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Service Manual

HP OmniBook 2000, 5500, and 5700

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Table of Contents

List of Figures

List of Tables

Introduction

This document provides reference information for the HP OmniBook 2000, 5500, and 5700. It is intended to be used by HP-qualified service personnel to help with the installation, servicing, and repair of these HP OmniBook PCs.

It is a self-paced guide designed to train you to install, configure, and repair the OmniBook Notebook PC. You can follow it without having any equipment available.

The following table lists additional sources where supplementary information can be obtained.

Table 1 - Additional Resources

Resource	Number/Address	Comments
HP External Web	http://www.hp.com/go/omnibook	No usage restriction (http://www2.hp.com/go/omnibook provides a European mirror)
HP-MCD Internal Web	http://webmcd.cv.hp.com	Restricted to HP intranet access only
America Online	Keyword: HP	Call (800) 827-6364 for membership within the US
CompuServe[1]	GO HP	Call (800) 524-3388 for membership within the US
HP Bulletin Board Service[2]	(208) 344-1691 (US only)	Refer to the latest Product Support Plan for non-US BBS numbers
HP First (automated fax)	(800) 333-1917	US and Canada
	(801) 344-4809	Outside US and Canada
	(800) 544-9976	Reseller support number (enter outlet id number)
HP Support Assist CD-ROM	(800) 457-1762	US and Canada
	(801) 431-1587	Outside US and Canada
HP MCD Service Engineer	svc-eng_mcd@om.cv.hp.com	Email address for service related questions and issues

[1] Baud rates = 300-28.8; Parity = E; Data bits = 7; Stop bits = 1
[2] Baud rates = 300-28.8; Parity = N, Data bits = 8; Stop bits = 1

Part 1

Product Overview

- What's New
- Product Features
- Product at a Glance
- Product Comparisons

What's New

The OmniBook 2000 is the newest OmniBook in the Desktop-to-Go Notebook PC series. It has many of the same features as the OmniBook 5700 while still maintaining a lower price. The following list compares and contrasts the OmniBook 2000 and OmniBook 5700.

Feature	OmniBook 2000	OmniBook 5700
Processor	133-MHz Intel Pentium® with and without MMX™ technology	Intel Pentium® P55C 150 MHz and 166 MHz with MMX™ technology
Cache	no L2 cache 16-KB or 32-KB L1 cache	512-KB L2 pipeline-burst synchronous cache 32-KB L1 cache
Memory	expandable to 128MB	expandable to 128MB
Display	12.1" TFT SVGA up to 16.7M colors 12.1" DSTN SVGA up to 64K colors	12.1" TFT XGA and 12.1" TFT SVGA up to 16.7M colors
Video	C&T 65554 64-bit accelerated graphics processor with 2M video RAM and Zoom Video enabled	C&T 65554 64-bit accelerated graphics processor with 2M video RAM and Zoom Video enabled
PC Card	Cardbus support	Cardbus support
System Chipset	Opti Viper-N+	Opti Viper-N+
Desktop Management Interface	Pre-installed DMI 1.1 software	Pre-installed DMI 1.1 software
Advanced Power Management	APM 1.2	APM 1.2
Off States	On, suspend, resume, hibernate and full off	On, suspend, resume, hibernate and full off

Product Features

The first two illustrations (Figure 1 and Figure 2) point out the key external features of the OmniBook 2000 and 5700. The second two illustrations (Figure 3 and Figure 4) point out the key external features of the OmniBook 5500. Figure 5 on page 14 shows the accessories that can be used in the center bay of the OmniBook 2000, 5500, and 5700.

