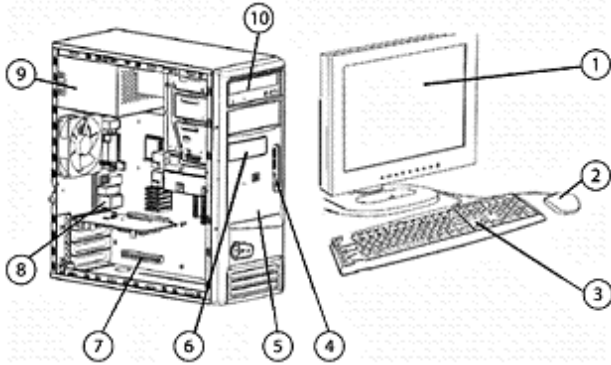
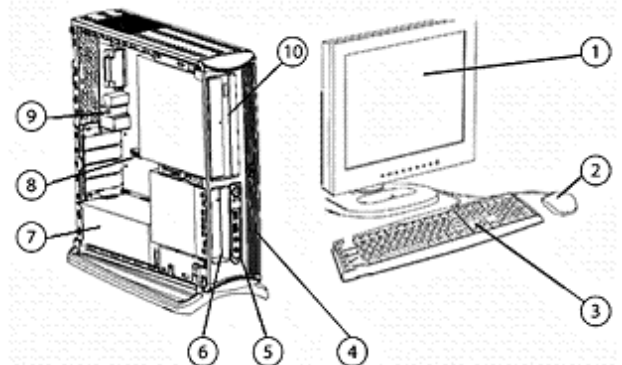


Overview

MT (175 x 420 x 367.4 mm)



SFF (101.1 x 339.2 x 390.2 mm)



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

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

7. 3 full-height PCI 2.3 slots, 1 PCI-Ex1 slot

8. 6 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

9. 250W PSU as standard configuration on both MT and SFF
300W non-PFC for India only on Microtower.

10. 2 external 5.25" bays for optional optical drives (MT only)

What's New

- Intel® new generation chipset Broadwater Q963/ICH8
- Choice of operating systems(during launch)
 - Microsoft Windows XP 32-bit Home – Cost Reduced (China Only)
 - Microsoft Windows XP 32-bit Professional – Cost Reduced (China Only)
 - Microsoft Windows XP 32-bit Home SP2
 - Microsoft Windows XP 32-bit Professional SP2
 - Redflag Linux (Post launch) – applicable only for China.
 - Within Vista RC1 plus 90 days, Vista OS will be pulled for Taihu.
- Integrated Realtek 8110SC Gigabit Network Connection
- PC2-533/667 DDR2 SDRAM
- Single or Dual Channel memory configurations (recommend to adopt dual channels on memory configuration)
- 4 Memory DIMMs for mounting
- High definition Audio Realtek ALC 885

Overview

At A Glance

- Intel Core 2 Duo(E6xxx), Pentium D(9xx/8xx), Pentium 4 (6xx/5xx), Cedar Mill and Celeron D LGA775 processors
- Choice of operating systems:
 - FreeDos
 - Redflag Linux (Redflag Linux will gradually replace Freedos especially on governmental deals)
 - Microsoft Windows XP 32-bit Home – Cost Reduced (China Only)
 - Microsoft Windows XP 32-bit Professional – Cost Reduced (China Only)
 - Microsoft Windows XP 32-bit Home SP2
 - Microsoft Windows XP 32-bit Professional SP2

NOTES:

1. At product launch, Vista capable program and its logo will be applied for the applicable SKUs.
2. Vista OS will become mandatory after Vista RC1 +90 days.

- Intel new generation chipset Broadwater Q963/ICH8 on Northbridge and Southbridge
- Intel Integrated Graphic Media Accelerator 3000
- 1 PCI-Epressx1 slot/3 PCI 2.3 ver slots
- Integrated Realtek 8110SC Gigabit Network Connection
- Integrated SATA controller for Serial ATA Hard Drives and Optical Drives. (There are no supports for PATA ODD)
- Single or Dual channel DDR2 system memory (4 DIMMs)
- Integrated High definition ALC 885 Audio
- Energy Star(Rev3.0) /CCEC compliant with energy-saving features.
- Protected by HP Services, including a 1-1-1 or 3-1-1 Standard warranty and variable or flexible warranty. Terms and conditions vary by country. Certain restrictions and exclusions apply.
- 250W power as Standard config (300W non-PFC PSU only configured for India on Microtower)
- RoHS/WEEE complaint on system

Available Technology and Features

Processors(EM64T)

Intel Celeron D Processors:

