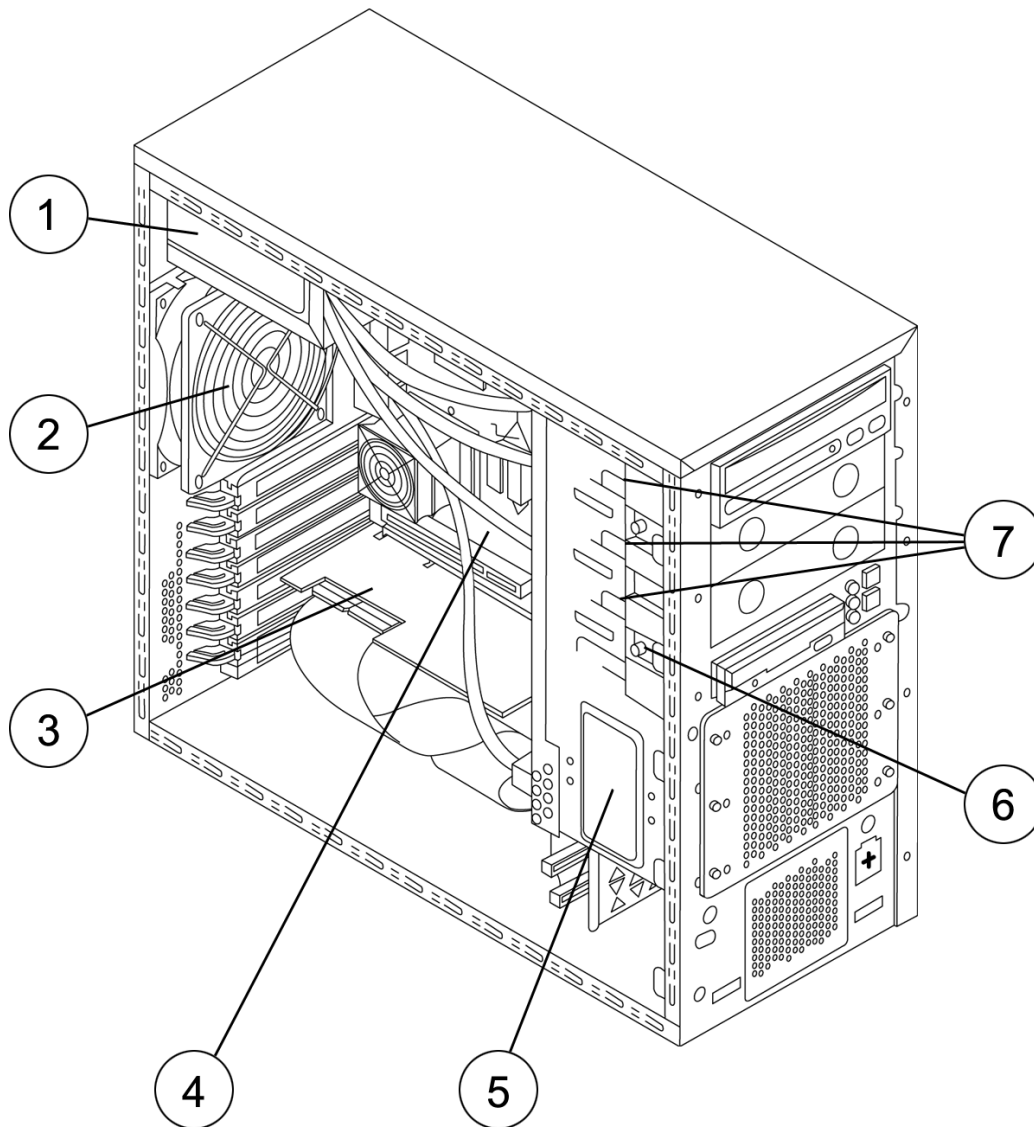


Overview



1. Power Supply

2. System Fan

3. Optional SCSI Controller

4. Main System Board

5. Four 1" Non-Hot Plug Drive Bays

6. 1.44 MB Floppy Drive

7. 48x CD-ROM & Two Removable Media Bays

What's New

- Supports 1 Intel® Celeron 2.6 GHz, processor with 128-KB second level ECC cache standard, 400MHz front-side-bus
- Supports 1 Intel Pentium 2.80E GHz processor supporting Hyperthreading technology with 1024-KB second level ECC cache standard 800MHz front-side-bus
- Supports 1 Intel Pentium 3.00E GHz processor supporting Hyperthreading technology with 1024-KB second level ECC cache standard 800MHz front-side-bus

