDE Drives.....	16
Getting Help	17

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<http://support.intel.com/support/motherboards/server/S815EBM1/manual.htm>

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Before You Begin

Emissions Disclaimer

To ensure EMC compliance with your local regional rules and regulations, the final configuration of your end system product may require additional EMC compliance testing. For more information please contact your local Intel Representative.

See the *Intel® Server Board S815EBM1 Product Guide* for product Safety and EMC regulatory compliance information. This is an FCC Class A device. Integration of it into a Class B chassis does not result in a Class B device.

Safety Cautions



CAUTIONS

Pressing the power button does not turn off power to this board. Disconnect the server board from its power source and from any telecommunications links, networks, or modems before doing any of the procedures described in this guide. Failure to do this can result in personal injury or equipment damage. Some circuitry on the server board may continue to operate even though front panel power button is off.

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Electrostatic discharge (ESD) can damage server board components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the server chassis.

Items Provided on the Bootable CD-ROM

Intel Server Board S815EBM1 Product Guide

Software utilities

Server Product Information

Customer Support Information

Web Links

To view the product guide, boot to Windows[†] 95/Windows NT[†] / Windows 98 / Windows 2000 and use Adobe[†] Acrobat[†].

Safety and Regulatory Compliance

See the *Intel Server Board S815EBM1 Product Guide* for product Safety and EMC regulatory compliance information.

Intended uses: This product was evaluated for use in servers that will be installed in offices, computer rooms, and similar locations. Other uses require further evaluation.

EMC testing: Before computer integration, make sure that the chassis, power supply, and other modules have passed EMC testing using a server board with a microprocessor from the same family (or higher) and operating at the same (or higher) speed as the microprocessor used on this server board.

Server board diagram label provided: Place the label inside the chassis in an easy-to-see location, preferably oriented similarly to the server board.

I/O panel label provided: Place the label on the I/O shield. The cut outs are for the top serial port and the parallel port.

Minimum Hardware Requirements

To avoid integration difficulties and possible board damage, your system must meet the following minimum requirements. For a list of qualified memory and chassis components see <http://support.intel.com/support/motherboards/server/S815EBM1/compat.htm>

Processor

Intel[®] Pentium[®] III processor or Intel[®] Celeron[™] processor.

Memory

The board supports 168-pin SDRAM DIMMs as defined below:

- 168-pin SDRAM Dual Inline Memory Modules (DIMMs) with gold-plated contacts
- Three DIMM slots are provided for flexible memory configurations
- 133 MHz SDRAM up to two double row DIMMs, or one double row DIMM and two single row DIMMs
- 100 MHz SDRAM up to three double row DIMMs
- Minimum system memory: 32 MB
- Maximum system memory: 512 MB



NOTE

The BIOS cannot determine DIMM size or type when not initialized. If more than 512 MB system memory is installed, the BIOS displays a message at boot indicating memory above 512 MB has not been initialized. The message indicates that additional information is available in Setup. The first time the BIOS detects this condition, a pause follows the message with the option to enter.

Setup or to <ESC> and continue to boot. The message continues to be displayed at boot time as long as the condition exists, however, the BIOS will not pause on subsequent detection. Setup displays the installed memory configuration and shows memory above 512 MB as "not initialized."

- Unbuffered single or double row DIMMs
- Serial Presence Detect (SPD) memory
- Non-ECC and ECC DIMMs (ECC DIMMs will operate in non-ECC mode only)
- 3.3 V memory (only)
- Basic Non-SPD support
- Mixed speed DIMM configuration will default to the slowest speed DIMM installed

