Illustrated Parts & Service Map

HP Pro 3330 Small Form Factor Business PC

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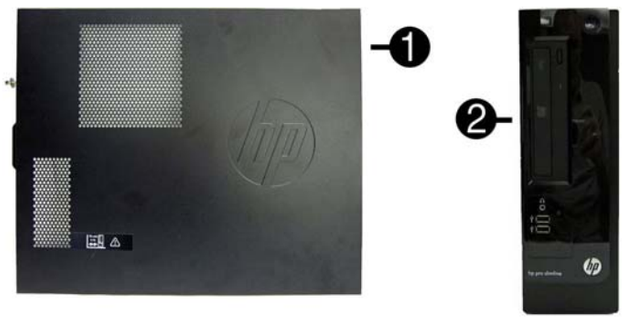
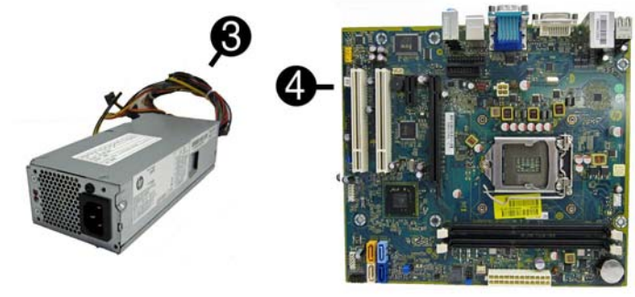
Key Specifications

Processor Type	Intel® Core i7, i5, i3, Pentium, Celeron
RAM Type	PC3-10600 DDR3 (1066/1333 MHz), non-ECC
Maximum RAM	8 GB
Expansion Slots	• (1) PCIe-x16 • (1) PCIe-x1 • (2) PCI
Chipset	Intel H61
Graphics Adapter	Integrated Intel HD Graphics
Bays	• (1) external 5.25-inch • (1) internal 3.5-inch
I/O Interfaces	Front: (2) USB 2.0, headphone Rear: (4) USB 2.0, DVI-D, VGA, HDMI, PS/2 keyboard and mouse, audio in, audio out, RJ-45, serial
Preinstalled Operating Systems	• Windows® 8 • Windows 7 • RedFlag Linux

Spare Parts





System Unit

1	Access panel	656832-001
2	Front bezel	668569-001
3	Power supply, 220W	656722-001
*	Power supply, 270W	665224-001
System boards with thermal grease, alcohol pad, and CPU socket cover		
4	System board	663099-001
*	System board for use in 3330 models with NetClone	711493-001
*	System board for use in 3330 models with Windows 8 with no Digital Product Key (DPK)	702644-001
*	System board for use in 3330 models with Windows 8 Standard	702644-501
*	System board for use in 3330 models with Windows 8 Professional	702644-601

** Not shown*

Cables

1	Power switch/LED assembly	656984-001
2	SATA cable, 165 mm	657102-001
2	SATA cable, 370 mm	656833-001
*	Adapter, DVI to VGA, HF	657401-001
*	DMS-59 to Dual VGA cable	463023-001
*	PATA to SATA power adapter	449283-001

**Not shown*

Mass Storage Devices (not illustrated)

16X SATA DVD±RW drive	581600-001
DVD-ROM drive	581599-001
Blu-ray BD-RW SuperMulti DL Drive	617030-001
Bezel, optical drive	657852-001
1 TB, 7200 rpm hard drive	667719-001
750 GB, 7200 rpm hard drive	632938-001
500 GB, 7200 rpm hard drive	667720-001
500 GB, 7200 rpm hard drive, 2.5 inch	686217-001
250 GB, 7200 rpm hard drive	621419-001

Miscellaneous Parts

1	Chassis fan	656834-001
2	Fan sink for use in models with Intel processors	667727-001
3	Front USB and I/O assembly	668570-001
*	Speaker with rubber rivets	666885-001
*	Mouse, PS2, optical, black	537748-001
*	Mouse, USB, laser, black	570580-001
*	Mouse, USB, optical, black	537749-001
*	Rubber feet	660261-001
*	Serial port kit	638815-001
*	Printer port kit	638817-001
*	USB powered speakers	636917-001
*	Drive adapter, 2.5 inch	586721-001