Figure 1 - OmniBook 2000 and 5700 External Features

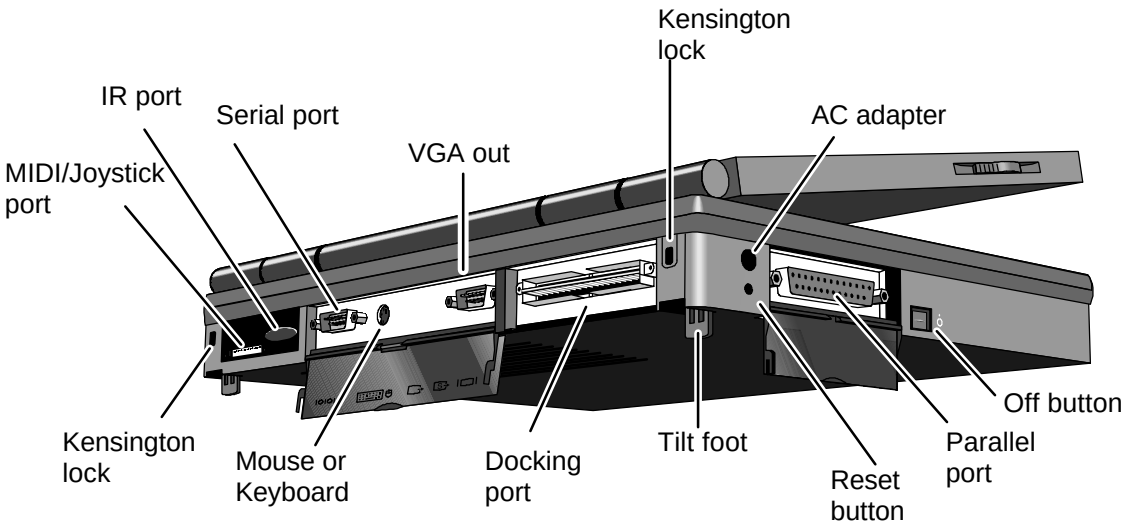

Figure 2 - OmniBook 2000 and 5700 External Features - continued

Figure 3 - OmniBook 5500 External Features

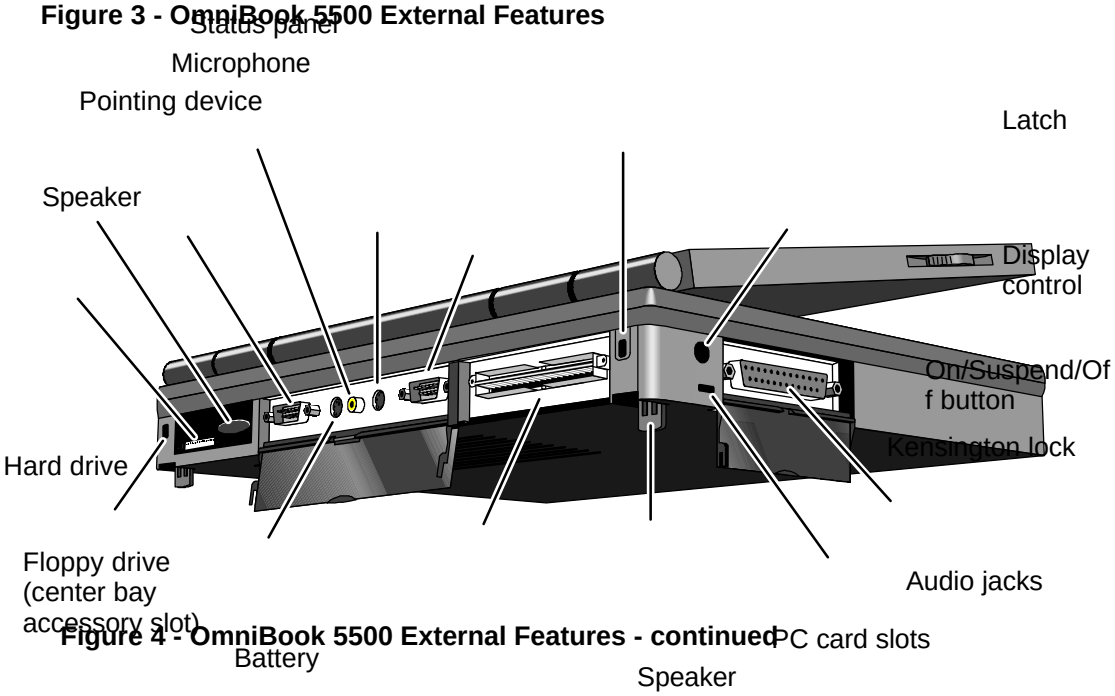

Figure 4 - OmniBook 5500 External Features - continued

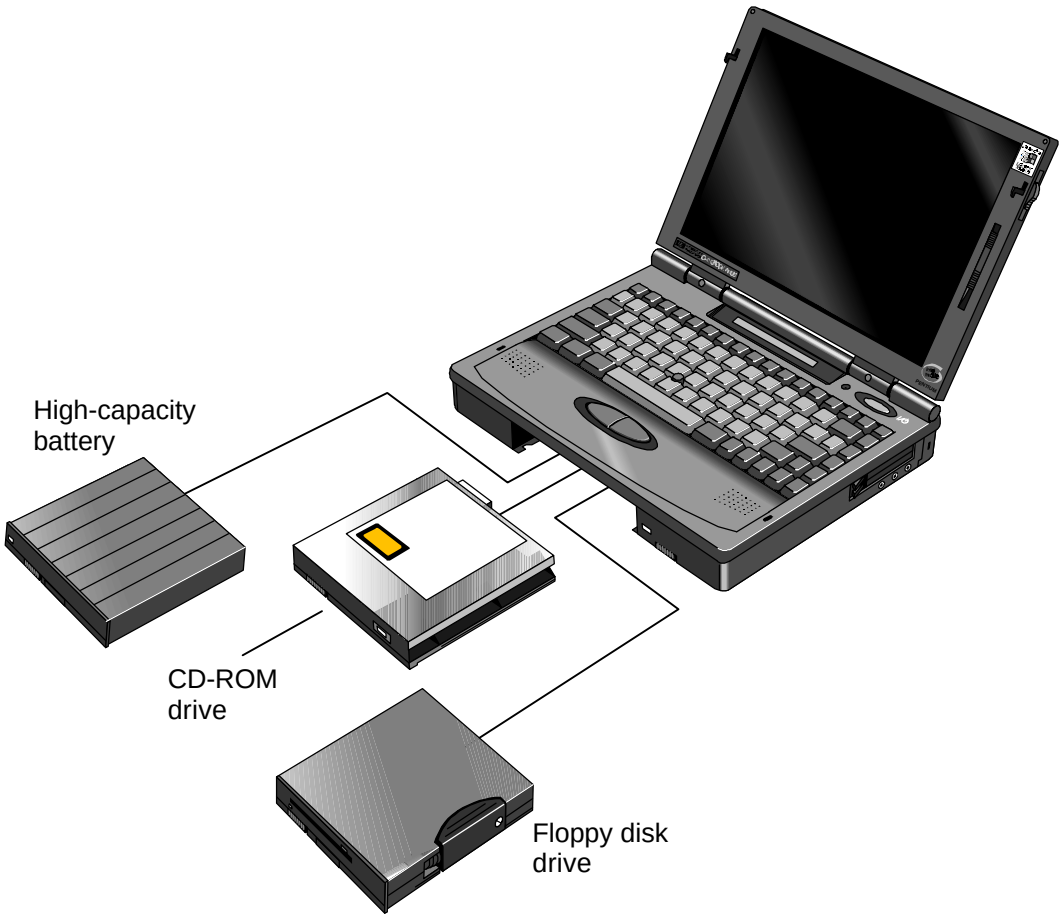

Figure 5 - OmniBook 2000, 5500, and 5700 Center Bay Modules

Product at a Glance

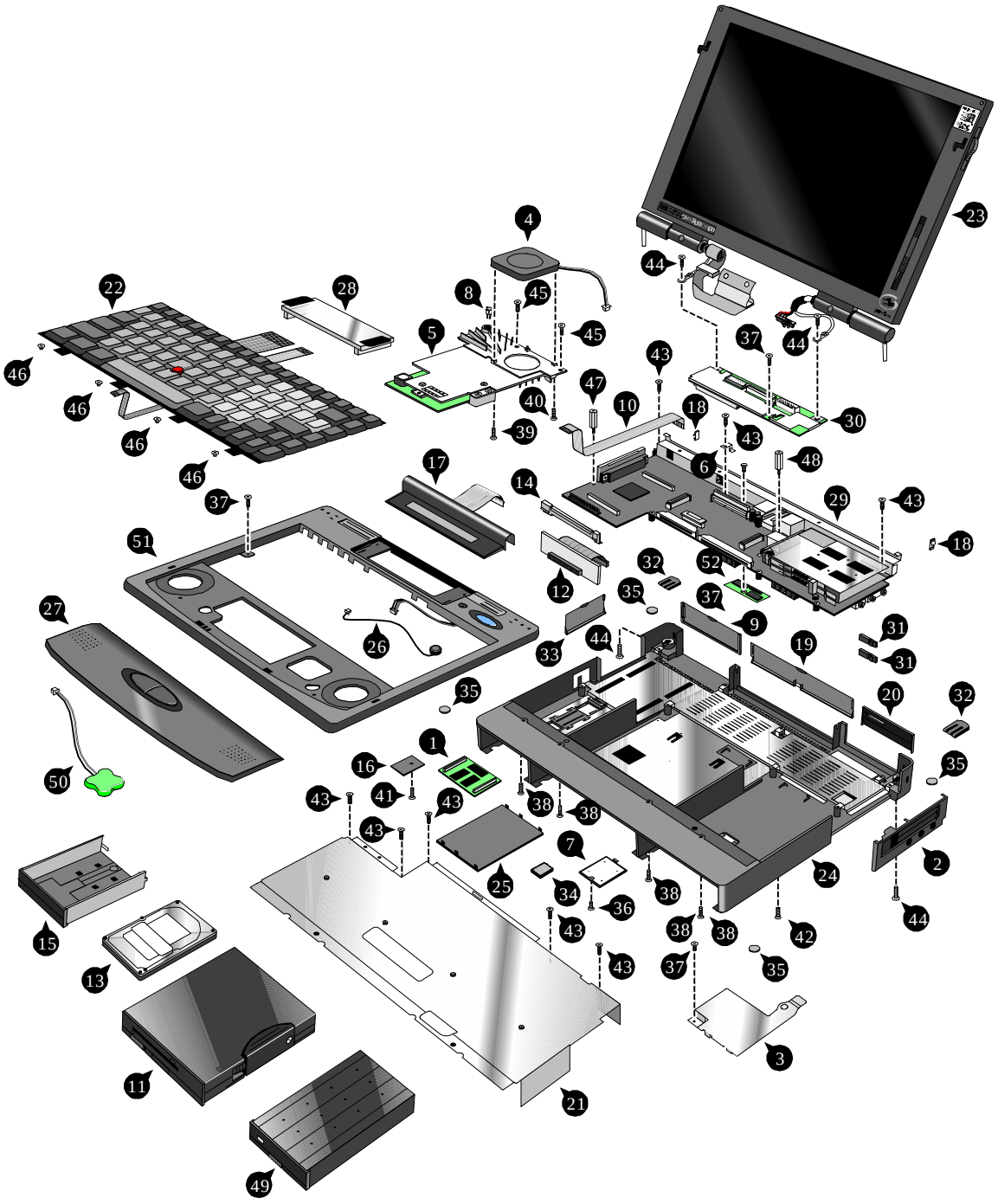

Figure 6 - OmniBook 2000 and 5700 Exploded Diagram

Table 2 - OmniBook 2000 and 5700 Parts Identification

	Description	*Part Number*	*Exchange Part #*	*User Replace.*	*OB5700*	*OB2000*
1	Memory Module					
	8MB RAM	F1134-60901	F1134-69001	Y	✓	✓
	16MB RAM	F1135-60901	F1135-69001	Y	✓	✓
	32MB RAM	F1136-60901	F1136-69001	Y	✓	✓
	64MB RAM	F1335-60901	F1335-69001	Y	✓	✓
2	Bezel	F1320-60958		N	✓	✓
3	Card Bus Bracket	F1350-60916		N	✓	✓
4	CPU Fan	F1350-60906		N	✓	✓
5	CPU Module					
	CPU Module/150C	F1350-60904	F1350-69004	N	✓	
	CPU Module/166C	F1350-60905	F1350-69005	N	✓	
	CPU Module/P54C-133	F1371-60908	F1371-69008	N		✓
	CPU Module/P55C-133 (MMX)	F1371-60909	F1371-69009	N		✓
6	Dock Grounding Spring Plate	F1320-60962		N	✓	✓
7	Door, Flash BIOS	F1371-60901		Y		✓
