

Illustrated Parts & Service Map

HP rp5800 Retail System



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Document Number 659816-002. 2nd Edition July 2011.

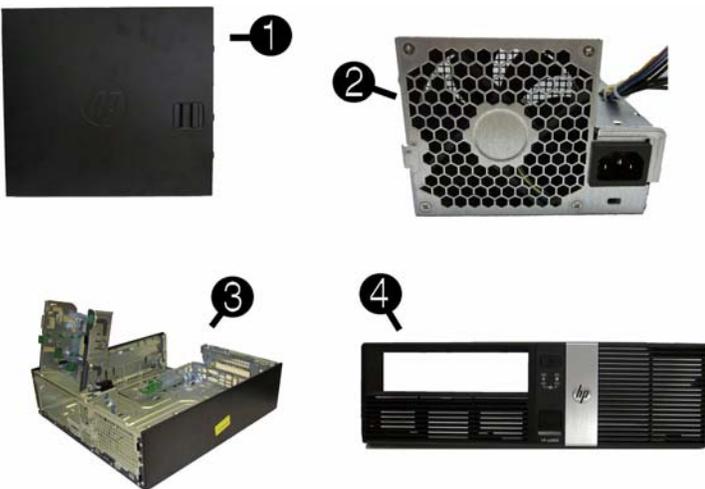


Key Specifications

Processor Type	Intel® Core i7, i5, i3, Pentium Dual-Core
RAM Type	Non-ECC DDR3 PC3-10600 (1333 MHz) & PC3-8500 (1066 MHz)
Maximum RAM	16 GB
Expansion Slots (Low profile)	<ul style="list-style-type: none"> • (2) PCIe-x16 • (1) PCIe-x1 • (1) PCI
Chipset	Intel Q67 Express
Graphics Adapter	Integrated Intel HD graphics
Bays	<ul style="list-style-type: none"> • (1) external 5.25-inch • (2) internal 3.5-inch
I/O Interfaces	Front: USB 2.0 (2; covered) Rear: USB 2.0 (5), 24V powered USB, serial (RS-232 compatible), parallel (optional), eSATA (optional) RS-232 (2; up to 4 total), USB+PWR 12V (USB+PWR 12V cards optional (3 per card) for a total of 6), PS/2 (2), RJ-11 (Cash Drawer port), VGA, DisplayPort v1.1a, line-in, line-out, RJ-45
Preinstalled Operating Systems	<ul style="list-style-type: none"> • Windows 7 Professional 32/64 • Windows Embedded POSReady 2009

Spare Parts

System Unit



System Unit		
1	Access panel	653025-001
2	Power supply, 90% efficient	659246-001
3	Chassis	Not spared
4	Front bezel	653025-001

* Not shown

Cables



Cables		
1	Front I/O cable and power switch assembly	655579-001
2	SATA cable, 19.5 inch, 2 straight ends	638813-001
*	SATA cable, 25.2 inch, 1 straight end, 1 angled end	638814-001
*	Powered serial cable	653023-001
*	Adapter, DisplayPort to VGA	603250-001
*	Adapter, DisplayPort to DVI	484156-001
*	Adapter, DisplayPort to HDMI	617450-001
*	DisplayPort cable	487562-001
*	Cable cover	653028-001

*Not shown

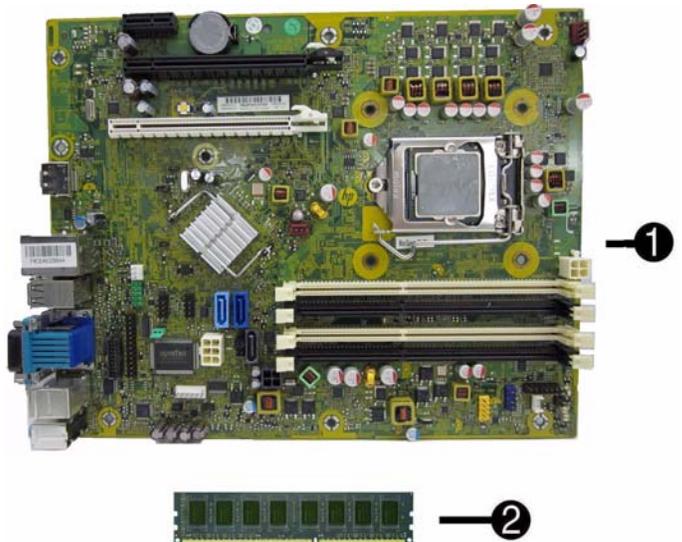
Keyboards (not illustrated)

