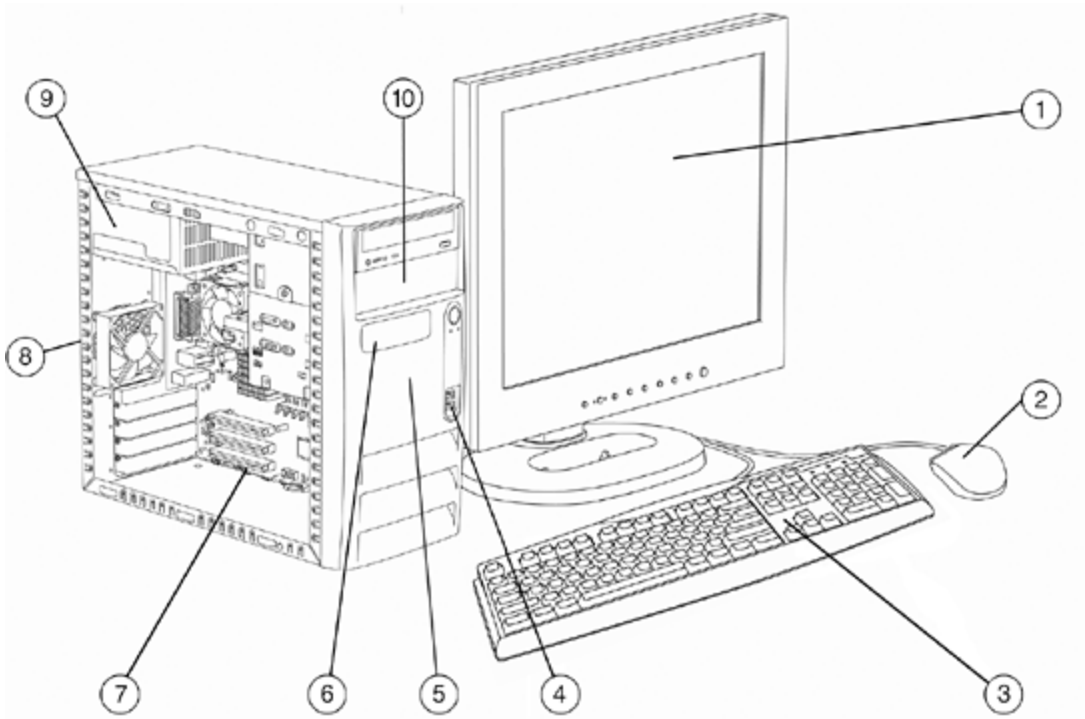
Overview

Microtower

35.5 x 18.0 x 39.6 centimeters / 14.0 x 7.1 x 15.6 inches



1. Monitor (sold separately)
2. 2-Button Scroll Mouse
3. Basic Windows Keyboard
4. 2 USB 2.0, headphone and microphone
5. 3.5" external bay for optional diskette drive or other 3.5" device
6. 2 internal 3.5" bays, 2 external 5.25" bays and 1 external 3.5" bay
7. 3 full-height PCI slots
8. 240-watt power supply
9. 4 USB 2.0, 1 standard serial port, 1 optional serial port, 1 parallel port, 2 PS/2, 1 RJ-45, 1 VGA, audio in/out
10. 2-5.25" external bays for CD-ROM, DVD-ROM, CD-RW or combo drives

At A Glance

- Intel® Pentium® 4 and Celeron® processors
- Choice of operating systems:
  Microsoft Windows XP Home
  Microsoft Windows XP Professional
  Mandrake Linux 9.2
- Intel Extreme Graphics 2
- Integrated Intel PRO/100 Network Connection
- SMART III Ultra ATA Hard Drives
- Choice of optical drives
- DDR SDRAM system memory
- Single or dual channel memory configurations
- Integrated audio, including an internal PC speaker
- Energy Star compliant with energy-saving features
- Protected by HP Services, including a 3-1-1 standard warranty. Terms and conditions vary by country. Certain restrictions and exclusions apply.