8	EMI Spring for LCD Hinge	F1350-60913		N	✓	✓
9	Expansion Door	F1125-60920		Y	✓	✓
10	FFC Cable T/B to M/B 10 PIN	F1320-60950		N	✓	✓
11	3.5" floppy disk drive	F1195-60901		Y	✓	✓
12	HDD-FPC Flex	F1320-60961		N	✓	✓
13	Hard Disk Drive					
	HDD Drive 1.44GB	F1375-60901	F1375-69001	Y		✓
	HDD Drive 2.0GB	F1339-60901	F1339-69001	Y	✓	✓
	HDD Drive 3.0GB	F1348-60901	F1348-69001	Y	✓	
14	HDD PCB Bracket	F1320-60965		N	✓	✓
15	HDD Plastic Kit	F1350-60920		Y	✓	✓
16	HDD Security Cover	F1320-40001		Y	✓	✓
17	Icon Assembly	F1320-60918		N	✓	✓
18	I/O Bracket Grounding Clip	F1350-60912		N	✓	✓
19	I/O Door	F1350-60910		Y	✓	✓
20	IR Lens	F1320-60952		N	✓	✓
21	KBD Shielding Plate	F1320-60960		N	✓	✓
22	Keyboard	*		N	✓	✓
23	LCD Display					
	LCD Assy 12.1 TFT/X	F1350-69002	F1350-69002	N	✓	
	LCD Assy/SMG 12.1 TFT/S	F1320-69094	F1320-69094	N	✓	✓
	LCD Assy-12.1" DSTN	F1371-60906	F1371-69006	N		✓
24	Lower Chassis Case					
	Lower Chassis Case - 5700	F1350-60914		N	✓	
	Lower Chassis Case - 2000	F1371-60905		N		✓
25	Memory Cover Door	F1320-60927		Y	✓	✓
26	Microphone Assembly	F1081-60946		N	✓	✓
27	Palmrest2 Assembly	F1320-60986		N	✓	✓
28	PCA - DC Power Supply	F1350-60909		N	✓	✓
29	PCA PB-586/IO Bracket	F1350-60901	F1350-69001	N	✓	✓
30	PCA PB-Icon Board					