Overview

At A Glance

- Intel 875P Chipset with 400Mhz FSB (Celeron Models) and 800Mhz FSB (Pentium 4)
- 256-MB or 512-MB (Pentium 4n models) of PC3200 DDR SDRAM running at 400MHz, with Advanced unbuffered ECC capabilities standard, expandable to 4 GB
- Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
- Integrated Dual Channel Ultra ATA/133 Adapter (ATA Models) or a Single Channel Wide Ultra320 SCSI Adapter (SCSI Models)
- Support for up to four 1" Ultra320 NHP SCSI hard drives or four 1" ATA/100 NHP Drives (depending on Model & Accessories)
- Five total PCI slots (5 available on ATA models, 4 available on SCSI models): three 64-bit/66MHz PCI-X at 3.3 Volt and two 32-bit/33MHz PCI at 5 Volt
- Internal storage capacity of up to 288 GB (4 x 72GB non-hot plug 1" SCSI HD) (SCSI Models) (**NOTE: 160GB SCSI HDD only available through CTO**)
- Internal storage capacity of up to 240 GB (3 x 80" ATA/100 drives - 4th channel is attached to CD-ROM Drive) (ATA Models)
- Integrated ATI Rage XL with 8MB SDRAM video
- 350W Power Supply
- Two USB 2.0 ports
- ROM Based Setup Utility (RBSU) and PXE support
- Protected by HP Services, including a one-year, limited warranty, Next Business Day 1 year on-site limited Global warranty - Certain restrictions and exclusions apply. Consult the Customer Support Center at 1-800-345-1518 for details

Standard Features

Processor <i>One of the following depending on Model</i>	Intel Pentium 4 processor 2.80E GHz supporting HyperThreading technology, 800 MHz Front Side Bus Intel Pentium 4 processor 3.00E GHz supporting HyperThreading technology, 800 MHz Front Side Bus Intel Celeron processor 2.6 GHz, 400 MHz Front Side Bus		
Cache Memory <i>One of the following depending on Model</i>	Integrated 1024-KB Level 2 ECC cache (Pentium 4 models only) Integrated 128-KB Level 2 ECC cache (Celeron models only)		
Memory <i>One of the following depending on Model</i>	Standard	256 MB PC3200 DDR SDRAM running at 400MHz, with Advanced unbuffered ECC capabilities (on Pentium 4 models or 2.6 Celeron models)	
	Maximum	4 GB	
	Standard	512 MB PC3200 DDR SDRAM running at 400MHz, with Advanced unbuffered ECC capabilities (on Pentium 4 SBS models)	
	Maximum	4 GB	
Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)		
Expansion Slots	I/O (5 Total, 5 Available in ATA models, 4 Available in SCSI models)		PCI Voltage:
	64-bit/66MHz PCI-X	3 (ATA) 2(SCSI)	3.3 volts
	32-bit/33Mhz PCI	2	5 volts
Storage Controller <i>One of the following depending on Model</i>	HP Single Channel Ultra3 SCSI Adapter (SCSI Models) Integrated Dual Channel Ultra ATA-133 IDE (ATA Models)		
Storage	Diskette Drives	1.44 MB	
	CD-ROM	48x IDE (ATAPI) CD-ROM Drive	
	Hard Drives	One of the following: <ul style="list-style-type: none">36.4-GB Ultra320 SCSI 10,000 rpm 1" Drive (SCSI models)72.8-GB Ultra320 SCSI 10,000 rpm 1" Drive (SCSI models)40-GB ATA/100 7200 rpm 1" Drive (Celeron Models only)80-GB ATA/100 7200 rpm 1" Drive (Pentium 4 ATA Models only)	
	Maximum Internal Storage (SCSI Models)	288 GB Internal Drive Cage Maximum SCSI capacity (4 x 72GB)	
	Maximum Internal Storage (ATA Models)	240 GB (3 x 80 GB) (internal drive bays and removable media bays) For larger internal storage requirements, please contact your local HP representative (in the U.S.) call 1-800-888-9909.	