Overview

What's New

- Intel 865GV chipset
- Choice of operating systems:
  Microsoft Windows XP Home
  Microsoft Windows XP Professional
  Mandrake Linux 9.2
- Integrated Intel PRO/100 Network Connection
- PC3200 (400MHz) DDR SDRAM
- Single or Dual Channel memory configurations
- 8 USB 2.0 ports
- Intel Extreme Graphics 2

Processors	**Intel Pentium 4 Processor**	**Integrated Cache**
	2.80 GHz with 533 MHz system bus	512KB L2 cache Advanced Transfer Cache
	2.80A GHz with 533 MHz system bus	1MB L2 cache Advanced Transfer Cache
	Intel Pentium 4 Processor with Hyper-Threading Technology	**Integrated Cache**
	2.80C GHz with 800 MHz system bus	512KB L2 Advanced Transfer Cache
	2.80E GHz with 800 MHz system bus	1MB L2 Advanced Transfer Cache
	3.0E GHz with 800 MHz system bus	1MB L2 Advanced Transfer Cache
	3.20E GHz with 800 MHz system bus	1MB L2 Advanced Transfer Cache
	Intel Celeron with MMX Technology	**Integrated Cache**
	2.40 GHz with 400 MHz system bus	128KB L2 Advanced Transfer Cache
	2.60 GHz with 400 MHz system bus	128KB L2 Advanced Transfer Cache
	2.80 GHz with 400 MHz system bus	128KB L2 Advanced Transfer Cache

Operating Systems and Application Software	Microsoft Windows XP Home SP1a
	Microsoft Windows XP Professional SP1a
	Mandrake Linux 9.2
	Microsoft Office 2003 Basic (availability varies by region)
	Microsoft Office 2003 Small Business (availability varies by region)
	Microsoft Office 2003 Professional (availability varies by region)
	Microsoft Works 2003 (availability varies by region)
	Norton AntiVirus 2004 (availability varies by region)
	OpenOffice Suite (availability varies by region)

Hard Drives	40GB 5400rpm SMART III Ultra ATA/100
	40GB 7200rpm SMART III Ultra ATA/100
	80GB 5400rpm SMART III Ultra ATA/100
	80GB 7200rpm SMART III Ultra ATA/100

System Memory - Single Channel Configurations	128MB DDR SDRAM PC2700 (333-MHz) non ECC
	256MB DDR SDRAM PC2700 (333-MHz) non ECC
	512MB DDR SDRAM PC2700 (333-MHz) non ECC
	128MB DDR SDRAM PC3200 (400-MHz) non ECC
	256MB DDR SDRAM PC3200 (400-MHz) non ECC
	512MB DDR SDRAM PC3200 (400-MHz) non ECC

System Memory - Dual Channel Configurations	256MB (2 x 128) DDR SDRAM PC2700 (333-MHz) non ECC
	512MB (2 x 256) DDR SDRAM PC2700 (333-MHz) non ECC
	1024MB (2 x 512) DDR SDRAM PC2700 (333-MHz) non ECC
	256MB (2 x 128) DDR SDRAM PC3200 (400-MHz) non ECC
	512MB (2 x 256) DDR SDRAM PC3200 (400-MHz) non ECC
	1024MB (2 x 512) DDR SDRAM PC3200 (400-MHz) non ECC

Available Technology and Features

Removable Storage	1.44MB diskette drive 128MB USB 2.0 Drive Key
Optical Storage	CD-ROM drive CD-RW drive DVD-ROM drive Combo drive (CD-RW & DVD-ROM)
Keyboard	PS/2 keyboard
Mouse	PS/2 scroll mouse USB optical scroll mouse
Audio	ADI AD1888 2 channel audio 3D audio compliant with AC'97 rev. 2.3 includes internal PC speaker
Communication	Integrated Intel PRO/100 Network Connection Intel PRO/1000 MT Desktop Adapter (FH PCI NIC) PCI High Speed 56K Win Modem
Graphics	Intel Extreme Graphics 2 (integrated with the 865GV chipset)

System Details

Base Unit		• uATX microtower chassis, including power supply and front bezel; featuring five (5) drive bays and three PCI expansion slots • Microsoft or Linux operating system CD • active type heatsink • 80 x 80 x 25mm chassis fan • Motherboard with Intel 865GV chipset, Intel PRO/100 integrated network interface, integrated graphics and audio, 3 ea. PCI slots, 4 ea. DDR DIMM slots • (2) ATA data cables – (3) headed; each cable supports two drives • product documentation on CD • HP system restore CD • power cord
Slots	PCI	Three (3) full-height slots on PCA
	Memory Expansion	Four (4) DIMM slots (4.0GB maximum memory support)
Bays	Internal	Two (2) 3.50" half-height
	External	Two (2) 5.25" half-height One (1) 3.50" half-height
USB Support	EHCI high-speed USB 2.0 controller Two (2) front ports; Six (6) rear ports	
Interfaces (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) mic in One (1) RJ45 network port	
Weight & Dimensions	Chassis Dimensions	355 mm x 180 mm x 396 mm (H x W x D)
	Packaged Dimensions - Americas	548 mm x 506 mm x 288 mm (L x W x H)
	Packaged Dimensions - Asia	545 mm x 483 mm x 280 mm (L x W x H)
	System Net Weight (not including packaging)	10.5 kg
	System Gross Weight (including packaging)	14 kg
Supported Technology & Features	Memory Type	• PC2700 DDR SDRAM (333MHz) non-ECC • PC3200 DDR SDRAM (400MHz) non-ECC • Single or dual channel configurations • 4.0GB maximum system memory
	Serial Presence Detect Support	Yes
	Hard Drive Interfaces Supported	SMART III Ultra ATA/100
	Hard Drive Controller (PCI) Supported	SMART III Ultra ATA/100