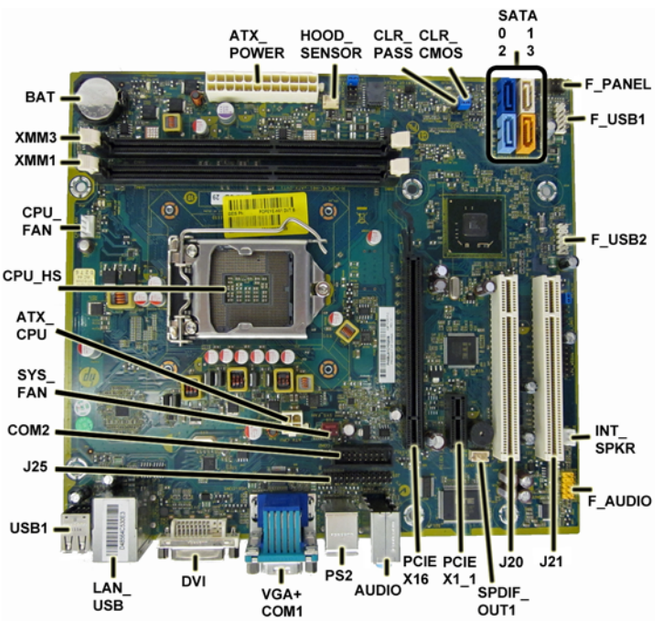
**Not shown*

Standard and Optional Boards

Memory modules (PC3-10600, CL9)		
*	1 GB	635802-001
*	2 GB	635803-001
*	4 GB	585157-001
Graphics cards		
*	ATI Radeon HD 6350 512-MB graphics adapter	637995-001
*	ATI Radeon HD 6450 512-MB graphics adapter	637996-001
*	nVidia Quadro NVS300 PCIe x16 graphics card, 512 MB, PCIe x16	632486-001
*	nVidia Quadro NVS300 PCIe x16 graphics card, 512 MB, PCIe x1	632827-001
*	ATI Radeon HD 7450 1-GB graphics adapter	682411-001
Other boards		
*	Intel Gigabit NIC, includes bracket	490367-001
*	HP USB 3.0 SuperSpeed PCIe x1 card	663213-001
Intel Core i7 processors (include thermal material)		
*	2600, 3.4 GHz, 8-MB L3 cache	638632-001
Intel Core i5 processors (include thermal material)		
*	2500, 3.3 GHz, 6-MB L3 cache	638631-001
*	2400, 3.1 GHz, 6-MB L3 cache	638630-001
*	2320, 3.0 GHz, 6-MB L3 cache	665121-001
Intel Core i3 processors (include thermal material)		
*	2130, 3.4 GHz, 3-MB L3 cache	665120-001
*	2120, 3.3 GHz, 3-MB L3 cache	638629-001
*	2100, 3.1 GHz, 3-MB L3 cache	638628-001
Intel Pentium Dual-Core processors (include thermal material)		
*	G870, 3.1 GHz, 3-MB L3 cache	691936-001
*	G860, 3.0 GHz, 3-MB L3 cache	665123-001
*	G850, 2.9 GHz, 3-MB L3 cache	655973-001
*	G840, 2.8 GHz, 3-MB L3 cache	655972-001
*	G620, 2.6 GHz, 3-MB L3 cache	655971-001
Intel Celeron Dual-Core processors (include thermal material)		
*	G550, 2.6 GHz, 2-MB L3 cache	691934-001
*	G540, 2.5 GHz, 2-MB L3 cache	666892-001
*	G530, 2.4 GHz, 2-MB L3 cache	666891-001
*	G440, 1.6 GHz, 1-MB L3 cache	665467-001

** Not shown*

System Board



System Board Connectors and Jumpers (component location may vary)

ATX_POWER	Main power connector	PCIEX16	PCIe X16 expansion slot
HOOD_SENSOR	Hood sensor connector	AUDIO	Audio connectors
CLR_PASS	Password header	PS2	Legacy keyboard and mouse connectors
CLR_CMOS	CMOS header	VGA+COM1	Monitor+serial connector
SATA0	1st hard drive	DVI	DVI connector
SATA1	2nd hard drive	LAN+USB	LAN + USB connector
SATA2	1st optical drive	USB1	USB connectors
SATA3	2nd optical drive	J25	Parallel port connector
F_PANEL	Front panel connector	COM2	2nd serial port connector
F_USB1	1st USB connector	SYS_FAN	Fan connector
F_USB2	2nd USB connector	ATX_CPU	CPU power connector
INT_SPRK	Speaker connector	CPU HS	Processor socket
F_AUDIO	Front audio connector	CPU_ FAN	Heat sink fan connector
J21	PCI expansion slot	XMM1	Memory socket - Channel A
J20	PCI expansion slot	XMM3	Memory socket - Channel B
SPDIF_OUT1	S/PDIF audio connector	BAT	RTC battery socket
PCIEX1_1	PCIe x1 expansion slot		

