Product Brief

Intel® L440GX+ Server Board for Intel® Pentium® III Processors

Specifically Designed and Tested for the Server Environment

Increase your profitability with the latest technology from Intel—
Introducing the Intel® L440GX+ server board and the Intel® Pentium® III processor.

Enhance your network's performance with the power of the Intel® Pentium® III processor and the L440GX+ server board. Intel has designed the L440GX+ server board to harness the full processing power of the Pentium III processor. Combining this processor with the L440GX+ server board, you have the building blocks necessary to run your business today and tomorrow with *real server* technology. Look inside to find out how Intel® server technology works for you.

Future-proof Your Business with Intel® Server Technology. The Intel® L440GX+ server board is designed with the latest server technology, including support for two Intel® Pentium® III or Pentium® II processors, Ultra2 SCSI storage, 2GB of memory, and dual peer PCI buses. By offering all these features, servers based on the L440GX+ server board provide powerful business solutions today and room for expansion as your business grows. You're investing in computer technology. Invest in Intel® server building blocks and get a new level of dependability and productivity.

Boost Your Network's Performance. The L440GX+ server board removes the barriers to your network's performance. Imagine your data traveling down a one-lane road and it encounters a traffic jam. Your network slows to a crawl. If only there were a two-lane freeway to eliminate the data roadblock. That's what Intel has done with the L440GX+ server board. Two peer PCI buses speed data flow by adding that second "lane" to your data freeway. With this advanced technology and support for 66 MHz PCI cards, *the L440GX+ server board has up to three times the PCI bandwidth of most dual-processor servers.*

Reliability through Proactive Server Management. If your network goes down, your business could go down. The L440GX+ server board has an advanced management system that can dramatically reduce server downtime. This system includes a dedicated server management microprocessor, Intel® Server Control (ISC) management software, Emergency Management Port (EMP), and Platform Event Paging (PEP). Behind the scenes, this board proactively monitors key server operations and alerts you to any unforeseen problems. For example, in the event that a chassis fan should fail, this board can be configured to send a page to the system administrator. The administrator can anticipate and remedy the problem before the server overheats and your business critical data is lost forever.

The Foundation is the Intel® L440GX+ Server Board. In today's competitive business environment server requirements are changing. Businesses recognize the value of real server building blocks. A real server, based on the L440GX+ server board, is your foundation for a dependable network—helping you reduce costs and boost profits—keeping you ahead of the competition.

The Boxed Intel L440GX+ Server Board Includes:

- One L440GX+ server board
- Two universal retention mechanisms
- One termination card for uni-processor configurations
- One I/O shield, ATX 2.01 compliant
- SCSI, IDE, and floppy cables
- Quick Start Guide
- CD-ROM with Intel Server Control, software drivers, configuration tools, and technical product information

Features	Benefits
Supports one to two Intel® Pentium® III or Pentium® II processors—500, 450, 400, and 350 MHz	Processing performance for demanding server applications
Supports up to 2 GB of SDRAM memory, four DIMM sockets	Memory capacity to support a wide range of server tasks
Six available PCI slots, two supporting 66 MHz PCI cards, and one ISA slot	Investment protection—room to grow and support for high performance PCI cards
Dual peer PCI buses	Removes the PCI bottleneck—up to 3 times the PCI bandwidth of most dual processor servers
High integration (Ultra2 SCSI, LAN, graphics)	All slots available for expansion
Integrated Intel® PRO/100+ Fast Ethernet Controller (Intel® 82559)	Scalable network bandwidth and redundant links when combined with Intel's complete line of server adapters
Advanced Intel® server management system **• Server management microprocessor** **• ISC—Intel® Server Control software** **• EMP—Emergency Management Port** **• PEP—Platform Event Paging****	Remote, realtime server management to reduce server downtime
Designed by Intel	Quality, reliability, and compatibility that you expect from the Intel

**BIOS/Firmware available at www.intel.com/go/serverbuilder following product launch.

For the most current product information on all of Intel's server building blocks, visit Intel's Web site at:
www.intel.com/go/serverbuilder

