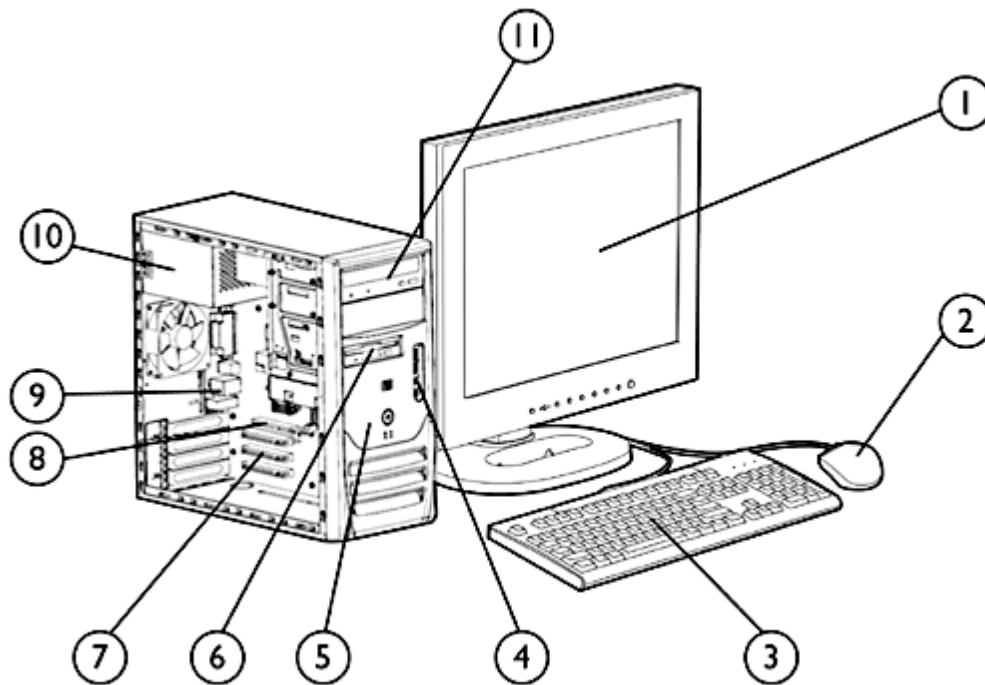


Overview

**HP recommends
Windows Vista™ Business**

Microtower

14.49 x 6.89 x 15.75 in (368 x 175 x 400 mm – H x W x D)



1. Monitor (sold separately)

2. 2-Button Scroll Mouse

3. HP Standard Keyboard

4. Front I/O - 2 USB 2.0 ports & Mic -in, Headset

5. 2 internal 3.5" bays (2nd HDD expandable via 2nd HDD bracket option)

6. One external 3.5" bay for optional diskette drive or other 3.5" device

7. 3 full-height PCI 2.3 slots

8. 1 AGP 8X slot

9. 4 USB 2.0 ports, 1 serial port, 1 parallel port, 2 PS/2, 1 RJ-45, 1 VGA, 1 audio in, 1 audio out, 1 MIC

10. 230-watt max power supply

11. 2 external 5.25" bays for optional optical drives

Overview

At A Glance

- Intel® Pentium® 4 and Celeron® D LGA775 processors
 - Choice of operating systems:
 - FreeDos
 - Genuine Windows XP 32-bit Home – Cost Reduced (China Only)
 - Genuine Windows XP 32-bit Professional – Cost Reduced (China Only)
 - Genuine Windows XP 32-bit Home SP2
 - Genuine Windows XP 32-bit Professional SP2
 - SiS 661FX/964 chipset
 - SiS integrated Mirage VGA output
 - Discrete nVidia 5200 128M AGP 8X as display option
 - Integrated 10/100 Ethernet NIC
 - Integrated SATA/150 controller for Serial ATA Hard Drives
 - Integrated Ultra ATA/100 controller for choice of optical drives
 - Single channel DDR PC3200 SDRAM system memory
 - Integrated AC'97 audio Realtek ALC655
 - Energy Star /CCEC compliant with energy-saving features
 - Protected by HP Services, follow 1-1-1 standard warranty. Terms and conditions vary by country. Certain restrictions and exclusions apply.
-

What's New

- SiS 661FX/964 chipset platform
- Choice of operating systems:
 - Genuine Windows XP 32-bit Home – Cost Reduced (China Only)
 - Genuine Windows XP 32-bit Professional – Cost Reduced (China Only)
 - Genuine Windows XP 32-bit Home SP2
 - Genuine Windows XP 32-bit Professional SP2
- Integrated 10/100 Network Connection
- PC2-4200 (533MHz) DDR2 SDRAM
- Single or Dual Channel memory configurations
- System ROHS/CCEC compliance

Available Technology and Features

Processors(EM64T)

Intel Celeron D Processors:

Intel Celeron D 326 Processor (2.53-GHz, 256K L2 cache, 533-MHz FSB)
Intel Celeron D 331 Processor (2.66-GHz, 256KB L2 cache, 533-MHz FSB)
Intel Celeron D 336 Processor (2.80-GHz, 256KB L2 cache, 533-MHz FSB)
Intel Celeron D 341 Processor (2.93-GHz, 256KB L2 cache, 533-MHz FSB)
Intel Celeron D 346 Processor (3.06-GHz, 256KB L2 cache, 533-MHz FSB)
Intel Celeron D 351 Processor (3.20-GHz, 256KB L2 cache, 533-MHz FSB)
Intel Celeron D 355 Processor (3.33-GHz, 256KB L2 cache, 533-MHz FSB)

Intel Pentium 4 Processors:

506 – 2.66-GHz, 1-MB L2 cache, 533-MHz FSB
516 – 2.93-GHz, 1-MB L2 cache, 533-MHz FSB
519K – 3.06-GHz, 1-MB L2 cache, 533-MHz FSB
511 – 2.8-GHz, 1-MB L2 cache, 800-MHz FSB (Trailing Processor)

Intel Pentium 4 Processors supporting Hyper-Threading Technology:

521– 2.80-GHz, 1-MB L2 cache, 800-MHz FSB
531– 3.0-GHz, 1-MB L2 cache, 800-MHz FSB
541– 3.20-GHz, 1-MB L2 cache, 800-MHz FSB
551– 3.40-GHz, 1-MB L2 cache, 800-MHz FSB
630 – 3.00-GHz, 2-MB L2 cache, 800-MHz FSB
640 – 3.20-GHz, 2-MB L2 cache, 800-MHz FSB
650 – 3.40-GHz, 2-MB L2 cache, 800-MHz FSB

NOTE: Processor type will vary upon system offering.