Common POST Error Messages

Screen Message	Probable Cause	Recommended Action
101-Option ROM Error	System ROM or expansion board option ROM checksum.	1. Verify ROM, reflash if required 2. Remove recently added cards to see if problem remains. 3. Clear CMOS. If message disappears, may be card problem. 4. Replace system board
103-System Board Failure	DMA or timers	1. Clear CMOS memory. 2. Remove expansion boards. 3. Replace system board.
163-Time & Date Not Set	Invalid time or date in configuration memory. RTC battery may need to be replaced.	Reset the date and time under Control Panel (Computer Setup can also be used). If the problem persists, replace the RTC battery.
164-Memory Size Error	Memory amount has changed since the last boot (memory added/removed).	Press the F1 key to save the memory changes.
164-Memory Size Error	Incorrect memory configuration	1. Run Setup (F10). 2. Make sure memory module(s) installed properly. 3. If third-party memory added, test using HP-only memory. 1. Verify proper module type.
201-Memory Size Error	RSM failure	1. Ensure memory modules are correctly installed. 2. Verify proper module type. 3. Remove and replace faulty module(s). 4. If error persists after replacing modules, replace system board.
214-DIMM Configuration Warning	Populated DIMM configuration is not optimized	Rearrange DIMMs so that each channel has the same amount of memory.
219-ECC Memory Module Detected ECC Modules not supported on this Platform	Recently added memory module(s) support ECC memory error correction.	1. If additional memory was recently added, remove it to see if the problem remains. 2. Check product documentation for memory support information.
301-, 304-Keyboard error	Keyboard failure.	1. Reconnect keyboard with system turned off. 2. Check kybd connection or keys. 3. Check connector for bent or missing pins. 4. Replace keyboard. 5. If 304, possible sys bd problem.
511-CPU Fan not Detected	CPU Fan not Detected.	1. Reseat CPU fan. 2. Reseat fan cable. 3. Replace CPU fan.
1805-Ambient Temperature Previously Over Limit	This system was placed in a low power state to prevent damage due to excessive environmental temperature.	Make sure the system meets the HP enclosure guidelines as listed in the Quick Specs, including the following: 1. Clean the air vents on the front, back, or any other vented side of the computer. 2. Ensure that there is a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow. 3. Ensure that computers are not so near each other that they are subject to each other's re-circulated or preheated air.
2200-PMM Allocation Error during MEBx Download 2201-MEBx Module did not checksum correctly 2202-PMM Deallocation Error during MEBx cleanup	(2200) Memory error during POST execution of the Management Engine (ME) BIOS Extensions option ROM. (2201) Memory error during POST execution of the Management Engine (ME) BIOS Extensions option ROM. (2202) Memory error during POST execution of the Management Engine (ME) BIOS Extensions option ROM.	1. Reboot the computer. 2. Unplug the power cord, re-seat the memory modules, and reboot the computer. 3. If the memory configuration was recently changed, unplug the computer, restore the original memory configuration, and reboot the computer. 4. If the error persists, replace the system board.
2230-General error during MEBx execution 2231-ME error during MEBx execution 2232-AMT error during MEBx execution	(2230) Error occurred during MEBx execution which fails into the “General” grouping. Status information displayed along with the error provides further clarity into the failure. MEBx handles transference of information between the system BIOS and ME firmware. (2231) Error occurred during MEBx execution which fails into “ME” grouping. (2232) Error occurred during MEBx execution which fails into “AMT” grouping.	1. Reboot the computer. 2. If the error persists, update to the latest BIOS version and ME firmware version. 3. If the error still persists, replace the system board.