System Details

Intel Pentium 4 CPU	Coprocessor	Integrated
	CPU Socket Type/Number	Socket N 478 pin
	CPU Package	FCPGA2
	Front Side Bus Speed	533MHz
	Cache Memory	1MB L2 Advanced Transfer Cache
Intel Pentium 4 CPU with HT Technology	Coprocessor	Integrated
	CPU Socket Type/Number	Socket N 478 pin
	CPU Package	mPGA478
	Front Side Bus Speed	800MHz
	Cache Memory	1MB L2 Advanced Transfer Cache
Intel Celeron CPU	Coprocessor	Integrated
	CPU Socket Type/Number	Socket N 478 pin
	CPU Package	FCPGA2
	Front Side Bus Speed	400MHz
	Cache Memory	512KB/1MB L2 Advanced Transfer Cache
Chassis	Front Panel	• Power button • Power On LED • HDD Activity LED
	Cooling Solutions Supported	• Power Supply Fan (variable speed) • Aluminum active heatsink (variable speed) • Chassis fan (variable speed)
	Slots Supported	Three (3) full-height, half-length PCI slots
	Front I/O	Two (2) USB 2.0 ports
	Rear I/O	Standard uATX I/O connectors, including six (6) USB 2.0 ports
	Drive Bays	• Two (2) 5-1/4" external • One (1) 3-1/2" external • Two (2) 3-1/2" internal
	Internal Speaker	yes
	Power Supply	250 watt ATX Power Supply – PFC/non-PCF with a 115v/230v line switch (varies by country/region)

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.
- The computer is designed to operate continuously (24 x 7) if needed, provided that the operating guidelines listed above are met.

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 (unpressurized)	10,000 ft (3048 m)
	30,000 ft (9144 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 mPGA478B industry standard uATX form factor**	
	Processor	● Socket 478B; mPGA 478-pin ● Support single Intel Pentium 4/Celeron 800/533/400MHz FSB processors
	PWN	● ON 3 phase power solution ● Meet Intel FMB 1.5 spec
	Chipset	● Intel 865GV ● Intel ICH5
	Super I/O	● SMSC LPC47M192
	Front Side Bus Frequency	● 400/533/800 MHz
	Memory	● 4 x DIMM sockets ● Support single and dual channel PC3200/PC2700/PC2100 DDR SDRAM ● 1st/3rd DIMM sockets in black; 2nd/4th DIMM sockets in blue
	Clock Generator	● Cypress CY28404
	Integrated Graphics	● Intel Extreme Graphics 2 (integrated on the 865GV chipset)
	Audio	● ADI AD1888 2 channel audio ● 3D audio compliant with AC'97 rev. 2.3
	LAN	● Intel 82562EZ 10/100 LAN
	IDE	● Support all PIO modes ● 2 x IDE ports support up to 4 devices ● Support Ultra ATA 33/66/100 (IDE1 black, IDE2 white)
	Expansion Slots	● 3 x PCI slots
	BIOS	● 4Mbit flash EEPROM ● AMI BIOS, PnP, ACPI, SMBIOS 2.3, Boot Block, DMI
	Manageability	● WfM 2.0, DMI 2.0, SMBus
	Industrial Standard	● PCI 2.3 compliant ● USB 2.0
	Rear Side I/O Ports	● 1 x PS/2 keyboard port ● 1 x PS/2 mouse port ● 6 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	● 1 x ATX power connector ● 1 x +12V power connector ● 1 x Floppy connector ● 1 x Front panel connector, Switch, LED (ON/Flash/OFF) ● 1 x Header for front side LINE-OUT and MIC-IN ● 2 x Fan headers for CPU, chassis, with voltage/fan speed control ● 1 x ATAPI headers-CD IN/AUX IN ● 1 x header to support 2 USB 2.0 ports at front side ● 1 x MONO-OUT header with amplifier
	Board Size	● uATX form factor 245mm x 245mm ● 4-layer PCB with green color
	Additional Features	● Keyboard/mouse/USB wake up ● Support S1, S3, S4 and S5 ● ACPI status ● Hardware monitor capability ● CPU fan speed control