PS/2, Basic*	537745-xx1
USB, Basic*	537746-xx1
USB Mini (-001, -121 only)	535873-xxx
Washable	577495-xxx
French Canadian	-121 U.S. -001

*.001 only

Mass Storage Devices (not illustrated)

16X SATA DVD±RW drive with LightScribe	581600-001
16X SATA DVD-ROM drive	581599-001
Blu-ray BD-RW SuperMulti DL Drive with LightScribe	617030-001
1 TB, 7200 rpm SATA hard drive	636930-001
500 GB, 7200 rpm SATA hard drive	636929-001
250 GB, 7200 rpm SATA hard drive	636927-001
160 GB Solid State Drive (SSD)	646809-001
80 GB Solid State Drive (SSD)	607817-001



System Boards, Memory, Processors

System boards with thermal grease, alcohol pad, and CPU socket cover

1	System board, includes Trusted Platform module (TPM)	628930-001
*	System board, does not include TPM	655580-001

Memory modules (PC3-10600, CL9)

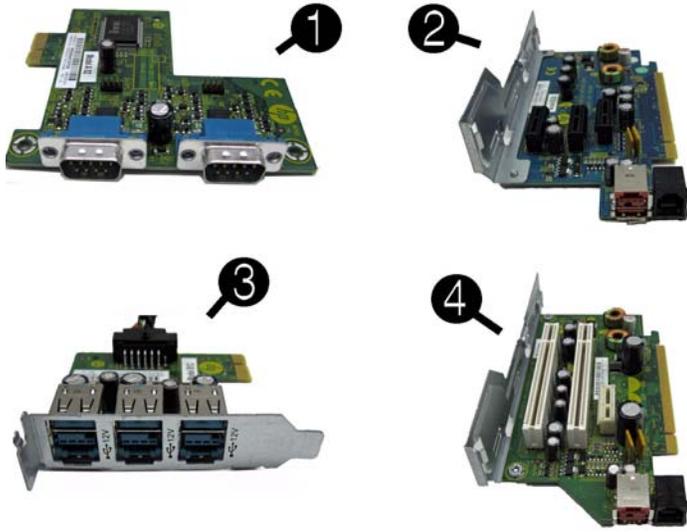
2	1 GB	635802-001
*	2 GB	635803-001
*	4 GB	585157-001

Processors (include thermal replacement material)

*	Intel Core i7 2600 processor, 3.4 GHz, 8-MB L3 cache, 95W	638632-001
*	Intel Core i5 2400 processor, 3.1 GHz, 6-MB L3 cache, 95W	638630-001
*	Intel Core i3 2120 processor, 3.3 GHz, 3-MB L3 cache, 65W	638412-001
*	Intel Pentium Dual-Core G850 processor, 2.9 GHz, 3-MB L3 cache, 65W	655973-001

* Not shown

Expansion Cards



Expansion Cards

1	2-port powered serial card	638947-001
2	PCIe to PCIe riser, 24V	638944-001
3	Powered USB card, 12V	638945-001
4	PCIe to PCI riser, 24V	638943-001
*	eSATA port assembly, PCI card	645558-001
*	Intel PRO/1000CT NIC, includes bracket	635523-001
*	HP FireWire / IEEE 1394a PCIe x1 Card	637591-001

