

# *chapter* 6

## SPECIFICATIONS

This chapter provides physical, environmental, and performance specifications for the computer, keyboard, and mass storage devices.

### 6.1 System

#### 6.1.1 Specifications

<b>Dimensions</b>		
Height	3.6 in	9.0 cm
Width	12.5 in	31.8 cm
Length	14.6 in	37.1 cm
<b>Weight</b>	20 lb	9.1 kg
<b>Power Supply</b>		
Operating Voltage Range	90-132 VAC	180-264 VAC
Rated Voltage Range	100-127 VAC	200-240 VAC
Rated Line Frequency	47-63 Hz	47-63 Hz
<b>Rated Input Current (maximum)</b>	2.4 A	1.2 A
<b>Power Output</b>	90 W	90 W
System board 314213-001 and 118007-001	90 W	90 W
System board 140513-001	120 W	120 W
<b>Environmental Requirements</b>		
<b>Temperature</b>		
Operating	50° to 95F	10° to 35°C
Shipping	-4° to 140°F	-20° to 60°C
<b>Humidity (noncondensing)</b>		
Operating	8% to 90%	8% to 90%
Nonoperating	5% to 95%	5% to 95%
<b>Maximum Altitude (unpressurized)</b>		
Operating	10,000 ft	3048 m
Nonoperating	30,000 ft	9144 m
<b>Heat Dissipation (maximum)</b>	470 Btu/hr	1.97 kg-cal/min

## 6.1.2 System Interrupts

<b>Hardware IRQ</b>	<b>System Function</b>
0	Timer Interrupt (Not on ISA Bus)
1	Keyboard (Not on ISA Bus)
2	Interrupt Controller Cascade (Not on ISA Bus)
3	Serial Port (COM B)
4	Serial Port (COM A)
5	Unused
6	Diskette Drive
7	Parallel Port (LPT 1)
8	Real-Time Clock (Not on ISA Bus)
9	Unused
10	Unused
11	PCI Interrupt
12	Mouse
13	Coprocessor (Not on ISA Bus)
14	IDE Interface Hard Drive
15	CD-ROM

## 6.1.3 System DMA

<b>Hardware DMA</b>	<b>System Function</b>
0	Audio
1	Audio
2	Diskette Drive
3	ECP Parallel Port LPT1 (Default; Alternate = DMA 0)
4	DMA Controller Cascading (Not on ISA Bus)
5	Unused
6	Unused
7	Unused

## 6.1.4 System I/O

<b>I/O Address (Hex)</b>	<b>System Function (Shipping Configuration)</b>
000 - 00F	DMA Controller # 1
010 - 01F	Unused
020 - 03F	Interrupt Controller # 1
040 - 043	Counter/Timer
044 - 05F	Unused
060	Keyboard Controller
061	Port B
062 - 063	Unused
064	Keyboard Controller
065 - 06F	Unused
070 - 071	NMI Enable/Real-Time Clock
072 - 07F	Unused
080 - 08F	DMA Page Registers
090 - 091	Unused
092	Port A
093 - 09F	Unused
0A0 - 0BF	Interrupt Controller # 2
0C0 - 0DF	DMA Controller # 2
0E0 - 0EB	Unused
0EC - 0ED	483 Configuration Index/Data
0EE - 0EF	483 Fast A20/Fast Reset
0F0 - 0F1	Co-Processor Busy Clear/Reset
0F2 - 0F3	Unused
0F4 - 0F5	483 CPU Speed Slow/Fast
0F6 - 0F8	Unused
0F9	483/PGL Configuration Lock
0FA	Unused
0FB	483/PGL Configuration Unlock
0FC - 0FF	Unused
100 - 12F	Unused
130 - 131	Unused
132 - 16F	Unused
170 - 177	Reserved
178 - 1EF	Unused