Power Supply

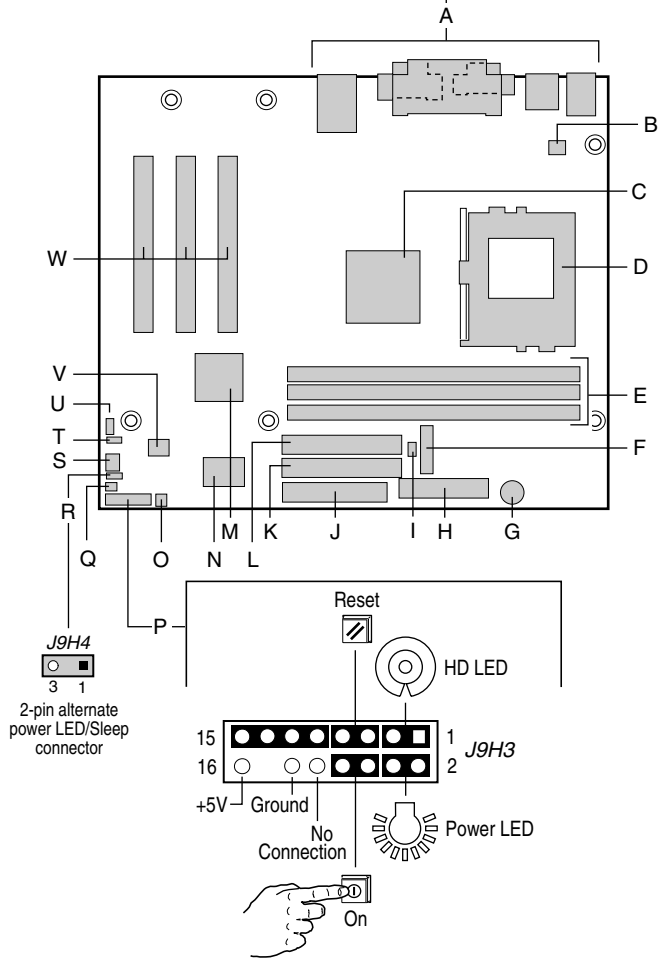
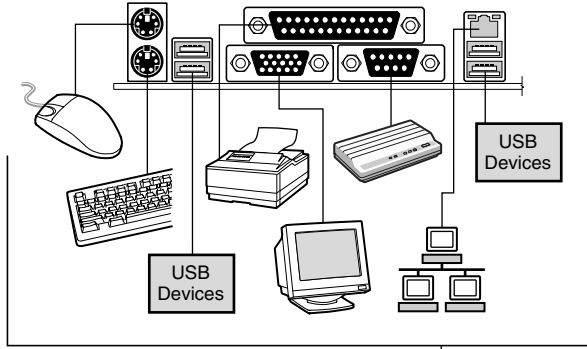
If the Wake On LAN[†] (WOL) and Instantly Available technology features are used, ensure that the power supply current required depends on the wake devices supported, please see the S815EBM1 Technical Product Specification for more details.

Installation Notes

Installation Process Quick Reference

Step	Where the information is located
Install the primary processor	This guide
Install memory	This guide
Install the I/O shield	This guide

Server Board Components



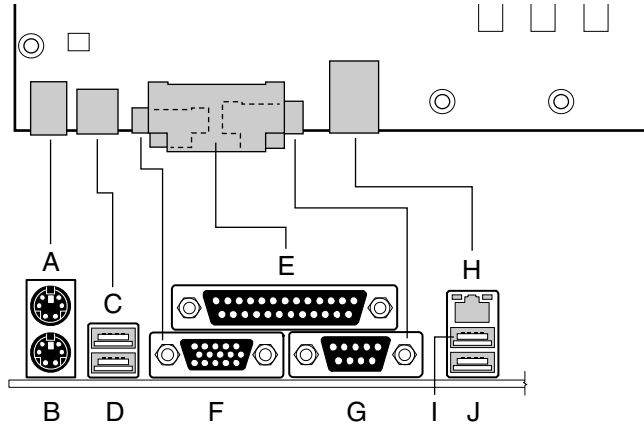
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continued

Server Board Components (continued)