Operating Systems and FreeDos

Application Software

Genuine Windows XP Home SP2
Genuine Windows XP Professional SP2
Genuine Windows XP Home SP2 – Cost Reduced (China Only)
Genuine Windows XP Professional SP2 – Cost Reduced (China Only)
Microsoft Office 2003 Basic (AP SEA Only)
Microsoft Office 2003 Small Business (AP SEA Only)
Microsoft Office 2003 Professional (AP SEA Only)
Microsoft Works 7.0 (PI for AP SEA only)
Adobe Acrobat Reader 7.0
Norton Anti-Virus 2005
Roxio Cineplayer
Dantz Restrospect Express 7.0 (Drop in Box)
Lightscribe Labeling SW (Drop in Box)
Roxio DigitalMedia Plus (Drop in Box)
Roxio DigitalMedia Plus (Non – DVD playback) (Drop in Box)
Altiris Local Recovery
Sun Java Runtime Environment

Available Technology and Features

Hard Drives	40-GB Serial ATA 1.5-Gb/s Hard drive (7200 rpm) 80-GB Serial ATA 3.0-Gb/s Hard drive (7200rpm) 160-GB Serial ATA 3.0-Gb/s Hard drive (7200rpm) 250-GB Serial ATA 3.0-Gb/s Hard drive (7200rpm) NOTE: The Serial ATA interfaces in the HP Compaq dx2030 Microtower support data transfer rates up to 1.5 Gb/s.
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System Memory – Single Channel Configurations	256-MB DDR SDRAM PC-3200 (400-MHz) Non-ECC (1 x 256-MB) 512-MB DDR SDRAM PC-3200 (400-MHz) Non-ECC (1 x 512-MB) 1-GB DDR SDRAM PC-3200 (400-MHz) Non-ECC (1 x 1-GB) NOTE: For best performance, memory speeds and sizes should not be mixed. See memory section for more information.
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Removable Storage	1.44-MB diskette drive 512-MB USB HP Drive Key II (USB 2.0)
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Optical Storage	48X CD-ROM drive 52X CD-ROM drive 48X/32X/48X CD-RW drive 16X/48X DVD-ROM drive 48X/32X Combo CD-RW/DVD-ROM Drive 16X DVD+/-RW Lightscribe Drive (Double Layer/Dual Format)
------------------------	--

Keyboard	HP PS/2 Standard Keyboard HP USB Standard Keyboard
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Mouse	HP PS/2 2-Button scroll mouse HP PS/2 2-Button optical scroll mouse HP USB 2-Button scroll mouse HP USB 2-Button optical scroll mouse
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Audio	Realtek ALC655 audio 3D audio compliant with AC'97 rev. 2.3
--------------	--

Communication	Integrated 10/100 Ethernet Network connection Agere 56K PCI Soft Modem
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Graphics	SiS Integrated Mirage VGA output nVidia Geforce 5200 64-bit/128-MB AGP 8X VGA/DVI-I/TV-out
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System Details

Base Unit	<ul style="list-style-type: none"> • uATX microtower chassis, including power supply and front bezel; featuring five (5) drive bays (2nd HDD via additional bracket) and three PCI expansion slots(Chassis structure from back) • Microsoft or FreeDos operating system CD (Varies depending upon countries) • Active type heatsink • 90 x 90 x 25 mm chassis fan • Motherboard with SiS 661FX/964 chipset, integrated 10/100 network interface, integrated graphics and audio, 3 PCI slots, 1 AGP8X x1 slot, 2 DDR DIMM memory slots • (1) IDE data cable – (3) headed; supports two Optical drives • (1 or 2) SATA data cables – Base on required HDD qty • Product documentation CD • HP system restore CD • Power cord • Warranty card and Quick setup guide
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Slots	<table> <tr> <td>PCI 2.3</td> <td>Three (3) full-height slots on PCA</td> </tr> <tr> <td>Memory Expansion</td> <td>Two (2) DIMM slots (2.0GB maximum memory support)</td> </tr> <tr> <td>AGP8X</td> <td>One (1) AGP8X slot on PCA</td> </tr> </table>	PCI 2.3	Three (3) full-height slots on PCA	Memory Expansion	Two (2) DIMM slots (2.0GB maximum memory support)	AGP8X	One (1) AGP8X slot on PCA
PCI 2.3	Three (3) full-height slots on PCA						
Memory Expansion	Two (2) DIMM slots (2.0GB maximum memory support)						
AGP8X	One (1) AGP8X slot on PCA						

Bays	<table> <tr> <td>Internal</td> <td>Two (2) 3.50" half-height (default -1, 2nd HDD expansion available as option)</td> </tr> <tr> <td>External</td> <td>Two (2) 5.25" half-height One (1) 3.50" half-height</td> </tr> </table>	Internal	Two (2) 3.50" half-height (default -1, 2nd HDD expansion available as option)	External	Two (2) 5.25" half-height One (1) 3.50" half-height
Internal	Two (2) 3.50" half-height (default -1, 2nd HDD expansion available as option)				
External	Two (2) 5.25" half-height One (1) 3.50" half-height				

USB Support	<p>EHCI high-speed USB 2.0 controller</p> <p>Two (2) front ports; Four (4) rear ports</p>
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Interfaces (Legacy)	<p>One (1) parallel port</p> <p>One (1) serial port</p> <p>One (1) PS/2 keyboard port</p> <p>One (1) PS/2 mouse port</p> <p>One (1) analog VGA video port</p> <p>One (1) line in; one (1) line out; one (1) mic in</p> <p>One (1) RJ45 network port</p>
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Weight & Dimensions	<table> <tr> <td>Chassis Dimensions</td> <td>14.49 x 6.89 x 15.75 in (368x175 x400 mm) (H x W x D)</td> </tr> <tr> <td>Packaged Dimensions</td> <td>21.85 x 19.72 x 15.83 in (555 x 501 x 402 mm) (L x W x H)</td> </tr> <tr> <td>System Weight</td> <td>18.48 lb (8.4 kg)</td> </tr> <tr> <td>Shipping Weight</td> <td>26.62 lb (12.1 kg)</td> </tr> </table>	Chassis Dimensions	14.49 x 6.89 x 15.75 in (368x175 x400 mm) (H x W x D)	Packaged Dimensions	21.85 x 19.72 x 15.83 in (555 x 501 x 402 mm) (L x W x H)	System Weight	18.48 lb (8.4 kg)	Shipping Weight	26.62 lb (12.1 kg)
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System Weight	18.48 lb (8.4 kg)								
Shipping Weight	26.62 lb (12.1 kg)								

System Details

Supported Technology & Features	Memory Type	<ul style="list-style-type: none"> • PC2-4200 DDR2 SDRAM (533MHz) non-ECC • Single or dual channel configurations • 2.0GB maximum system memory
	Hard Drive Interfaces Supported	<ul style="list-style-type: none"> • Serial ATA 1.5-Gb/s and 3.0-Gb/s hard drives are supported • Maximum transferring rate is up to 1.5Gb/s.