Intel Celeron D 326 Processor (2.53-GHz, 256K L2 cache, 533-MHz FSB), EM64T/XD
Intel Celeron D 331 Processor (2.66-GHz, 256KB L2 cache, 533-MHz FSB), EM64T/XD
Intel Celeron D 336 Processor (2.80-GHz, 256KB L2 cache, 533-MHz FSB), EM64T/XD
Intel Celeron D 341 Processor (2.93-GHz, 256KB L2 cache, 533-MHz FSB), EM64T/XD
Intel Celeron D 346 Processor (3.06-GHz, 256KB L2 cache, 533-MHz FSB), EM64T/XD
Intel Celeron D 351 Processor (3.20-GHz, 256KB L2 cache, 533-MHz FSB), EM64T/XD
Intel Celeron D 355 Processor (3.33-GHz, 256KB L2 cache, 533-MHz FSB), EM64T/XD

Intel Pentium 4 Processors with Hyper-Threading Technology:

630 – 3.00-GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF
640 – 3.20-GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF
650 – 3.40-GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF

Intel Core 2 Duo(E6xxx) Family Processors:

E6700 – 2.66GHz, 4-MB L2 cache, 1066-MHz FSB, VT/EM64T/XD/EISFF
E6600 – 2.4GHz, 4-MB L2 cache, 1066-MHz FSB, VT/EM64T/XD/EISFF
E6400 – 2.13GHz, 4-MB L2 cache, 1066-MHz FSB, VT/EM64T/XD/EISFF
E6300 – 1.86GHz, 4-MB L2 cache, 1066-MHz FSB, VT/EM64T/XD/EISFF
E4200 – 1.6GHz, 2-MB L2 cache, 800-MHz FSB, EM64T/XD/EISFF(Trailing CPU)

Intel Pentium D Family Processors:

950 – 3.4GHz, 4-MB L2 cache, 800-MHz FSB, VT/EM64T/XD/EISFF
945 – 3.4GHz, 4-MB L2 cache, 800-MHz FSB, EM64T/XD/EISFF(Trailing CPU)
940 – 3.2GHz, 4-MB L2 cache, 800-MHz FSB, VT/EM64T/XD/EISFF
930 – 3.0GHz, 4-MB L2 cache, 800-MHz FSB, VT/EM64T/XD/EISFF
925 – 3.0GHz, 4-MB L2 cache, 800-MHz FSB, EM64T/XD/EISFF(Trailing CPU)
915 – 2.8GHz, 4-MB L2 cache, 800-MHz FSB, EM64T/XD/EISFF(Trailing CPU)
820 – 2.8GHz, 2-MB L2 cache, 800-MHz FSB, EM64T/XD
805 – 2.66GHz, 2-MB L2 cache, 533-MHz FSB, EM64T/XD(Trailing CPU)

Intel Pentium 4 6x1 & CeleronD 3xx Family Processors:

661 – 3.6GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF
651 – 3.4GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF
641 – 3.2GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF
631 – 3.0GHz, 2-MB L2 cache, 800-MHz FSB, HT/EM64T/XD/EISFF
541 – 3.2GHz, 1-MB L2 cache, 800-MHz FSB, HT/EM64T/XD
531 – 3.0GHz, 1-MB L2 cache, 800-MHz FSB, HT/EM64T/XD
524 – 3.06GHz, 1-MB L2 cache, 533-MHz FSB, HT/EM64T/XD
360 – 3.46GHz, 512K L2 cache, 533-MHz FSB, EM64T/XD
356 – 3.33GHz, 512K L2 cache, 533-MHz FSB, EM64T/XD
352 – 3.2GHz, 512K L2 cache, 533-MHz FSB, EM64T/XD

Available Technology and Features

Operating Systems and Application Software	FreeDos
	Microsoft Windows XP Home SP2
	Microsoft Windows XP Professional SP2
	Microsoft Windows XP Home SP2 - Cost Reduced (China Only)
	Microsoft Windows XP Professional SP2 - Cost Reduced (China Only)
	Microsoft Office 2003 Basic (India and SEAT Only)
	Microsoft Office 2003 Small Business (India and SEAT Only)
	Microsoft Office 2003 Professional (India and SEAT Only)
	Adobe Acrobat Reader 7.0
	Symantec Anti-Virus 2006
	InterVideo WINDVD (pre-installed)
	HP Backup & Recovery Manager
	Lightscribe driver (DIB) for Lightscribe drives only
	Roxio DigitalMedia Plus (pre-installed/DIB) for rewritable drives only
	Microsoft Works 8.5 (pre-installed/DIB) (India and SEAT only)
	Redhat Linux (For India only)
	SCO Unix (For China Only)
	Network Clone (Customized for China only, not included in drop in box)
	Santools SMART Disk Monitor Application for HDD Pre-failure alert (Available for India sku only)
	Google tool bar
	Sun Java Runtime Environment
	BRAND.ini
	Branding approved wallpaper
Modified XP Help and Support Module	
Safety and Comfort Guide	
Set Video Refresh	
Insight Windows Diagnostics (Insight)	
PDF complete (SRP)	

Hard Drives	40-GB Serial ATA 1.5-Gb/s Hard drive (7200 rpm)
	80-GB Serial ATA 3.0-Gb/s Hard drive (7200 rpm)
	160-GB Serial ATA 3.0-Gb/s Hard drive (7200rpm)
	250-GB Serial ATA 3.0-Gb/s Hard drive (7200rpm)

