

# Illustrated Parts & Service Map

## HP Pro 3520 Series All-in-One Business PC



© 2012 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. HP shall not be liable for technical or editorial errors or omissions contained herein. Intel, Pentium, Intel Inside, and the Intel logo are trademarks or registered trademarks of the Intel Corporation and its subsidiaries in the U.S. and other countries.

Document Number 713368-001.

1st Edition December 2012.



### Key Specifications

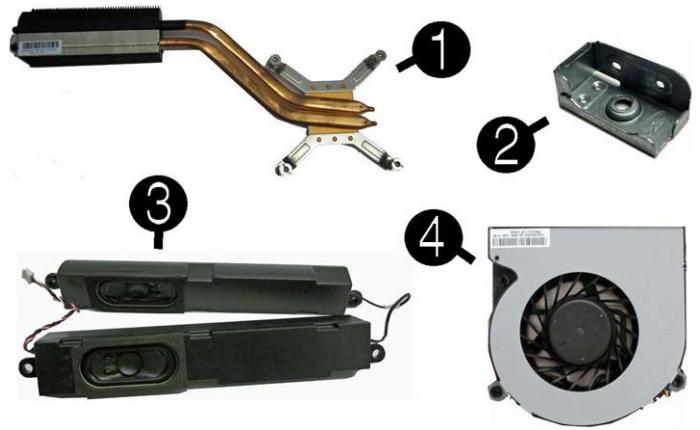
<b>Processor Type</b>	Intel® Core™ i3, Intel Pentium, Intel Celeron
<b>RAM Type</b>	DDR3 non-ECC SDRAM
<b>Maximum RAM Supported</b>	8 GB (2 SODIMM slots)
<b>Display</b>	20" diagonal widescreen LCD HD anti-glare, non-touch
<b>Expansion Slots</b>	(1) Mini PCIe x1, half-height
<b>Graphics Adapter</b>	Intel HD graphics
<b>Chipset</b>	Intel H61
<b>Drive Support</b>	(1) 5.25-inch Slimline, (1) 3.5-inch hard drive
<b>I/O Interfaces</b>	<u>Left:</u> (2) USB 3.0 ports, (1) 6-in-1 Media Card Reader, stereo audio headphone and microphone jack <u>Right:</u> Slim Optical Disk Drive <u>Rear:</u> (4) USB 2.0 ports, (1) RJ-45 Ethernet, (1) stereo audio line out, (1) power connector
<b>Operating Systems</b>	Windows 8 Professional 64-bit Windows 8 64-bit FreeDOS

### Spare Parts



### System Unit

1	Front bezel kit with lens and logo	709846-001
2	Display panel, 18.5-inch, CCFL, non-ZBD, 200 nits	
*	Samsung	709833-001
*	LG	709834-001
*	CMI	709835-001
3	Stand	709838-001
4	Rear cover (does not include stand)	709839-001



### Miscellaneous Parts

1	Heat sink (thermal module)	709832-001
2	Optical drive bracket	671558-001
3	Speaker kit (includes left and right speakers)	709831-001
4	Fan (blower)	671582-001
*	Rubber grommet for use in the hard drive cage	709840-001
*	Conductive tape (hard drive; 36mm x 11mm)	709841-001
*	AC adapter, 120W	665470-001
*	Mouse, USB, optical	596410-001

\*Not shown



### Cables

1	Hard drive cable (data and power)	709826-001
2	Optical drive cable (data and power)	709827-001
*	LVDS cable	709828-001
*	Inverter cable	709829-001
*	Webcam cable	709830-001
*	Antenna (1x1)	709836-001