- A. Back panel connectors
- B. Processor fan connector (fan 1)
- C. Intel® 82815E Graphics Memory Controller Hub (GMCH)
- D. 370-pin processor socket
- E. DIMM sockets
- F. Battery
- G. Speaker
- H. Main power connector
- I. Chassis fan (fan 3)
- J. Floppy drive connector
- K. Primary IDE connector
- L. Secondary IDE connector
- M. Intel® 82801BA I/O Controller Hub (ICH2)
- N. SMC LPC47M132 Super I/O controller
- O. SCSI hard drive activity LED connector
- P. Front panel switch/LED connector
- Q. Chassis intrusion connector
- R. Alternate front panel power LED connector
- S. System fan (fan 2)
- T. BIOS configuration jumper block
- U. Wake on LAN technology connector
- V. 4 Mbit Firmware Hub (FWH)
- W. PCI expansion slots

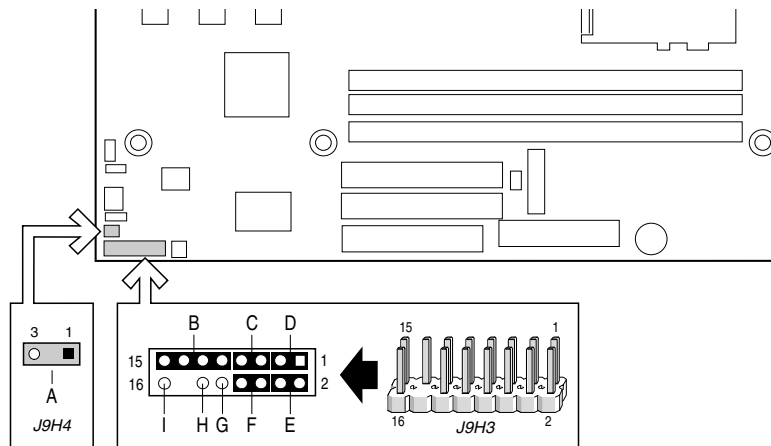
Back Panel Connectors



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- A. PS/2[†] mouse, green
- B. PS/2 keyboard, purple
- C. USB port 1
- D. USB port 3
- E. Parallel port, burgundy
- F. VGA port, blue
- G. Serial port A, teal
- H. RJ-45 LAN connector with LED display
- I. USB port 0
- J. USB port 2

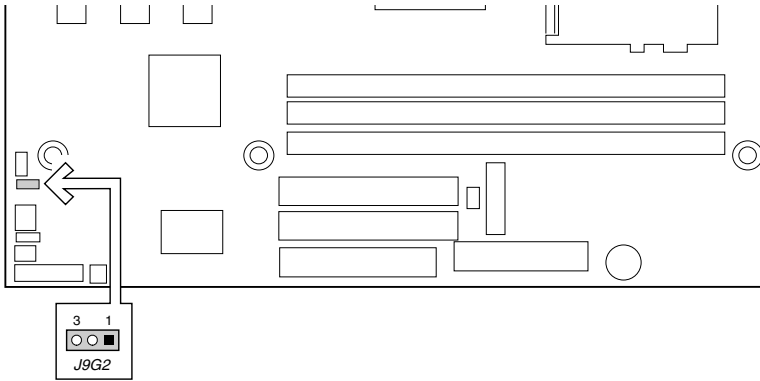
Front Panel Connectors






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- A. Chassis intrusion connector
- B. Reserved
- C. Reset switch
- D. Hard drive activity LED
- E. Power LED
- F. On/Off Switch
- G. No connect
- H. Ground
- I. +5 V