	PCA PB-ICON/SVGA	F1350-60907		N	✓	✓
	PCA PB-ICON/XGA	F1350-60908		N	✓	
	PCA PB-ICON/DSTN	F1371-60911		N		✓
31	PCMCIA Button Assembly	F1320-60949		Y	✓	✓
32	Plastic Foot	F1320-60929		Y	✓	✓
33	Printer Port Door	F1125-60918		Y	✓	✓
34	Prog Flash IC, BIOS	F1371-60903		N	✓	✓
35	Rubber Foot	F1320-60957		Y	✓	✓
36	Screw - BIOS Door	F1371-60902		Y		✓
37	Screw - CPU M2 X 4L	F1320-60963		N	✓	✓
38	Screw - CPU M2.6 X 6L	F1081-60942		N	✓	✓
39	Screw - FTB M2.6x10L	F1350-60925		N	✓	✓
40	Screw - FTB M2.6x8L	F1350-60926		N	✓	✓
41	Screw - HDD Door	F1320-60919		Y	✓	✓
42	Screw - ISOF M2.6x6L	F1350-60923		N	✓	✓
43	Screw - ISOP M2x6L Nyl	F1350-60924		N	✓	✓
44	Screw - ISOP M2.6X8L NYLOK	F1081-60939		N	✓	✓
45	Screw - ISOT M2.6x4L	F1350-60927		N	✓	✓
46	Screw - Keyboard	F1320-60920		N	✓	✓
47	Standoff-M2x11.75 Nyl	F1350-60928		N	✓	✓
48	Standoff-M2x15L Nyl	F1350-60929		N	✓	✓
49	Std Li-Ion Battery	F1193-60902		Y	✓	✓
50	Sub Batt - NiMHd	F1350-60921		N	✓	✓
51	Upper Chassis Case	F1350-60915		N	✓	✓
52	Video RAM	F1350-60922		N	✓	✓

Note, this is a partial parts list. For a complete parts list, please refer to Appendix E or the Product Support Plan.
*For a complete listing of available localized keyboards, refer to Appendix E or the Product Support Plan.

