

chapter 6

SPECIFICATIONS

This chapter provides physical and performance specifications for the Armada E500 and Armada V300 Personal Computers.

Table 6-1 Computer		
	U.S.	Metric
Dimensions		
Height	1.65 in.	41.8 cm
Depth	9.99 in	316.0 cm
Width	12.40 in	254.0 cm
Weight		
	5.7 to 7.0 pounds, depending on configuration	2.60 to 3.20 kilograms, depending on configuration
Standalone (Battery) Power Requirements		
Nominal operating voltage (Li ion)	10.8 VDC	
Average operating power	15 W	
Peak operating power	30 W	
AC Adapter Power Requirements		
Rated input voltage	90 - 264 VAC RMS (auto switching)	
Rated input current	< 60 W	
Rated frequency	47 to 63 Hz	
Temperature		
Operating	50 to 98°F	10 to 35°C
Nonoperating	-4 to 140°F	-20 to 60°C
Relative Humidity (non-condensing)		
Operating	10 to 90%	
Nonoperating	5 to 95%, 101.6°F/38.7°C Maximum Wet Bulb	

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Table 6-1 *continued*

	U.S.	Metric
Altitude (unpressurized)		
Operating	0 to 10,000 ft.	0 to 3048 m.
Nonoperating	0 to 30,000 ft.	0 to 9144 m.
Shock		
Operating	10 G, 11 ms, half sine	
Nonoperating	240 G, 2 ms, half sine	
Vibration		
Operating	0.5 G zero to peak, 10 to 500 Hz, 0.25 oct/min.	
Nonoperating	1.5 G zero to peak, 10 to 500 Hz, 0.50 oct/min.	

NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.

Table 6-2
14.1-inch XGA, TFT Display

	U.S.	Metric
Dimensions		
Height	8.46 in.	21.50 cm.
Width	11.22 in.	28.50 cm.
Diagonal	14.10 in.	35.81 cm.
Number of Colors	Up to 16.8 million	
Contrast Ratio	150:1	
Brightness	120 nits minimum, 150 nits typical	
Pixel Resolution		
Pitch		0.264 × 0.264 mm
Format	1024 × 768	
Configuration	RGB Stripe	
Backlight	Edge Lit, bottom	
Total Power Consumption	4.2 W	

Table 6-3
13.3-inch XGA, TFT Display

	U.S.	Metric
Dimensions		
Height	7.98 in.	20.28 mm
Width	10.64 in.	27.03 mm
Diagonal	13.30 in.	33.79 mm
Number of Colors	Up to 16.8 million	
Contrast Ratio	150:1	
Brightness	120 nits minimum, 150 nits typical	
Pixel Resolution		
Pitch		0.264 × 0.264 MM
Format	1024 × 768	
Configuration	RGB stripe	
Backlight	Edge lit, bottom	
Total Power Consumption	4.0 W	

Table 6-4
12.1-inch SVGA, TFT Display

	U.S.	Metric
Dimensions		
Height	9.70 in.	24.60 cm.
Width	7.24 in.	18.40 cm.
Diagonal	12.10 in.	30.70 cm.
Number of Colors	Up to 16.8 million	
Contrast Ratio	150:1	
Brightness	120 nits minimum, 150 nits typical	
Pixel Resolution		
Pitch		0.300 × 0.300 mm
Format	800 × 600	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Total Power Consumption	3.5 W	

Table 6-5
12.1-inch SVGA, STN Display

	U.S.	Metric
Dimensions		
Height	9.70 in.	24.60 cm.
Width	7.24 in.	18.40 cm.
Diagonal	12.10 in.	30.70 cm.
Number of Colors	Up to 16.8 million	
Contrast Ratio	40:1	
Brightness	> 90 nits minimum typical	
Pixel Resolution		
Pitch		0.300 × 0.300 mm
Format	800 × 600	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Total Power Consumption		
	3.5 W	