Standard Features

Interfaces	Parallel	1
	Serial	1
	Pointing Device (Mouse, PS2)	1
	Graphics	1
	Keyboard (PS2)	1
	USB	2
	Network RJ-45 (Ethernet)	1

NOTE: Please see the following URL for additional information regarding USB support:
<http://h18004.www1.hp.com/products/servers/platforms/usb-support.html>.

Graphics	Integrated ATI RAGE XL Video Controller with 8MB SDRAM Video Memory
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Form Factor	Tower (5U)
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Industry Standard Compliance	ACPI V1.0b Compliant
	PCI 2.2 Compliant
	PXE Support
	WOL Support
	Microsoft® Logo certifications
	Novell Logo certifications

Manageability	Online ROM Flash Utility
	BIOS Serial Console

Security	Power-on password
	Setup password
	Diskette boot control
	Intruder Alert Message

Server Power Cords	One Lowline NEMA power cord and one Highline IEC Power cord ships standard
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Power Supply	350 Watts, PFC (Power Factor Correcting)
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System Fans	1 - Non-hot plug, Non-redundant system fan shipped standard
	1 - Non-hot plug, Non-redundant CPU heatsink fan shipped standard

Standard Features

OS Support

Microsoft Windows® 2000 Server
Microsoft Windows Server 2003
Microsoft Windows Small Business Server 2003
Novell NetWare 6.5
Novell Small business Suite 6.5
LINUX (Red Hat & United Linux)

NOTE: For an up-to-date listing of the latest ML110 OS support matrix, please see:

<http://www.hp.com/go/supportos>

NOTE: For an up-to-date listing of the latest drivers available for the HP server ML110, please see:

http://h20004.www2.hp.com/soar_rnotes/bsdmatrix/matrix296540en_US.html

Service and Support

HP Services provides a one-year, limited warranty, memory and processors) fully supported by a worldwide network of resellers and service providers and toll-free 7 x 24 hardware technical phone support. In addition, available service offerings include:

NOTE: Limited Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support

This warranty can be upgraded to a three-year, limited warranty.

A full range of HP Care Pack packaged hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services
- Availability and recovery services

NOTE: For more information, customer/resellers can contact <http://www.hp.com/services/carepack>.

Please see the following URL regarding Warranty Information:

<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

For additional information regarding Worldwide Limited Warranty and Technical Support, please see the following URL:

<ftp://ftp.compaq.com/pub/supportinformation/ejourney/176738.pdf>

NOTE: Certain restrictions and exclusions apply. Consult the Customer Support Center at 1-800-345-1518 for details.

Models

ML110 C2.6-128KB
256MB, 40GB, ATA
 339042-xx1

Processor	(1) Intel Celeron 2.6GHz (standard)
Cache Memory	Integrated 128-KB Level 2 cache
Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 200MHz, with Advanced ECC capabilities
Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
Storage Controller	Ultra ATA 100
Hard Drive	(1) 40 GB Ultra ATA/100
Internal Storage	240 GB maximum
Optical Drive	48x IDE (ATAPI) CD-ROM Drive
Form Factor	Tower (5U)

ML110
P2.80E -1024KB
256MB, 80GB, ATA
 339043-xx1

Processor	(1) Intel Pentium 4 2.80E GHz supporting HyperThreading technology (standard)
Cache Memory	Integrated 1024-KB Level 2 cache
Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC capabilities
Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
Storage Controller	Ultra ATA 100
Hard Drive	(1) 80 GB Ultra ATA/100
Internal Storage	240 GB maximum
Optical Drive	48x IDE (ATAPI) CD-ROM Drive
Form Factor	Tower (5U)

ML110
P2.80E-1024KB 256MB,
36GB, SCSI
 339044-xx1

Processor	(1) Intel Pentium 4 2.80E GHz supporting HyperThreading technology(standard)
Cache Memory	Integrated 1024-KB Level 2 cache
Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC capabilities
Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
Storage Controller	HP Single Channel Ultra320 SCSI Adapter)
Hard Drive	1) 36.4 GB Ultra320 SCSI, 10,000 rpm, 1" Drive
Internal Storage	288 GB maximum
Optical Drive	48x IDE (ATAPI) CD-ROM Drive
Form Factor	Tower (5U)