Intel Pentium 4 Processor without HT Technology	Coprocessor	Integrated
	CPU Socket Type/Number	Socket T LGA775 socket
	CPU Package	LGA775
	Front Side Bus Speed	533-MHz (506/516/519K), 800-MHz (511 trailing CPU)
	Cache Memory	1-MB L2 Advanced Transfer Cache (500 series – 506/516/519K)

Intel Pentium 4 Processor with HT Technology	Coprocessor	Integrated
	CPU Socket Type/Number	Socket T LGA775 socket
	CPU Package	LGA 775
	Front Side Bus Speed	800-MHz
	Cache Memory	1-MB L2 Advanced Transfer Cache (500 Series – 521/531/541/551) 2-MB L2 Advanced Transfer Cache (600 Series – 620/630/640)

Intel Celeron D CPU	Coprocessor	Integrated
	CPU Socket Type/Number	Socket T LGA775 socket
	CPU Package	LGA 775
	Front Side Bus Speed	533-MHz
	Cache Memory	256-KB L2 Advanced Transfer Cache (3xx series – 326/331/341/346/351/355)

Chassis	Front Panel	<ul style="list-style-type: none"> • Power button • Power On LED • HDD Activity LED
	Cooling Solutions Supported	<ul style="list-style-type: none"> • Power Supply Fan (with speed control) • Active heat sink (variable speed) • Chassis fan (variable speed)
	Slots Supported	<ul style="list-style-type: none"> • Three (3) full-height, half-length PCI slots • One (1) AGP8X x1 Slot
	Front I/O	<ul style="list-style-type: none"> • Two (2) USB 2.0 ports/1 Mic-in & 1 Headset
	Rear I/O	<ul style="list-style-type: none"> • Standard uATX I/O connectors, including four (4) USB 2.0 ports
	Drive Bays	<ul style="list-style-type: none"> • Two (2) 5-1/4" external • One (1) 3-1/2" external • Two (2) 3-1/2" internal (2nd expansion via option)
	Power Supply	<ul style="list-style-type: none"> • 230 watt ATX Power Supply – PFC with 230V only/ non-PCF with a 115v/230v line switch (varies by country/region)

System Details

Unit Environment and Operating Conditions

General Unit Operating Guidelines

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

Temperature Range Operating Temperature: 50° to 95° F (10° to 35° C)
Non-operating Temperature: -22° to 140° F (-30° to 60° C)

Relative Humidity Operating Humidity 10% to 90% (non condensing at ambient)
Non-operating Humidity 5% to 95% (non condensing at ambient)

Maximum Altitude Operating: 8,000 ft (2500 m)
(unpressurized) Non-operating: 30,000 ft (9000 m)

NOTE: Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.

Motherboard

Socket mPGA478B industry standard uATX form factor

- | | |
|--------------------------|--|
| Processor | <ul style="list-style-type: none">• Socket T; LGA 775• Support single Intel Pentium 4/Celeron 800/533MHz FSB processors |
| PWM | <ul style="list-style-type: none">• ON 3 phase power solution• Meet Intel FMB 04A spec |
| Chipset | <ul style="list-style-type: none">• SiS 661FX• SiS 964 |
| Super I/O | <ul style="list-style-type: none">• ITE IT8705FX |
| Front Side Bus Frequency | <ul style="list-style-type: none">• 533/800-MHz |
| Memory | <ul style="list-style-type: none">• 2 x DIMM sockets• Support single and dual channel• PC-3200 DDR SDRAM |
| Clock Generator | <ul style="list-style-type: none">• ICS 93722CF |
| Integrated Graphics | <ul style="list-style-type: none">• SiS integrated Mirage NIC |
| Audio | <ul style="list-style-type: none">• Realtek ALC655 2 channel audio• 3D audio compliant with AC'97 rev. 2.3 |
| LAN | <ul style="list-style-type: none">• ICS1883 integrated SiS900 Ethernet Network connection |
| IDE | <ul style="list-style-type: none">• Support all PIO modes• 1xIDE port support up to 2 Optical devices• Support Ultra ATA 33/66/100 |
| Expansion Slots | <ul style="list-style-type: none">• 3 x PCI 2.3 slots• 1 - AGP8X x1 slot |

System Details

BIOS	<ul style="list-style-type: none">• 4Mbit flash EEPROM• Award BIOS, PnP, ACPI, SMBIOS 2.4, Boot Block, DMI
Manageability	<ul style="list-style-type: none">• WfM 2.0, DMI 2.0, SMBus
Industrial Standard	<ul style="list-style-type: none">• PCI 2.3 compliant• USB 2.0
Rear Side I/O Ports	<ul style="list-style-type: none">• 1 x PS/2 keyboard port• 1 x PS/2 mouse port• 4 x USB 2.0 ports• 1 x RJ-45 10/100 port• 1 x serial port• 1 x parallel port• 1 x DB 15 pin analog VGA port• 3 x audio ports
On Board I/O Interfaces	<ul style="list-style-type: none">• 1 x ATX power connector• 1x+12V power connector• 1 x Floppy connector• 1 x Front panel connector, Switch, LED (Power/HDD)• 2 x Fan headers for CPU, chassis, with voltage/fan speed control• 1 x ATAPI headers-CD IN• 1 x header to support 2 USB 2.0 ports at front side• 2 x IDE connector (Optical drive)• 2 x SATA connectors• 1 x audio header (mic in/audio out - front I/O)
Board Size	<ul style="list-style-type: none">• uATX form factor, PCB size: 9.6 X9.06"• 4-layer PCB with green color
Additional Features	<ul style="list-style-type: none">• Keyboard/mouse/USB/Lan wake up• Support S1, S3, S4 and S5• ACPI status• Hardware monitor capability• CPU fan speed control

Power Supply

- ATX Power Supply – Passive PFC at 230V only/non-PFC with a 115v/230V line switch
- Passive Power Factor Correction (PFC) – with voltage set to 230V
- 50-60 Hz rated line frequency
- 230 watt maximum rated power

Power Conservation 'Energy Saver'

- Energy Star compliant
- ACPI 2.0 support
- Screen blanking
- Hard drive 'Idle' mode
- System Idle mode
- CECF – China Only (<3 w in S5 – power off and < 10W in S4 – Hibernation)
- <4 watt power consumption in S3 mode – suspend to RAM (instantly available PC)
- Processor/Cache memory power-down (S3)

System Environmental Specs

- Values are subject to change without notification and are for reference only.
- Performance of system, options, and ancillary equipment will vary depending on the system configuration.
- Levels presented do not account for non-HP/Compaq installed hardware.

System Details

Ambient Air Temperature	Operating	10° to 35°C at sea level with an altitude de-rating of 1.0°C per every 1000 ft (300 m) above sea level to a maximum of 8,000 ft (2500m), no direct sustained sunlight. Maximum rate of change is 25°C/Hr. The upper limit may be limited by the type and number of options installed.
	Storage	-30° to 60°C - Maximum rate of change: 210°C/Hr.
Humidity	Operating	10% to 90% relative humidity (Rh), 30°C maximum wet bulb temperature, non-condensing
	Storage	10% to 95% relative humidity (Rh), 38.7°C maximum wet bulb temperature, non-condensing
Altitude	Operating	0 to 8,000 feet (0 to 2438.4 meters)- This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1,000 ft/min(304.8m/min).
	Non-Operating	0 to 30,000 feet (0 to 9,144 meters) - Maximum allowable altitude change rate is 1200 ft/min (365.76 m/min).
Shock		Listed are the levels of shock the product can withstand with NO damage being incurred. The values represent peak input acceleration during an 2~3 ms half-sine shock pulse
	Non-Operating	Acceleration:105G; Duration Time:2.5~3ms;6 faces 35G's (Trapezoidal Shock)
Vibration		Listed are the levels of vibration the product can withstand with NO damage being incurred. The values represent a flat random vibration input acceleration profile across the given frequency range.
	Operating	Random vibration at 5Hz@0.00025G ² /Hz, 10Hz@0.01 G ² /Hz, 100Hz@0.01G ² /Hz, 300Hz@0.00001G ² /Hz 5Hz to 300Hz, (0.25 G's nominal).
	Non-Operating	Random vibration at 0.008G ² /Hz, 10Hz to 500Hz, (2 Grms nominal).
Acoustic Noise		Listed are the declared A-WEIGHTED SOUND POWER LEVELS (LWAd) and declared average desktop seated operator position A-WEIGHTED SOUND PRESSURE LEVELS (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).
	IDLE (Fixed disk drive spinning)	LWAd = 3.74 Bels <4.3 Bels (spec) Average LpAm = 29.5 dBA< 32 dBA(spec)
	FIXED DISK (Random write)	LWAd = 3.80 Bels<4.8 Bels(spec) Average LpAm = 30.1 dBA<37 dBA(spec)
	CD-ROM (Sequential Reads)	LWAd =5.10 Bels<5.5 Bels(spec) Average LpAm = 45.1 dBA<55 dBA(spec)