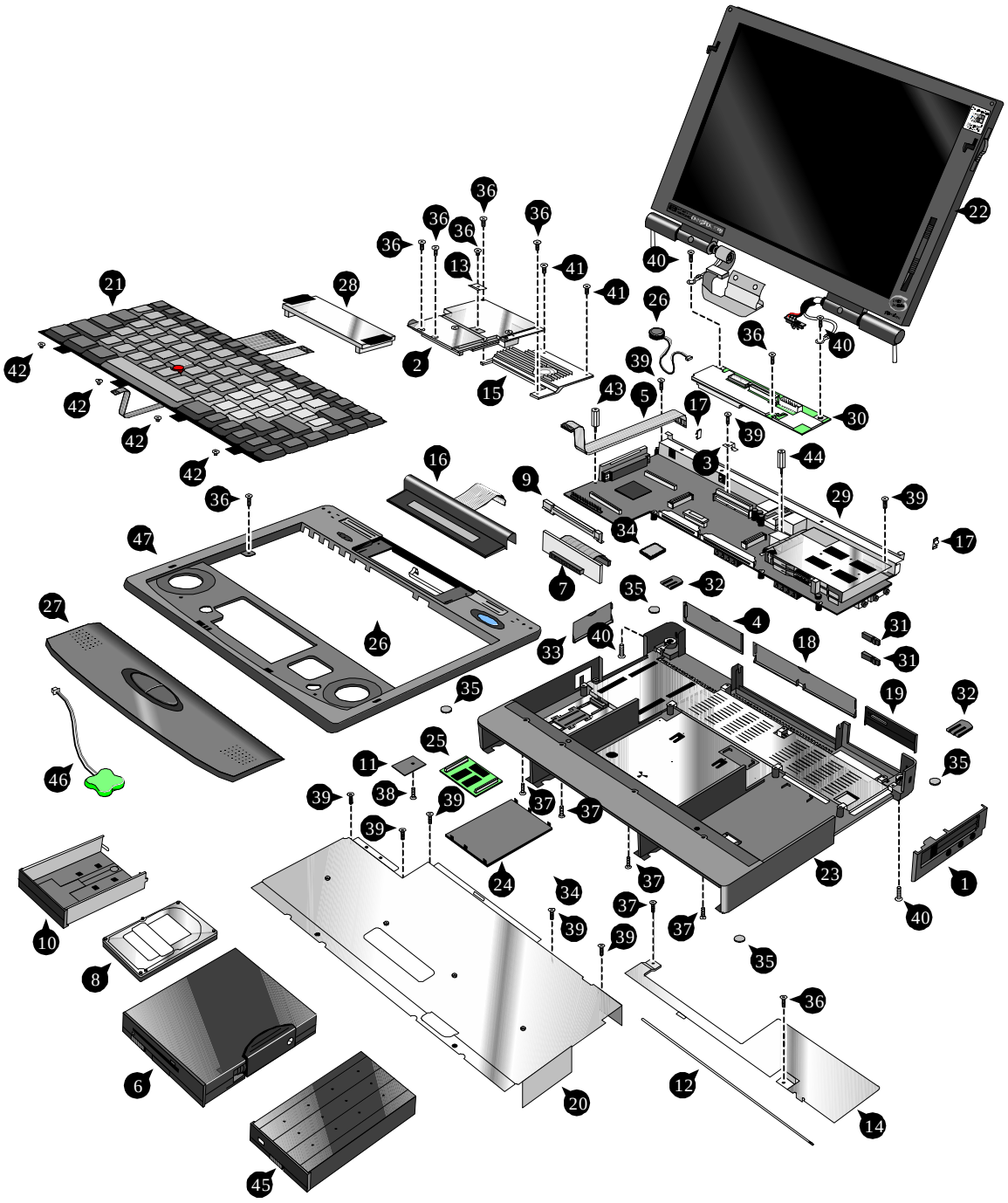

Figure 7 - OmniBook 5500 Exploded Diagram

Table 3 - OmniBook 5500 Parts Identification

	Description	*Part Number*	*Exchange Part #*	*User Replace.*
1	Bezel	F1320-60958		N
2	CPU Module			
	CPU Module/100C	F1320-60901	F1320-69001	N
	CPU Module/120C	F1320-60902	F1320-69002	N
	CPU Module/133C	F1320-60903	F1320-69003	N
3	Dock Grounding Spring Plate	F1320-60962		N
4	Expansion Door	F1125-60920		Y
5	FFC Cable T/B to M/B 10 PIN	F1320-60950		N
6	3.5" floppy disk drive	F1195-60901		Y
7	HDD-FPC Flex	F1320-60961		N
8	Hard Disk Drive			
	HDD Drive 810MB	F1191-60901	F1191-69001	Y
	HDD Drive 1.35GB	F1192-60901	F1192-69001	Y
	HDD Drive 2.0GB	F1339-60901	F1339-69001	Y
9	HDD PCB Bracket	F1320-60965		N
10	HDD Plastic Kit	F1320-60947		Y
11	HDD Security Cover	F1320-40001		Y
12	Heat Pipe	F1320-60964		N
13	Heat Pipe Bracket	F1320-60972		N
14	Heat Pipe Spreader	F1320-60921		N
15	Heat Sink	F1320-60954		N
16	Icon Assembly	F1320-60918		N
17	I/O Bracket Grounding Clip	F1350-60912		N
18	I/O Door	F1320-60928		Y
19	IR Lens	F1320-60952		N
20	KBD Shielding Plate	F1320-60960		N
21	Keyboard	*		N
22	LCD Display			
	LCD Assy 10.4” TST/S	F1320-60904	F1320-69004	N
	LCD Assy 11.3” DSTN/S	F1320-60905	F1320-69005	N
	LCD Assy 12.1" TFT/S	F1320-60906	F1320-69006	N
	LCD Assy-SMG 12.1" TFT/S	F1320-60994	F1320-69094	N
23	Lower Chassis Case	F1320-60930		N
24	Memory Cover Door	F1320-60927		Y
25	Memory Module			
	8MB RAM	F1134-60901	F1134-69001	Y
	16MB RAM	F1135-60901	F1135-69001	Y
	32MB RAM	F1136-60901	F1136-69001	Y
26	Microphone Assembly	F1081-60946		N
27	Palmrest2 Assembly	F1320-60986		N
28	PCA - DC Power Supply	F1320-60925		N
29	PCA PB-586/IO Bracket	F1320-60926	F1320-69026	N
30	PCA PB-Icon Board			
	PCA PB-ICON	F1320-60924		N
	PCA PB-ICON/SMG	F1320-60993		N
31	PCMCIA Button Assembly	F1320-60949		Y
32	Plastic Foot	F1320-60929		Y
33	Printer Port Door	F1125-60918		Y
34	Prog Flash IC, BIOS	F1321-60907		N
35	Rubber Foot	F1320-60957		Y
36	Screw - CPU M2 X 4L	F1320-60963		N
37	Screw - CPU M2.6 X 6L	F1081-60942		N
38	Screw - HDD Door	F1320-60919		Y
39	Screw - ISOP M2.0x6.0L Nylok	F1350-60924		N
40	Screw - ISOP M2.6X8L Nylok	F1081-60939		N
41	Screw - M2.6x4.0L	F1350-60927		N
42	Screw - Keyboard	F1320-60920		N
43	Standoff-M2x11.75 Nyl	F1320-60951		N
44	Standoff-M2x15L Nyl	F1320-60955		N
45	Std Li-Ion Battery	F1193-60902		Y
46	Sub Battery 4.8v	F1081-60925		N
47	Upper Chassis Case	F1320-60931		N

Note, this is a partial parts list. For a complete parts list, please refer to Appendix E or the Product Support Plan.
*For a complete listing of available localized keyboards, refer to Appendix E or the Product Support Plan.