Jumpers



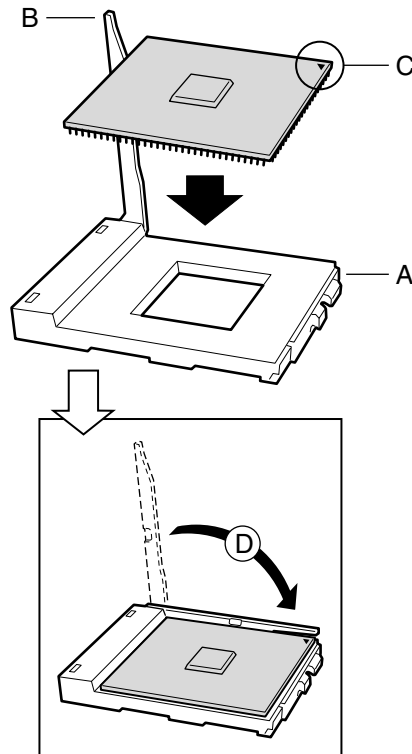
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Function/Mode	Jumper Setting	Configuration
Normal	1-2 	The BIOS uses current configuration information and passwords for booting.
Configure	2-3 	After the POST runs, Setup runs automatically. The maintenance menu is displayed.
Recovery	None 	The BIOS attempts to recover the BIOS configuration. A recovery diskette is required.

Installation Procedures

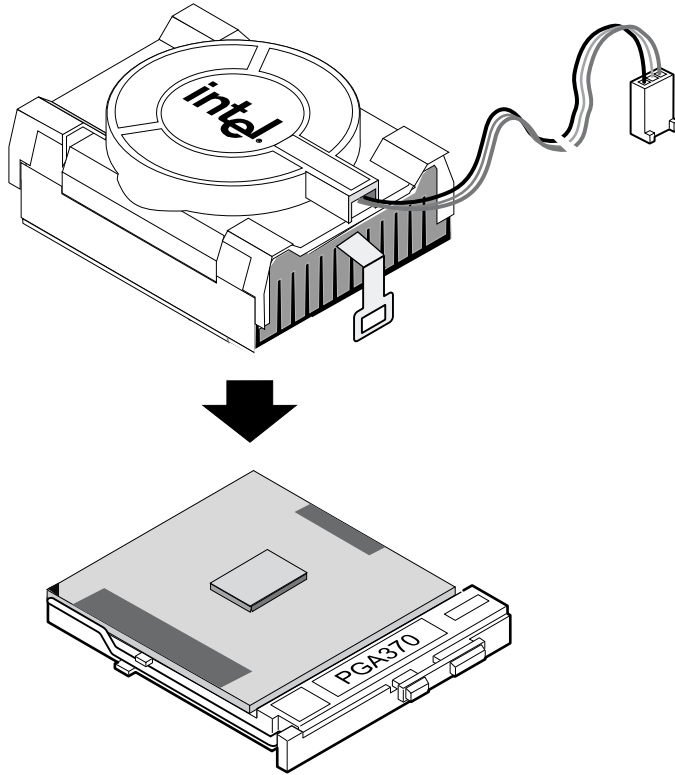
Installing Processors

- 1 Observe the precautions in “Before you Begin”.
- 2 Locate the processor socket and raise the socket handle completely (B).
- 3 Aligning the pins of the processor with the socket, insert the processor into the socket (A and C).
- 4 Close the handle completely (D).



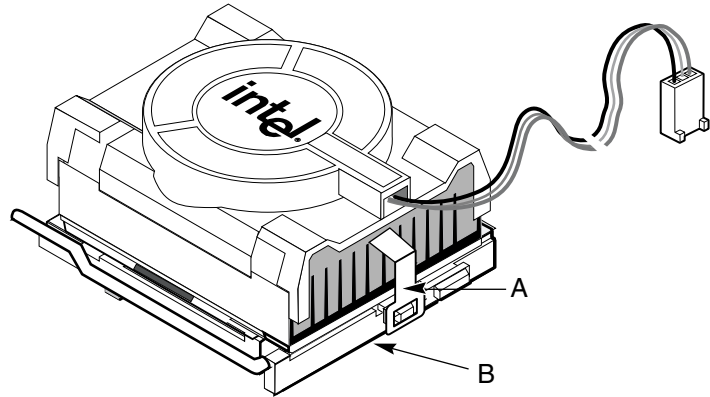
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- 5 Place the fan heatsink on top of the processor.