*Not shown

Miscellaneous Parts

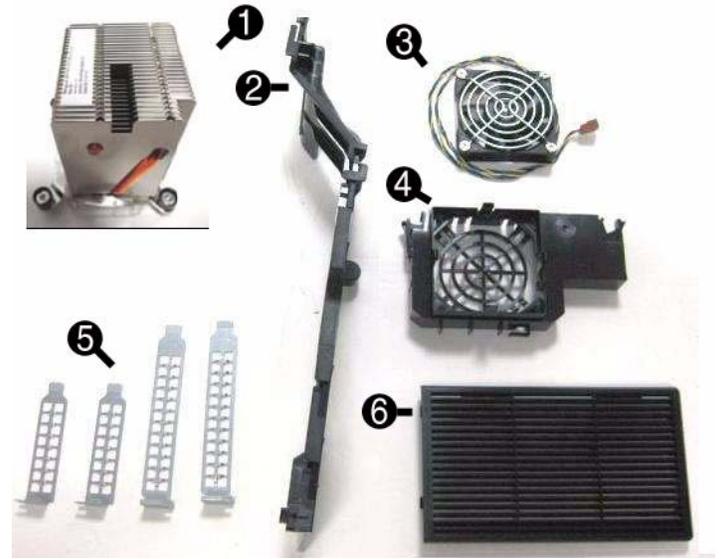


Miscellaneous Parts

1	Heat sink (includes replacement thermal material)	645326-001
2	Chassis fan	653024-001
3	Speaker	636925-001
4	Printer port, PCI card	638817-001
5	Fan duct	636921-001
6	Serial port (COMB)	638946-001
*	Modem, LSI, v.92	490689-001
*	Mouse, PS2, optical, jack black	537748-001
*	Mouse, washable	619580-001
*	Mouse, optical, jack black	537749-001
*	Mouse, laser, jack black	570580-001

*Not shown

50°C Thermal Kit Contents



50°C Thermal Kit

50°C Thermal Kit		649033-001
1	Heat sink, copper-base	
2	Partition	
3	Radial fan, 70mm	
4	Fan holder	
5	Vented slot covers	
6	Front bezel trim (no optical drive)	

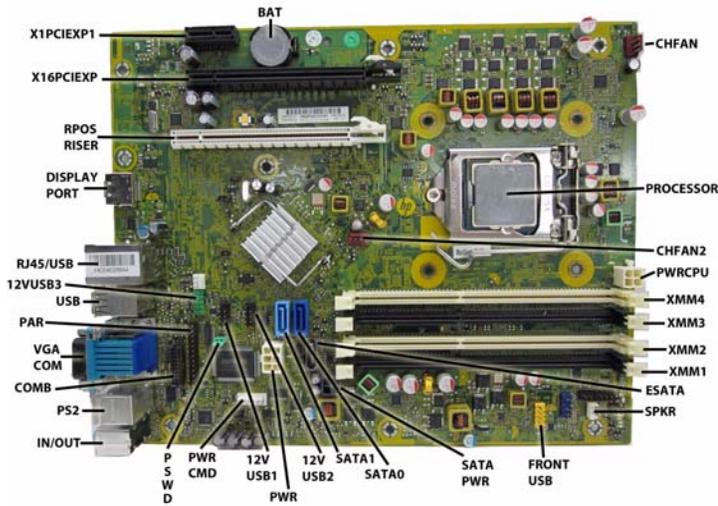
Integration Tray



Integration Tray

1	Cable cover assembly	662397-001
2	Front bezel - integration tray	662396-001
3	Scanner cover (plastic blank for unused scanner ports)	662398-001
4	Endcap for display arm	662399-001
5	VFD display stand connector	662400-001
6	Scanner mount adapter	666553-001

System Board



System Board Connectors and Jumpers (component location may vary)

X1PCIEXP1	PCIe X1 slot	SATA1	2nd HDD, or 1st ODD if eSATA Adapter exists
BAT	RTC battery slot	12VUSB2	Powered USB connector
CHFAN	Main fan connector	PWR	Main power connector
PROCESSOR	Processor socket	12VUSB1	Powered USB connector
CHFAN2	50C fan connector	PWRCMD	Power connector
PWRCPU	CPU power connector	PSWD	Password header
XMM4	Memory socket - Channel B	IN/OUT	Audio connectors
XMM3	Memory socket - Channel B	PS2	PS/2 connectors
XMM2	Memory socket - Channel A	COMB	Serial port
XMM1	Memory socket - Channel A	VGA COM	Monitor connectors
ESATA	eSATA/ODD connector	PAR	Parallel port connector
SPKR	Speaker connector	USB	USB connectors
FRONT_USB	USB connector	12VUSB3	Powered USB connector
SATA PWR	SATA drive power connector	RJ45/USB	Network/USB connector
FRNT AUD	Front panel connector	DISPLAYPORT	DisplayPort connector
FRONT_USB2	2nd USB connector	RPOS RISER	Riser card connector
SATA0	1st hard drive	X16PCIEXP	PCIe X16 slot