System Memory Single Channel Configurations	256-MB DDR2 SDRAM DDR2 – 533 or 667 Non-ECC (1 x 256-MB)
	512-MB DDR2 SDRAM DDR2 – 533 or 667 Non-ECC (1 x 512-MB)
	1-GB DDR2 SDRAM DDR2 – 533 or 667 Non-ECC (1 x 1-GB)

Available Technology and Features

System Memory Dual Channel Configurations	512-MB DDR2 SDRAM DDR2 – 533 or 667 Non-ECC (2 x 256-MB)
	1-GB DDR2 SDRAM DDR2 – 533 or 667 Non-ECC (2 x 512-MB)
	1-GB DDR2 SDRAM DDR2 – 533 or 667 Non-ECC (4 x 256-MB)
	2-GB DDR SDRAM DDR2 – 533 or 667 Non-ECC (2 x1-GB)
	2-GB DDR SDRAM DDR2 – 533 or 667 Non-ECC (4 x512-MB)
	4-GB DDR SDRAM DDR2 – 533 or 667 Non-ECC (4 x1-GB)

NOTE: In order to achieve best performance, memory speeds and sizes should not be mixed and dual channel installation is recommended. See memory section for more information.

Removable Storage	1.44MB diskette drive 16 in 1 card reader
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Optical Storage (SATA interface only)	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 Light scribe Drive (Double Layer/Dual Format)
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Keyboard	HP PS/2 Standard Keyboard HP USB Standard Keyboard
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Mouse	HP PS/2 2-Button scroll mouse HP USB 2-Button scroll mouse HP USB 2-Button optical scroll mouse HP PS/2 2- Button optical mouse
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Audio	Integrated Realtek ALC885 high definition Audio
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Communication	Integrated Realtek 8100s 10/100/1000 Network Connection Broadcom Netxtreme Gigabit Ethernet PCI Express x1 FH Adapter (MT) Broadcom Netxtreme Gigabit Ethernet PCI Express x1 LP Adapter (SFF) Intel Pro Gb NIC PClex1 FH adapter (MT) Intel Pro Gb NIC PClex1 LP adapter (SFF) Agere 56K PCI Soft Modem FH (MT) Agere 56K PCI Soft Modem LP (SFF)
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Graphics	Intel integrated GMA 3000 (new graphics engine)
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System Details

Base Unit

- uATX Microtower or Small Form Factor chassis, including power supply and front bezel; functioning five (5/3) drive bays and 1 PCI express slot plus 3 PCI expansion slots (**NOTE: SFF only has 3 bays.**)
- Microsoft or Linux operating system CD (Varies upon different countries)
- Active type Heatsink
- 92 x 92 x 25 mm chassis fan
- Motherboard with Intel Q963/ICH8 chipset, Realtek Gb integrated network interface, integrated graphics and high definition audio, 3 PCI slots, 1 PCI Express x1 slot, 4 DDR2 DIMM memory slots
- (2) SATA data cables – provided for 1 SATA HDD and 1 SATA ODD support.
- FDD as option
- Chassis intrusion alert for India, SEAT and HK on both of MT and SFF form factor.
- Internal speaker for India, SEAT and Hong Kong' shipment on both of MT and SFF product

PCA Slots/Headers

PCI 2.3	3 full-height slots on PCA
Memory Expansion	4 DIMM slots (up to maximum 4G)
PClex1	1 PClex1 slot on PCA
FDD connector	1 Floppy connector
SATA headers	4 SATA headers
SATA headers	4 SATA headers

Chassis Bays

Internal	Two (2) 3.50" half-height (MT) One (1) 3.50" half-height (SFF)
External	Two (2) 5.25" half-height (MT) One (1) 5.25" half-height (SFF) One (1) 3.50" half-height (MT) One (1) 3.50" half-height (SFF)

USB Support

EHCI high-speed USB 2.0 controller
Two (2) front ports; Six (6) rear ports

Rear I/O Ports (Legacy)

One (1) parallel port
One (1) serial port
One (1) PS/2 keyboard port
One (1) PS/2 mouse port
One (1) analog VGA video port
One (1) line in; one (1) line out; one (1) Microphone
One (1) RJ-45 network port
Six (6) USB 2.0 ports

System Details

Weight & Dimensions (MT and SFF)	Chassis Dimensions (H x W x D)	175 x 367.4 x 420 mm (H x W x D) – MT 101.1 x 339.2 x 390.2 mm (H x W x D) – SFF
	Packaged Dimensions (L x W x H)	555 x 501 x 402 mm – MT 495 x 595 x 219 mm – SFF
	System Weight	8.45 Kg – MT 8.36 Kg – SFF
	Shipping Weight	

Supported Technology & Features	Memory Type	<ul style="list-style-type: none"> • DDR2 533 or 667 SDRAM un-buffer non-ECC • Single or dual channel configurations • 4GB maximum system memory
	Hard Drive Interfaces Supported	<ul style="list-style-type: none"> • Serial ATA 1.5-Gb/s (40GB) and 3.0-Gb/s (80GB/160GB/250GB) hard drives are supported