System Details

Service and Support

On-site Warranty¹: This 1-1-1 or 3-1-1 limited warranty delivers on-site, next business-day² service for parts and labor and includes free telephone support³ Global coverage ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. One-year onsite and labor are not available in all countries.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured Compaq and third-party HP-qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

After-Market Options

Communication	Modems	
	Agere PCI Hi-Speed 56K International SoftModem	EK694AA
	Wireless Network Interface Cards	
	Wireless A+G PCI Adapter – WW except Americas	PZ928AA
Hard Disk Drives	80-GB 7200 rpm SATA 3.0Gb/s Hard Drive	PY276AA
	160-GB 7200 rpm SATA 3.0Gb/s Hard Drive	PY277AA
	250-GB 7200 rpm SATA 3.0Gb/s Hard Drive	PY278AA
Removable Storage Devices	Diskette Drive	
	512-MB HP Drive Key II (USB 2.0)	ED516AA
Input Devices	Keyboards	
	HP PS/2 Standard Keyboard	DT527A#xxx
	HP USB Standard Keyboard	DT528A#xxx
	HP USB Smartcard Keyboard (Carbonite/Silver)	ED707AA#xxx
	Mice	
	HP PS/2 2-Button Scroll Mouse	DD440B
	HP USB scroll Mouse	DD441B
	HP USB 2-Button Optical Scroll Mouse	DC172B
Memory	PC3200 (400MHz) DDR SDRAM non-ECC	
	256-MB DDR SDRAM PC3200 (400-MHz) non-ECC	DE466A
	512-MB DDR SDRAM PC3200 (400-MHz) non-ECC	DE467A
	1-GB DDR SDRAM PC3200 (400-MHz) non-ECC	DE468A
Audio	HP Satellite Speakers	ZD929AA#xxx
Optical Drives	48X Max CD-ROM Drive	DC143B
	52X Max CD-ROM (APJ)	AG041AA
	48X/32X/48X CD-RW Drive	DL975B
	48X/32X Combo Drive CD-RW & DVD-ROM	DL976B
	16X/48X DVD-ROM Drive	PR596A
	16X DVD+/-RW Drive Lightscribe Drive (Dual Format, Double Layer Format)	PR595A
Miscellaneous Accessories	HP FireWire / IEEE 1394 PCI Card	PA997A

After-Market Options

Monitors

CRTs

HP s5502 15" (13.8" vis) CRT Monitor	PQ560AA#XXX
HP s7540 17" (16.0" vis) CRT Monitor	PF997AA#XXX
HP v7650 17" (16.0" vis) Flat-face CRT Monitor	PF996AA#XXX

TFTs

HP L1506 15" TFT Flat Panel Monitor – Analog only	PX848AA#XXX
HP L1706 17" TFT Flat Panel Monitor – Analog only	PX849AA#XXX
HP L1740 17" TFT Flat Panel Display – Analog/Digital	PL766AA#XXX
HP L1755 17" TFT Flat Panel Display – Analog/Digital	PL777AA#XXX
HP L1906 19" TFT Flat Panel Display – Analog only	PX850AA#XXX
HP L1940T 19" TFT Flat Panel Display – Analog/Digital	EM869AA#XXX
HP L1955 19" TFT Flat Panel Display – Analog/Digital	PD974AA#XXX
HP L2065 20" TFT Flat Panel Display – Analog/Digital	EF227A4#XXX
HP LP2465 24" TFT Widescreen Flat Panel Display – Analog/Digital	EF224A4#XXX

GSA Monitors

HP L717g 17" GSA Flat Panel Monitor	EE191AA#XXX
HP L919g 19" GSA Flat Panel Monitor	EE192AA#XXX

Options

HP Flat Panel Speaker Bar	EE418AA
HP CRT Monitor Multimedia Base	PM552AA

Memory

SiS661FX/964 chipset

DDR SYNCH DRAM NON-ECC MEMORY

The SiS661FX Express chipset supports non-ECC DDR PC3200 (400-MHz) memory. Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations.

MAXIMUM MEMORY (MICROTOWER)

Supports up to 2-GB of DDR SYNCH DRAM.

POSSIBLE MEMORY CONFIGURATIONS (MICROTOWER)

NOT ALL MEMORY CONFIGURATIONS POSSIBLE ARE REPRESENTED BELOW

MAXIMUM MEMORY (MICROTOWER)

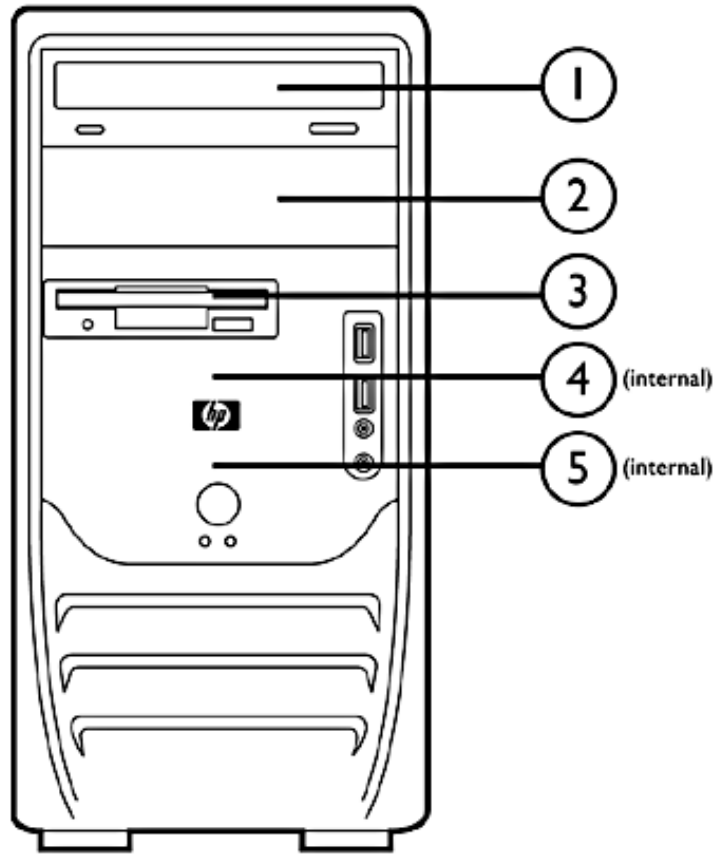
Supports up to 2-GB of DDR2 SYNCH DRAM.