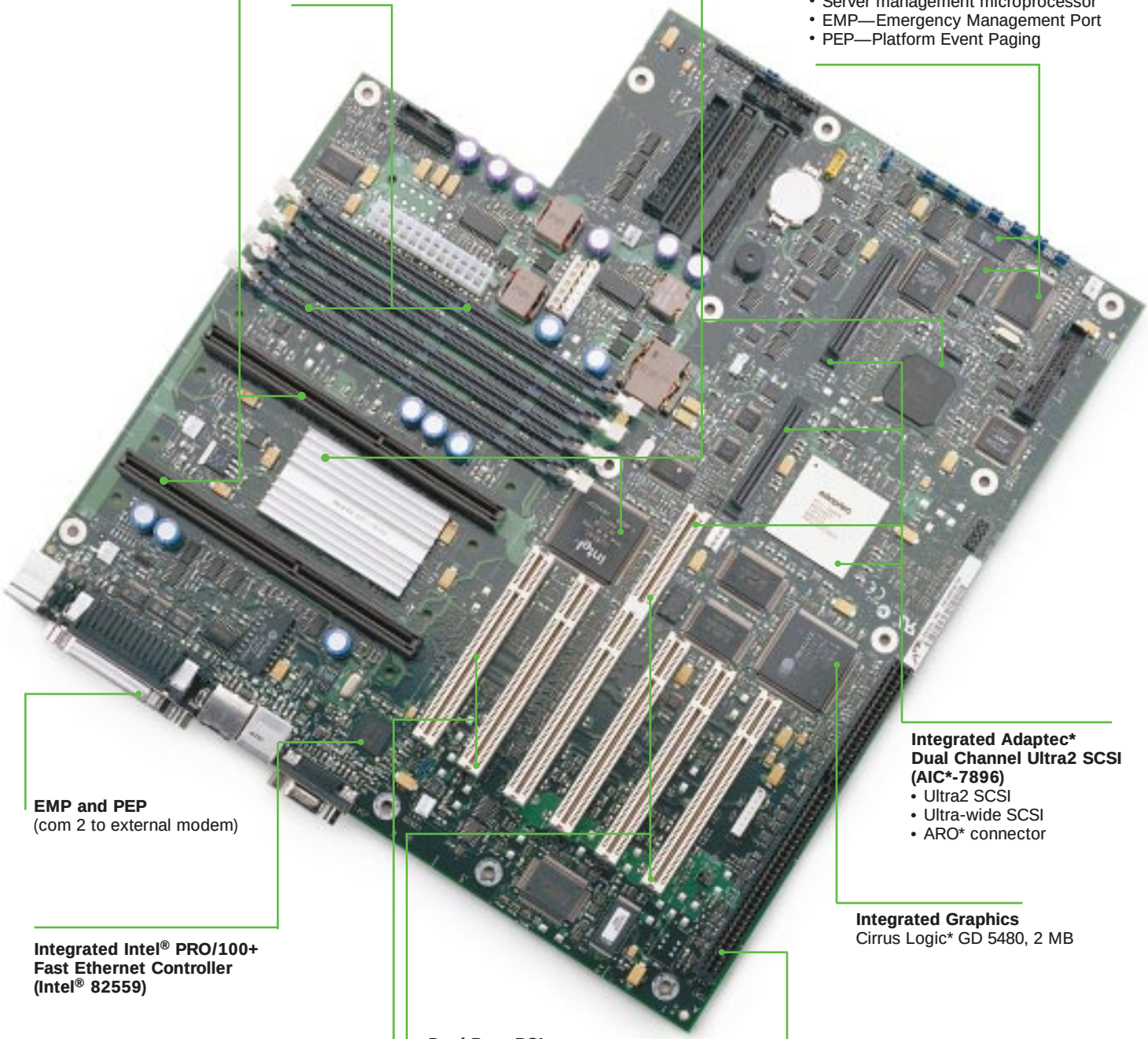
Intel® L440GX+ Server Board for Intel® Pentium® III Processors

Support for Two Pentium® III or Pentium® II Processors

2 GB of SDRAM Support
- Four DIMM sockets

Intel® 440GX+ Chipset
Including Intel 21150 AGP-to-PCI Bridge and PIIX4E

Advanced Intel® Server Management
- Intel® Server Control software
- Server management microprocessor
- EMP—Emergency Management Port
- PEP—Platform Event Paging



EMP and PEP
(com 2 to external modem)

Integrated Intel® PRO/100+ Fast Ethernet Controller (Intel® 82559)

Integrated Adaptec* Dual Channel Ultra2 SCSI (AIC*-7896)
- Ultra2 SCSI
- Ultra-wide SCSI
- ARO* connector

Integrated Graphics
Cirrus Logic* GD 5480, 2 MB

Dual Peer PCI, 6 Available PCI Slots
- Bus A—four PCI slots
- Bus B—two PCI slots (support for 66 MHz PCI)

One Dedicated ISA Slot

Intel® L440GX+ Server Board Specifications

Intel order code: BOXL440GX

Processor/Cache

Processors Supported
Intel® Pentium® III processors 500 MHz and 450 MHz with 512 KB of integrated L2 cache
Intel Pentium® II processors 450 MHz, 400 MHz, and 350 MHz with 512 KB of integrated L2 cache

Intel Chipset

Intel® 82443GX+ (includes Intel® 21150 AGP-to-PCI Bridge), Intel® PIIX4E

System Memory

Memory Capacity
Four DIMM sockets for up to 2 GB of SDRAM (32 MB minimum)

Memory Type
PC/100 100 MHz SDRAM, 72-bit ECC or 64-bit non-ECC, 168-pin gold plated DIMMs

DIMM Sizes
32 MB, 64 MB, 128 MB, 256 MB, 512 MB

Memory Voltage
3.3V only

Error Detection
Corrects single-bit errors, detects double-bit errors (using ECC memory)

Expansion Slots (all full length)