Intel Core 2 Duo E6xxx Family Processors (Dual core)	Coprocessor	Integrated
	CPU Socket Type/Number	Socket T LGA775
	CPU Package	FCPGA4
	Front Side Bus Speed	1066-MHz or 800-MHz
	Cache Memory	4MB or at least 2MB

Intel Pentium D 9xx/8xx Family Processors (Dual core)	Coprocessor	Integrated
	CPU Socket Type/Number	Socket T LGA775
	CPU Package	FCPGA4
	Front Side Bus Speed	800-MHz or 533-MHz
	Cache Memory	4MB or at least 2MB

Intel Pentium 4 /Celeron D CPU (Single core) 6xx & 5xx & 3xx	Coprocessor	Integrated
	CPU Socket Type/Number	Socket T LGA775
	CPU Package	FCPGA4
	Front Side Bus Speed	800-MHz or 533-MHz
	Cache Memory	256-KB L2 (Celeron D) 2-MHz L2 (Pentium 4) 512-KB or 2-MHz (Cedar Mill)

System Details

Chassis	Front Panel	<ul style="list-style-type: none"> • Power button • Power LED • HDD LED
	Cooling Solutions Supported	<ul style="list-style-type: none"> • Power Supply Fan (variable speed) • Active heatsink (variable speed) • Chassis fan (variable speed)
	Slots Supported	3 PCI slots + PCIe1 slot full height for MT 3 PCI slots + PCIe1 slot low profile for SFF
	Front I/O	Two (2) USB 2.0 ports, Headset and Microphone
	Rear I/O	Standard uATX I/O connectors, including Six (6) USB 2.0 ports
	Drive Bays	<ul style="list-style-type: none"> • Two (2/1) 5-1/4" external – MT/SFF • One (1) 3-1/2" external – MT/SFF • Two (2/1) 3-1/2" internal – MT/SFF
	Physical Security features	Security Loop for external pad lock
	Power Supply	Micro-tower: Standard 250 watt ATX PFC or non-PFC power supply as default 300W non-PFC power supply as option for India/SEAT/HK Small Form Factor: Only 250W PFC or non-PFC power supply selectable

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: 41° to 104° F (5° to 40° 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.

System Details

Motherboard	Socket-T LGA775 industry standard uATX form factor
Processor	<ul style="list-style-type: none">• LGA 775• Support Dual core Conroe/Pentium D processors or Single core Intel Pentium 4/Celeron D processors(E6xxx/9xx/8xx/6xx/5xx/3xx)
PWM	<ul style="list-style-type: none">• ON 3 phase power solution• Meet Intel FMB05B
Chipset	<ul style="list-style-type: none">• Intel Q963/ICH8
Super I/O	<ul style="list-style-type: none">• SCH5017
Front Side Bus Frequency	<ul style="list-style-type: none">• 533/800/1066 MHz
Memory	<ul style="list-style-type: none">• 4 x DIMM sockets• Support single and dual channel• DDR2 533/667 SDRAM
Clock Generator	<ul style="list-style-type: none">• SILEGO SLG84516STR
Integrated Graphics	<ul style="list-style-type: none">• Intel GMA3000
Audio	<ul style="list-style-type: none">• Realtek ALC885 High definition Audio
LAN	<ul style="list-style-type: none">• Realtek 8100s 10/100/1000 LAN
Expansion Slots	<ul style="list-style-type: none">• 3 x PCI 2.3 slots• 1 – PClex1 slot
BIOS	<ul style="list-style-type: none">• 8Mbit flash EEPROM• Award BIOS, PnP, ACPI, SMBIOS 2.4, Boot Block, DMI2.0
Manageability	<ul style="list-style-type: none">• WFM 2.0, DMI 2.0
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• 6 x USB 2.0 ports• 1 x RJ-45 10/100/1000 port• 1 x Serial port• 1 x Parallel port• 1 x DB 15 pin Analog VGA port• 3 x Audio ports(Line-in, Line-out, Micro-phone)
On Board I/O Interfaces	<ul style="list-style-type: none">• 1 x ATX 24 pins power connector• 1 x Floppy connector• 2 x 5 Header for Front Panel (Power Switch, Power LED, and HDD activities LED)• 1 x 4 Header for CPU Heat-sink• 1 x 3 Header for System Fan• 1 x 4 Header for CD Audio – in• 2 x 5 Header support 2 USB 2.0 ports at front I/O• 2 x 5 Header for Front Headset and Microphone• 4 x SATA connector
Board Size	<ul style="list-style-type: none">• uATX form factor, PCB size: 9.6 x 9.6" 4-layer PCB
Additional Features	<ul style="list-style-type: none">• WOL enabled• Support S1, S3, S4 and S5• ACPI 3.0/APM1.2• Hardware monitor capability• System Smart Fan control (CPU Heat-sink/System Fan)• Bios PXE(Pro-boot Execution Environment) enabled• Bios RPL(Remote Program Load) supported

System Details

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
- 250 watt as default power output for both MT and SFF
- MT has maximum 300W non-PFC power supply to migrate for non-China regions only.
- SFF form factor doesn't have 300W to upgrade.