NOT ALL MEMORY CONFIGURATIONS POSSIBLE ARE REPRESENTED BELOW.

DIMM Size	Slot	
	Channel A	Channel B
	1	2
256-MB	256-MB	
512-MB	512-MB	
512-MB	256-MB	256-MB
1-GB	512-MB	512-MB
1-GB	1-GB	
2-GB	1-GB	1-GB

NOTE: For single DIMM installations, Channel A and Channel B are same performance selected to use.

Storage



HP Compaq Business Desktop dx2030

	Maximum Quantity Supported	Position Supported	Controller
Drive Support			
Diskette Drives	1	3	964
CD-ROM Drives	2	1, 2	IDE ATAPI
DVD-ROM Drives	2	1, 2	IDE ATAPI
CD-RW/Combo Drives	2	1, 2	IDE ATAPI
DVD+/-RW Drives	2	1, 2	IDE ATAPI
3.5" Serial ATA Hard Drives	2	4,5	SATA

Technical Specifications - Audio

**Integrated Realtek
ALC655 Audio**

Type	Integrated
AC '97 Stereo Codec	Yes
Sampling	Supports 48 KHz
Power Support	Digital: 3.3V Analog: 5V
Other	Meets performance requirements for audio on PC99/2001 systems High quality differential CD input

NOTE: External Speakers need to be powered externally.

Technical Specifications - Communications

Agere 56K PCI Modem	Data Transmission	56,000 Kbps maximum downstream data NOTE: 56 Kbps technology refers to download speeds only and requires compatible modems at server sites. Other conditions may limit modem speed. FCC limitations allow a maximum of 53 Kbps during download transmissions.
	Data Speeds	(Upload only) 33,600/31,200/28,800/26,400/21,600/19,200/16,800/14,400/ 12,000/9,600/7,200/4,800/2,400/1,200/300
	Data Standards	ITU-T V.90, ITU-T, ITU-T V.34, V.44, V.42, V.42bis21, V.32bis, Bell 212A, and Bell 103
	Fax Speeds	14,400/12,000/9,600/7,200/4,800/2,400/300 b/s
	Fax Mode Capabilities	ITU-T T.31 class 1 FAX, V. 17, V.29, V.27ter, and V.21 Channel 2
	Error Correction and Data Compression	V.44, 42bis, V.42 and MNP2-5
	Power Management	ACPI; PPMI 1.1 and wake support with PME and Vaux; meets PCI 2.3 requirements and PC 2001 requirements
	Upgradeability	Driver upgradeable for future enhancements
	Video	ITU-T V.80 video ready interface
	Other	TIA/EIA 602 standard AT command set Integrated DTE interface with speeds of up to 115.2 Kbps, parallel 16550a UART-compatible interface Optional ring wakeup signal
	Operating Temperature	32° to 158° F (0° to 70° C)
	Operating Humidity	20% to 90%, non-condensing
	Power	Requires a 3.3-V auxiliary power rail on PCI bus Uses only one PCI load (i.e., one grant/request pair), one shared IRQ, one electrical load
	Chipset	Agere Systems SV92PL – Integrated PCI interface with 5-V tolerant buffers and CardBus support
	Dimensions (L X H)	Complies with PCI low profile specifications—6.7 x 2.3 in (17.0 x 5.8 cm) and supports high- and low-profile brackets
	Connection	Single RJ-11 connector
	Other Features	Digital line protection, call progress monitoring via on-board piezo device, support for high profile and low profile brackets, PnP ID support
	Safety	UL recognized to UL 1950, 3rd edition (U.S. and Canada); IEC 950 (TUV, NEMKO, DEMKO, SEMKO); CE Mark, EC 950 (TUV, NEMKO, DEMKO, SEMKO, CE mark)
	EMC	FCC Part 15, IC ES003, EN 55022, 3rd edition, EN 55024, annex A, EN 61000-4-6, EN 61000-4-8
	Telecom	FCC Part 68, IC-CS-03 (Canada); Worldwide PTT approvals Not available in Korea or the Republic of South Africa.
	Health	Bare PCB material compliant to 94V-0 or better (marked as such)
	Other	PC 2001 compliant, PCI version 2.3, WHQL approved; ACPI compliant

Technical Specifications - Communications

Kit Contents

DC132D : Agere Systems PCI International Softmodem with full-height bracket attached, additional low-profile bracket, RJ11 modem cable, driver and documentation CD.

NOTE: RJ11 modem adapter is not included.

DC131C #xxx: RJ11 modem adapter kit for use with DC132D

#ACP: Austria, #ABW: Belgium (Dutch/Flemish), #AKN: Bosnia, Herzegovna, Croatia, Slovenia, Yugoslavia (Slovenian), #AKB: Czech Republic (Czech) & Slovakia, #ABF: France, #ABD: Germany, #AB7: Greece, #AKC: Hungary, #ABT: Israel, #ABZ: Italy, #ABH: Netherlands, #UJW: Nordic Region, #ACB: Russia, #ACQ: South Africa, #ACD: Switzerland, #AB8: Turkey, #ABU: UK, #ABG: Australia, New Zealand, #ACJ: India.

Technical Specifications - Input/Output Devices

HP PS/2 or USB Standard Keyboard	Physical characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
		Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2.5 cm)
		Weight	2 lb (0.9 kg) minimum
	Electrical	Operating voltage	+ 5VDC ± 5%
		Power consumption	50-mA maximum (with three LEDs ON)
		ESD	CE level 4, 15-kV air discharge
		EMI - RFI	Conforms to FCC rules for a Class B computing device
	Mechanical	MicrosoftPC 99 - 2001	Functionally compliant
		Languages	38 available
		Keycaps	Low-profile design
		Switch actuation	55-g nominal peak force with tactile feedback
		Switch life	20 million keystrokes (using Hasco modified tester)
		Switch type	Contamination-resistant switch membrane
		Key-leveling mechanisms	For all double-wide and greater-length keys
		Cable length	6 ft (1.8 m)
		Microsoft PC 99 - 2001	Mechanically compliant
	Environmental	Acoustics	43-dBA maximum sound pressure level
		Operating temperature	50° to 122° F (10° to 50° C)
		Non-operating temperature	-22° to 140° F (-30° to 60° C)
		Operating humidity	10% to 90% (non-condensing at ambient)
		Non-operating humidity	20% to 80% (non-condensing at ambient)
		Operating shock	40 g, six surfaces
		Non-operating shock	80 g, six surfaces
		Operating vibration	2-g peak acceleration
		Non-operating vibration	4-g peak acceleration
		Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
		Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence
	Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	
	Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

