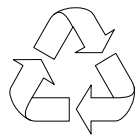
Packard Bell oneTwo L5860 / L5861 All-In-One Computer Service Guide



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Revision History

Refer to the table below for changes made on this version of the Packard Bell oneTwo L5860 / L5861 All-In-One Computer Service Guide.

Date	Chapter	Updates

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Conventions

The following textual conventions are used in this service guide.

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives additional information related to the current topic.
WARNING	Alerts you to any physical risk or system damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Service Guide Coverage

This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for our "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

FRU Information

Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed service guide. For AUTHORIZED SERVICE PROVIDERS, your office may have a DIFFERENT part number code to those given in the FRU list of this printed service guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Table of Contents

Chapter 1

Features and Specifications

This chapter lists the features and specifications of the Packard Bell oneTwo L5860 / L5861 AIO computer.

NOTE The items listed in this section are for reference only. The exact configuration of your PC depends on the model purchased.

System Features

Component	Description
Processor	• LGA1155 socket • Supports the Intel Core Second Generation Processor Family
Chipset	• Intel H67 Chipset (PCH) • SIO ITE 8728F-CX (Super I/O)
Memory	• Four DIMM slots • Supports 1066/1333 MHz DDR3 UNB-DIMM (unbuffered) • 16 GB maximum memory capacity (using four 4 GB modules)
PCI expansion options	• One PCI Express 2.0 x16 slot (for graphics card installation) • One PCI Express 2.0 x1 slot (for TV tuner or USB 3.0 card installation)
Display	• Display size – oneTwo L5860: 23-inch LCD panel – oneTwo L5861: 23-inch LCD touchscreen panel • Windows 7 compliant multi-touchscreen function for oneTwo L5861
Audio	• Two built-in 5W stereo speakers • Realtek ALC662VC 5.1+2 channel high definition audio codec
I/O ports	• Right panel – USB ports (two) – Headphone jack – Microphone jack • Left panel – HD dual digital TV tuner (optional) – PS/2 keyboard and mouse ports – Line-in, line-out, and microphone jacks – USB 2.0 ports (six) – HDMI port – Ethernet jack (RJ-45) – External display (VGA) port – DVI port (optional) – PS/2 keyboard and mouse ports
Media storage	• 3.5-inch 25.4 mm 5400/7200 rpm SATA hard disk drive (HDD) • Slim type SATA optical disc drive (ODD)
Card reader	• 9-in-1 card reader slot • Supports MultiMediaCard (MMC), Reduced-Size MultiMediaCard (RS-MMC), Secure Digital (SD), xD-Picture Card (xD), Secure Digital High Capacity (SDHC), Memory Stick (MS), Memory Stick PRO (MS PRO) cards, CompactFlash Type I and II (CF-I, CF-II), and microdrives

Component	Description
Connectivity	• Wired LAN: Onboard 10/100/1000 Ethernet support • WLAN option: Mini Card wireless network adapter (802.11 b/g/n) • WPAN option: Bluetooth® 2.1+EDR (Enhanced Data Rate) • Integrated 2.0 MP webcam
DIgital TV tuner (optional)	• AVerMedia H753-A TV Tuner Card PCIe Hybrid ATSC card • AVerMedia H753-D TV Tuner Card PCIe Hybrid DVB-T card
Digital media protection	• Support Blu-ray Disc content protection • B-CAS card – This optional card allows users to access protected digital TV broadcasts.
Power supply	220 W power supply unit with PFC or non-PFC option (power factor correction)
Ventilation	• Heat sink fan for the processor • PSU fan • System fan (only for systems with certain graphics card models installed)
Operating system support	Microsoft Windows 7 Home Premium
Antivirus software	Norton Internet Security
Security	• BIOS-based user and supervisor passwords • Kensington lock
Power management	• ACPI 2.0-compliant • Energy Star 5.0 compliant (option)