Power Conservation 'Energy Saver'

- Energy Star compliant
- APM 1.2 support
- Screen blanking
- Hard drive 'Idle' mode
- System Idle mode
- CCEC – China Only (<3 w in S5 – power off)
- <10 watt power consumption in Sleep mode – suspend to RAM (S3) (instantly available PC)
- Processor/Cache memory power-down (S3)
- Default waiting time no less than 30 minutes prior to entering sleep mode

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.

Ambient Air Temperature	Operating	5° to 40°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 (2500 m), 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 (304.8 m/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	35G's (Half-sine Shock) 35G's (Trapezoidal Shock)

System Details

Vibration	<p>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.</p> <p>Operating Random vibration at 5Hz@0.00025G²/Hz, 10Hz@0.01 G²/Hz, 100Hz@0.01G²/Hz, 300Hz@0.00001G²/Hz 5Hz to 300Hz, (0.25 Gs nominal).</p> <p>Non-Operating Random vibration at 0.008G²/Hz, 10Hz to 500Hz, (2 Grms nominal).</p>
Acoustic Noise	<p>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).</p> <p>IDLE (Fixed disk drive spinning) LWAd = 4.3 Bels (goal), <4.5 Bels (must) Desktop Average LpAm = 32 dBA (goals) Desktop Average LpAm < 35 dBA (must)</p> <p>FIXED DISK (Random write) LWAd = 4.8 Bels, Desktop Average LpAm = 37 dBA</p> <p>CD-ROM (Sequential Reads) LWAd = 5.5 Bels, Deskside Average LpAm = 55 dBA</p>

Service and Support

On-site Warranty^{Note 1}: These 1-1-1, 3-1-1, 3-3-1, or 90-0-0 limited warranty delivers on-site, next business-day^{Note 2} service for parts and labor and includes free telephone support^{Note 3} 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 support may not be available in some countries.

After-Market Options

Not all products available in all listed countries – check local price list for availability

Communications

Modems

Agere PCI Hi-Speed 56K International Soft Modem	EK694AA
HP RJ11 Modem Adapter Kit	DC131C#xxx

Wireless & Network Interface Cards

Wireless A+G PCI Adapter – WW except Americas	PZ928AA
Broadcom NetXtreme Gigabit Ethernet PCIe NIC Card	EA833AA
Intel Pro 1000 GT PCI Gigabit NIC(FH) card	AG393AA
HP bt450 Bluetooth Wireless Printer and PC Adapter(IPG)	Q6398A

Hard Disk Drives

Serial ATA Hard Drive

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

1.44 MB USB Floppy Drive – External	DC141B
1.44 MB Internal Floppy for 5.25 all	EY084AA
512-MB HP Drive Key II (USB 2.0)	ED516AA
1-GB HP Drive Key II (USB 2.0)	AG382AA

Input Devices

Keyboards

HP PS/2 Standard Keyboard	DT527A#xxx
HP USB Standard Keyboard	DT528A#xxx
HP PS/2 Easy Access Keyboard	DC167B#xxx
HP USB Smart Card keyboard	DC170B#xxx

Mouse

HP PS/2 2-Button Scroll Mouse	DD440B
HP USB 2-Button Scroll Mouse	DD441B
HP USB 2-Button Optical Scroll Mouse	DC172B
HP PS/2 2-Button Optical Scroll Mouse	EY703AA

After-Market Options

Memory	PC4200 (533-MHz) DDR2 SDRAM non-ECC	PV558AA
	512-MB DDR2 SDRAM PC4200 (533-MHz) non-ECC	PV560AA
	1-GB DDR2 SDRAM PC4200 (533-MHz) non-ECC	PV557AA
	2-GB DDR2 SDRAM PC4200(533-MHz) non-ECC	PX977AA
	256MB PC2-5300 DDR2-667 non-ECC	PX974AA
	512MB PC2-5300 DDR2-667 non-ECC	PX975AA
	1GB PC2-5300 DDR2-667 non-ECC	PX976AA
	2GB PC2-5300 DDR2-667 non-ECC	PX977AA
Audio	HP Satellite Speakers	ZD929AA#xxx
Optical Drives (SATA) I/O Devices	16X DVD+/-RW Drive Lightscribe Drive (Dual Format, Double Layer Format)	PR595A
	52X SATA CD-ROM (APJ)	AH045AA
	48X/32X SATA Combo Drive (CD-RW/DVD)	AH046AA
	16X/48X SATA DVD-ROM Drive	AH047AA
	16X SATA DVD+/-RW Drive (Dual Format, Double Layer, LightScribe)	AH048AA
	HP 16-in-1 Media Card Reader with PCI card	EM718AA
Security Devices	HP Business PC Security Lock Kit	PV606AA
	Kensington Compaq Security Lock Ind – All	PC766AA
	HP USB Biometric Fingerprint Reader	EM717AA
USB to Serial Adapter	Belkin USB to Serial Adapter, 3ft	EM449AA
Graphics & Graphics Cables	Tower Stand – Carbonite dc5000 SFF/dx5150 SFF	DE870A
	NVIDIA Quadro NVS 55 PCI Graphics Card	EK561AA
	NVIDIA Quadro NVS 280 PCI Graphics Card	DY599A
	HP DMS59 DVI Dual-head Connector Cable	DL139A
	HP DVI to DVI Cable (for all DVI enabled flat panels)	DC198A
1394 Interface	Adaptec FireConnect 2100 FireWire (1394) PCI Card	PA997A