Product Comparisons

	HP OmniBook 5700	*HP OmniBook 5500*	*HP OmniBook 2000*
Size Closed	29.5 x 22.6 x 4.9 cm (11.6 x 8.9 x 1.93 in)	29.5 x 22.6 x 4.9 cm (11.6 x 8.9 x 1.93 in)	29.5 x 22.6 x 4.9 cm (11.6 x 8.9 x 1.93 in)
Weight	3.27 kg (7.2 lb)	3.4 kg (7.5 lb)	3.27 kg (7.2 lb)
Processor	166- or 150-MHz Intel Pentium® with MMX technology	100-, 120-, or 133-MHz Intel Pentium processor	133-MHz Intel Pentium with and without MMX technology
Bus Architecture	32-bit PCI bus	32-bit PCI bus	32-bit PCI bus
Cache	512-KB burst-synchronous L2 cache	256-KB external L2 cache	no L2 cache
Display Size	12.1-inch TFT	10.4- or 12.1-inch diagonal TFT 11.3-inch diagonal DSTN	12.1-inch diagonal TFT 12.1-inch diagonal DSTN
Display Resolution	XGA TFT 1024 x 768 x 64k colors SVGA TFT 800 x 600 x 16.7M colors	SVGA TFT 800 x 600 x 64K colors SVGA DSTN 800 X 600 X 256 colors	SVGA TFT 800 x 600 x 16.7M colors SVGA DSTN 800 x 600 x 64K colors
Video Bus	PCI local bus video	PCI local bus video	PCI local bus video
Video RAM	2-MB video RAM	1-MB video RAM	2-MB video RAM
VGA-out Support	XGA-out supports up to 1024 x 768 x 64k colors	XGA-out supports up to 1024 x 768 x 256 colors	XGA-out supports up to 1024 x 768 x 64k colors
Video Controller	Chips and Technology 65554 controller (64-bit)	Chips and Technology 65548 controller (32-bit)	Chips and Technology 65554 controller (64-bit)
Power	AC adapter 100 to 240 Vac (50 to 60 Hz) input; 12 Vdc, 3.3 A output	AC adapter 100 to 240 Vac (50 to 60 Hz) input; 12 Vdc, 3.3 A output	AC adapter 100 to 240 Vac (50 to 60 Hz) input; 12 Vdc, 3.3 A output
Battery Type	14.4-Vdc, 2.5-AH rechargeable Lithium-Ion battery Optional, 14.4-Vdc, 3.75-AH enhanced Lithium Ion battery	14.4-Vdc, 2.5-AH rechargeable Lithium-Ion battery Optional, 14.4-Vdc, 3.75-AH enhanced Lithium Ion battery	14.4-Vdc, 2.5-AH rechargeable Lithium-Ion battery Optional, 14.4-Vdc, 3.75-AH enhanced Lithium Ion battery
Battery Life	Up to 2.5 hours with one LiIon battery (enhanced LiIon battery adds up to 3.75 hours)	Up to 2.5 hours with one LiIon battery (enhanced LiIon battery adds up to 3.75 hours)	Up to 2.5 hours with one LiIon battery (enhanced LiIon battery adds up to 3.75 hours)
Recharge Rate	Battery recharges to high level in 4 hours using AC adapter while PC is on or off	Battery recharges to high level in 4 hours using AC adapter while PC is on or off	Battery recharges to high level in 4 hours using AC adapter while PC is on or off
Advanced Power Management	Instant-on maintains computer in ready-to-work state for weeks on a full charge; returns you to	Instant-on maintains computer in ready-to-work state for weeks on a full charge; returns you to your application or file	Instant-on maintains computer in ready-to-work state for weeks on a full charge; returns you to your application or file