Diagnostic LEDs

LED	Color	LED Activity	State/Message
Power	Green	On	Computer on
Power	Green	1 blink every 2 seconds	Normal Suspend Mode
Power	Red	1 blink every second followed by a 2 second pause	CPU thermal shutdown
Power	Red	3 blinks, 1 blink every second followed by a 2 second pause	Processor not installed
Power	Red	4 blinks, 1 blink every second followed by a 2 second pause	Power failure (power supply overload)
Power	Red	5 blinks, 1 blink every second followed by a 2 second pause	Pre-video memory error
Power	Red	6 blinks, 1 blink every second followed by a 2 second pause	Pre-video graphics error
Power	Red	7 blinks, 1 blink every second followed by a 2 second pause	System board failure (ROM
Power	Red	8 blinks, 1 blink every second followed by a 2 second pause	Invalid ROM based on Checksum
Power	Red	9 blinks, 1 blink every second followed by a 2 second pause	System powers on but is unable to boot
Power	Red	10 blinks, 1 blink every second followed by a 2 second pause	Bad option card
Power	Red	11 blinks, 1 blink every second followed by a 2 second pause	Current processor does not support a feature previously enabled.
none	none	System does not power on and LEDs are not flashing	System unable to power on

Password Security

Establishing a Setup or Power-On password:

1. Turn on or restart the computer.
2. As soon as the computer turns on, press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
3. Press the **F10** key to enter Computer Setup.
4. To establish Setup password, select **Security > Setup Password** and follow the instructions.
   - or -
   To establish a Power-On password, select **Security > Power-On Password** and follow the instructions on the screen
5. Before exiting, click **File > Save Changes and Exit**.

Changing a Setup or Power-On password:

1. Turn on or restart the computer.

To change the Setup password, go to step 2.
To change the Power-on password, go to step 3.

2. As soon as the computer turns on:
   - Press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed.
   - Press the **F10** key to enter Computer Setup.
3. When the key icon appears, type your current password, a slash (/) or alternate delimiter character, your new password, another slash (/) or alternate delimiter character, and your new password again as shown:
   current password/new password/new password.
   NOTE: Type the new password carefully since the characters do not appear on the screen.
4. Press **Enter**.

The new password will take effect the next time the computer is restarted.

Deleting a Power-On or Setup password

1. Turn on or restart the computer.

To delete the Setup password, go to step 2.
To delete the Power-On password, go to step 3.

2. As soon as the computer turns on:
   - Press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed.
   - Press the **F10** key to enter Computer Setup.
3. When the key icon appears, type your current password followed by a slash (/) or alternate delimiter character as shown. Example: currentpassword/
4. Press **Enter**.

Clearing CMOS

1. Turn off the computer and disconnect the power cord from the power outlet.
2. Remove the access panel.
3. On the system board, locate the CLR_CMOS header.
4. Remove the jumper from pins 2 and 3.
5. Place the jumper on pins 1 or 2.
6. Replace the jumper on pins 2 and 3.
7. Replace the chassis access panel and reconnect the power cord.
8. Turn on the computer and allow it to start.

Clearing Passwords

1. Turn off the computer and disconnect the power cord from the power outlet.
2. Remove the access panel.
3. On the system board, locate the CLR_PASS header.
4. Remove the jumper from pins 2 and 3.
5. Place the jumper on pins 1 or 2.
6. Replace the jumper on pins 2 and 3.
7. Replace the chassis access panel and reconnect the power cord.
8. Turn on the computer and allow it to start.

System Setup and Boot

Access the Setup Utility during computer boot by pressing the **F10** key. If you do not press **F10** at the appropriate time, you must restart the computer and again press **F10** when the monitor light turns green. NOTE: Not all settings are available for all models.