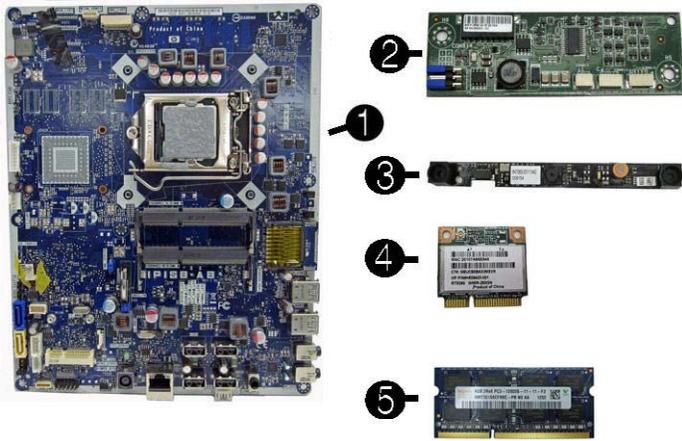
\*Not shown

### Mass Storage Devices (not illustrated)

HP SuperMulti DVD Writer Drive (includes bezel)	657958-001
2 TB hard drive	616608-001
1.5 TB hard drive	613209-001
1 TB hard drive	621418-001
500 GB hard drive	621421-001

### Keyboards (not illustrated)

<b>Jade, wired, USB</b>	<b>709694-xx1</b>		
<b>USB, unbranded</b>	<b>709695-xx1</b>		
<b>Wireless</b>	<b>708630-xx1</b>		
Arabic	-17x	Italian	-06x
Belgian	-18x	Norwegian	-09x
BHCSY	-B4x	Portuguese	-13x
Bulgarian	-26x	Romanian	-27x
Czech	-DTx	Russian	-25x
Danish	-08x	Saudi Arabian	-DEx
French	-05x	Spanish	-07x
German	-04x	Swedish	-10x
Greek	-15x	Swiss	-11x
Hebrew	-BBx	Turkish	-14x
Hungarian	-21x	U.K.	-03x
International English	-L3x		

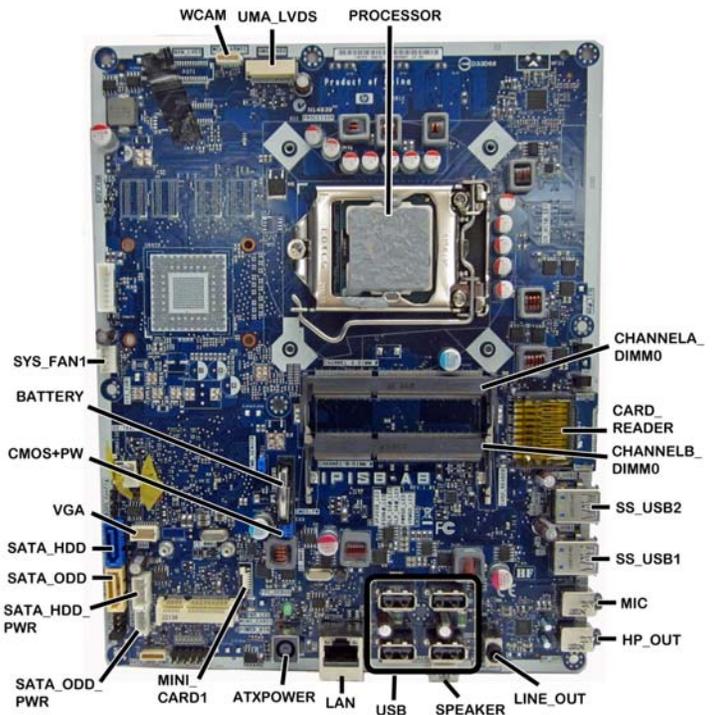


**Boards, memory, processors**

System board (includes replacement thermal material)		
1	System board for use in models with Windows 8 with no Digital Product Key (DPK)	703643-001
*	System board for use in models with Windows 8 Standard	703643-501
*	System board for use in models with Windows 8 Professional	703643-601
2	Converter board	697319-001
3	Webcam module, 720p HD with 2 microphones	709837-001
4	Ralink RT5390R 802.11bgn 1x1 Wi-Fi Adapter (WLAN module)	701396-001
5	4-GB memory module (PC3-12800, SODIMM)	689373-001
*	2-GB memory module (PC3-12800, SODIMM)	689372-001
Processors (include thermal material)		
*	Intel Core i3 3240 processor, 3.4 GHz	688951-001
*	Intel Core i3 3225 processor, 3.3 GHz	689578-001
*	Intel Core i3 3220 processor, 3.3 GHz	688950-001
*	Intel Core i3 3210 processor, 3.2 GHz	715895-001
*	Intel Core i3 2130 processor, 3.4 GHz	665120-001
*	Intel Core i3 2120 processor, 3.3 GHz	638629-001
*	Intel Pentium Dual-Core G2130 processor, 3.2 GHz	715898-001
*	Intel Pentium Dual-Core G2120 processor, 3.1 GHz	703282-001
*	Intel Pentium Dual-Core G645 processor, 2.9 GHz	704228-001
*	Intel Pentium Dual-Core G640 processor, 2.8 GHz	691935-001
*	Intel Celeron G1620 processor, 2.7 GHz	715894-001
*	Intel Celeron G550 processor, 2.6 GHz	691934-001
*	Intel Celeron G540 processor, 2.5 GHz	665119-001