ML110 P2.80E-1024KB,
512MB, 36GB SCSI,
w/SBS Pre-Install
 339045-xx1

Processor	(1) Intel Pentium 4 2.80E GHz supporting HyperThreading Technology
Cache Memory	Integrated 1024-KB Level 2 cache
Memory	512 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC Capabilities
Network Controller	Broadcom 5705 PCI Gigabit NIC (Embedded) 10/100/1000 WOL (Wake on LAN)
Storage Controller	HP Single Channel Ultra320 SCSI Adapter
Hard Drive	(1) 36.4 GB Ultra320 SCSI 10,000 rpm, 1" Drive
Internal Storage	288 GB Maximum (with optional drives)
Optical Drive	48x IDE (ATAPI) CD-ROM Drive
Form Factor	Tower (5U)
NOS	Microsoft Windows Small Business Server 2003 + 5 CALs standard (pre-installed)

Models

ML110 P3.0 OE -1024KB 256MB, 80GB, ATA 359661-xx1	Processor	(1) Intel Pentium 4 3.00E GHz supporting HyperThreading technology(standard)
	Cache Memory	Integrated 1024-KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC capabilities
	Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	Ultra ATA 100
	Hard Drive	(1) 80 GB Ultra ATA/100
	Internal Storage	240 GB maximum
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)

ML110 P3.00E-1024KB 256MB, 36GB, SCSI 359663-xx1	Processor	(1) Intel Pentium 4 3.00E GHz supporting HyperThreading technology(standard)
	Cache Memory	Integrated 1024-KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC capabilities
	Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	HP Single Channel Ultra320 SCSI Adapter
	Hard Drive	1) 36.4 GB Ultra320 SCSI, 10,000 rpm, 1" Drive
	Internal Storage	288 GB maximum
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)

ML110 P3.00E-1024KB, 512MB, 36GB SCSI, w/SBS Pre-Install 359664-xx1	Processor	(1) Intel Pentium 4 3.00E GHz supporting HyperThreading Technology
	Cache Memory	Integrated 1024-KB Level 2 cache
	Memory	512 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC Capabilities
	Network Controller	Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	HP Single Channel Ultra320 SCSI Adapter
	Hard Drive	(1) 36.4 GB Ultra320 SCSI 10,000 rpm, 1" Drive
	Internal Storage	288 GB Maximum (with optional drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)
	NOS	Microsoft Windows Small Business Server 2003 + 5 CALs standard (pre-installed)

Country Code Key	XX=00	NA
	XX=01	Australia
	XX=03	UK
	XX=04	Germany
	XX=05	France
	XX=37	AP
	XX=42	Euro
	XX=AB	Taiwan
	XX=AD	Korea
	XX=AA	PRC
	XX=29	Japan

Options

Memory	1024MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	354563-B21
	512MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	354560-B21
	256MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	354557-B21
Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
Hard Drives	Wide Ultra320 SCSI - Non-Hot Plug	
	NOTE: These drives require an additional SCSI controller in ATA models.	
	36-GB U320 10,000 rpm Non-Hot Plug Hard Drive, 1"	271832-B21
	72-GB U320 10,000 rpm Non-Hot Plug Hard Drive, 1"	332751-B21
	ATA 100 - Non-Hot Plug (ATA Models only)	
	80-GB ATA/100 7,200 rpm Drive, 1"	278424-B21
	40-GB ATA/100 7,200 rpm Drive, 1"	230534-B21
Storage Controllers - SCSI Drives	NOTE: The following Storage Controllers are qualified for SCSI drives only. They do not support the ATA Drives.	
	HP Single Channel Ultra3 SCSI Adapter Kit	311863-B21
	Adaptec PCI SCSI RAID controller	355671-B21
Communications	NC7771 PCI-X 10/100/1000-T Server Adapter	290563-B21
	Agere PCI V.92 56K Worldwide Controller less Win Modem	DC131B
	NOTE: RJ11 modem adapter is not included.	
	Modem adapter option kit localizations -	DC131C#xxx
	NOTE: RJ11 Modem adapter kit country/network-specific telecoms adapter for use with DC131B, DC132B or DC132C modems	
	Modem adapter option kit Country Code Key	
	#ACP= Austria	#ABZ= Italy
	#ABW= Belgium (Dutch/Flemish)	#ABH= Netherlands
	#AKN= Bosnia, Herzegovina, Croatia, Slovenia, Yugoslavia (Slovenian)	#UUW= Nordic Region
	#AKB= Czech Republic (Czech) & Slovakia	#ACB= Russia
#ABF= France	#ACQ= South Africa	
#ABD= Germany	#ACD= Switzerland	
#AB7= Greece	#AB8= Turkey	
#AKC= Hungary	#ABU= UK	
#ABT= Israel	#ABG= Australia, New Zealand	
	#ACJ= India	
Tape Backup Drives	HP DAT24i Internal SCSI DAT Drive	C1555D
	HP DAT40i Internal SCSI DAT Drive	C5686B
	HP DAT72i Internal SCSI DAT Drive	Q1522A
	NOTE: When installing a DAT24i, DAT40i or DAT72i in a ML110 ATA model a SCSI controller kit will be required (PN: 311863-B21).	