**Table 6-6
Hard Drives**

	12.0 GB	10.0 GB	6.0 GB	4.3 GB
User capacity per drive (refer to note below)	12.0 GB	10.0 GB	6.0 GB	4.3 GB
Drive height (with drive frame, in mm)	9.5	9.5	9.5	9.5
Drive width (with drive frame, in mm)	70.0	70.0	70.0	70.0
Interface type	ATA	ATA	ATA	ATA
Seek times (typical, including setting)				
Single track	2.5 ms	2.5 ms	4.0 ms	4.0 ms
Average	12.0 ms	12.0 ms	13.0 ms	13.0 ms
Full stroke	23.0 ms	23.0 ms	23.0 ms	23.0 ms
Physical configuration				
Bytes per sector	512	512	512	512
Buffer size	512 K	512 k	512 K	512 K
Disk rotational speed (rpm)	4200	4200	4200	4200
Transfer rates				
Synchronous	33.3 MBps	33.3 MBps	33.3 MBps	33.3 MBps

NOTE: Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details.

**Table 6-7
Diskette Drive**

Diskette Size	3.5 inch
Light	On system
Height	0.5 in. / 12.7 mm
Bytes per Sector	512
Sectors per Track	
High Density	18 (1.44 MB) / 15 (1.2 MB)
Low Density	9
Tracks per Side	
High Density	80 (1.44 MB) / 80 (1.2 MB)
Low Density	80
Read/Write Heads	2
Average Seek Times	
Track-to-Track (high/low)	3 ms / 6 ms
Average (high/low)	95 ms / 174 ms
Settling Time	15 ms
Latency Average	100 ms

Table 6-8
CD-ROM Drive

Applicable Disc	CD-ROM (Mode 1, 2, and 3) CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R (read only) CD Plus Photo CD (Single/Multi-session) CD-Extra Video CD CD-WO (fixed packets only) CD-Bridge
Center Hole Diameter	.59 in. / 15 mm
Disc Diameter	12 cm, 8 cm
Disc Thickness	1.2 mm
Track Pitch	1.6 μ m
Access Time	
Random	< 150 ms
Full Stroke	< 300 ms
Cache Buffer	128 KB
Data Transfer Rate	
Sustained, 16X	2400 KB/sec (150 KB/sec at 1X)
Variable	1500 to 3600 KB/sec (10X to 24X)
Normal PIO Mode 4 (single burst)	16.66 MB/sec
Start-up time	< 8 seconds
Stop time	< 4 seconds

Table 6-9
DVD-ROM Drive

Applicable Disc	DVD-5, DVD-9, DVD-10 CD-ROM mode 1, mode 2 CD-Digital Audio CD-XA mode 2 (Form 1, Form 2) CD-I mode 2 (Form 1 and Form 2) CD-I Ready CD-Bridge CD-R Photo CD (single/multisession)
Center Hole Diameter	.59 in. / 15 mm
Disc Diameter	12 cm, 8 cm
Disc Thickness	1.2 mm
Track Pitch	.74 μ m
Access Time	
Random	< 150 ms
Full Stroke	< 225 ms
Audio Output Level	
Line Out	0.7 V rms
Headphone	none
Cache Buffer	128 KB
Data Transfer Rate (typical, including setting)	
Sustained, 1X CD rate	150 KB/sec
Sustained, 16X CD rate	2400 KB/sec
Sustained, 1X DVD rate	1380 KB/sec
Sustained, 4X DVD rate	5520 KB/sec
Normal IO Mode 4 (single burst)	16.6 MB/sec
Start time	< 15 seconds
Stop time	< 6 seconds

Table 6-10
LS-120 SuperDisk Drive

	1.68 MB DMF	1.44 MB	1.2 MB	1.2 MB	720 KB
Formatted capacity (bytes)	1,720,320	1,474,560	1,261,568	1,228,800	737,280
Sector size (bytes)	512	512	1,024	512	512
Sectors	3,360	2,880	1,232	2,400	1,440
Magnetic tracks surface	80	80	77	80	80
Optical servo tracks/surface	N/A	N/A	N/A	N/A	N/A
Sectors/track	21	18	8	15	9
Sector interleave	2:1	1:1	1:1	1:1	1:1
Spare sectors	0	0	0	0	0
Zones (each side)	1	1	1	1	1
Average random seek	70 ms	70 ms	70 ms	70 ms	70 ms
Track-to-track seek	25 ms	25 ms	25 ms	25 ms	25 ms
Max single seek	170 ms	170 ms	170 ms	170 ms	170 ms
Average latency	41.67 ms	41.67 ms	41.67 ms	41.67 ms	41.67 ms