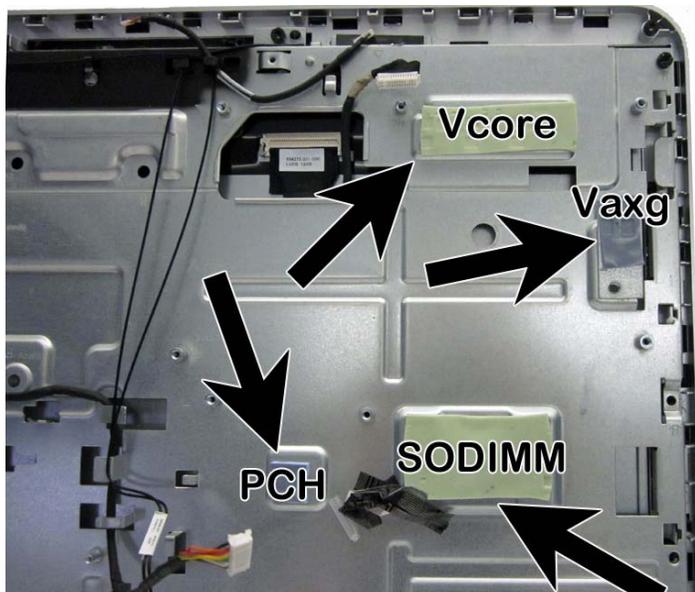
\*Not shown

**System Board**



**System Board Components**

WCAM	Webcam connector	USB	USB ports
UMA_LVDS	Display connector	LAN	RJ-45 network connector
PROCESSOR	Processor socket	ATXPOWER	AC power connector
CHANNELA_DIMM0	Memory slot, channel A	MINI_CARD1	Mini PCIe slot
CARD_READER	Card reader	SATA_ODD_PWR	Optical drive power connector
CHANNELB_DIMM0	Memory slot, channel B	SATA_HDD_POWER	Hard drive power connector
SS_USB2	External USB 3.0 connector	SATA_ODD	Optical drive data connector
SS_USB1	External USB 3.0 connector	SATA_HDD	Hard drive data connector
MIC	External microphone connector	VGA	Inverter board connector
HP_OUT	External headphone connector	CMOS+PW	CMOS/password jumper
SPEAKER	Speaker connector	BATTERY	RTC battery slot
LINE_OUT	Line out connector	SYS_FAN1	Fan connector



**Thermal pads**

Thermal pad, PCH	709842-001
Thermal pad, Vaxg	709843-001
Thermal pad, Vcore	709844-001
Thermal pad, SODIMM	709845-001

**Password Security and CMOS**

**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 CMOS+PASSWORD.
4. Remove the jumper and place it on pins 1 and 2.
5. Wait for three seconds, and then replace the jumper to its original position (pins 2 and 3).
6. Replace the access panel and reconnect the power cord.
7. Turn on the computer and allow it to start.