After-Market Options

Monitors

TFT

HP L1506 15" TFT Flat Panel Monitor – Analog only	PX848AA
HP L1706 17" TFT Flat Panel Monitor – Analog only	PX849AA
HP L1706v 17" TFT Flat Panel Monitor – Analog only (Specific for PRC)	PX849A2
HP L1906 19" TFT Flat Panel Monitor – Analog only	PX850AA
HP L1740 17" TFT Flat Panel Monitor – Analog/Digital	PL766AA
HP L1755 17" TFT Flat Panel Monitor – Analog/Digital	PL777AA
HP L1940T 19" TFT Flat Panel Monitor – Analog/Digital	EM869AA
HP L1955 19" TFT Flat Panel Monitor – Analog/Digital	PD974AA
HP L2065 20" TFT Flat Panel Monitor – Analog/Digital	EF227A4
HP LP2465 24" Widescreen TFT Flat Panel Monitor – Analog/Digital	EF224A4

CRT

HP s5502 15" CRT Monitor	PQ560AA
HP s7540 17" (16.0 vis) CRT Monitor	PF997AA
HP v7650 17" (16.0 vis) Flat-face CRT Monitor	PF996AA
HP v930 19" Flat-face CRT Monitor (Specific for Korea)	EU601AA

Memory

Intel Q963/ICH8 chipset

DDR2 SYNCH DRAM NON-ECC MEMORY

The Intel Q963 Express chipset supports non-ECC DDR2 memory on both DDR2 533 and 667 frequency. Memory upgrades are accomplished by adding single or dual DIMMs of the same or variable sizes. This chart does not represent all possible memory configurations.

MAXIMUM MEMORY (SMALL FORM FACTOR AND MICROTOWER)

Supports up to 42-GB of DDR2 SYNCH DRAM.

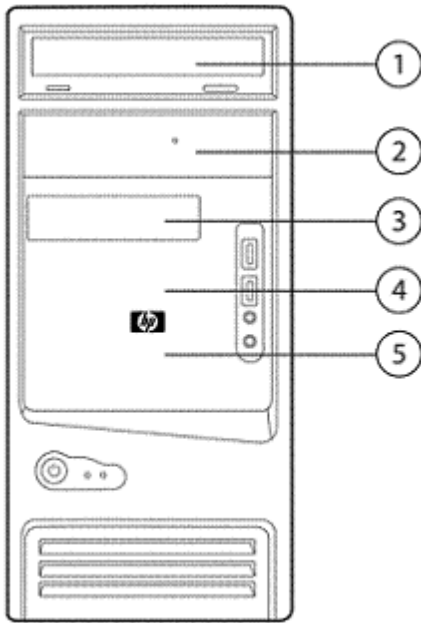
POSSIBLE MEMORY CONFIGURATIONS (SMALL FORM FACTOR AND MICROTOWER)

NOT ALL MEMORY CONFIGURATIONS POSSIBLE ARE REPRESENTED BELOW

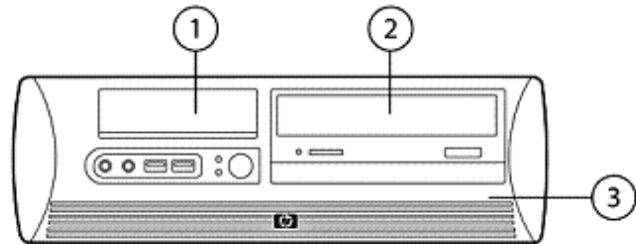
DIMM Size	Slot			
	Channel A		Channel B	
	Slot 1	Slot 2	Slot 1	Slot 2
256MB	256MB			
512MB	512MB			
512MB	256MB*		256MB*	
768MB	256MB		512MB	
1GB	256MB*	256MB*	256MB*	256MB*
1GB	512MB*		512MB*	
1GB	1GB			
1.5GB	1GB		512MB	
2GB	512MB*	512MB*	512MB*	512MB*
4GB	1GB*	1GB*	1GB*	1GB*

* HP recommends dual channel configurations for maximum performance.