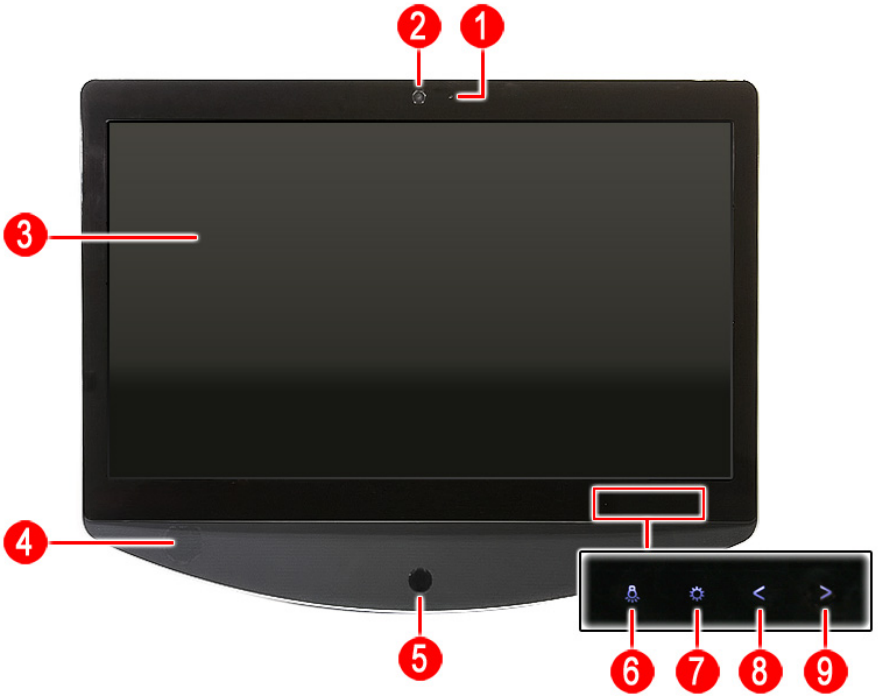
Physical Specifications

Aspect	Description
System dimension (W × H × D)	104 × 400 × 500 mm (4.09 × 15.75 × 19.66 in)
Mainboard form factor	Standard DTX
Mainboard dimensions (W × H)	200 × 244 mm

System Tour

The pictures and tables in this section illustrate the physical outlook of the computer.