System Details

		Integrated Intel PRO/100 Network Connection
Network Interface	**Hardware Highlights**	• 82562EZ Platform LAN Connect device • IEEE 802.3 10BASE-T compliant physical layer interface • IEEE 802.3u Auto-Negotiation and 100BASE-TX support • Digital adaptive equalization control • Link status interrupt capability • XOR Tree mode support for board testing • 3-port LED support (speed, link and activity) • 10BASE-T auto-polarity correction • Diagnostic loopback mode • 1:1 transmit transformer ratio support • Low power (300 mW) typical in active transmit mode • Reduced power(less than 50 mW) in "unplugged mode" • Automatic detection of "unplugged mode" • 3.3V device • Platform LAN connect interface support
	Features	• 3-port LED support (speed, link, and activity) • WfM Baseline and NetPC Specification compliant • ACPI support • Magic Packet filtering for Wake on LAN support • ARP and flexible frame support • Automatic detection of "unplugged mode" • Low power (less than 300 mW in active transmit mode) • Platform LAN connect interface support • Low power 3.3 V device

Power Supply	• ATX Power Supply – PFC/non-PFC with a 115v/230v line switch • Passive Power Factor Correction (PFC) – with line switch set to 230V – No PFC in 115V line switch position • 90 to 132VAC, or 180 to 264VAC operating voltage range • 100 to 127 VAC, or 200 to 240VAC rated voltage range • 50-60 Hz rated line frequency • 47-63 Hz operating line frequency range • 250 watt maximum rated power • 80-mm power supply fan – variable speed for optimum acoustics

Power Conservation 'Energy Saver'	• Energy Star compliant • APM 1.2 support • Screen blanking • Hard drive 'Idle' mode • System Idle mode • Blue Angel compliant (<5w in S5 – power off) • ~2 watt power consumption in ES mode – suspend to RAM (S3) (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.

Ambient Air Temperature	**Operating**	10° to 35°C at sea level with an altitude de-rating of 1.0°C per every 300m (1000ft) above sea level to a maximum of 3000m (10,000ft), no direct sustained sunlight. Maximum rate of change is 10°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: 20°C/Hr.
Humidity	**Operating**	10% to 90% relative humidity (Rh), 30°C maximum wet bulb temperature, non-condensing
	Storage	5% to 95% relative humidity (Rh), 38.7°C maximum wet bulb temperature, non-condensing
Altitude	**Operating**	0 to 10,000 feet – This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min.
	Non-Operating	0 to 30,000 feet – Maximum allowable altitude change rate is 1500 ft/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 11ms half-sine shock pulse.	
	Operating	3 G's
	Non-Operating	20 G's
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 0.000215 G^2/Hz, 10Hz to 300Hz, (0.25G's nominal).
	Non-Operating	Random vibration at 0.002041 G^2/Hz, 10Hz to 500Hz, (1G 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 = 4.3 Bels, Desktop Average LpAm = 32 dBA
	FIXED DISK (Random write)	LWAd = 5.0 Bels, Desktop Average LpAm = 40 dBA
	CD-ROM (Sequential Reads)	LWAd = 5.4 Bels, Deskside Average LpAm = 44 dBA

Service and Support

On-site Warranty[Note 1]: This one-year (1-1-1), limited warranty delivers one year of on-site, next business-day[Note 2] service for parts and labor and includes free telephone support[Note 3] 24 x 7. Global coverage[Note 2] 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

