Compaq Deskpro EX

Maintenance & Service Guide

Compaq Deskpro EX Series
of Personal Computers
Microtower Models

COMPAQ

Part Number: 216616-001

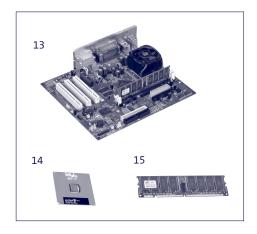Spare Part Number: 216921-001
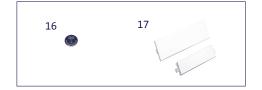
Documentation (not shown)

Maintenance & Service Guide	216921-001
Service Reference Guide	152611-001
Compaq Quick Troubleshooting Guide	153837-001

Keyboards (not shown)

Keyboard	216919-xx1
United States	-00x
French Canadian	-12x
Japanese (Kanji)	-29x
Latin American Spanish	-16x
Spanish (LA MERCO)	-C9x
PRC Chinese	-AAx
Taiwanese	-ABx
HK Chinese	-ACx

System Unit

1	Left access panel with 2 screws	Not spared
2	Chassis assembly (reference only)	Not spared
3	Right access panel with 2 screws	Not spared
4	Front bezel	Not spared
5	Power supply	216912-001

Mass Storage Devices

6	10-GB hard drive with 4 screws	203139-001
7	48X CD-ROM drive with 4 screws	187263-001
8	Diskette drive with 4 screws	222604-001

Cables

9	CD-ROM drive cable/Hard drive cable	216914-001
10	Diskette drive cable	216916-001
11	Power button and LED cable	216917-001
12	CD audio cable	Not spared

Standard and Optional Boards

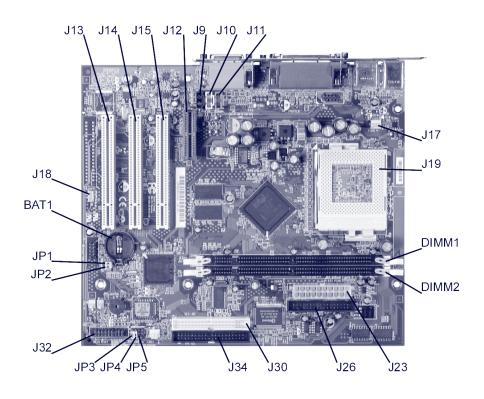|		
13	System board	216906-001
*	Processor, Intel Celeron, 566/66 with heatsink	203967-001
14	Processor, Intel Pentium III, 667/133 with heatsink	192007-001
15	Memory module, 64MB/133MHz	170080-001

Miscellaneous Parts

16	RTC Battery	153099-001
*	Mouse	216920-001
17	Bezel blanks (2)	216913-001
*Not shown		

Miscellaneous Screw Kit (not shown)

Screw Kit, including:	216918-001
4 US screws for drive retention	
4 Metric screws for drive retention	
2 access panel screws	

J13 J14 J15 J12 J9 J10 J11

J18
BAT1
JP1
JP2
J32

JP3 JP4 JP5   J34 J30   J26 J23

J17
J19
DIMM1
DIMM2

System Memory Map

Address Range	Memory Address	Size	Description
1024K–524288K	100000–1FFFFFFF	511MB	Extended memory
960K–1024K	F0000-FFFFF	64KB	Runtime BIOS
896K–960K	E0000-EFFFF	64KB	Reserved
800K–896K	C8000-DFFFF	96KB	Available high DOS memory (open to PCI bus)
640K-800K	A0000-C7FFF	160KB	Video memory and BIOS
639K-640K	9FC00-9FBFF	1KB	Extended BIOS data (movable by memory manager software)
512K-639K	80000-9FBFF	127KB	Extended conventional memory
0K-512K	00000-7FFFF	512KB	Conventional memory

DMA

Hardware DMA	Data Width	System Function
0	8- or 16-bits	Audio
1	8- or 16-bits	Audio/Parallel port
2	8- or 16-bits	Diskette drive
3	8- or 16-bits	Parallel port (for ECP or EPP)/audio
4		DMA controller
5	16-bits	Open
6	16-bits	Open
7	16-bits	Open

Connectors and Jumpers

BAT1	External battery
DIMM1-2	Memory slots
J9	CD audio
J10	Aux-in connector
J11	Telephony connector
J12	Audio/Modem Riser (AMR) slot
J13-15	PCI Expansion Slots
J17	CPU fan connector
J18	Wake on Lan (WOL)
J19	Processor socket
J23	ATX power connector
J26	Floppy drive connector

J30	Secondary IDE connector
J32	Front panel/Misc header
J34	Primary IDE connector
JP1	Front panel USB (pins 2&3 jumpered = default shipping configuration)
JP2	Back panel USB (pins 2&3 jumpered = default shipping configuration)
JP3*	FWH lock (boot block)
JP4*	CPU safe speed
JP5	Clear password/CMOS jumper

JP3 and JP4 settings should never be altered.