	HP OmniBook 5700	*HP OmniBook 5500*	*HP OmniBook 2000*
	your application or file instantly 2-minute low-battery warning	instantly 2-minute low-battery warning	instantly 2-minute low-battery warning
Removable Modules	• Floppy disk drive internal/external (can be replaced with a second battery or CD ROM drive) • Hard disk drive • RAM • Battery	• Floppy disk drive internal/external (can be replaced with a second battery or CD ROM drive) • Hard disk drive • RAM • Battery	• Floppy disk drive internal/external (can be replaced with a second battery or CD ROM drive) • Hard disk drive • RAM • Battery
Hard Disk Drive	3.0-billion-byte or 2.0-billion-byte hard drives	810-MB, 1.35-GB, or 2.0GB hard disks	1.44-billion-byte or 2.0-billion-byte hard drives
Floppy Disk Drive	Internal 3.5-inch, 1.44-MB, standard; swaps with CD-ROM or enhanced battery; usable externally	Internal 3.5-inch, 1.44-MB, standard; swaps with CD-ROM or enhanced battery; usable externally	Internal 3.5-inch, 1.44-MB, standard; swaps with CD-ROM or enhanced battery; usable externally
CD-ROM Drive	Optional, internal, 10x	Optional, internal, 10x	Optional, internal, 10x
Memory	Self-refreshed FPM DRAM 16 or 32-MB models, expandable to 128 MB 8-, 16-, 32-, and 64-MB RAM modules available	Self-refreshed FPM DRAM 8 or 16-MB models, expandable to 64 MB 8-, 16-, and 32-MB RAM modules available	Self-refreshed FPM DRAM 16 or 32-MB models, expandable to 128 MB 8-, 16-, 32-, and 64-MB RAM modules available
Audio	16-bit with Sound Blaster™ Pro and MIDI support Stereo sound via two built-in speakers	16-bit with Sound Blaster Pro compatible and MIDI support Stereo sound via two built-in speakers	16-bit with Sound Blaster Pro and MIDI support Stereo sound via two built-in speakers
IO Ports	• 9-pin, 115,200-bps, RS-232 port • 25-pin bidirectional ECP/EPP parallel port • XGA-out (up to 1024 x 768 x 64K) • Fast-IR-IRDA compliant @ 4Mbps • Expansion bus connector • PS/2 keyboard/mouse port • Headphone/stereo-out port • Stereo-in and microphone ports • MIDI/joystick port	• 9-pin, 115,200 - b/s, RS-232 port • 25-pin bidirectional ECP/EPP parallel port • XGA-out (up to 1024 x 768 x 256) • Fast-IR-IRDA compliant @ 4Mbps • Expansion bus connector • NTSC/PAL video-out port (RCA and SVideo) • PS/2 keyboard/mouse port • Headphone/stereo-out port • Stereo-in and microphone ports • MIDI/joystick port	• 9-pin, 115,200-bps, RS-232 port • 25-pin bidirectional ECP/EPP parallel port • XGA-out (up to 1024 x 768 x 64K) • Fast-IR-IRDA compliant @ 4Mbps • Expansion bus connector • PS/2 keyboard/mouse port • Headphone/stereo-out port • Stereo-in and microphone ports • MIDI/joystick port
PCMCIA	One Type III PCMCIA slot (or use as two Type II slots) with 3.3-V or 5-V support Zoomed video support for lower slot CardBus support (both slots)	One Type III PCMCIA slot (or use as two Type II slots) with 3.3-V or 5-V support.	One Type III PCMCIA slot (or use as two Type II slots) with 3.3-V or 5-V support Zoomed video support for lower slot CardBus support (both slots)
Docking	Optional docking system with one PCI/ISA and one ISA slot,	Optional docking system with one PCI/ISA-and one ISA slot,	Optional docking system with one PCI/ISA-and one ISA slot,

	HP OmniBook 5700	*HP OmniBook 5500*	*HP OmniBook 2000*
	parallel, serial, XGA-out (up to 1024 x 768 x 64k), keyboard, PS/2 mouse, MIDI/joystick, audio and SCSI-2 ports. Optional port replicator with parallel, serial, video-out, keyboard, PS/2 mouse, MIDI/joystick, and audio ports	parallel, serial, XGA-out (up to 1024 x 768 x 256), keyboard, PS/2 mouse, MIDI/joystick, audio and SCSI-2 ports.	parallel, serial, XGA-out (up to 1024 x 768 x 64K), keyboard, PS/2 mouse, MIDI/joystick, audio, and SCSI-2 ports. Optional port replicator with parallel, serial, video-out, keyboard, PS/2 mouse, MIDI/joystick, and audio ports.
Pre-installed Software	Microsoft® Windows® for Workgroups 3.11 and MS-DOS® 6.22 co-loaded with Microsoft Windows 95* Windows 95-compatible Plug and Play BIOS Advanced Power Management 1.2 DMI 1.1 under Windows 95 with TopTools HP PIM and Financial Calculator On-line documentation	Microsoft Windows for Workgroups 3.11 and MS-DOS 6.22 co-loaded with Microsoft Windows 95* Windows 95-compatible Plug and Play BIOS Advanced Power Management 1.1 HP PIM and Financial Calculator On-line documentation	Microsoft® Windows® for Workgroups 3.11 and MS-DOS® 6.22 co-loaded with Microsoft Windows 95* Windows 95-compatible Plug and Play BIOS Advanced Power Management 1.2 DMI 1.1 under Windows 95 with TopTools HP PIM and Financial Calculator On-line documentation
Security Features	• 2-level password protection • Hardware-based hard drive password • Electronic serial number in CMOS accessible through DMI • PC ID (tattooing) • Kensington lock slots	• 2-level password protection • PC ID (tattooing) and serialization • Drive lock • Kensington lock slots	• 2-level password protection • Hardware-based hard drive password • Electronic serial number in CMOS accessible through DMI • PC ID (tattooing) • Kensington lock slots
Warranty	3-year return-to HP for repair (1-year on battery and accessories)	3-year return-to-HP for repair for premium models; 1-year return-to-HP for VL's (1-year on battery and accessories)	3-year return-to HP for repair (1-year on battery and accessories)

*(Note: Upon first boot, the end user must make a ONE-TIME selection between Windows 95 and Windows for Workgroups. Later, if the end user desires the rejected operating system, the end user will need to acquire and pay for such product as a separate transaction.)

Part 2

Troubleshooting

- Power-On Self-Test
- OmniBook Diagnostics
- Desktop Management Interface
- System Configuration Utility
- Troubleshooting Tips

Power-On Self-Test

The OmniBook 2000, 5500, and 5700 BIOS includes a Power-On Self-Test (POST) facility that tests a number of hardware and firmware items in the unit at each cold-start (BOOT or RESET).

The OmniBook self-test alone should not be used to diagnose a hardware problem. If the self-test results are absolutely clear and repeatable, confirm the results with at least two other non-self-test troubleshooting tools.