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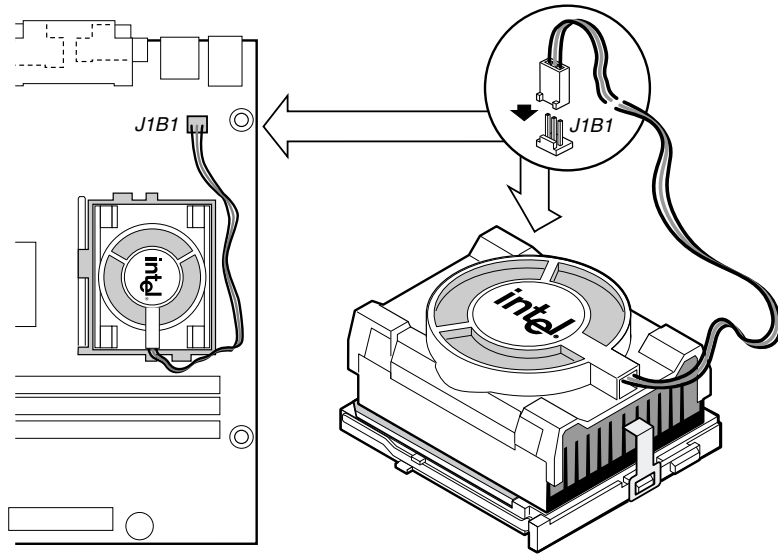
- 6 Attach the fan heatsink clips to the processor socket.



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- A. Fan Heatsink Clip
- B. Processor Socket

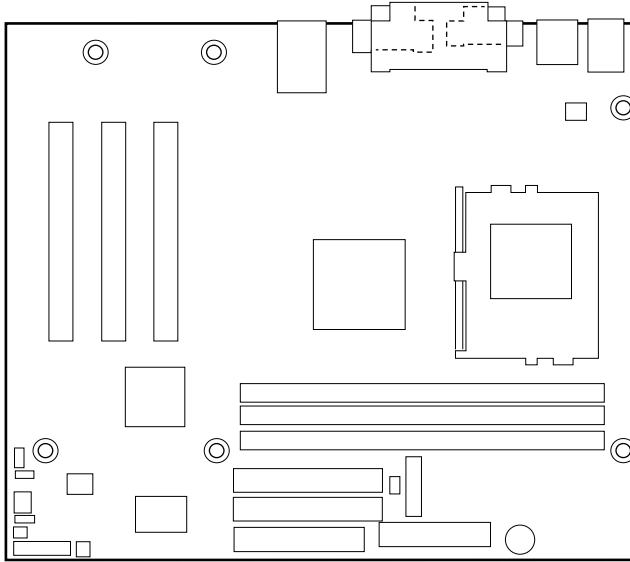
- 7 Connect the processor fan cable to the processor fan connector.



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Memory

The S815EBM1 board requires that DIMMs be installed as shown in the following figure. The three DIMM sockets are arranged as Banks 0, 1, and 2 as shown. If installing a single DIMM, install it in Bank 0. If installing two DIMMs, install them in Banks 0 and 1.