Common POST Error Messages

Screen Message	Probable Cause	Recommended Action
101-Option ROM Error	1. System ROM checksum error. 2. Expansion board option ROM checksum	1. Verify ROM, reflash if required 2. Remove suspected card, reboot 3. Clear CMOS memory, reboot 4. Replace system board
103-System Board Failure	DMA, 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 and 201-Memory Error	Incorrect memory configuration	1. Run Setup (F10). 2. Check DIMMs for proper seating, type, and HP compatibility. 3. Remove DIMMs singularly and reboot to isolate faulty DIMM. 4. Replace system board.
214-DIMM Configuration Warning	Populated DIMM configuration is not optimized	Rearrange the DIMMs so that each channel has the same amount of memory.
301-, 304-Keyboard error	Keyboard failure.	Check keyboard connection or keys. Check connector for bent or missing pins. Replace keyboard. If 304, possible system board problem.
501-Display Adapter Failure	Graphics display controller.	1. Reseat graphics card. 2. Clear CMOS. 3. Check monitor connection. 4. Replace graphics card.
1720-SMART Hard Drive Detects Imminent Failure	Hard drive is about to fail.	1. Determine if hard drive is giving correct error message. Enter Computer Setup and run the Drive Protection System test under Storage > DPS Self-test . 2. Apply hard drive firmware patch if applicable. 3. Back up contents and replace hard drive.
The system is violating the thermal environment requirement.	Improper processor installed or add-in card installed in 50C mode.	1. Replace the processor with a 65W processor. 2. Remove any add-in cards.

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**.

Resetting a Setup or Power-On password:

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 header labeled E49.
4. Remove the jumper from the header.
5. Replace the jumper.
6. Replace the chassis access panel and reconnect the power cord.
7. Turn on the computer and allow it to start.

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, press and hold the CMOS button for 5 seconds.
4. Replace the chassis access panel and reconnect the power cord.
5. Turn on the computer and allow it to start.

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	12 blinks, 1 blink every second followed by a 2 second pause. Beeps stop after a third iteration and computer reboots.	Health timer expired.
none	none	System does not power on and LEDs are not flashing.	System unable to power on.

System Setup and Boot

Access the Setup Utility during the computer boot sequence by pressing the **Esc** key while "Press the ESC key for Startup Menu" message is displayed at the bottom of the screen, and then pressing the **F10** key. If you do not press **Esc** at the appropriate time, you must restart the computer and again press **Esc** when the monitor light turns green to access the utility.

Computer Setup Menu

Heading	Option/Description
File	<p>System Information - Lists the following main system specifications:</p> <ul style="list-style-type: none"> • Product name • SKU number (some models) • Processor type/speed/stepping • Cache size (L1/L2/L3) • Installed memory size/speed/chan • Integrated MAC Address • System BIOS • Chassis serial number • Asset tracking number • ME firmware version • ME Management mode <p>About - Displays copyright notice.</p> <p>Set Time and Date - Allows you to set system time and date.</p> <p>Flash System ROM - Allows you to select a drive containing a new BIOS.</p> <p>Replicated Setup - Save to Rmvble Media and Restore from Rmvble Media</p> <p>Default Setup</p> <ul style="list-style-type: none"> • Save Current Settings as Default • Restore Factory Settings as Default <p>Apply Defaults and Exit - Applies the selected default settings and clears any established passwords.</p> <p>Ignore Changes and Exit - Exits Computer setup without saving changes.</p> <p>Save Changes and Exit - Saves changes to system configuration or default settings and exits Computer Setup.</p>
Storage	<p>Device Configuration - Lists all installed BIOS-controlled storage devices. The following options are available:</p> <ul style="list-style-type: none"> • CD-ROM - Let you view drive size, model, firmware version, serial number, connector color. • Hard Disk - Let you view drive size, model, firmware version, serial number, connector color, SMART. Also lets you set Translation Mode (Automatic, Bit-Shift, LBA Assisted, User, and Off). • Diskette Drive - model and firmware version. • SATA Defaults - lets you set Translation Mode (Automatic, Bit-Shift, LBA Assisted, User, and Off). • eSATA port - Allows you to set a SATA port as an eSATA port for use with an external drive. • SATA Emulation - IDE, RAID, or AHCI. • 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 Gbps as the maximum eSATA speed. <p>DPS Self-Test - Allows you to execute self-tests on ATA hard drives.</p> <p>Boot Order - Allows you to specify boot order.</p> <ul style="list-style-type: none"> • Shortcut to Temporarily Override Boot Order
Security	<p>Setup Password - Allows you to set and enable the setup (Admin) password.</p> <p>Power-On Password - Allows you to set and enable power-on password.</p> <p>Password Options - When any password exists allows you to lock legacy resources, enable/disable Setup Browse Mode, set password prompt, enable/disable network server mode, specify password requirement for warm boot, and set stringent passwords.</p>