Storage



HP Compaq Business Desktop dx2700 MT



HP Compaq Business Desktop dx2700 SFF

Maximum Quantity Supported

Position Supported

Controller

Drive Support

	Maximum Quantity Supported	Position Supported	Controller
Diskette Drives (MT)	1	3	ICH8
Diskette Drives (SFF)	1	1	ICH8
CD-ROM Drives (MT)	2	1, 2	SATA
CD-ROM Drives (SFF)	1	2	SATA
DVD-ROM Drives (MT)	2	1, 2	SATA
DVD-ROM Drives (SFF)	1	2	SATA
CD-RW/Combo Drives (MT)	2	1, 2	SATA
CD-RW/Combo Drives (SFF)	1	2	SATA
DVD+/-RW Drives (MT)	2	1, 2	SATA
DVD+/-RW Drives (SFF)	1	2	SATA
3.5" Serial ATA Hard Drives (MT)	2	4, 5	SATA
3.5" Serial ATA Hard Drives (SFF)	1	3	SATA

Technical Specifications - Audio

Integrated Realtek ALC885 Audio	Type	Integrated
	High definition	Yes
	Sampling	Supports 96 KHz
	Power Support	Digital: 3.3V Analog: 5V

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, 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; PPM1 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, RJ-11 modem cable, driver and documentation CD. NOTE: RJ-11 modem adapter is not included. DC131C #xxx RJ-11 modem adapter kit for use with DC132D #ACJ: India
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Broadcom NetXtreme Gigabit Ethernet PCI Express x1 Adapter	Connector	RJ-45
	Controller	Broadcom 5751 PCI-Express LAN Controller
	Memory	Integrated 96Kb frame buffer memory
	Data rates supported	10/100/1000 Mbps
	Compliance	IEEE 802.1P, 802.1Q, 802.2, 802.3, 802.3AB and 802.3u compliant, 802.3x flow control
	Bus architecture	PCI-E
	Data path width	Single channel, PCI-E
	Data transfer mode	Bus-master DMA
	Hardware certifications	FCC, B, CE, TUV- cTUVus Mark Canada and United States, TUV-GS Mark for European Union
	Power requirement	3.1 watts @ +3.3V AUX supply with 5V tolerance
	Boot ROM support	Yes
	Network transfer mode	Full-duplex Half-duplex (not available for the 1000BASE-T transceiver)
	Network transfer rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Environmental	Operating temperature 32° to 131° F (0° to 55° C) Operating humidity 85% at 131° F (55° C)
	Dimensions	4.4 x 2.2 x 0.08 in (11.2 x 5.5 x 0.2 cm)
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Broadcom mgmt utility
	Alerting	N/A
	Kit contents	Broadcom 5751, CD, Broadcom NetXtreme Gigabit Ethernet PCI-E Adapter, drivers, quick install guide, product warranty Statement

Technical Specifications - Graphics

Integrated Intel GMA3000	3D/2D Controller	Support is fully compliant with Microsoft Standard API such as Direct Draw, GDI/GDI+ and Direct Show
	VGA Controller	Integrated
	Bus Type	none
	RAMDAC	Integrated 400-MHz DAC
	Memory	Graphics memory is shared with system memory. Graphics memory usage can be up to maximum 192MB depending on the amount of system memory installed and system load. Additional memory is allocated for graphics using Intel's Dynamic Video Memory Technology (DVMT) to balance the optimum amount of memory between graphics and other system use.
	Controller Clock Speed	333 MHz
	Overlay Planes	Single Overlay support with 5x3 filtering
	Maximum Color Depth	64-bits/pixel
	Maximum Vertical Refresh Rate	75Hz at 2048 x 1536. Varies with mode and configuration. See table below
	Multi-display Support	Dual independent display
	Graphics/Video API Support	Microsoft DirectX®9, DirectXVA®, VMR9, GDI/GDI+; OpenGL® 1.4.

Resolutions Supported ¹	Resolution	Maximum Refresh Rate (Hz)	
		Analog Monitor	Digital Monitor
	640 x 480	85	70
	800 x 600	85	70
	1024 x 768	85	70
	1152 x 864	85	70
	1280 x 768	60	70
	1280 x 960	85	70
	1280 x 1024	85	70
	1600 x 900	60	70
	1600 x 1200	85	60
	1920 x 1080	60	-
	1920 x 1200	60	-
	1920 x 1440	75	-
	2048 x 1536	75	-

¹ Modes listed are supported with a single active display. The supported mode list for multiple active displays is a subset of this list. Not all modes will support video playback and some supported modes may use software MC (motion compensation) rather than hardware MC. Not all modes will support 3D acceleration depending on the system configuration (e.g., resolution selected, size of frame buffer, number of installed memory modules, etc.).

*NOTE: Other resolutions and refresh rates may be selectable but are not recommended.