*continued*

**Table Continued**

<b>I/O Address (Hex)</b>	<b>System Function (Shipping Configuration)</b>
1F0 - 1F7	Fixed Disk Controller
1F8 - 1FF	Unused
200	Unused
201	Unused
202 - 21F	Unused
220 - 22F	Audio
2E8 - 2EF	Reserved Serial Port
2F0 - 2F7	Unused
2F8 - 2FF	Reserved Serial Port
300 - 317	Unused
318 - 319	Unused
31A - 36F	Unused
330 - 331	Audio
370 - 377	Reserved
378 - 37F	Parallel Port (Primary)
380 - 387	Unused
388 - 38B	Audio
38C - 397	Unused
398 - 399	Super AI/O Index/Data (Default; Alt = 26Eh, 15Ch, 02Eh)
39A - 3AF	Unused
3B0 - 3BB	MDA, EGA/VGA
3BC - 3BF	Reserved (Parallel Port)
3C0 - 3DF	EGA/VGA
3E0 - 3E7	Unused
3E8 - 3EF	Reserved (Serial Port)
3F0 - 3F7	Diskette Controller
3F8 - 3FF	Serial Port (Primary)

**6.1.5 System Memory Map**

<b>Size*</b>	<b>Memory Address</b>	<b>System Function</b>
256 KB	FFFFFFFh to FFFC0000h	System ROM
3839 MB	FFFBFFFFh to 10000000h	PCI Memory Expansion
255 MB	0FFFFFFFh to 00100000h	HOST or PCI Memory Expansion
128KB	000FFFFFFh to 000E0000h	System ROM
96 KB	000DFFFFh to 000C8000h	ISA/PCI Option ROMs
32 KB	000C7FFFh to 000C0000h	Video ROM
128 KB	000BFFFFh to 000A0000h	Video RAM
640 KB	0009FFFFh to 00000000h	Base Memory

\*All memory above the first 256 MB is non-cacheable.  
All PCI memory is non-cacheable.

## 6.2 Drives

### 6.2.1 Diskette Drive

<b>Size and Capacity</b>	
Size (in)	3.5
High Density (MB)	1.44
Low Density (KB)	720
<b>Compaq Spare Part Number</b>	314236-001
<b>Light</b>	Green
<b>Height (inches)</b>	1
<b>Bytes per Sector</b>	512
<b>Sectors per Track</b>	
High Density	18
Low Density	9
<b>Tracks per Side</b>	
High Density	80
Low Density	80
<b>Read/Write Heads</b>	2
<b>Average Seek Time (Mb/s)</b>	
Track-to-Track (high/low)	18/21
Average (high/low)	94/173
Latency Average (ms)	100

### 6.2.2 Ultra ATA Hard Drives

	<b>3.2 GB</b>	<b>6.4 GB</b>	<b>10.0 GB</b>	<b>13.5 GB</b>
<b>Formatted Capacity</b>				
Logical (GB)	3.2	6.4	10.0	13.5
<b>Compaq Spare Part Number</b>	166873-001	166973-001	320662-001	140515-001
<b>Drive Type</b>	65 (soft)	65 (soft)	65 (soft)	65 (soft)
<b>Transfer Rate</b>				
Media (Mb/s)	84.8-136	84.8-136	48-158.6	
Interface (MBytes/sec)	33.3	33.3	16.6	66.6
<b>Seek Time (including settling)</b>				
Single Track (ms)	<1.0	<1.0	1.0	1.7
Average (ms)	<9.7	<9.7	8.5	8.5
Full Stroke (ms)	18.0	18.0	15.0	165.0
<b>Disk Rotational Speed (rpm)</b>	5200	5200	5400	7200
<b>Buffer Size (KB)</b>	256	256	128	1966



The hard drive is fully partitioned with each partition being 2.0-GB or less.

### 6.2.3 24X Max Slimline CD-ROM Drive

<b>Applicable Disc</b>	CD-ROM mode1, mode 2 Mixed mode (audio and data combined) CD-DA Photo CD (single- and multi-session) CDi ready CD-XA ready
<b>Compaq Spare Part Number</b>	314214-001
<b>Disc Diameter</b>	12 cm, 8 cm
<b>Capacity</b>	550-MB, mode 1, 12 cm 640-MB, mode 2, 12 cm 180-MB, 8cm
<b>Center Hole</b>	15-mm diameter
<b>Disc Thickness</b>	1.2 mm
<b>Track Pitch</b>	1.6 $\mu$ m
<b>Access Time</b>	
Random	< 140 ms
Full Stroke	< 350 ms
<b>Audio Output Level</b>	0.7V RMS (typical)
<b>Cache Buffer</b>	512 KB
<b>Data Transfer Rate</b>	
Sustained	3600 KB/s (max)
Burst	16.6 MB/sec
<b>X-Factor Characteristic (Speed Step Range)</b>	
Balanced media	24X max 20X max 10X max
Extreme out-of-balance media	4X max