Communications	Agere PCI High Speed 56K Worldwide Controllerless WinModem NOTE: Does not support Philippines, India, Malaysia, Russia, Slovakia, Morocco.		DC131B#xxx
	RJ11 Modem Adapter Kit (for use with DC131B)		DC131C
	Intel Pro/1000 MT Desktop Adapter 10/100/1000 Network Adapter		DC193A
	HP WL220 PCI Wireless Network Adapter (802.11b)		DC756B
Hard Disk Drives	*SMART III Ultra ATA/100 Hard Drive*		
	40-GB 7200 rpm SMART III Ultra ATA/100 Hard Drive with DPS		DC180A
	80-GB 7200 rpm SMART III Ultra ATA/100 Hard Drive with DPS		DC181A
Removable Storage Devices	*Diskette Drive*		
	1.44 MB Diskette Drive (external)		DC141B
	USB Drive Key		
	HP 16MB Drive Key (USB 1.1)		DC192B
	HP 128MB Drive Key (USB 2.0)		DQ819B
	HP 256MB Drive Key (USB 2.0)		DL973B
Input Devices	*Keyboards*		
	HP 04 Standard Keyboard – PS/2		DT527A#xxx
	Mice		
	HP PS/2 2-Button Scroll Mouse		DD440B
	HP USB 2-Button Optical Scroll Mouse		DC172B
Memory	*PC2700 (333MHz) DDR SDRAM non-ECC*		
	128-MB DDR SDRAM PC2700 (333-MHz) non-ECC		DC338A
	256-MB DDR SDRAM PC2700 (333-MHz) non-ECC		DC339A
	512-MB DDR SDRAM PC2700 (333-MHz) non-ECC		DC340A
	PC3200 (400MHz) DDR SDRAM non-ECC		
	128-MB DDR SDRAM PC3200 (400-MHz) non-ECC		DE465A
	256-MB DDR SDRAM PC3200 (400-MHz) non-ECC		DE466A
	512-MB DDR SDRAM PC3200 (400-MHz) non-ECC		DE467A
Audio	JBL Platinum Series Speakers		DE893C
Optical Drives	CD-ROM Drive	48X	DC143B
	CD-RW Drive	48X/32X/48X	DL975B
	Combo Drive	CD-RW & DVD-ROM	DL976B
	DVD-ROM Drive	16X/40X DVD-ROM w/ +R read	DC151B
Monitors	**Essential Series**		
	HP s9500 CRT Monitor (19")		P9010A#ABA
	HP L1502 Flat Panel Monitor (15" analog only)		P9617D#ABA
	HP L1702 Flat Panel Monitor (17" analog only)		P9621D#ABA

Memory

865GV chipset

DDR SYNCH DRAM NON-ECC MEMORY

It is not necessary to add memory in pairs. 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. The HP Compaq dx2000 supports non-ECC 333MHz (PC2700) and 400MHz (PC3200) DDR memory.

For best performance, add in pairs, add in different channel in matching slots (color coded), and do not mix speeds.

MAXIMUM MEMORY (SLIM TOWER, DESKTOP, AND MICROTOWER)

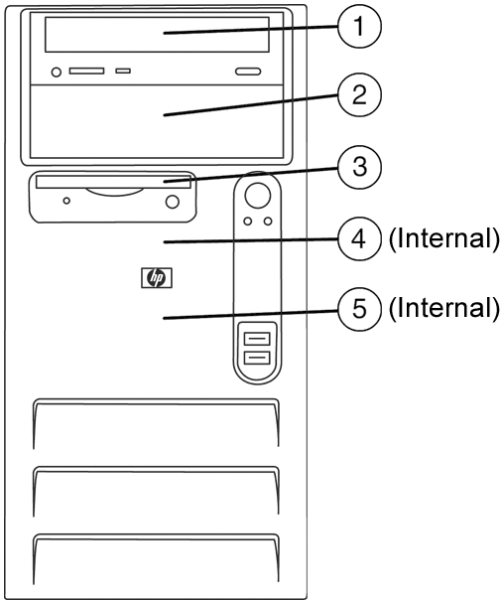
Supports up to 4-GB of DDR SYNCH DRAM.

POSSIBLE MEMORY CONFIGURATIONS (SLIM TOWER, DESKTOP, AND MICROTOWER)

NOT ALL MEMORY CONFIGURATIONS POSSIBLE ARE REPRESENTED BELOW

DIMM Size	Slot			
	Channel A		Channel B	
	1	2	3	4
128-MB	128-MB			
256-MB	128-MB *		128-MB *	
512-MB	512-MB			
512-MB	256-MB *		256-MB *	
1-GB	512-MB *		512-MB *	
2-GB	512-MB *	512-MB *	512-MB *	512-MB *
* HP recommends dual channel configurations for maximum performance				

Storage



HP Compaq Business Desktop dx2000

	Maximum Quantity Supported	Position Supported	Controller
Drive Support			
Diskette Drives	1	3	ICH5
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
Ultra ATA/100 Hard Drives	2	4, 5	Ultra ATA/100