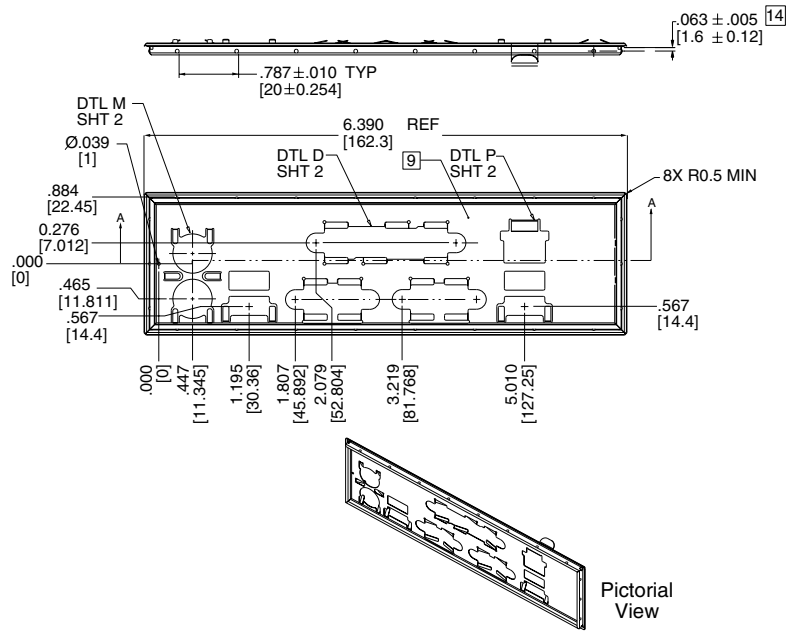


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Install the I/O Shield

The server board comes with an I/O shield for use in general purpose chassis. If integrating this board in a 1U chassis, please obtain an I/O shield from the chassis vendor. When installed in the chassis, the shield blocks radio frequency transmissions, protects internal components from dust and foreign objects, and promotes correct airflow within the chassis.

Install the I/O shield before installing the server board in the chassis. Place the shield inside the chassis and press the shield into place so that it fits tightly and securely. If the shield doesn't fit, obtain a properly-sized shield from the chassis supplier.

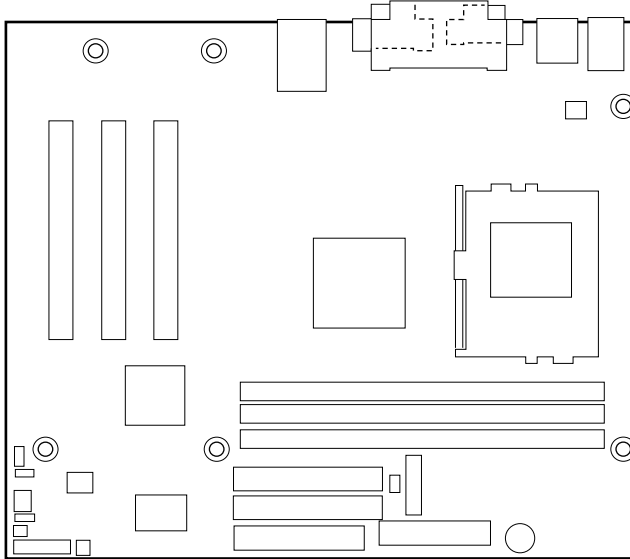


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Install the Server Board

Refer to your chassis manual for specific instructions on installing and removing the server board.

Secure the server board to the chassis standoffs using six screws. Insert the screws into the mounting holes as shown in the following figure.



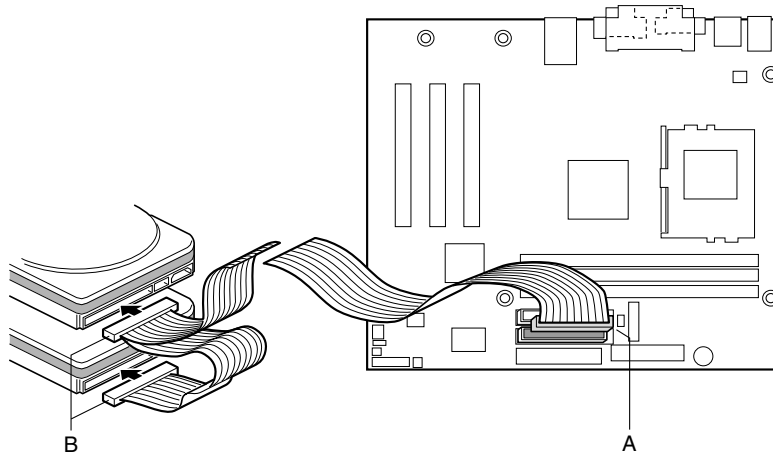
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Connecting the IDE Drives