Technical Specifications - Input/Output Devices

HP 2-Button Scroll Mouse (PS/2 or USB)	Scroll Wheel	8 mm		
	Maximum Rotation Speed	30 mm/s		
	Switch Type	Light force micro-switch		
	Switch Life	1 million operations		
	Mechanical Life	Minimum 200,000 revolutions		
	Environmental	Operating Temperature	50° to 122° F (10° to 50° C)	
		Non-operating Temperature	-22° to 140° F (-30° to 60° C)	
		Operating Humidity	10% to 90% (non condensing at ambient)	
		Non-operating Humidity	20% to 80% (non condensing at ambient)	
		Operating Shock	40 g, 6 surfaces	
		Non-operating Shock	80 g, 6 surfaces	
		Operating Vibration	2 g peak acceleration	
		Non-operating Vibration	4 g peak acceleration	
		Electrical	Operating Voltage	+ 5VDC ± 10%
			Power Consumption	15mA
System Consumption	PS/2 mini-din connector			
ESD	CE level 4, 15 kV air discharge			
EMI-RFI	Conforms to FCC rules for a Class B computing device			
Mechanical	PC98		Functionally compliant	
	Resolution		400 ± 20% DPI	
	Tracking Speed	10 in/s maximum		
	Acceleration	100 in/s		
	Switch Actuation	85 g nominal peak force		
	Switch Life	1,000,000 operations (using Hasco modified tester)		
	Cable Length	2 m		
	PC98-99	Mechanically compliant		
Regulatory Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C-Tick			

Technical Specifications - Hard Drives

7200 rpm Serial ATA Hard Drives	40 GB	Capacity	40,020,664,320 bytes	
		Dimensions (H x W)	1.0 x 4.0 in (2.5 x 10.2 cm)	
		Interface	Serial ATA	
		Synchronous Transfer Rate (Maximum)	1.5 Gb/s	
		Buffer	2 MB	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	1.0 ms
			Average	8.5 ms
			Full-Stroke	18.0 ms
		Rotational Speed	7,200 rpm	
		Logical Blocks	78,165,360	
		Operating Temperature	32° to 140° F (0° to 60° C)	
	80 GB*	Capacity	80,026,361,856 bytes	
		Dimensions (H x W)	1.0 x 4.0 in (2.5 x 10.2 cm)	
		Interface	Serial ATA	
		Synchronous Transfer Rate (Maximum)	3.0 Gb/s	
		Buffer	8 MB	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	1.0 ms
			Average	8.5 ms
			Full-Stroke	18.0 ms
		Rotational Speed	7,200 rpm	
		Logical Blocks	156,301,488	
		Operating Temperature	32° to 140° F (0° to 60° C)	
	160 GB*	Capacity	160,041,885,696 bytes	
		Dimensions (H x W)	1.0 x 4.0 in (2.5 x 10.2 cm)	
		Interface	Serial ATA	
		Synchronous Transfer Rate (Maximum)	3.0 Gb/s	
		Buffer	8 MB	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	1.0 ms
			Average	8.5 ms
			Full-Stroke	18 ms
		Rotational Speed	7,200 rpm	
		Logical Blocks	312,581,808	
		Operating Temperature	32° to 140° F (0° to 60° C)	

Technical Specifications - Hard Drives

250 GB*	Capacity	250,059,350,016 bytes	
	Dimensions (H x W)	1.0 x 4.0 in (2.5 x 10.2 cm)	
	Interface	Serial ATA	
	Synchronous Transfer Rate (Maximum)	3.0 Gb/s	
	Buffer	8 MB	
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track	1.0 ms
		Average	<9.0 ms
		Full-Stroke	<17 ms
	Rotational Speed	7,200 rpm	
	Logical Blocks	488,397,168	
	Operating Temperature	41° to 131°F (5° to 55°C)	

NOTE: Although this drive is rated for a 3.0-Gb/s transfer rate, the Serial ATA interfaces in The HP Compaq dx2030 Microtower support data transfer rates up to 1.5 Gb/s.

Technical Specifications - Optical Storage

48X CD-ROM Drive	Interface	ATAPI		
	Data Transfer Rate	Variable (Audio CD) - 1,800 to 3,600 KB/s (24X) Max	Variable (CD-ROM, CD-R)-2,400 to 7,200 KB/s (48x) Max	
	Access Time (ms)	Random: <125 ms	Full-stroke seek: <210 ms	
	Data Buffer	2MB		
	Disk Formats Read	CD-ROM Mode 1, CD-ROM XA (Mode 2, Form 1 and 2), CD Digital Audio, CD-EXTRA, CD-I (Mode 2, Form 1 and 2) and CD-I Ready, CD-Text, CD-Bridge, Photo CD (Single and Multi Session), Video CD, CD-R and CD-RW Multi-Session		
	Disk Formats Written	None		
	Disk Capacity (CD)	180MB, 540MB, 650 MB, and 700MB		
	Block Size	Mode 1-2,048, 2,352 bytes Mode 2-1, 2,048, 2,328, 2,336, 2,340, 2,353 bytes Mode 2-2, 2,328, 2,336, 2,340, 2,352 bytes CD-DA-2,352, 2,368 bytes		
	Diameter	12 cm; 8 cm		
	Thickness	1.2 mm		
	Track Pitch	1.6 µm		
	Audio Output Level	Line-out-0.7 V @ 47 Kohm	Headphone-0.6 V @ 32 ohm	
	Startup Time	<7 seconds (typical); < 30 seconds with multi-session		
	Operating Conditions	Temperature	41° to 122° F (5° to 50° C)	
		Relative Humidity	10% to 90%	
	Dimensions (H x W x D, maximum)	1.7 x 5.9 x 8.0 in (4.3 x 15.0 x 20.3 cm)		
	Weight	2.6 lb (1200 g)		
	<hr/>			
	48X/32X/48X CD-RW Drive	Orientation	Either horizontal or vertical	
		Disc loading mechanism	Half-height, tray load	
Interface type		ATAPI IDE		
Dimensions-external (W x H x D)		7.99 x 5.88 x 1.71 in (20.3 x 14.93 x 4.34 cm)		
Weight		2.6 lb (1.2 kg)		
Disc diameter		12 cm, 8 cm		
Disc thickness		1.2 mm		
Track pitch		1.6 µm		
Disc center hole diameter		15 mm		
Reference scanning velocity		1.2 m/s		
Recording/playing time		80 minutes with CD-R media		

Technical Specifications - Optical Storage

Read only disc parameters	Formats and modes supported	CD-ROM-Mode 1; CD-ROM XA-Mode 2 (forms 1 and 2); CD digital audio; CD Extra; CD-I-Mode 2 (forms 1 and 2) and CD-I-Ready; Photo CD (single and multi-session); video CD
	Capacity	185 MB (Mode 2, 8cm); 540 MB (Mode 1, 12 cm); 650 MB (Mode 2, 12 cm); 700 MB (Mode 2, 12 cm)
	Block size	Mode 1-2,048 and 2,352 bytes; mode 2, form 1-2,048; 2,328; 2,336; 2,340 and 2,352 bytes; mode 2, form 2-2,328; 2,336; 2,340 and 2,352 bytes; CD-DA-2,352 and 2,368 bytes
Writeable disc parameters	Disc type	CD-R and CD-RW
	Write methods	Disc at Once, Track at Once, Session at Once, Variable Packet, Fixed Packet
	Format and modes supported	CD-ROM (mode 1); CD-ROM XA (mode 2, forms 1 and 2); CD digital audio, CD-I (mode 2, forms 1 and 2); video CD
	Capacity	185 MB (Mode 2, 8cm); 540 MB (Mode 1, 12 cm); 650 MB (Mode 2, 12 cm); 700 MB (Mode 2, 12 cm)
	Block size	Mode 1-2,048 bytes; mode 2, form 1-2,048 and 2,352 bytes; mode 2, form 2-2,352 bytes; CD-DA ---2,352 bytes
Access times (typical)	Random	< 120 ms
	Full stroke	< 200 ms
Data transfer rates	CD-RW write	4800 KB/s (up to 32X)
	CD-ROM, CD-R read	7200 KB/s (up to 48X)
	CD-RW read	7200 KB/s (up to 32X)
	CD-R write	7200 KB/s (up to 48X)
Data transfer modes	ATA PIO mode 4 (16.7MB/s); ATA multi-word DMA mode 2 (16.7 MB/s); ATA UltraDMA mode 0 (16.7 MB/s); ATA UltraDMA mode 1 (24 MB/s); ATA UltraDMA mode 2 (33 MB/s) - default.	
Cache buffer	2 MB (minimum)	
Start-up time (single)	< 7 seconds typical	
Start-up time (multi-session)	< 30 seconds typical	
Stop time	< 4 seconds	