Integrated ADI AD1888 Audio	**Type**	Integrated	
	AC '97 Stereo Codec	Yes	
	OPL3 FM Synthesis Support	Yes	
	Sound Blaster Compatibility	Yes	
	Audio Jacks	Mic-In (20-K ohm Input Impedance) Line-In (12-K ohm Input Impedance) Line-Out * (less than 800 ohms Output Impedance, expects at least a 10-K ohm load) Headphone-Out (2.5 Ohms Output Impedance, expects at least a 32 ohm load)	
	NOTE: *Internal Speaker Amplifier is for Internal Speaker only. External Speakers need to be powered externally.		
	Sampling	7KHz-48KHz	
	Compression	ADPCM, ESPCM	
	Wavetable Syntheses (software)	Yes	
	3D Positional Sound	No	
	Analog Audio	**Number of Channels on Line-Out** (mono/stereo)	Stereo (Left & Right channels)
		Internal Audio Speaker Power Rating	3W
		Internal Tuned Port Speaker	Yes
		External Speaker Jack (Line-Out)	Yes

PCI High Speed 56K Worldwide Controllerless WinModem	Data Transmission	High speed 56K modem technology speeds: 56,000 Kbps maximum downstream data, controllerless 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 high speed 56K modem, ITU-T, V.34bis, V.22bis, V.22bis, V.21, V.23, Bell 212A, and Bell 103
	Fax Speeds	14,400/12,000/9,600/7,200/4,800/2,400/1,200/300 b/s
	Fax Mode Capabilities	Group3 FAX, V. 17, V.29, V.27ter, and V.21 Channel 2, Class 1
	Error Correction and Data Compression	V.44 (software upgradeable), 4.2bis, V.42 and MNP2-5
	Power Management	APM and ACPI states D0, D1, D2, and D3; meets PCI 2.2 requirements and PC'99 requirements
	Upgradeability	Software driver upgradeable for high speed 56K modem and future enhancements
	Video	ITU-T V.80 video ready interface
	Other	TIA/EIA 602 standard AT command set ntegrated 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
	Operating System Support	Microsoft® Windows® 95 and 98, Microsoft Windows 98 SE, Microsoft Windows 2000, Microsoft Windows Me, Microsoft Windows NT® 4.0, and Microsoft Windows XP
	OS Driver Support	Microsoft Windows 95 and98, Microsoft Windows 98 SE , Microsoft Windows 2000, Microsoft Windows Me, Microsoft Windows NT 4.0, Microsoft Windows XP
	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 1648C (Mars 3.2) - 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	Dual, parallel RJ-11 support with auxiliary Tip/Ring connector
	Other Features	Digital line protection, call progress monitoring via on-board piezo device, transformer-based DAA design, support for high profile and low profile brackets, PnP ID supports via external EEPROM
	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 India, Russia, Slovakia, Slovenia, Belarus, Brunei, Croatia, Ecuador, Latvia, Lithuania, Morocco, Peru, Phillipines, Sri Lanka, Ukraine, Malaysia (use DC132B or DC132C instead)
	Health	Bare PCB material compliant to 94V-0 or better (marked as such), Microsoft Windows Me health compliant
	Other	PC'99 compliant, PCI version 2.2, WHQL approved; support for ACPI revision 1.1 DC131C #xxx: RJ11 modem adapter kit for use with DC131B, DC132B and DC132C #ACP: Austria, #ABW: Belgium, #AKB: Czech Republic, #ABU: UK & former colonies, #ABD: Germany, #ABF: France, #AB7: Greece, #AKC: Hungary, #ABT; Israel, #ABZ: Italy, #ABH: Netherlands, #UUW: Nordic countries, #UUZ: Switzerland, #AB8: Turkey, #ABG: Australia, #ACJ: India

Intel Pro 1000 MT NIC	Connector	RJ-45	
	Controller	Intel 82540EM Gigabit Controller	
	Memory	Integrated 96Kb frame buffer memory	
	Data rates supported	10/100/1000 Mbps	
	Compliance	IEEE 802.1A, 802.1P, 802.1P, 802.1Q, 802.2, 802.3, 802.3AB and 802.3u compliant, 802.3x flow control	
	Bus architecture	PCI 2.2	
	Data path width	32-bit, 33/66 MHz bus interface	
	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	1.48 watts @ +3.3V AUX supply with 5V tolerance	
	Boot ROM support	Yes	
	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, 1000 Mbps	
	Environmental	Operating temperature	32° to 131°F (0° to 55° C)
		Operating humidity	85% at 131° F (55° C)
	Dimensions	6.4 x 4.8 x 0.8 inches (16.3 x 12.1 x 1.9 cm)	
	Operating system driver support	Microsoft Windows NT 4.0, Microsoft Windows 98, Microsoft 2000, Microsoft XP, Linux 2.2, Linux 2.4	
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Intel PROset II utility	