Computer Setup Menu

Heading	Option/Description
File	System Information - Lists the following main system specifications: • Product name • SKU number (some models) • Processor type/speed/stepping • Cache size (L1/L2/L3) • Installed memory size/speed/ch • Integrated MAC Address • System BIOS • Chassis serial number • Asset tracking number • ME firmware version • ME management mode
	About - Displays copyright notice.
	Set Time and Date - Allows you to set system time and date.
	Replicated Setup - Allows you to save or restore system configuration to/from a USB flash drive.
	Default Setup - Allows you to save current settings as default or restore factory settings as default.
	Apply Defaults and Exit - Applies the selected default settings and clears any established passwords.
	Ignore Changes and Exit - Exits Computer setup without saving changes.
	Save Changes and Exit - Saves changes to system configuration or default settings and exits Computer Setup.
Storage	Device Configuration - Lists all installed BIOS-controlled storage devices. The following options are available: • CD-ROM • Hard Disk • Default Values • Translation Mode • SSD Life Used • SMART (ATA disks only) • Diskette • SATA Defaults
Storage (*continued*)	Storage Options - Allows you to set: • eSATA Port - Set SATA port as eSATA port for use with external drive. • SATA Emulation - Choose how the SATA controller and devices are accessed by the OS. SATA Emulation choices are AHCI, RAID, or IDE. • Removable Media Boot - Enables/disables ability to boot the system from removable media. • Max eSATA Speed - Allows you to choose 1.5 Gbps or 3.0 Gpbs as the maximum eSATA speed. By default, the speed is limited to 1.5 Gbps for maximum reliability.
	DPS Self-Test - Execute self-tests on ATA hard drives capable of performing the Drive Protection System (DPS) self-tests.
	Boot Order - Specify boot order for UEFI and legacy boot sources. Also specify hard drive boot order. • Shortcut to Temporarily Override Boot Order
Security	Setup Password - Set and enable the setup (Admin) password.
	Power-On Password - Set and enable power-on password.
	Password Options - Allows to you enable/disable: • Lock Legacy Resources • Setup Browse Mode • Password prompt on F9 & F12 • Network Server Mode
	Smart Cover - Allows you to lock/unlock the smart cover and set the cover removal sensor to disable/notify user/setup password.
	Device Security - Set Device Available/Device Hidden for: embedded security device, system audio, network controller, USB controller, serial/parallel ports, and SATA ports.
	USB Security - Set Device Available/Device Hidden for front USB ports, rear USB ports, internal USB ports, accessory USB ports.
	Slot Security - Disable the PCI, PCIe, and Mini Card slots.
	Network Boot - Enables/disables boot from OS (NIC models only).
	System IDs - Allows you to update asset tag, ownership tag, UUID, keyboard locale setting.
	Master Boot Record Security - enables/disables MBR.
	System Security - Allows you to set: • Data Execution Prevention (enable/disable) • SVM CPU Virtualization (enable/disable). • Virtualization Technology (VTx) (enable/disable) • Virtualization Technology/Directed IO (VTd) (enable/disable) • Trusted Execution Technology (enable/disable) • Embedded Security Device (enable/disable) • Reset to Factory Settings (Do not reset/Reset) • Measure boot variables/devices to PCR1 (enable/disable) • OS management of Embedded Security Device (enable/disable) • Reset of Embedded Security Device through OS (enable/disable) • No PPI provisioning (Windows 8 only; enable/disable) • Allow PPI policy to be changed by OS (enable/disable)
	DriveLock Security - Allows you to assign or modify a master or user password for hard drives.
	Secure Boot Configuration (Windows 8 only) • Legacy Support (enable/disable) • Secure Boot (enable/disable). • Key Management (enable/disable) • Fast Boot (enable/disable)
Power	OS Power Management - Allows you to enable/disable Runtime Power Management, Idle Power Savings, Unique Sleep State Blink Rates.
	Hardware Power Management - Enable/disable SATA power management, S5 maximum power savings., PCI slots, network controller, USB 3.0 controller
	Thermal - Control minimum fan speed.
Advanced	Power-On Options - Allows you to set: • POST mode (QuickBoot, Clear Memory, FullBoot, or FullBoot Every x Days) • POST messages (enable/disable) • Press the ESC key for Startup Menu (enable/disable) • Option ROM Prompt (enable/disable) • After Power Loss (off/on/previous state) • POST Delay (none, 5, 10, 15, 20, or 60 seconds) • Remote Wakeup Boot Source (remote server/local hard drive) • Factory Recovery Boot Support (enable/disable) • Bypass F1 Prompt on Configuration Changes (enable/disable)
	BIOS Power-On - Set the computer to turn on at a preset time.
	Bus Options - Allows you to enable/disable PCI SERR# Generation and PCI VGA palette snooping.
	Onboard Devices - Allows you to set resources for or disable on-board system devices.
	Device Options - Allows you to set: • Printer mode (Bi-Directional, EPP + ECP, Output Only) • Num Lock State at Power-on (off/on) • Integrated Video (enable/disable) • Integrated Graphics (Auto/Disable/Force) • Internal Speaker (enable/disable) • NIC PXE Option ROM Download (enable/disable) • SATA RAID Option ROM Download (enable/disable) • Multi-Processor (enable/disable) • Hyper-threading (enable/disable) • Turbo Mode (enable/disable)
	VGA Configuration - Allows you to specify which VGA controller is the “boot”/primary. Displayed only if add-in video card installed.
	AMT Configuration - Allows you to set: • AMT (enable/disable) • Unconfigure AMT/ME (enable/disable) • Hide Unconfigure ME Confirmation Prompt (enable/disable) • Watchdog Timer (enable/disable)