Description
Six dedicated PCI slots (bus mastering)
Two 32-bit PCI buses (one 33 MHz, one 66 MHz)
66 MHz Bus- Two slots (Compatible with 33 MHz cards)
33 MHz Bus- Four slots
One dedicated ISA slot

Integrated Adaptec* SCSI Controller

Controller
Adaptec* AIC*-7896 Dual Channel- one Ultra2/LVD, one Ultra-wide
Two 68 pin "wide" SCSI connectors
Max data transfer: 120MB/sec (80 + 40)

Integrated Intel® Network Adapter

Controller
One Intel® PRO/100+ Fast Ethernet Controller (Intel® 82559)
Supports 10BASE-T and 100BASE-TX, RJ45 output

Integrated Graphics

Controller
Cirrus Logic* GD 5480

Maximum Resolution
1,280 x 1,024; 16 colors

Graphics memory
2 MB 10 ns SGRAM

Integrated PCI/ISA IDE Xcelerator (PIIX4e)

IDE
Two independent channels for a total of four IDE devices
PIO Mode 0, PIO Mode 3, PIO Mode 4, ATA-33 and CD-ROM support

USB
Two stacked USB connectors

Integrated Super I/O

Controller
National* Super 87309

Serial ports
Two Asynch, RS-232C, 9 pin and 10 pin

Parallel port
IEEE 1284, 25 pin bidirectional

Floppy Controller
1.44 MB, 2.88 MB, 3-mode support

Keyboard/mouse
PS/2, 8240A compatible

System BIOS

BIOS Type
8 MB Flash EEPROM with Intel Phoenix* BIOS, Multi-boot BBS (BIOS Boot Specification) 1.0 Compliant

Special Features
Plug and play, IDE drive autoconfigure, DMI 2.0, ECC/Parity support, multilingual support and jumperless processor speed setup

Configuration Utilities
System Set-up Utility (SSU) enables easy system setup of BIOS and utilities, plug and play

Jumpers and Front Panel Connectors

ATX Connectors
Speaker, reset, power LEDs, HD LED, power on/off

Jumpers
Chassis intrusion; Wake On LAN (WOL) Enable; flash configuration jumpers include: fault-resilient booting timer, boot-block protection, boot recovery, CMOS clear, password protect, BMC Forced Update

Mechanical

Server Board Style
Extended ATX, fits in many ATX 2.0 compliant tower chassis

Server Board Size
12" x 13" with cutout "notch"

Server Board Power Requirements

+5V	19.33A maximum continuous current
+5V Standby	0.8A maximum continuous current
+12V	5.61A maximum continuous current
+3.3V	11.05A maximum continuous current
-5V	0
-12V	0.15A maximum continuous current

Server Management Instrumentation***

Failure detection
Voltage variation, thermal, operating-system watchdog, fan failure, hard-disk-drive failure, power-supply failure, processor status, ECC memory, heat-sink fan check

Emergency Management Port
Remote reset, power up/down control, read system event log (external modem required)

Platform Event Paging**
Paging on 12 configurable events (external modem required)

Event Logging
Nonvolatile storage to prevent loss of logs in the event of system failure

Security
Chassis intrusion (configured through jumper), video blanking, password protection

**BOIS/Firmware available at www.intel.com/go/serverbuilder following product launch.
***Full utilization of some Server Management features is dependent on the use of an Intel® server chassis.

Intel® Server Control (ISC), Version 1.7

Managed Server
Operating systems supported:
Windows* NT* Server 3.51, 4.0
Novell Netware* 4.11, 5.0
SCO UnixWare* 7.0

Management Consoles Supported
ISC integrates into the leading management consoles:
Intel® LANDesk® Server Manager 6.01
HP OpenView* Network Node Manager 5.02 for Windows* NT
CA TNG* Framework 2.01 for Windows* NT

Stand-alone Consoles Supported
Microsoft Management Console
Internet Explorer* 3.02
Netscape Navigator* 3.0 with ActiveX* snap-in

System Health Monitor
Temperature, voltage, cooling fans, chassis intrusion, ECC memory, processor status, power-supply status, on-board NIC and SCSI. OS hang monitoring via Watchdog Timer

Alert Notification
When a configured event takes place these methods of notification are available:
Network broadcast, SNMP trap, writing into System Event log (non-volatile storage), Message box.

Critical Event Actions
Graceful operating system shutdown with reboot or power off at administrator's discretion
Immediate power off or reset
Immediate Generate NMI or Reset

Environment

Ambient Temperature	
Operating	0°C to +55°C
Non-operating/storage	-40°C to +70°C ambient
Relative Humidity	
Non-operating	95% @ 30°C non-condensing

Regulations

Safety Regulations:	
U.S. & Canada	UL/CUL 950-CSA 950-95, 3rd Edition
Europe	EN60950, 2nd Edition; IEC 950, 2nd Edition CE Mark-European Directive 73/23/EEC

EMI/RFI—in a compatible host system

U.S.	FCC, CFR 47 Part 15, Class B
Canada	ICES-003, Class B
Europe	Verified to EN55022 and EN50082-1
Japan/ Australia/ New Zealand	CISPR-22/AS/NZS 3548, Class B

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