The Intel® boxed server board package includes a 40-conductor or 80-conductor IDE cable. It is capable of connecting two drives to the server board. The cable supports the Ultra UDMA-33 and Ultra ATA-66/100 transfer protocols and is backward compatible with drives using slower IDE transfer protocols.

For the cable to function correctly, you must do the following:

- 1** Attach the cable end with the single connector (A), which is blue and labeled P1, to the server board.
- 2** Attach the cable end with the two closely-spaced connectors (B), to the drives. The connectors are gray and black and are labeled P2 and P3.



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Getting Help

World Wide Web

<http://support.intel.com/support/motherboards/server/s815ebm1>

Telephone

Talk to a Customer Support Technician* (Intel reserves the right to change pricing for telephone support at any time without notice). Credit card calls billed at U.S. \$25 per incident, levied in local currency at the applicable credit card exchange rate plus applicable VAT (Intel reserves the right to change pricing for telephone support at any time without notice).

In U.S. and Canada:		1-800-404-2284	
In Europe:			
UK	0870 6072439	Finland	9 693 79297
France	01 41 918529	Denmark	38 487077
Germany	069 9509 6099	Norway	23 1620 50
Italy	02 696 33276	Sweden	08 445 1251
Spain	91 377 8166	Holland	020 487 4562
In Asia-Pacific region:			
Australia	1800 649931	Indonesia	001-803 65 7249
Hong Kong	852 2 844 4456	Malaysia	1-800 80 1390
Korea	822 767 2595	New Zealand	0800 444 365
PRC	800 820 1100	Pakistan	632 6368415 IDD via Philippines
Singapore	65 831-1311	Philippines	1-800 1 651 0117
Taiwan	2 2718 9915	Thailand	001-800 6310003
India	0006517-2-830 3634	Vietnam	632 6368416 IDD via Philippines
In Japan			
0120-868686 (Domestic)		81-298-47-0800 (Outside country)	
In Latin America			
Brazil	0021-0811-408-5540	Guatemala	99-99-190, 800-628-8686 (via AT&T)
Mexico	001-800-628-8686	Venezuela	800-11-120, 800-628-8686 (via AT&T)
Colombia	980-9-122-118	Argentina	001-800-222-1001, 800-628-8686 (via AT&T)
Costa Rica	0-800-011-0395	Paraguay	008-11, 800-628-8686 (via AT&T)
Panama	001-800-628-8686	Peru	0-800-50000, 800-628-8686 (via AT&T)
Miami	1-800-621-8423	Uruguay	000-410, 800-628-8686 (via AT&T)
Chile	800-532-992		
Ecuador	999-119, 800-628-8686 (via AT&T)		

* Or contact your local dealer or distributor.

For an updated list of telephone numbers, please see:

<http://www.intel.com/support/9089.htm>

Technical Training & Support

If you are registered in the Intel Product Dealer Program (North America), the Genuine Intel Dealer Program (Asia-Pacific Region), or the Intel Product Integrator Program (Europe/Latin America), you are eligible for technical training and support.

In U.S. and Canada: **1-800-538-3373**, ext. 442 (M–F, 5:00 *am*–5:00 *pm*, PST)

In Europe: contact your distributor or fax your details to European Literature on **+44 (0) 1793 513142**.

In Asia: **+65-831-1379** (M–F, 8:30 *am*–5:30 *pm*, Singapore local time) or via e-mail: **APAC_gid@ccm.isin.intel.com**