Computer Setup Menu (continued)

Heading	Option/Description
Security (cont)	<p>Smart Cover (some models) - Allows you to lock/unlock cover lock and set status of cover removal sensor.</p> <p>Device Security - Allows you to set Device Available/Device Hidden for: embedded security devices, serial and parallel ports, system audio, network controller, and SATA ports.</p> <p>USB Security - Allows you to set Device Available/Device Hidden for front USB ports 1-4, rear USB ports 1-6, accessory USB ports 1-4.</p> <p>Slot Security - Allows you to disable any PCI or PCI Express slot.</p> <p>Network Boot - Enables/disables boot from OS (NIC models only).</p> <p>System IDs - Allows you to set Asset tag, Ownership tag, Chassis serial number or UUID, and keyboard locale setting.</p> <p>System Security (some models) - Allows you to enable/disable:</p> <ul style="list-style-type: none"> • Data Execution Prevention (enable/disable) • Virtualization Technology (VTx) (enable/disable) • Virtualization Technology Directed I/O (VTd) (enable/disable) • Intel TXT (LT) (enable/disable) • Embedded Security Device Support (enable/disable) • OS management of Embedded Security Device (enable/disable) • Reset of Embedded Security Device through OS (enable/disable) <p>DriveLock Security - Allows you to assign or modify a master or user password for hard drives.</p>
Power	<p>OS Power Management - Allows you to enable/disable Runtime Power Management, Idle Power Savings, Unique Sleep State Blink Rates.</p> <p>Hardware Power Management - Allows you to enable/disable SATA bus power management and S5 maximum power savings.</p> <p>Thermal - Allows you to control minimum fan speed.</p>
Advanced	<p>Power-On Options - Allows you to set:</p> <ul style="list-style-type: none"> • POST mode-QuickBoot, FullBoot, Clear Memory, 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, or 20 seconds • System Recovery Boot Support - Enable/disable • Remote Wakeup Boot Source - Remote server/local hard drive • Bypass F1 Prompt on Configuration Changes - Enable/disable <p>BIOS Power-On - Allows you to set the computer to turn on at a preset time.</p> <p>Onboard Devices - Allows you to set:</p> <ul style="list-style-type: none"> • resources or disable Legacy devices • serial port A-D voltage settings - set to 0V, +5V, +12V <p>Bus Options (some models) - Allows you to enable/disable PCI SERR# Generation and PCI VGA palette snooping.</p> <p>Device Options - Allows you to set:</p> <ul style="list-style-type: none"> • Turbo Mode - enable/disable • Printer Mode - Bi-Directional, EPP & ECP, Output Only • Num Lock State at Power-on - off/on • Integrated Video - enable/disable • Internal Speaker - enable/disable • NIC Option ROM Download - enable/disable • Multi-Processor - enable/disable • Hyper-threading - enable/disable
Advanced	<p>VGA Configuration - Displayed only if there are multiple PCI video adapters in the system. Allows you to specify which VGA controller will be the "boot" or primary VGA controller.</p>
	<p>AMT Configuration - Allows you to set:</p> <ul style="list-style-type: none"> • AMT-enable/disable functions of the embedded Management Engine (ME) such as Active Management Technology (AMT). • Unconfigure AMT/ME-unconfigure any provisioned management settings for AMT. • Watchdog Timer-set amount of time for a operating system and BIOS watchdog alert to be sent if the timers are not deactivated.