**Resetting 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 header labeled CMOS+PASSWORD.
4. Remove the jumper and place it on pins 1 and 2.
5. Wait for three seconds, and then replace the jumper to its original position (pins 2 and 3).
6. Replace the access panel and reconnect the power cord.
7. 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: <ul style="list-style-type: none"> <li>Product name</li> <li>SKU number (some models)</li> <li>Processor type/speed/stepping</li> <li>Cache size (L1/L2/L3)</li> <li>Installed memory size/speed/ch</li> <li>Integrated MAC Address</li> <li>System BIOS</li> <li>Chassis serial number</li> <li>Asset tracking number</li> <li>ME firmware version</li> <li>ME management mode</li> </ul>	
	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: <ul style="list-style-type: none"> <li>CD-ROM</li> <li>Hard Disk</li> <li>Default Values</li> <li>Translation Mode</li> <li>SSD Life Used</li> <li>SMART (ATA disks only)</li> <li>Diskette</li> <li>SATA Defaults</li> </ul>
		Storage Options - Allows you to set: <ul style="list-style-type: none"> <li>eSATA Port - Set SATA port as eSATA port for use with external drive.</li> <li>SATA Emulation - Choose how the SATA controller and devices are accessed by the OS. SATA Emulation choices are AHCI, RAID, or IDE.</li> <li>Removable Media Boot - Enables/disables ability to boot the system from removable media.</li> <li>Max eSATA Speed - Allows you to choose 1.5 Gbps or 3.0 Gbps as the maximum eSATA speed. By default, the speed is limited to 1.5 Gbps for maximum reliability.</li> </ul>
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. <ul style="list-style-type: none"> <li>Shortcut to Temporarily Override Boot Order</li> </ul>		
Security		Setup Password - Set and enable the setup (Admin) password.
		Power-On Password - Set and enable power-on password.
	Password Options - Allows you to enable/disable: <ul style="list-style-type: none"> <li>Lock Legacy Resources</li> <li>Setup Browse Mode</li> <li>Password prompt on F9 &amp; F12</li> <li>Network Server Mode</li> </ul>	
	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: <ul style="list-style-type: none"> <li>Data Execution Prevention (enable/disable)</li> <li>SVM CPU Virtualization (enable/disable)</li> <li>Virtualization Technology (VTx) (enable/disable)</li> <li>Virtualization Technology/Directed IO (VTd) (enable/disable)</li> <li>Trusted Execution Technology (enable/disable)</li> <li>Embedded Security Device (enable/disable)</li> <li>Reset to Factory Settings (Do not reset/Reset)</li> <li>Measure boot variables/devices to PCR1 (enable/disable)</li> <li>OS management of Embedded Security Device (enable/disable)</li> <li>Reset of Embedded Security Device through OS (enable/disable)</li> <li>No PPI provisioning (Windows 8 only; enable/disable)</li> <li>Allow PPI policy to be changed by O (enable/disable).</li> </ul>		
DriveLock Security - Allows you to assign or modify a master or user password for hard drives.		
Secure Boot Configuration (Windows 8 only) <ul style="list-style-type: none"> <li>Legacy Support (enable/disable)</li> <li>Secure Boot (enable/disable)</li> <li>Key Management (enable/disable)</li> <li>Fast Boot (enable/disable)</li> </ul>		
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: <ul style="list-style-type: none"> <li>POST mode (QuickBoot, Clear Memory, FullBoot, or FullBoot Every x Days)</li> <li>POST messages (enable/disable)</li> <li>Press the ESC key for Startup Menu (enable/disable)</li> <li>Option ROM Prompt (enable/disable)</li> <li>After Power Loss (off/on/previous state)</li> <li>POST Delay (none, 5, 10, 15, 20, or 60 seconds)</li> <li>Remote Wakeup Boot Source (remote server/local hard drive)</li> <li>Factory Recovery Boot Support (enable/disable)</li> <li>Bypass F1 Prompt on Configuration Changes (enable/disable)</li> </ul>	
	BIOS Power-On - Set the computer to turn on at a preset time.	

Advanced (continued)	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: <ul style="list-style-type: none"> <li>Printer mode (Bi-Directional, EPP + ECP, Output Only)</li> <li>Num Lock State at Power-on (off/on)</li> <li>Integrated Video (enable/disable)</li> <li>Integrated Graphics (Auto/Disable/Force)</li> <li>Internal Speaker (enable/disable)</li> <li>NIC PXE Option ROM Download (enable/disable)</li> <li>SATA RAID Option ROM Download (enable/disable)</li> <li>Multi-Processor (enable/disable)</li> <li>Hyper-threading (enable/disable)</li> <li>Turbo Mode (enable/disable)</li> </ul>
	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: <ul style="list-style-type: none"> <li>AMT (enable/disable)</li> <li>Unconfigure AMT/ME (enable/disable)</li> <li>Hide Unconfigure ME Confirmation Prompt (enable/disable)</li> <li>Watchdog Timer (enable/disable)</li> </ul>	