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Table 6-10 *Continued*

	1.68 MB DMF	1.44 MB	1.2 MB	1.2 MB	720 KB
Motor RPM	720± 0.5%	720± 0.5%	720± 0.5%	720± 0.5%	720± 0.5%
Motor start time	800 ms	800 ms	800 ms	800 ms	800 ms
Track density	135 TPI	135 TPI	135 TPI	135 TPI	135 TPI
Track width	125 µm	125 µm	125 µm	125 µm	125 µm
Encoding method	MFM	MFM	MFM	MFM	MFM
Max flux density	17,334 FCI	17,334 FCI	17,334 FCI	17,334 FCI	17,334 FCI
Recording density	17,334 BPI	17,334 BPI	17,334 BPI	17,334 BPI	17,334 BPI
Nominal transfer rate	150 KB/sec	150 KB/sec	125 KB/sec	125 KB/sec	75 KB/sec
Nominal sustained transfer rate across interface	65 KB/sec read, 32 KB/sec write	55 KB/sec read, 28 KB/sec write	49 KB/sec read, 25 KB/sec write	46 KB/sec read, 23 KB/sec write	28 KB/sec read, 14 KB/sec write
Buffer transfer rate	4.0 MB/sec	4.0 MB/sec	4.0 MB/sec	4.0 MB/sec	4.0 MB/sec

**Table 6-11
AC Adapter**

	U.S.	Metric
Dimensions		
Height	1.15 in.	2.92 cm
Length	2.38 in.	6.03 cm
Width	1.40 in.	3.60 cm
Weight	0.66 lb.	0.30 kg
Power Supply (input)		
Operating voltage	90 to 260 VAC RMS	
Operating current	1.1 A RMS	
Operating frequency range	47 to 63 Hz AC	
Maximum transient	4/50 kV	

Table 6-12
Lithium Ion Battery Packs

	U.S.	Metric
Dimensions		
9-cell primary battery pack		
Height	.81 in.	2.05 cm
Length	5.60 in.	14.30 cm
Width	3.80 in.	9.60 cm
Weight	1.01 lb.	462 g
6-cell primary battery pack		
Height	.81 in.	2.05 cm
Length	5.60 in.	14.30 cm
Width	3.80 in.	9.60 cm
Weight	0.73 lb.	334 g
6-cell MultiBay battery pack		
Height	.53 in.	1.35 cm
Length	5.50 in.	14.00 cm
Width	5.23 in.	13.30 cm
Weight	0.84 lb.	382 g
Energy and Environmental Requirements are the same for all battery packs.		
Energy		
9-cell		
Voltage	10.8 V	
Amp-hour capacity	4.8 AH	
Watt-hour capacity	51.8 AH	
6-cell		
Voltage	10.8 V	
Amp-hour capacity	3.2 AH	
Watt-hour capacity	34.5 AH	
Environmental Requirements		
Temperature		
Operating	50°F to 95°F	10°C to 35°C
Non-operating	-12°F to 140°F	-25°C to 60°C

Table 6-13
System DMA

Hardware DMA	System Function
DMA0	Available for audio
DMA1	Entertainment Audio (Default; Alternate = DMA0, DMA3, None)
DMA2	Diskette Drive
DMA3	ECP Parallel Port LPT1 (Default; Alternate = DMA 0, none)
DMA4	DMA Controller Cascading (Not available)
DMA5	Available for PC Card
DMA6	Not Assigned
DMA7	Not Assigned
Note: PC Card controller can use DMA 1, 2, or 5.	