Options

Rack Enabling Kit	ProLiant Rack Enabling Kit	238547-B22
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Other	Internal SCSI Cable Option Kit, 4 drops - To be used when adding additional hard disk drives or a tape back-up drive.	166389-B21
	Internal SCSI Cable Option Kit, 2 drops - To be used when adding additional hard drives or a tape back-up drive.	273463-B21

NOTE: For a complete list of keyboards and mice please view the following URL:
http://h30143.www3.hp.com/options.cfm?oid=89301&from=enter.cfm¶m=oid&val=89301#m_11

Service and Support Offerings (HP Care Pack Services)

Hardware Services 4-Hour On-site Service

13-Hour x 5-Day Coverage, 3 Years (U.S. Part Number)	331136-002
13-Hour x 5-Day Coverage, 3 Years (Canadian Part Number)	FP-TU3EC-36
13-Hour x 5-Day Coverage, 3 Years (Global/EMEA Part Number)	U4434A U4434E
24-Hour x 7-Day Coverage, 3 Years (U.S. Part Number)	321653-002
24-Hour x 7-Day Coverage, 3 Years (Canadian Part Number)	FP-TU7EC-36
24-Hour x 7-Day Coverage, 3 Years (Global/EMEA Part Number)	U4435A U4435E

Hardware Services Next Business Day On-Site Service

9-Hour x 5-Day Coverage, 3 Years (U.S. Part Number)	321651-002
9-Hour x 5-Day Coverage, 3 Years (Canadian Part Number)	FP-TUXEC-36
9-Hour x 5-Day Coverage, 3 Years (Global/EMEA Part Number)	U4433A U4433E
Hardware Installation (US Part Number)	321671-002
Hardware Installation (Canadian Part Number)	FP-TUINS-EC
Hardware Installation (Global/EMEA Part Number)	U4444A U4444E

NOTE: For more information, customer/resellers can contact <http://www.hp.com/services/carepack>.

Tested Product List

NOTE: The Tested Product List (TPL) is a list of HP and standard 3rd party devices (hardware or software) that have been tested by either HP or independent test houses for basic compatibility with the HP ProLiant ML110. HP products are supported by HP, non-HP products are not supported by HP. For non-HP products, you must obtain support from their own manufacturer. Non-HP third party products have been tested only for compatibility with the specified HP server. This level of testing confirms proper device recognition by the HP server and basic compatibility with the identified HP server. HP disclaims all responsibility and liability for the manufacturing, distribution, marketing, licensing, installation, use, performance, maintenance, safety, regulatory certification, and support of these 3rd party products.

IDE RAID Controller	Manufacturer	Promise Technology, Inc.
	Product	FastTrak TX4000 IDE RAID Controller
	Channels	Four (4) Independent Data Channels
	RAID Configurations	RAID levels 0 + 1 striping/mirroring; RAID 1 mirroring; RAID 0 striping
	Capacity	240GB (3x80GB ATA) in ML110
	Data Transfer Method	32-bit, 66MHz PCI Bus Master
	Manufacturer's Website	http://www.promise.com/

Memory

HP ProLiant ML110 Celeron and Pentium 4 Models

Standard Memory

256-MB of PC3200 DDR SDRAM running at 400MHz (Celeron models running at 200 MHz), with Advanced ECC capabilities Memory installed (1 x 256-MB SDRAM DIMM).

Standard Memory Plus Optional Memory

Up to 3328-MB memory is available with the optional installation of PC3200 Registered ECC DDR SDRAM DIMM Memory kits.

Standard Memory Replaced with Optional Memory

Up to 4096-MB of memory is available with the removal of the standard 256-MB of memory and the optional installation of PC3200 Registered ECC DDR SDRAM DIMM Memory kits.

NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		4	3	2	1
Standard	256 MB	Empty	Empty	Empty	256 MB
Optional	3328 MB	1024 MB	1024 MB	1024 MB	256 MB
Maximum	4096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP:

- 256MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB)
 - 512MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB)
 - 1024MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)
- 354557 -B21
354560 -B21
354563 -B21

HP server ML110 Pentium 4 SBS Models

Standard Memory

512-MB of PC3200 DDR SDRAM running at 400MHz, with Advanced ECC capabilities Memory installed (1 x 512-MB SDRAM DIMM).

Standard Memory Plus Optional Memory

Up to 3584-MB memory is available with the optional installation of PC3200 Registered ECC DDR SDRAM DIMM Memory kits.

Standard Memory Replaced with Optional Memory

Up to 4096-MB of memory is available with the removal of the standard 512-MB of memory and the optional installation of PC3200 Registered ECC DDR SDRAM DIMM Memory kits.

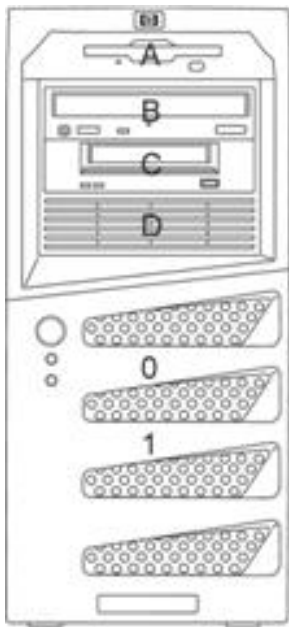
NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		4	3	2	1
Standard	512 MB	Empty	Empty	Empty	512 MB
Optional	3584MB	1024 MB	1024 MB	1024 MB	512 MB
Maximum	4096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP:

- 256MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB)
 - 512MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB)
 - 1024MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)
- 354557 -B21
354560 -B21
354563 -B21

Storage



- B 48x IDE (ATAPI) CD-ROM
- A 3.5 in. Diskette Drive (location is incorrect in the picture)
- B, C, D Removable Media Bays (1.6" each)
- 0, 1, 2, 3 Four 1" Non-Hot Plug Drive Bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	E	Integrated
IDE (ATAPI) CD-ROM Drive	Up to 2	B or C	Integrated IDE (ATAPI)
DVD-ROM Drive Option Kit	Up to 2	B or C	Integrated IDE (ATAPI)

Hard Drives (SCSI Models only)
Ultra 320 SCSI - Non-Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch 36.4-GB 72.8-GB	Up to 4	0,1, 2 or 3	HP Single Channel Ultra3 SCSI Adapter (SCSI Models)

Hard Drives (ATA Models only)
ATA/100 IDE - Non-Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch 80.0-GB 40.0-GB	Up to 3	0,1, 2 or 3	Integrated Dual Channel Ultra ATA-100 Adapter (ATA Models)

Storage

Maximum Storage Capacity - SCSI Models

Internal	288 GB (4 x 72 GB non-hot-plug hard drives)
Total	288 GB

Maximum Storage Capacity - ATA Models

Internal	240 GB (3 x 80 GB non-hot-plug hard drives - 4th channel is attached to CD-ROM Drive)
Total	240 GB; For larger internal storage requirements, please contact your local HP representative.

Tape Drives

NOTE: A SCSI controller needs to be purchased to operate internal SCSI devices in the ATA Models.

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:

http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html (North America)

<http://h18000.www1.hp.com/products/quickspecs/Division/10233.html> (Worldwide)

	Quantity Supported	Position Supported	Controller
HP DAT24i	Up to 1	C	HP Single Channel Ultra3 SCSI Adapter
HP DAT40i	Up to 1	C	HP Single Channel Ultra3 SCSI Adapter
HP DAT72i	Up to 1	C	HP Single Channel Ultra3 SCSI Adapter

Power Specifications

Part Number	346127-001
Spare Kit	348626-001
Operational Input Voltage Range (V rms)	90 to 135 and 180 to 5 V auto ranging
Frequency Range (Nominal) (Hz)	47 to 63 Hz