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)
	Electrical	Weight	2 lb (0.9 kg) minimum
		Operating voltage	+ 5VDC \pm 5%
	Mechanical	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
		MicrosoftPC 99 – 2001	Functionally compliant
	Environmental	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)
	Approvals	Microsoft PC 99 – 2001	Mechanically compliant
		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
	Ergonomic compliance	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
		UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	
		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			
PC98	Functionally compliant			
Mechanical	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		
Regulatory Approvals	PC98-99	Mechanically compliant		
	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 ms		
		Rotational Speed	7,200 rpm		
		Logical Blocks	78,165,360		
		Operating Temperature	41° to 131° F (5° to 55° C)		
	80 GB	80 GB	Capacity	80,026,361,856 bytes	
			Height	1 in (2.6 cm)	
Width			Media diameter: 3.5 in (8.9 cm) Physical size: 4 in (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	156,301,488		
		Operating Temperature	32° to 140° F (0° to 60° C)		
160 GB		160 GB	Capacity	160,041,885,696 bytes	
	Height		1 in (2.6 cm)		
	Width		Media diameter: 3.5 in (8.9 cm) Physical size: 4 in (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		
	Height	1 in (2.6 cm)		
	Width	Media diameter: 3.5 in (8.9 cm) Physical size: 4 in (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	0.8 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)		

Technical Specifications - Optical Storage

48X Max CD-ROM Drive	Interface	SATA
	Data Buffer	2MB
	Data Transfer Rates - Read	Audio CD - 1,800 to 3,600 KB/s (24X) Max CD-ROM, CD-R - 2,400 to 7,200 KB/s (48x) Max
	Access Time (ms)	Random: <125ms Full-Stroke seek: <210 ms
	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 μ m
	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 120° 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)

48X/32X/48X CD-RW Drive	Orientation	Either horizontal or vertical
	Disc Loading Mechanism	Half-height, tray load
	Interface Type	SATA
	Dimensions (W x H x D)	7.99 x 5.88 x 1.71 in (203 x 149.5 x 43.5 mm)
	Weight (maximum)	2.6 lb (1.2 kg)
	Disc Diameter	12 cm, 8 cm
	Disc Thickness	1.2 mm
	Track Pitch	1.6 m μ m
	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
	CD-RW Write	4800 KB/s (32X) Max
	CD-ROM, CD-R read	7200 KB/s (48X) Max
	CD-RW read	7200 KB/s (32X) Max
	CD-R write	7200 KB/s (48X) Max
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	
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 < 1A (typical) < 1600 mA (maximum) 12 VDC < 600 mA (typical) < 1.4A (maximum)
	Total Drive Power (standby mode)	< 2.5 Watt
	Audio Output	Line-Out

Technical Specifications - Optical Storage

Configuration Jumper Block	Master, slave and cable select modes	
Data Interface Connector	50-pin IDE interface	
Environmental (all conditions, non-condensing)	Temperature (operating)	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 Drive 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 μ m (CD), 0.74 μ m (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	
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)	

Technical Specifications - Optical Storage

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 85%
	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

Form Factor	5.25-inch, half-height, tray-load
Color	Carbonite
Mounting Orientation	Either horizontal or vertical
Interface	SATA
Dimensions (HxWxD)	5.77 x 1.71 x 7.36 in (146.5 x 43.5 x 187 mm) (external, excluding bezel)
Disc Diameter	12 cm, 8 cm
Disc Thickness	0.05 in (1.2 mm)
Track Pitch	1.6 μ m (CD), 0.74 μ m (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)

Technical Specifications - Optical Storage

	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)	
Maximum Data Transfer Rates	CD-R write	7200 KB/s (48X) Max	
	CD-RW write	1500 KB/s (10X) Max	
	CD-ROM, CD-R, CD-RW read	7200 KB/s (48X) Max	
	DVD ROM read	21,632 KB/s (16X) Max	
	DVD RW		
Data Transfer Modes	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)		
	Cache Buffer	2 MB (minimum)	
	Startup Time (single)	< 7 seconds (typical)	
	Startup Time (multi-session)	< 30 seconds (typical)	
	Stop Time	< 4 seconds	
	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 (< 1000 mA typical, < 1600 mA maximum)	
		12 VDC (< 600 mA typical, < 1400 mA maximum)	
Total Drive Power (standby mode)		< 2.5 Watt	

Technical Specifications - Optical Storage

Audio Output	Line-Out	0.7 VRMS
	Signal-to-Noise Ratio	74 dB
	Channel Separation	65 dB
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	41° to 122° F (5° to 50° C)
	Relative humidity	10% to 90%
	Maximum wet bulb temperature	86° F (30° C)
Certifications, Approvals	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 or SATA		
	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 (maximum)	2.6 lb (1.2 kg)		
	Write Speed (maximum)	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 (maximum)	DVD+R/-R/+RW/-RW	Up to 16X		
	DVD-ROM	Up to 16X		
	CD-R/RW	Up to 40X		

Technical Specifications - Optical Storage

	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	Four-pin, DC power receptacle
DC Power Requirement		5 VDC \pm 5%-100 mV ripple p-p 12 VDC \pm 10%-200 mV ripple p-p	
DC Current		5 VDC (< 2000 mA typical, < 2500 mA maximum)	
		12 VDC (< 700 mA typical, < 2000 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	
Operating Environmental (all conditions 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.		
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

HP 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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