Technical Specifications - Optical Storage

Power	Source	Four-pin, DC power receptacle
	DC power requirement	5 VDC 5%-100 mV ripple p-p 12 VDC 5%-200 mV ripple p-p
	DC current	5 VCD < 1A (typical) < 1600 mA (maximum) 12 VCD < 600 mA (typical) < 1.4A (maximum) Total Drive Power (Standby mode) < 2.5 watt
Audio output level		0.7 Vrms
Configuration jumper block		Master, slave and cable select modes
Data interface connector		50-pin IDE interface
Environmental (all conditions, non-condensing)	Temperature (operating)	41° to 122° F (5° to 50° C)
	Relative Humidity (operating)	10% to 90%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)
Certifications, requirements		ACA AS/NZS 3548, ANSI C63.4-1992, CB Test Certificate for IEC 950, CE Mark, CFR 47 part 15, CNS 13438, CSA C22.2 No. 60950, DHHS/FDA - 1040, EN60825, EN55022:1998, EN55024, EN60950:2000, ICES-003 class B, IEC 61000 4-2 - 4-11, Nordic EN60 950, TUV or VDE EN60 950, UL 60950, C.I.S.P.R. Publication 22 Class B, BSMI, Microsoft® P2001, Microsoft Logo for Windows® 98, 2000 and XP

16X/40X DVD-ROM	Height	5.25-in, half-height
	Interface Type	ATAPI
	Dimensions— External, Excluding Bezel (W x H)	5.88 x 1.71 in (149.5 x 43.5 mm)
	Disc Diameter	12 cm, 8 cm
	Disc Thickness	1.2 mm
	Track Pitch	1.6 µm (CD), 0.74 µm (DVD)
	Disc Center Hole Diameter	15 mm
	Disc Formats	DVD-ROM (single and dual layer); DVD-video; DVD-R version 1.0 and 2.0; DVD-RW version 1.0 and 1.1; DVD-R multi-border; DVD+RW; DVD+R ; CD-ROM Mode 1 and 2; CD-DA; CD-ROM XA Mode 2, Form 1 and 2; CD-extra; CD-text; CD-I Mode 2, Form 1 and 2; CD-I ready; video CD, CD-bridge; PhotoCD (single and multi-session); CD-R; CD-RW

Technical Specifications - Optical Storage

Disc Capacity	DVD-ROM	4.7 GB (DVD-5), 8.54 GB (DVD-9), 9.4 GB (DVD-10), 3.95 GB (DVD-R version 1.0), 4.7 GB (DVD-R version 2.0), 4.7 GB (DVD-RW version 1.0 and 1.1), 4.7 GB (DVD+RW), 4.7 GB (DVD+R)
	CD-ROM	40 MB (Mode 1, 12 cm), 640 MB (Mode 2, 12 cm), 700 MB (80 minimum CD-R and CD-RW), 180 MB (8 cm)
Block Size (bytes)	DVD-ROM - 2048; CD-ROM Mode 0 - 2352; CD-ROM Mode 1 - 2352, 2340, 2336, 2048; CD-ROM Mode 2 - 2352, 2340, 2336, 2048	
Access Times (typical reads, including settling)	DVD-ROM Single Layer	120 ms (typical)
	CD-ROM Mode 1	90 ms (typical)
	Full Stroke DVD	240 ms (seek) (typical)
	Full Stroke CD	160 ms (seek) (typical)
Maximum Data Transfer Rates	CD-ROM Read	6000 KB/s (40X) Max
	DVD-ROM Read	21,600 KB/s (16X) Max
Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 3 (44.4 MB/s)	
Power	Source	Four-pin, DC power receptacle
	DC Power Requirement	5 VDC \pm 5% – 100 mV ripple p-p 12 VDC \pm 5% – 200 mV ripple p-p
	DC Current	5 VDC – <800 mA typical, < 1000 mA maximum 12 VDC – < 870 mA typical
Audio Output Level	0.7 Vrms (typical)	
Configuration Jumper Block	Master, slave, and cable select modes	
Data Interface Connector	40-pin, shrouded and keyed, flat ribbon	
Environmental (all conditions non-condensing)	Temperature (operating)	41° to 122° F (5° to 50° C)
	Relative Humidity (operating)	10% to 90%
	Maximum Wet Bulb Temperature (operating)	86° F (30° C)
Certifications, Approvals	MMC II support, multi-read certification, Microsoft WHQL certification, ACA AS/NZS 3548 class B, CNS 13438, C.I.S.P.R. Pub 22, TUV or VDE EN60950, EN 55022, EN55024, SEMKO, NEMKO, DEMKO, FIMKO, EN 60825-1, UL 60950, and CSA C22.2 60950-2000.	
Kit Contents	16X/40X DVD-ROM Drive, Roxio CinePlayer software, and installation guide.	

48X/32X/48X/16X
Combo CD-RW/DVD-
ROM

Height	5.25-inch, half-height, tray-load
Color	Carbonite
Orientation	Either horizontal or vertical
Interface Type	ATAPI