Front View

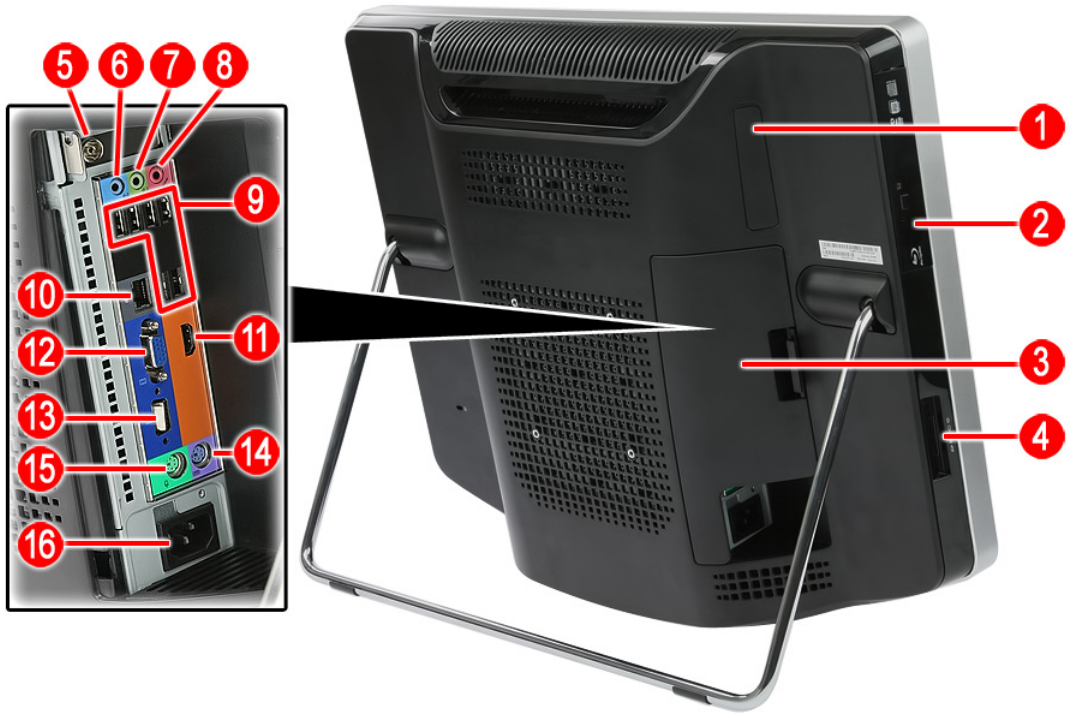


Item	Icon	Component
1		Integrated microphone
2		Integrated webcam
3		Display screen
4		Speakers
5	⏻	Power button/indicator • Blue – System is in power-on mode • Flashing blue – System is in standby mode
6		Auxiliary lighting capacitive key
7		LCD brightness capacitive key
8		Volume decrease capacitive key
9		Volume increase capacitive key

NOTES:

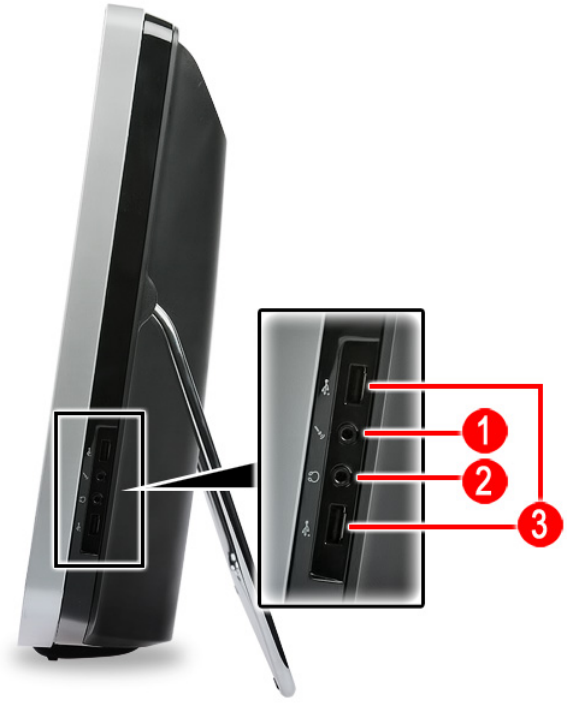
- Icons for the capacitive keys are only visible when the system is turned on.
- The auxiliary lighting capacitive key is designed to provide a light source when using a keyboard in low-light conditions.

Left View



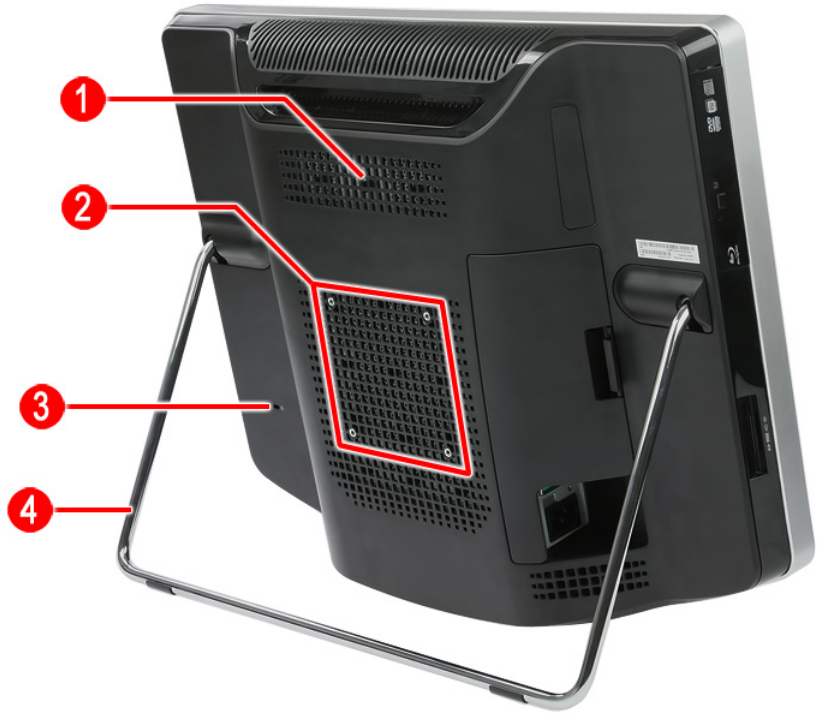
Item	Icon	Component
1		B-CAS card (optional) cover
2		Optical disc drive (ODD)
3		I/O cable cover
4		9-in-1 card reader
5		HD dual digital TV tuner (optional)
6		Line-in jack
7		Line-out jack
8		Microphone jack
9		USB ports
10		Ethernet port (RJ-45)
11	HDMI	HDMI port
12		Monitor port (VGA)
13		DVI port (optional)
14		PS/2 keyboard port
15		PS/2 mouse port
16		AC power jack