Integrated Intel Extreme Graphics 2	**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 350-MHz DAC
	Memory	Graphics memory is shared with system memory. Graphics memory usage can vary from 8 – 64MB depending on the amount of system memory installed and system load. 16MB is pre-allocated for graphics use at system boot time. 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. With a 128MB system, graphics memory usage will be 8MB – 32MB depending on system load. With 256MB or more, graphics memory usage will be 8MB – 64MB depending on system load.
	Controller Clock Speed	266 MHz
	Overlay Planes	Single Overlay support with 5x3 filtering
	Max Color Depth	32-bits/pixel
	Maximum Vertical Refresh Rate	85Hz at up to 1920 x 1440, 75Hz at 2048 x 1536. Varies with mode and configuration. See table below
	Multi-display Support	Support for one CRT via the motherboard's VGA connector.
	Graphics API Support	Complete Microsoft DirectX® support, including DirectX 8.1; complete OpenGL® 1.3 support. Compatible with DirectX 9.

Resolutions Supported (At various color depths & memory configurations) (NOTE: Refresh rates higher than 85Hz may be obtainable in some modes and configurations but are not recommended.)

Resolution	Maximum Refresh Rate (Hz) DR266 Single Channel (8/16/32 bits/pixel)	Maximum Refresh Rate (Hz) DDR 266 Dual/DDR 333 Single Channel (8/16/32 bits/pixel)	Maximum Refresh Rate (Hz) DDR 333 Dual Channel (8/16/32 bits/pixel)
640 x 480	85/85/85	85/85/85	85/85/85
800 x 600	85/85/85	85/85/85	85/85/85
1024 x 768	85/85/85	85/85/85	85/85/85
1152 x 864	85/85/85	85/85/85	85/85/85
1280 x 720	85/85/85	85/85/85	85/85/85
1280 x768	85/85/85	85/85/85	85/85/85
1280 x 960	85/85/85	85/85/85	85/85/85
1280 x 1024	85/85/85	85/85/85	85/85/85
1400 x 1050	85/85/85	85/85/85	85/85/85
1600 x 900	85/85/85	85/85/85	85/85/85
1600 x 1200	85/85/85	85/85/85	85/85/85
1856 x 1392	75/75/60	75/75/60	75/75/60
1920 x 1080	85/85/75	85/85/85	85/85/85
1920 x 1200	75/75/60	75/75/75	75/75/75
1920 x 1440	85/85/60	85/85/60	85/85/60
2048 x 1536	75/75/NA	75/75/NA	75/75/60

2004 Standard Keyboard (PS/2 or USB)	**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)
		System interface	USB Type A plug connector
		ESD	CE level 4, 15-kV air discharge
		EMI - RFI	Conforms to FCC rules for a Class B computing device
		Microsoft® PC 99 - 2001	Functionally compliant
	Mechanical	**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
		Acoustics	43-dBA maximum sound pressure level
	Environmental	**Operating temperature**	50° to 122° F (10° to 50° C)
		Non-operating temperature	-22° to 140° F (-30° to 60° C)
		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 accelerationx
		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
	Operating system support	Windows® 2000 and Windows XP	
	Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	
	Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

2-Button Scroll Mouse (PS/2 or USB)	**Scroll Wheel**	8 mm	
	Maximum Rotation Speed	30 mm/s	
	Switch Type	Light force micro-switch	
	Mechanical 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	20% to 80% (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
		PC98-99	Mechanically compliant
	Regulatory Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C-Tick	

Technical Specifications - Hard Drives

5400 rpm SMART III Ultra ATA/100 Hard Drives	40-GB	**Capacity**	40 GB
		Dimensions (H x W)	1.0 x 3.5 in (2.5 x 8.9 cm)
		Interface	Ultra ATA/100
		Transfer Rate Synchronous (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 1.2 ms
			Average 8 ms
			Full-Stroke 18 ms
		Rotational Speed	5400 rpm
		Logical Blocks	78,165,360
		Operating Temperature	41° to 131° F (5° to 55° C)
7200 rpm SMART III Ultra ATA/100 Hard Drives	40-GB	**Capacity**	40 GB
		Dimensions (H x W)	1.0 x 3.5 in (2.5 x 8.9 cm)
		Interface	Ultra ATA/100
		Transfer Rate Synchronous (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 0.8 ms
			Average 9 ms
			Full-Stroke 17 ms
		Rotational Speed	7200 rpm
		Logical Blocks	78,140,160
		Operating Temperature	41° to 131° F (5° to 55° C)
	80-GB	**Capacity**	80 GB
		Dimensions (H x W)	1.0 x 3.5 in (2.5 x 8.9 cm)
		Interface	Ultra ATA/100
		Transfer Rate Synchronous (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 0.8 ms
			Average 9.0 ms
			Full-Stroke 17.0 ms
		Rotational Speed	7200 rpm
		Logical Blocks	156,301,488
		Operating Temperature	41° to 131° F (5° to 55° C)