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	N/A	350	N/A	N/A	350	N/A
Nominal Input Current (A rms)	N/A	54.0	N/A	N/A	2.50	N/A
Max Rated Input Wattage Rating (Watts)	N/A	575310	N/A	N/A	575310	N/A
Max. Rated VA (Volt-Amp)	N/A	920	N/A	N/A	920	N/A
Efficiency (%)	N/A	~63%	N/A	N/A	~63%	N/A
Power Factor	N/A	N/A	N/A	N/A	N/A	N/A
Leakage Current (mA)	N/A	3.5mA	N/A	N/A	0.73.5mA	N/A
Maximum Inrush Current (A peak)	N/A	80120	N/A	N/A	120	N/A
Maximum Inrush Current duration (mS)	N/A	N/A	N/A	N/A	N/A	N/A

System Specifications

	Power **
HP ProLiant ML110 Fully Configured	(see **)
Fully Loaded System Input Wattage (W)	318W
Fully Loaded System Input Current (A rms)	4.4A @ 115V, 2.2A @ 230V
Fully Loaded System Thermal (BTU- Hr)	1907BTU
Fully Loaded System VA (Volt-Amp)	506
System Leakage with all power supplies loaded (mA)	0.75mA
System Inrush Current with all power supplies loaded (A)	80A
Power cord requirements	Nema 5-15P to IEC320-C13
	IEC320-C13 to IEC320-C14
	**Power shown is for a fully configured system consisting of (1) CPU, (4) double-sided DIMMs, (3) HDDs, (1) CD-ROM, (1) DVD-ROM, (4) PCI cards, and (1) power supply.
Power Cords (13 Cord Sets)	Power Cord Part Number
Country	
APD	100614-009, 100613-008, 139867-004, 187487-004(India)
Korea	100614-009
Italy	109197-008
Australia	100661-001
Euro	100614-009
France	100614-009
Germany	100614-009
Japan	139867-004
PRC	286496-001
UK	100613-008
US, Taiwan	121565-001

TechSpecs

System Unit	Dimensions (HxWxD) (with feet)	16.9 x 7.9 x 21.7 in (43.0 x 20.0 x 55.0 cm)	
	Weight(approximate)	37 lb (16.8 kg)	
	Input Requirements (per power supply)	Range Input Voltage	90 to 135 VAC/180 to 265 VAC
		Normal Line Voltage	115 or 230 VAC
	Line Frequency	50 to 60 Hz	
	Rated Input Current	load 8A at 115VAC, 4A at 230VAC	
	BTU Rating	1907 BTU	
	SCSI Connectors (SCSI Models only)	One internal LVD/SE connector for U160 devices, plus two internal SE connectors for legacy devices.	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	320W
		Maximum Peak Power	350W
	Temperature Range	Operating	50° to 93° F (10° to 35° C)
		Shipping	-40° to 150° F (-40° to 66° C)
	Relative Humidity (non-condensing)	Operating	20% to 80%
		Non-operating	5% to 90%
	Acoustic Noise	Idle (Fixed Disk Drives Spinning)	

L WAd (BELS) 4.7

L pAm (dBA) 31

Operating
(Random Seeks to Fixed Disks)

L WAd (BELS) 4.8

L pAm (dBA) 32

1.44-MB Diskette Drive	Diskette Size	3.5 in (8.89 cm)	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low density)	1.44 MB/720 KB	
	Drive Supported	One	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500 K/250 K bits/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	169/94 ms
		Settling Time	15 ms
		Latency Average	100 ms
	Cylinders (high/low)	80/80	
	Read/Write Heads	Two	

TechSpecs

Non-Hot Plug Ultra320
SCSI Hard Drives

36.4 GB 10K
271832-B21

Capacity	36,419.2 MB	
Height	1.0 in (2.5 cm)	
Width	4.0 in (10.16 cm)	
Interface	Ultra320 SCSI	
Transfer rate synchronous (maximum)	320 MB/s	
Seek time (typical reads, including settling)	Single track	0.7 ms
	Average	5.4 ms
	Full-stroke	11 ms
	Rotational Speed	10,000 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	71,132,000
Operating Temperature	50° to 95° F (10° to 35° C)	

72.8 GB 10K
332751-B21

Capacity	72,837.2 MB	
Height	1.0 in (2.54 cm)	
Width	4.0 in (10.16 cm)	
Interface	Ultra320 SCSI	
Transfer rate synchronous (maximum)	320 MB/s	
Seek time (typical reads, including settling)	Single track	0.55 ms
	Average	4.9 ms
	Full-stroke	10 ms
	Rotational Speed	10,000 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	142,264,000
Operating Temperature	50° to 95° F (10° to 35° C)	