Technical Specifications - Optical Storage

Dimensions (W x H x D)	5.77 x 1.71 x 7.36 in (14.66 x 4.34 x 18.69 cm) (external, excluding bezel)	
Disc diameter	12 cm, 8 cm	
Disc thickness	0.05 in (1.2 mm)	
Track pitch	1.6 um (CD), 0.74 um (DVD)	
Disc center hole diameter	0.6 in (15 mm)	
Reference scanning velocity	1.2 m/s (CD); 3.49 m/s (DVD SL); 3.84 m/s (DVD DL)	
Read only disc parameters	Formats and modes supported	CD-ROM - Mode 1; CD-ROM XA - Mode 2 (forms 1 and 2); CD-Bridge; CD digital audio; CD Extra; CD-I - Mode 2 (forms 1 and 2) and CD-I-Ready; Photo CD (single and multi-session); video CD; DVD (single- and double-layer); DVD-R; DVD-RW; DVD-RW Multi-Border; DVD+R; DVD+R Multi-Session, and DVD+RW
	Capacity	180 MB (mode 2, 8 cm); 540 MB (mode 1, 12 cm); 650 MB (mode 2, 12 cm); 700 MB (Mode 2, 12 cm); 4.7 GB (DVD-5); 8.54 GB (DVD-9); 9.4 GB (DVD-10)
	Block size	Mode 1 - 2,048 and 2,352 bytes; mode 2, form 1 - 2,048; 2,328; 2,336; 2,340 and 2,352 bytes; mode 2, form 2-2,328; 2,336; 2,340 and 2,352 bytes; CD-DA-2,352 bytes; DVD-2,048 bytes
Writeable Disc Parameters	Disc type	CD-R and CD-RW
	Write methods	Disc at Once, Track at Once, Session at Once, Variable Packet, Fixed Packet
	Format and modes supported	CD-ROM (mode 1); CD-ROM XA (mode 2, forms 1 and 2); CD digital audio, CD-I (mode 2, forms 1 and 2); video CD; CD-Bridge; Video CD
	Capacity	180 MB (mode 2, 8 cm); 540 MB (mode 1, 12 cm); 650 MB (mode 2, 12 cm); 700 MB (mode 2, 12 cm)
	Block size	CD-DA - 2,352 bytes; mode 0 - 2,336 and 2,352 bytes; mode 1 - 2,048 and 2,352 bytes; mode 2 - 2,336 and 2,352; mode 2, form 1 - 2,048 and 2,352 bytes; mode 2, form 2 - 2,324 and 2,352 bytes
Access Times (typical reads, including settling)	Random DVD	< 140 ms (typical)
	Random CD	< 125 ms, (typical)
	Full Stroke DVD	< 250 ms (seek)
	Full Stroke CD	< 210 ms (seek)

Technical Specifications - Optical Storage

Data transfer rates	CD-R write	7200 KB/s (up to 48X)
	CD-RW write	1500 KB/s (10X) Max
Data transfer modes	CD-ROM, CD-R, CD-RW read	7200 KB/s (up to 48X)
	DVD ROM read	21,632 KB/s (16X) Max
	ATA PIO mode 4 (16.7 MB/s); ATA Multi-word DMA mode 2 (16.7 MB/s); ATA UltraDMA mode 0 (16.7 MB/s); ATA UltraDMA mode 1 (24 MB/s), mode 2 (33 MB/s); ATA UltraDMA Mode 3 44 Mbytes/s (default)	
Power	Cache buffer	2 MB (minimum)
	Startup time (single)	< 7 seconds (typical)
	Startup time (multi-session)	< 30 seconds (typical)
	Stop time	< 4 seconds
	Source	Four-pin, DC power receptacle
	DC power requirement	5 VDC \pm 5%-100 mV ripple p-p 12 VDC \pm 5%-200 mV ripple p-p
	DC current	5 VDC (< 1000 mA typical, < 1600 mA maximum) 12 VDC (< 600 mA typical, < 1400 mA maximum)
	Total drive power (standby mode)	< 2.5 Watt
	Audio output level	0.7 Vrms (typical)
	Configuration Jumper Block	Master, slave, and cable select modes
Data Interface Connector	40-pin, shrouded and keyed, flat ribbon	
Operating Conditions (all conditions non-condensing)	Temperature (operating)	41° to 122° F (5° to 50° C)
	Relative humidity (operating)	10% to 90%
	Maximum wet bulb temperature (operating)	86° F (30° C)
Certifications, requirements	MPC-3 compliant, multi-read requirements, ACA AS/NZS 3548, ANSI C63.4-1992, ATAPI Spec SFF-8020, ATA Spec X3T9.2, CB Bulletin No. 92A, CSA C22.2 No. 950-1995, C.I.S.P.R. Pub 22, EMKO-TSE 207/94, TUV or VDE EN60 950, EN60825-1, Microsoft PC2001 certification, Microsoft Logo for Windows XP, 2000, and NT4	

16X DVD+/-RW Drive	Height	5.25-inch, half-height, tray-load
	Orientation	Either horizontal or vertical
	Interface type	ATAPI/EIDE
	Disc recording capacity	8.5 GB DL or 4.7 GB standard
	Dimensions (W x H x D)	5.9 x 1.7 x 8.0 in (15.0 x 4.4 x 20.3 cm)
	Weight (max)	2.6 lb (1.2 kg)

Technical Specifications - Optical Storage

Write speed	DVD+R	Up to 16X
	DVD+RW	Up to 4X
	DVD+R DL	Up to 2.4X
	DVD-R	Up to 8X
	DVD-RW	Up to 4X
	CD-R	Up to 40X
	CD-RW	Up to 24X
Read speed	DVD+R/-R/+RW/-RW	Up to 16X
	DVD-ROM	Up to 16X
	CD-R/RW	Up to 40X
Access time (typical reads, including settling)	Random	DVD: < 130 ms (typical), CD: < 120 ms (typical)
	Full Stroke	DVD: < 240 ms (seek), CD: < 200 ms (seek)
	Startup Time	Single-session: < 7 seconds (typical), Multi-session: < 30 seconds (typical)
	Stop Time	< 4 seconds
	Cache Buffer	2 MB (minimum)
	Data Transfer Modes	ATA PIO mode 4 (16.7 MB/s); ATA Multi-word DMA mode 2 (16.7 MB/s); ATA UltraDMA Mode 3 (44.4 MB/s -default)
	Power	Source
DC Power Requirement		5 VDC \pm 5%-100 mV ripple p-p
		12 VDC \pm 5%-200 mV ripple p-p
DC Current		5 VDC (< 1000 mA typical, 1600 mA maximum)
		12 VDC (< 600 mA typical, 1400 mA maximum)
Total Drive Power (standby mode)	< 2.5 Watt	
Audio output	Line-Out	0.7 VRMS
	Signal-to-Noise Ratio	74 dB
	Channel Separation	65 dB
Environmental conditions (operating - non-condensing)	Temperature	41° to 122° F (5° to 50° C)
	Relative humidity	10% to 90%
	Maximum wet bulb temperature	86° F (30° C)
System configuration	Intel Pentium III Processor or later with 128 MB of memory (required); 256 MB recommended 2-D or 3-D graphics cards on primary disk drive for operating system and application software; second disk drive for audio and video data	
Regulatory approvals	MPC-3 compliant, multi-read requirements, ATA Spec X3T9.2, ATAPI Spec T13.1153D, ANSI C63.4-1992, UL 1950, ACA AS/NZS 3548, CB Bulletin No. 96A, CSA C22.2 No. 950-1995, CFR 47 C.I.S.P.R. Pub 22 Class B, DHHS/FDA, EMKO-TSE 07/94, TUV EN60950, EN60825-1, MIC, BSMI-CNS 13438, CE, Microsoft PC2001 certification, Microsoft Logo for Windows XP and 2000.	

Technical Specifications - Optical Storage

Option kit contents 16X DVD+/-RW drive, Roxio DigitalMedia Plus, Dantz Retrospect Express Backup Software, installation guide, and DVD+R media.

Technical Specifications - Removable Storage

1.44-MB Diskette Drive	Size	3.5 in (8.89 cm)
	LED Indicators (front panel)	Green
	Read/Write Capacity per Diskette (high/low)	1.44 MB/720 KB
	Drive Height	One-third
	Drive Rotation	300 rpm
	Transfer Rate (high/low)	500/250 KB/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) 94/173 ms
		Settling Time 15 ms
		Latency Average 100 ms
	Cylinders (high/low)	80/80
	Read/Write Heads	Two

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