Within POST, there are three kinds of messages:

- Error Messages – These messages appear when there is a failure in hardware, software, or firmware.
- Informational Messages – These messages provide information to the user but require no action.
- Beep Codes – This kind of warning sounds when POST errors occur and the screen is not yet available.

Beep Codes

These multiple beep codes indicate a failure in a simple test of:

- a portion of base memory
- flash BIOS checksum
- a portion of conventional memory
- a portion of extended memory

If the unit fails to boot

- all accessories are removed, including:
  memory, floppy drive, docking station, modems and other PC Cards, printers, external displays, pointing devices, and keyboard
- clean AC power is provided (no "chained" battery chargers or auto adapters), and press reset.

If the unit still fails to boot, it requires service.

Beep codes are used to identify a POST error that occurs when the screen is not available. Once the screen is operating, diagnostic messages are reported to the screen. There are beep codes for both fatal and nonfatal system board errors.

Table 4 - POST Beep Codes

Beep Code	Description
S-S-S-P-S-S-L-P	The DMA page registers are faulty.
S-S-S-P-S-L-S-P	The refresh circuitry is faulty
S-S-S-P-S-L-L-P	The ROM checksum is incorrect
S-S-S-P-L-S-S-P	The CMOS RAM test failed
S-S-S-P-L-S-L-P	The DMA controller is faulty
S-S-S-P-L-L-S-P	The interrupt controller failed
S-S-S-P-L-L-L-P	The 8042 keyboard controller failed
S-S-L-P-S-S-S-P	No video adapter was found
S-S-L-P-S-S-L-P	No RAM installed. No message is displayed.

Display Codes

There are a number of Power On Self Test (POST) tests that are performed after the Beep Code tests. Failure of one or more of these tests will result in a displayed failure code (such as 03044). It is extremely important not to interpret a failure code immediately as a hardware failure. The failure should be confirmed with a clean boot. A clean boot is defined as pressing the reset button after removing all accessories (including memory, floppy drive, modems, PC cards, and printers) and providing a reliable power source. Note, make sure the display is adjusted to be visible.

Table 5 - POST Display Codes

Message	Possible Cause
CLOCK NOT TICKING CORRECTLY	The real time clock is not ticking.
COLOR/MONO SWITCH INCORRECT	The COLOR/MONO switch on the system board is incorrect for the installed hardware.
CMOS CHECKSUM INVALID - RUN SCU	CMOS RAM information has been corrupted and needs to be reinitialized via the System Configuration Utility.
CMOS FAILURE - RUN SCU	CMOS RAM has lost power and needs to be reinitialized via the System Configuration Utility.
FLOPPY CONTROLLER FAILED	The floppy controller failed to respond to the reset command. Power down the system and check all appropriate connections. It the floppy controller continues to fail, you may need to replace it.
FLOPPY DISK TRACK 0 FAILED	The floppy drive cannot read track 0 of the floppy disk in the drive. Try another diskette. If the problem persists, you may need to replace the floppy drive.
FLOPPY INFORMATION INVALID - RUN SCU	The drive parameters stored in CMOS do not match the floppy drives detected in the system.
HARD DISK CONTROLLER ERROR	The hard disk controller failed to respond to the reset command. Possible solutions: 1) Check the drive parameters. 2) Power down the system and check all appropriate connections. If the problem persists, you may need to replace the hard disk controller.
HARDWARE INFO DOES NOT MATCH VIDEO CARD - RUN SCU	The video adapter type specified in CMOS RAM does not match the installed hardware.
KEYBOARD CONTROLLER FAILURE	The keyboard failed the self-test command. Check to see if the keyboard controller is properly installed. If the problem continues, replace the controller.
KEYBOARD FAILURE	The keyboard failed to respond to the RESET ID Command.
MACHINE IS LOCKED - TURN KEY	The system will not continue the boot

Message	Possible Cause
	sequence until you insert the key into the key lock and turn it.
NO BOOTABLE FLOPPY DRIVE 0 INSTALLED	No bootable floppy drive was detected. Possible solutions: 1) Power down the system and check all appropriate connections, cables, etc. 2) In configurations where no floppy drive is installed, run System Configuration Utility and make sure the diskette drive configuration item is set to "None". 3) Replace the diskette drive if necessary.
NO INTERRUPTS FROM TIMER 0	The periodic timer interrupt is not occurring.
RAM PARITY ERROR AT LOCATION xxxx	A RAM parity error occurred at the specified (hexadecimal) location.
ROM AT xxxx (LENGTH YYYY) WITH NON-ZERO CHECKSUM (zz)	An illegal adapter ROM was located at the specified address. An external adapter (such as a video card) may be causing a conflict.
TIME/DATE CORRUPT - RUN SCU	The time and date stored in the real time clock have been corrupted, possibly by a power loss.
UNEXPECTED AMOUNT OF MEMORY - RUN SCU	The amount of memory detected by POST does not match the amount specified in CMOS RAM.
CMOS RAM TEST FAILED	A walking built test of CMOS RAM locations 0E (Hex) - 3F (Hex) failed.
DMA CONTROLLER FAULTY	A sequential read/write of the transfer count and transfer address registers within the primary and secondary DMA controllers failed.
FAULTY DMA PAGE REGISTERS	A walking bit read/write of the 16 DMA controller page registers starting at location 80 Hex failed.
FAULTY REFRESH CIRCUIT	A continuous read/write test of port 61h found that bit 4 (Refresh Detect) failed to toggle within an allotted amount of time.
INTERRUPT CONTROLLER FAILED	A sequential read/write of various Interrupt Controller registers failed.
ROM CHECKSUM INCORRECT	A checksum of the ROM BIOS does not match the byte value at F000:FFFF.