## 6.3 Compaq Enhanced Keyboard

<b>Dimensions</b>		
Height	1.50 in	3.81 cm
Width	18.00 in	45.72 cm
Depth	6.50 in	16.51 cm
<b>Weight</b>		
	3.5 lb	1.59 kg

## 6.4 Two-Button Mouse

<b>Dimensions</b>		
Height	1.34 in	3.4 cm
Length	4.45 in	11.3 cm
Width	2.36 in	6.0 cm
<b>Weight</b>		
	4.59 oz	130 g
<b>Base Resolution</b>		
	400 dpi	400 dpi
<b>Tracking Speed (maximum)</b>		
	10 in/sec	25 cm/sec
<b>Temperature</b>		
Operating	32°F to 104°F	0°C to 40°C
Storage	-4°F to 140°F	-20°C to 60°C
<b>Lifetime</b>		
Mechanical	Exceeds 300 miles	Exceeds 483 km
Switch	Exceeds 1 million operations	Exceeds 1 million operations
<b>Relative Humidity</b>		
	10% to 90%, noncondensing	10% to 90%, noncondensing
<b>ESD</b>		
	No soft errors through 10 kV; No hard errors through 15 kV; specific performance depends on host system	

## 6.5 Supported Graphics Resolutions

### 6.5.1 ATI RAGE PRO TURBO AGP 2X

Resolution	Colors Supported 4-MB SGRAM	Colors Supported 8-MB SGRAM	Refresh Rate
1600 × 1200	65 K	16.7 M	85 Hz
1280 × 1024	16.7 M	16.7 M	85 Hz
1024 × 768	16.7 M	16.7 M	85 Hz
800 × 600	16.7 M	16.7 M	85 Hz
640 × 480	16.7 M	16.7 M	85 Hz

### 6.5.2 Embedded Intel 3D Direct AGP Graphics - Windows 3.1, Windows 95, and OS/2

Resolution	Colors Supported	Refresh Rate
1024 × 768	256	85 Hz
800 × 600	16.7 M	85 Hz
640 × 480	16.7 M	85 Hz

### 6.5.3 Embedded Intel 3D Direct AGP Graphics - Windows 98 and Windows NT 4.0

Resolution	Colors Supported	Refresh Rate
1600 × 1200	256	85 Hz
1280 × 1024	16.7 M	85 Hz
1152 × 864	16.7 M	85 Hz
1024 × 768	16.7 M	85 Hz
800 × 600	16.7 M	85 Hz
640 × 480	16.7 M	85 Hz

## 6.6 Audio System

	<b>16-bit Full Duplex Audio</b>	<b>Embedded AC'97 Audio</b>
<b>Sampling rate</b>	4 to 48 kHz (adjustable)	7 to 48 kHz
<b>Full Scale Input Voltage (rms)</b> Microphone-In	0.050	0.1
<b>Full Scale Output Voltage (rms)</b> Line Output	1.0	1.47
<b>Dynamic Range (SNR)</b> Digital Playback	-81 dB	-90.5 dB
Digital Record	-76 dB	-87.5 dB
<b>Total Harmonic Distortion</b>	0.061%	0.02%
<b>Frequency Response (-3 dB cutoffs)</b> Line Level (48 kHz)	20 to 20,000 Hz	20 to 20,000 Hz
Speaker	200 to 15,000 Hz	
<b>Impedance (nominal)</b> Microphone-In	100-K ohms	10-K ohms
Line-Out	5-K ohms	10-K ohms
<b>Data Types</b> PCM	8-/16-bit (mono/stereo)	
A-Law	8-/16-bit (mono/stereo)	
μ-Law	16-bit (mono/stereo)	