### Common POST Error Messages

Screen Message	Probable Cause	Recommended Action
101-Option ROM Error	System ROM or expansion board option ROM checksum.	<ol style="list-style-type: none"> <li>Verify ROM, reflash if required</li> <li>Remove recently added cards to see if problem remains.</li> <li>Clear CMOS. If message disappears, may be card problem.</li> <li>Replace system board</li> </ol>
103-System Board Failure	DMA or timers	<ol style="list-style-type: none"> <li>Clear CMOS memory.</li> <li>Remove expansion boards.</li> <li>Replace system board.</li> </ol>
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	<ol style="list-style-type: none"> <li>Run Setup (F10).</li> <li>Make sure memory module(s) installed properly.</li> <li>If third-party memory added, test using HP-only memory.</li> </ol>
201-Memory Size Error	RSM failure	<ol style="list-style-type: none"> <li>Verify proper module type.</li> <li>Ensure memory modules are correctly installed.</li> <li>Verify proper module type.</li> <li>Remove and replace faulty module(s).</li> <li>If error persists after replacing modules, replace system board.</li> </ol>
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.	<ol style="list-style-type: none"> <li>If additional memory was recently added, remove it to see if the problem remains.</li> <li>Check product documentation for memory support information.</li> </ol>
301-, 304-Key-board error	Keyboard failure.	<ol style="list-style-type: none"> <li>Reconnect keyboard with system turned off.</li> <li>Check kybd connection or keys.</li> <li>Check connector for bent or missing pins.</li> <li>Replace keyboard.</li> <li>If 304, possible sys bd problem.</li> </ol>
511-CPU Fan not Detected	CPU Fan not Detected.	<ol style="list-style-type: none"> <li>Reseat CPU fan.</li> <li>Reseat fan cable.</li> <li>Replace CPU fan.</li> </ol>
1805-Ambient Temperature Previously Over Limit	This system was placed in a low power state to prevent damage due to excessive environmental temperature.	<p>Make sure the system meets the HP enclosure guidelines as listed in the Quick Specs, including the following:</p> <ol style="list-style-type: none"> <li>Clean the air vents on the front, back, or any other vented side of the computer.</li> <li>Ensure that there is a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.</li> <li>Ensure that computers are not so near each other that they are subject to each other's re-circulated or preheated air.</li> </ol>
2200-PMM Allocation Error during MEBx Download	(2200) Memory error during POST execution of the Management Engine (ME) BIOS Extensions option ROM.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>Unplug the power cord, re-seat the memory modules, and reboot the computer.</li> <li>If the memory configuration was recently changed, unplug the computer, restore the original memory configuration, and reboot the computer.</li> <li>If the error persists, replace the system board.</li> </ol>
2201-MEBx Module did not checksum correctly	(2201) Memory error during POST execution of the Management Engine (ME) BIOS Extensions option ROM.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>If the error persists, update to the latest BIOS version and ME firmware version.</li> <li>If the error still persists, replace the system board.</li> </ol>
2202-PMM Deallocation Error during MEBx cleanup	(2202) Memory error during POST execution of the Management Engine (ME) BIOS Extensions option ROM.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>If the error persists, update to the latest BIOS version and ME firmware version.</li> <li>If the error still persists, replace the system board.</li> </ol>
2230-General 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.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>If the error persists, update to the latest BIOS version and ME firmware version.</li> <li>If the error still persists, replace the system board.</li> </ol>
2231-ME error during MEBx execution	(2231) Error occurred during MEBx execution which fails into "ME" grouping.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>If the error persists, update to the latest BIOS version and ME firmware version.</li> <li>If the error still persists, replace the system board.</li> </ol>
2232-AMT error during MEBx execution	(2232) Error occurred during MEBx execution which fails into "AMT" grouping.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>If the error persists, update to the latest BIOS version and ME firmware version.</li> <li>If the error still persists, replace the system board.</li> </ol>
2233-HECI error during MEBx execution	(2233) Error occurred during MEBx execution which fails into "MEI or HECI" grouping.	<ol style="list-style-type: none"> <li>Reboot the computer.</li> <li>If the error persists, update to the latest BIOS version and ME firmware version.</li> <li>If the error still persists, replace the system board.</li> </ol>