Right View



Item	Icon	Component
1		Microphone jack
2		Headphone jack
3		USB ports

Rear View



Item	Component
1	Ventilation slots
2	Mounting holes for wall mount option
3	Kensington slot
4	Computer stand
Note: Item # 1 is compliant with the 100 × 100 mm VESA standard.	

Hardware Specifications

Processor

- Socket: LGA1155
- Package type: 32 nm

Item	Specification					
Series	Intel Core Second Generation Processor Family					
Model	i3-2100	i5-2500	i5-2400	i5-2300	i5-2400S	i7-2600S
CPU speed	3.1 GHz	3.3 GHz	3.1 GHz	2.8 GHz	2.5 GHz	2.8 GHz
Bus speed	1333 MHz	1333 MHz	1333 MHz	1333 MHz	1333 MHz	1333 MHz
No. of cores	2	4	4	4	4	4
L3 cache size	3 MB	6 MB	6 MB	6 MB	6 MB	8 MB
TDP	65 W	95 W	95 W	95 W	65 W	65 W

Chipsets

Item	Specification
PCH	Intel H67
I/O controller	SIO ITE 8728F-CX

BIOS

Item	Specification
BIOS chip	AMI BIOS with 32 MM SPI Flash ROM
Setup utility	CMOS Setup Utility

Memory

Item	Specification
Controller	Integrated in the Intel processor
Number of DIMM slot	4
Maximum memory	16 GB (using four 4 GB modules)
Data rate	1066/1333 MT/s
Supported capacities	1, 2, or 4 GB
DIMM type	DDR3 UNB-DIMM
Supported brands	A-Data, Apacer, Kingston, Nanya, Samsung, Unifosa
Population rule	You can install memory modules in any combination as long as they match the above specifications.

Hard Disk Drive

Item	Specification
Controller	Integrated in the Intel H67 chipset
Form factor	3.5-inch 9.5 mm
Interface	SATA or SATA II
Supported capacities	
320 GB	• HGST HDS721032CLA362 (7200 rpm) • Seagate ST3320418AS (7200 rpm) • WD WD3200AAJS-22L7A0 (7200 rpm)
500 GB	• HGST HDS721050CLA362 (7200 rpm) • Seagate ST3500418AS (7200 rpm) • WD WD5000AAKS-22V1A0 (7200 rpm)
1 TB	• HGST HDS721010CLA332 (7200 rpm) • Seagate ST31000528AS (7200 rpm) • WD WD10EARS-22Y5B1 (5400 rpm)
1.5 TB	• Seagate ST31500341AS (7200 rpm) • WD WD15EARS-22MVWB0 (5400 rpm)

Optical Disc Drive

Item	Specification
Controller	Integrated in the Intel H67 chipset
Type	DVD-Super Multi double-layer, Blu-ray Disc combo, or Blu-ray Disc-RW drive option
Form factor	Slim type
Tray height (mm))	12.7 mm
Interface	SATA
Supported models	
DVD-Super Multi double-layer drive	• HLDS GT31N • PLDS DS-8A5SH
Blu-ray Disc combo drive	• HLDS CT21N • Panasonic UJ141AL
Blu-ray Disc-RW drive	Panasonic UJ240A