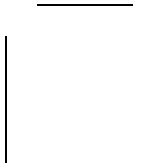
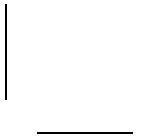


Table 6-14
System Interrupts

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Keyboard controller
IRQ2	Cascaded
IRQ3	COM2
IRQ4	COM1
IRQ5	Audio (default)*
IRQ6	Diskette drive
IRQ7	Parallel port
IRQ8	Real Time Clock (RTC)
IRQ9	Infrared
IRQ10	System use
IRQ11	System use
IRQ12	Internal Point Stick or External Mouse
IRQ13	Coprocessor (Not available to any peripheral)
IRQ14	IDE Interface (Hard Disk and CD-ROM Drive)
IRQ15	Fixed Disk Drives on the expansion base or convenience base.

NOTES: PCMCIA cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

* Default configuration; audio possible configurations are: IRQ5, IRQ7, IRQ9, IRQ10, or none.

**Table 6-15
System I/O Addresses**

I/O Address (Hex)	System Function (Shipping Configuration)
000 - 00F	DMA Controller no. 1
010 - 01F	Unused
020 - 021	Interrupt Controller no. 1
022 - 024	Opti Chipset Configuration registers
025 - 03F	Unused
02E - 02F	87334 "Super IO" configuration for CPU
040 - 043	Counter/Timer Registers
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 - 0A1	Interrupt Controller no. 2
0A2 - 0BF	Unused
0C0 - 0DF	DMA Controller no. 2
0E0 - 0EF	Unused
0F0 - 0F1	Coprocessor Busy Clear/Reset
0F2 - 0FF	Unused
100 - 16F	Unused
170 - 177	Secondary Fixed Disk Controller
178 - 1EF	Unused
1F0 - 1F7	Primary Fixed Disk Controller
1F8 - 200	Unused

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Table 6-15 *Continued*

I/O Address (Hex)	System Function (Shipping Configuration)
201	Joystick (Decoded in ESS1688)
202 - 21F	Unused
220 - 22F	Entertainment Audio
230 - 26D	Unused
26E - 26	National 87334 "Super IO" Controller in expansion base/convenience base
278 - 27F	Unused
280 - 2AB	Unused
2A0 - 2A7	Expansion base/convenience base PC Card DMA Selection, Hard Drive Reset, IDE Select, MultiBay Device Identification
2A8 - 2E7	Unused
2E8 - 2EF	Reserved Serial Port
2F0 - 2F7	Unused
2F8 - 2FF	Infrared port
300 - 31F	Network Interface in expansion base/convenience base (Default; Alternate is 320, 340, or 360h)
320 - 36F	Unused
370 - 377	Secondary Floppy Controller (In expansion base/convenience base when a floppy is installed in the CPU)
378 - 37F	Parallel Port (LPT1/Default)
380 - 387	Unused
388 - 38B	FM Synthesizer - OPL3
38C - 3AF	Unused
3B0 - 3BB	VGA
3BC - 3BF	Reserved (Parallel Port/No EPP Support)
3C0 - 3DF	VGA
3E0 - 3E1	PC Card Controller in CPU
3E2 - 3E3	PC Card Controller in expansion base/convenience base
3E8 - 3EF	Internal Modem
3F0 - 3F7	"A" Diskette Controller
3F8 - 3FF	Serial Port (COM1/Default)
CF8 - CFB	PCI Configuration Index Register (PCIDIV0-1)

Table 6-16
System Memory Map

Size	Memory Address	System Function
640 K	00000000 - 0009FFFF	Base Memory
128 K	000A0000 - 000BFFFF	Video Memory
48 K	000C0000 - 000CBFFF	Video BIOS
160 K	000C8000 - 000E7FFF	Unused
64 K	000E8000 - 000FFFFFF	System BIOS
15 M	00100000 - 00FFFFFF	Extended Memory
58 M	01000000 - 047FFFFFF	Super Extended Memory
58 M	04800000 - 07FFFFFF	Unused
2 M	08000000 - 080FFFFFF	Video Memory (Direct Access)
4 G	08200000 - FFFEFFFF	Unused
64 K	FFFF0000 - FFFFFFFF	System BIOS