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Non-Hot Plug ATA/100 Hard Drives	80 GB 7.2K 278424-B21	Capacity	80,054 MB	
		Height	1.0 in/2.54 cm	
		Width	4 in (10.16 cm)	
		Interface	ATA 100	
		Transfer rate synchronous (maximum)	100 MB/s	
		Seek time (typical reads, including settling)	Single track	0.8 ms
			Average	8.5 ms
			Full-stroke	17.8 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	156,355,584
		Operating Temperature	41° to 131° F/5° to 55° C	
	40 GB 7.2K 230534-B21	Capacity	40,027 MB	
		Height	1.0 in (2.54 cm)	
		Width	4.0 in (10.16 cm)	
		Interface	ATA 100	
		Transfer rate synchronous (maximum)	100 MB/s	
		Seek time (typical reads, including settling)	Single track	0.8 ms
			Average	8.5 ms
			Full-stroke	17.8 ms
			Rotational speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	78,177,792
		Operating Temperature	41° to 131° F (5° to 55° C)	

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48X Max IDE (ATAPI) CD-ROM Drive	Applicable Disk	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) Mixed Mode (Audio and Data combined) CD-R
	Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
Block Size	Mode 1	2,048 bytes, 1024 bytes
	Mode 2	2,340 bytes, 2,336 bytes, 1024 bytes
	CD-DA	2,352 bytes
	CD-XA	2,328 bytes
Interface	IDE (ATAPI)	
Access Times (typical)	Random	<100 ms
	Full-Stroke	<150 ms
Data Transfer Rate	Sustained	3000 to 7200 KB/s (20X to 48X)
	Burst	150 KBps to 7,200 KBps
	Bus Rate	16.7 MBps
Cache Buffer	128 KB	
Start-up Time (typical)	< 7seconds	
Stop Time	< 4seconds	
Laser Parameters	Type	Semiconductor Laser GaAlAs
	Wave Length	780 ± 25 nm
Operating Conditions	Temperature	41° to 113° F (5° to 45° C)
	Humidity	10% to 80%
Dimensions	(HxWxD, maximum)	1.7 x 5.85 x 8.11 in (42.9 x 150 x 208 cm)
	Weight	2.09 lb (0.95 kg)

Integrated Dual Channel Ultra ATA-100 Adapter (ATA Models only)	Drives Supported	Up to 5 IDE devices (3 devices channel 1/2 devices channel 2)
	Channels	2 (primary and secondary)
	Storage Capacity	240 GB
	Data Transfer Method	32-bit/33-MHz PCI bus-master
	Maximum ATA Channel Transfer Rate	100 MB/s per channel
	Maximum Transfer Rate per PCI Bus (peak)	133 MB/s per channel
	ATA Protocols	UDMA Mode [0-5]
		PIO Mode [0-4]
	ATA 100 Cable	80-Conductor Cable
	Internal ATA Connectors	Two 40-Pin Connectors (primary and secondary)

TechSpecs

HP Single Channel Ultra3 SCSI Adapter (SCSI Models only)	Drives Supported	Up to 4 SCSI devices
	Data Transfer Method	Wide 64-bit/33-MHz PCI bus-master
	SCSI Channel Transfer Rate	320 MB/s per channel
	Maximum Transfer Rate per PCI Bus (peak)	267 MB/s per channel
	SCSI Protocols	Wide Ultra4 SCSI, Wide Ultra2 SCSI, Wide Ultra SCSI-3, Fast-Wide SCSI-2, and Fast SCSI-2
	Electrical Protocol	Fast SCSI-2
	SCSI Termination	Low Voltage Differential (LVD)
External SCSI Connectors		Active Termination
		None

Broadcom 5705 PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)	Network Interface	Ethernet Standards: IEEE 802.3, 802.3u, 802.3ad, and 802.3ab, 802.1x, 802.1Q and 802.1p
	Data Transfer Method	32-bit PCI
	Network Transfer Rate	10/100/1000 Mbps, Half- and full-duplex Auto-negotiated speeds of 10/100/1000 Mbps in both half and full duplex
	Connector	RJ-45 connector
	Cable Support	Category 5 or higher UTP wiring

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