Ethernet

Item	Specification
Controller	Intel 82579V Gigabit Ethernet Controller
LAN protocol	10/100/1000 Mbps
LAN connector type	RJ-45

Wireless LAN

Item	Specification
Model	• Lite-On WN6607LH • Realtek RTL8191SU
Protocol	802.11 b/g/n
Form factor	PCIe Mini Card

Bluetooth

Item	Specification
Model	Chicony BC10B-04C1
Version	Bluetooth 2.1 + EDR

Audio

Item	Specification
Controller	Realtek ALC662VC 5.1+2 channel high definition audio codec
Features	• Two built-in 5W stereo speakers • Right panel audio jacks: Headphone and microphone jacks • Left panel audio jacks: Line-in, line-out, and microphone jacks

Webcam

Item	Specification
Resolution	2.0 MP
Supported models	• Chicony CNFA21321004590L • Park Orchid C04PL037F • Primax W202N / 50-704A4WNT8 • Simplo C04PL037F

Display

Item	Specification
Panel model	LGD LM230WF5-TLC1
Screen size (diagonal, inch)	23-inch
Active area (H × V)	509.184 × 268.416 mm
Backlight	White LED
Interface	LVDS 2-port
Supported resolutions	1920 × 1080 (Full HD)
Brightness (typical)	250 nits
Viewing angle (typical, H/V)	170/160
Contrast ratio (typical)	1000:1
Response time (typical)	5 ms
Display colors	16.7M (6bit+A-FRC)
Aspect ratio	16:9
Surface treatment	Anti-glare, 3H
Module size (W × H × D)	533.2 × 312 × 11.5 mm
Module weight (typical)	1900 g
Power consumption (typical, without converter)	18.95 W
Power supply input voltage (typical)	5.0 V
Temperature Operating Storage (shipping)	 0 to 50 °C (90% RH) -20 to 60 °C (90% RH)
Touchscreen	• oneTwo L5860: No • oneTwo L5861: Yes (Quanta optical touch solution)

Power Supply Unit

Item	Specification
Output (max.)	220 W
Supported models	• Chicony CPB09-D220R / CPB09-D220A / CPB09-D220E (FR 220W, ES) • Delta DPS-220UB-3A / DPS-220UB-4A / DPS-220UB-5A • Lite-On PS-5221-06A2 / PE-5221-08AF / PS-5221-9AB

Chapter 2

System Utilities

CMOS Setup Utility

CMOS Setup Utility is a hardware configuration program built into the system ROM. Since most systems are already properly configured and optimized, there is normally no need to run this utility.

You will need to run this utility under the following conditions:

- When changing the system configuration including:
  - Setting the system time and date
  - Configuring the system drives and peripherals
  - Specifying the boot device sequence
  - Configuring the power management modes
  - Setting up system passwords or making other changes to the security setup
- When trying to resolve IRQ conflicts
- When a configuration error is detected by the system and you are prompted ("**Run Setup**" message) to make changes to the BIOS settings.

The Setup Utility loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM, which allows configuration data to be retained when power is turned off. The values take effect when the system is booted. POST uses these values to configure the hardware. If the values and the actual hardware do not agree, POST generates an error message. You must run this utility to change the hardware settings from the default or current configuration.

IMPORTANT If you repeatedly receive "**Run Setup**" messages, the RTC battery located on the mainboard (BT1) may be defective. In this case, the system cannot retain configuration values in CMOS. Replace the RTC battery with a new one.

NOTE For ease of reading, CMOS Setup Utility will be simply referred to as "Setup" or "Setup Utility" in this Service Guide.