Technical Specifications - Optical Storage

48X Max CD-ROM Drive	**Interface**	ATAPI IDE	
	Data Buffer	16.6 Mbps	
	Data Transfer Rate	Sustained – 1200 Kbps minimum (audio)	
		Variable (CD) – 3,000 to 7,200 Kbps	
	Disk Rotation Technology	CAV (Constant Angular Velocity)	
	Access Time (ms)	Random: <100 ms	
		Full-stroke seek: <150 ms	
	Average Access Time	< 80 ms	
	Cache Buffer (standard/maximum)	128 KB	
	Disk Formats Read	Multi-session Photo CD, multi-read CD-ROM, CD text, audio CD, CD-I, CD-RW, CD-R, CD-Extra, CD-ROM XA	
	Disk Formats Written	None	
	Disk Capacity (CD)	650 MB	
	Block Size	Mode 1 – 2,048, 2,352 bytes Mode 2 – 1, 2,088, 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 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)	
	MPEG Playback Graphics Solution Support	None	

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 (203 x 149.5 x 43.5 mm)	
	Weight	2.6 lb (1.2 kg)	
	Disc Diameter	12 cm, 8 cm	
	Disc Thickness	1.2 mm	
	Track Pitch	1.6 m µm	
	Disc Center Hole Diameter	15 mm	
	Reference Scanning Velocity	1.2 m/s	
	Recording/Playing Time	80 minutes with CD-R media	
	Read Only Disc Prameters	**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	
Maximum Data Transfer Rates	**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 ± 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)	Operating 41° to 122° F (5° to 50° C)	
	Relative Humidity (operating)	10% to 90%	
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)	

16X/40X DVD-ROM with +R Read 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 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	
	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), 4.7G (DVD+R)
		CD-ROM	540 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
		CD-ROM Mode 1	< 90 ms
		Full Stroke DVD	< 240 ms (seek)
		Full Stroke CD	< 160 ms (seek)
	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 ± 5% – 100 mV ripple p-p
			12 VDC ± 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	

48X/32X/48X/16X Combo CD-RW/DVD-ROM	5.25-inch, half-height, tray		
	Color	Carbonite	
	Orientation	Either horizontal or vertical	
	Interface Type	ATAPI	
	Dimensions (W x H x D)	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 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)
	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
	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 ± 5% – 100 mV ripple p-p
		12 VDC ± 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	
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	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	
Operating Systems Supported	Microsoft Windows 2000, Windows XP Professional, Windows XP Home	

Technical Specifications - Removable Storage

1.44-MB Diskette Drive	Dimensions (HxWxD)	0.7 x 4.0 x 5.5 in (17.8 x 101.6 x 139.7 mm)	
	Weight	0.56 lb (255 g)	
	Disk Used	High density (2HD)	
	Maximum Data Transfer Rate	500-Kbps internal FDD	
	Cable Length	17.0 in (43.2 cm)	
	Disk Rotational Speed	300 rpm	
	Required Power	Supplied from a USB port	
	Operating Position	Horizontal only	
	Recording Method	MFM (modified frequency modulation)	
	Signal Interface	USB Specification version 1.1	
	Ambient Temperature	Operating	39° to 125° F (4° to 51.7° C)
		Storage	-8° to 140° F (-22° to 60° C)
	Temperature Gradient	Operating	36° F (20° C) or less per hour (no condensation)
		Storage	54° F (30° C) or less per hour (no condensation)
	Relative Humidity	Operating	20 to 80% (no condensation)-maximum wet bulb temperature of 85° F (29.4° C)
		Storage	5 to 90% (no condensation)-maximum wet bulb temperature of 104° F (40° C)
		Suspend	Initiates when continuously idle for 3.0 ms or more on the bus line
		Resume	Initiates when signal other than idle state is detected on the bus line
	Safety Standards	UL and CSA	

USB Disk on Key	Dimensions (HxWxD)	0.9 x 0.7 x3.9 in (2.3 x 1.8 x 9.8 cm)
	Weight	0.05 lb (0.02 kg)
	USB Specification	1.1 and 2.0
	Transfer Rate	Read-1023 KB/Sec; Write-850 KB/Sec
	Storage Media	Solid state flash memory, no moving parts
	Power Supply	USB Bus-powered, no external power required
	Capacity	16 MB, 128 MB and 256 MB