I/O Map

Address (hex)	Size	Description
0000-000F	16 bytes	DMA controller
0020-0021	2 bytes	Programmable Interrupt Control (PIC)
0040-0043	4 bytes	System timer
0060	1 byte	Keyboard controller byte-reset IRQ
0061	1 byte	System speaker
0064	1 byte	Keyboard controller, CMD/STAT byte
0071-0071	2 bytes	System CMOS/Real Time Clock
0072-0073	2 bytes	System CMOS
0080-008F	16 bytes	DMA controller
0092	1 byte	Fast A20 and PIC
00A0-00A1	2 bytes	PIC
00B2-00B3	2 bytes	APM control
00C0-00D0	32 bytes	DMA
00F0	1 byte	Numeric data processor
0170-0177	8 bytes	Secondary IDE channel
01F0-01F7	8 bytes	Primary IDE channel
One of these ranges: 0200-0207 0208-020F 0210-0217 0218-021F	Can very from 1 byte to 8 bytes	Audio/game port
One of these ranges: 0220-022F 0240-024F	16 bytes 16 bytes	Audio (SoundBlaster Pro+ compatible)
0228-022F*	8 bytes	LPT3
0278-027F*	8 bytes	LPT2
02E8-02EF*	8 bytes	COM4/video (8514A)
02F8-02FF*	8 bytes	COM2
One of these ranges: 0320-0327 0330-0337 0340-0347 0350-0357	8 bytes	MPU-401(MIDI)
0376	1 byte	Secondary IDE Channel command port
0377, bit 6:0	7 bits	Secondary IDE Channel status port
0378-037F	8 bytes	LPT1
0388-038B	6 bytes	AdLib+(FM synthesizer)
03B0-03BB	12 bytes	Intel 82810e-DC100 Graphics/Memory Controller Hub (GMCHE)
03C0-03DF	32 bytes	Intel 82810e Graphics/Memory Controller Hub (GMCHE)
03E8-03EF	8 bytes	COM3
03F0-03F5	6 bytes	Diskette channel 1
03F6	1 byte	Primary IDE channel command port
03F8-03FF	8 bytes	COM1
04D0-04D1	2 bytes	Edge/level triggered PIC
One of these ranges: 0530-0537 0E80-0E87 0F40-0F47	8 bytes	Windows Sound System
LPTn+400h	8 bytes	ECP port, LPTn base address+400h
0CF8-0CFB**	4 bytes	PCI configuration address register
0CF9***	1 byte	Turbo and reset control register
0CFC-0CFF	4 bytes	PCI configuration data register
FFA0-FFA7	8 bytes	Primary bus master IDE registers
FFA8-FFAF	8 bytes	Secondary bus master IDE registers

Size and address	Description
96 contiguous bytes starting on a 128-byte divisible boundary	ICH (ACPI+TCO)
64 contiguous bytes starting on a 64-byte divisible boundary	Motherboard resource
64 contiguous bytes starting on a 64-byte divisible boundary	Onboard audio controller
32 contiguous bytes starting on a 32-byte divisible boundary	ICH (USB)
16 contiguous bytes starting on a 16-byte divisible boundary	ICH (SMB)
4096 contiguous bytes starting on a 4096-byte divisible boundary	Intel 82810AA PCI bridge
32 contiguous bytes starting on a 32-byte divisible boundary	Intel 82559 LAN controller

Default, but can be changed to another address range.
*** Dword access only*
**** Byte access only*
NOTE: Some additional I/O addresses are not available due to ICH addresses aliassing.

Clearing CMOS and Passwords

Passwords may need to be changed, or the computer's configuration (CMOS) may occasionally be corrupted. Both can be cleared using jumper JP5.

1. Turn off the computer and any external devices, then disconnect the power cord from the power outlet.
2. Remove the access panel on the left side of the computer.
3. Locate the header labeled JP5. Place a jumper across pins 1 & 2 on JP5.
4. Connect the power cord to the power outlet.
5. Turn on the computer.
6. The password reset screen automatically displays. Choose either :
   F1 to reset CMOS
   F4 to reset passwords
   The computer executes the choice and automatically shuts down.
7. Disconnect the power cord from the power outlet.
8. Remove the jumper from JP5 pins 1 & 2 and place it on pins 2 & 3 (safe position).
9. Replace the access panel.
10. Reconnect the power cord to the power outlet and turn the computer on.
    If F1 was selected in step 6, the CMOS defaults are reset when the computer starts.
    If F4 was selected, all passwords are cleared when the computer starts.

NOTE: Clearing CMOS clears the Power-On Password. It does NOT clear the Supervisor Password.

Setting the Supervisor and Power-On Passwords

A. Setting the Supervisor Password provides access protection for the Computer Setup utility.
   1. Turn on the computer, then hold down the DEL key until the Computer Setup utility begins.
   2. Select "Change Supervisor Password" and follow screen instructions.
   3. The password will be enabled after saving settings and exiting the utility.

B. Setting a Power-On Password.
   NOTE: A Supervisor Password must have previously been set. That same password will be used for the Power-On Password.
   1. Turn on the computer, then hold down the DEL key until the Computer Setup utility begins.
   2. Select Advanced CMOS Setup➜Password Check.
   3. Select "Always" from the Available Options list.
   4. The password will be enabled after saving settings and exiting the utility.

NOTE: Clearing passwords clears both the Supervisor and Power-On Passwords, but does not clear the "Always" option. To reset only the Supervisor Password, change "Always" to "Setup" on the Available Options list.

NOTE: Clearing CMOS clears the Power-On Password. It does NOT clear the Supervisor Password.

System Interrupts (IRQ)

IRQ	System Resource
NM1	I/O channel check
0	Reserved, interval timer
1	Reserved, keyboard buffer full
2	Reserved, cascade interrupt from slave PIC
3	COM2* (user available if COM2 is not present)
4	COM1*
5	LPT2 (Plug and Play option)/audio/user available
6	Diskette drive controller
7	LPT1*

IRQ	System Resource
8	Real-time clock
9	User available
10	User available
11	User available
12	Onboard mouse port (if present, else user available)
13	Reserved, math coprocessor
14	Primary IDE (if present, else user available)
15	Secondary IDE (if present, else user available)

Default, but can be changed to another IRQ.