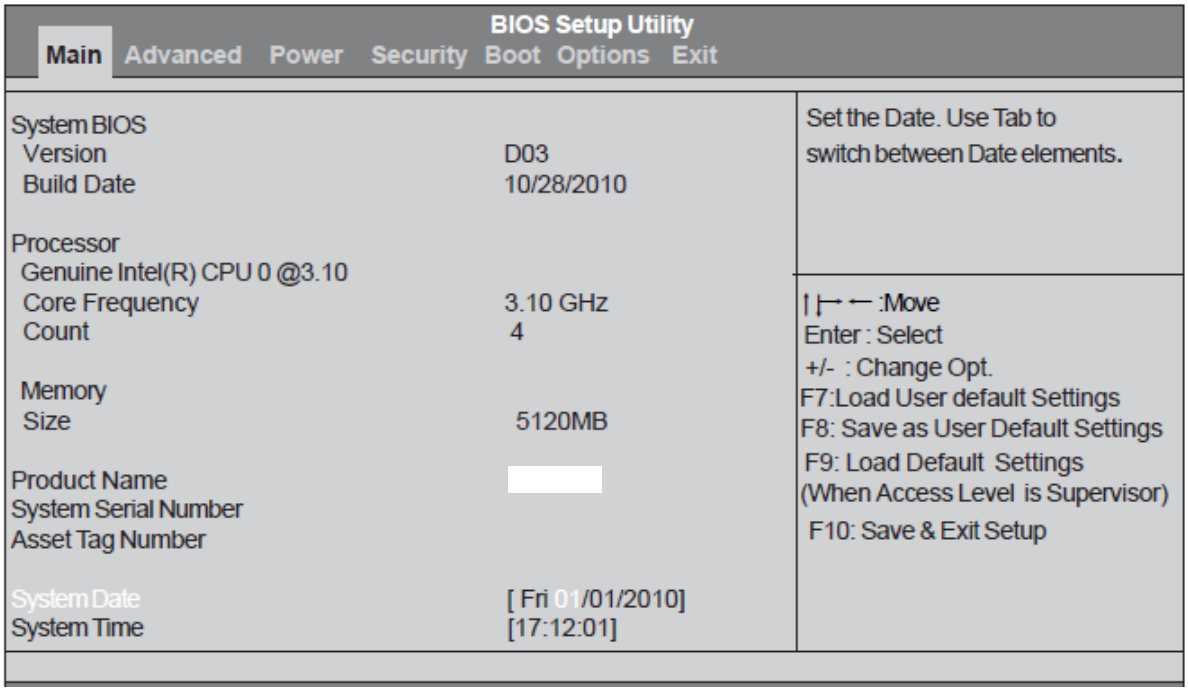
Accessing the Setup Utility

1. Turn on the computer.

   If the computer is already turned on, save your data and close all open applications, then restart the computer.

2. During POST, press **Delete**.

   If you fail to press **Delete** before POST is completed, you will need to restart the computer.



Use the **Left/Right** arrow keys to move between the menu screens, then press **Enter** to view that menu tab.

Use the **Up/Down a**rrow keys to move between the menu options, then press **Enter** to execute that option.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a ▶) lead to submenus that enable you to change the values for the option. Use the **Up/Down/Left/Right** arrow keys to scroll through the items in the submenu

Navigating through the Setup Utility

Use the keys listed in the legend bar on the bottom of the Setup screen to work your way through the various menu and submenu screens of the Setup Utility. The table below lists these legend keys and their respective functions.

Key	Function
Up/Down/Left/ Right arrow keys	Move the cursor to the menu/field you want.The currently selected field will be highlighted.
Enter	• To open the page for the currently selected menu/submenu • To apply a field value.
PgUp and PgDn	Move the cursor to the previous and next page of a multipage menu.
Home	Move the cursor to the first page of a multipage menu.
End	Move the cursor to the last page of a multipage menu.
+ and -	To select a value for the currently selected field (only if it is user-configurable). Press these keys repeatedly to display all possible entries. A parameter that is enclosed in square brackets [ ] is user-configurable. Grayed-out parameters are not user-configurable for one of the following reasons: • The field value is auto-configured or auto-detected.· • The field value is informational only. • The field is password-protected.
Esc	If you press this key: • On one of the primary menu screens, the Exit menu displays. • On a submenu screen, the previous screen displays. • When you are making selections from a pop-up menu, closes the pop-up without making a selection.
F1	To bring up the General Help window. The General Help window describes other Setup navigation keys that are not displayed on the legend bar.
F7	Load the saved User Default settings.
F8	Save the current menu settings as User Default settings.
F9	Press to load default system values.
F10	Press to save changes and close the Setup Utility.

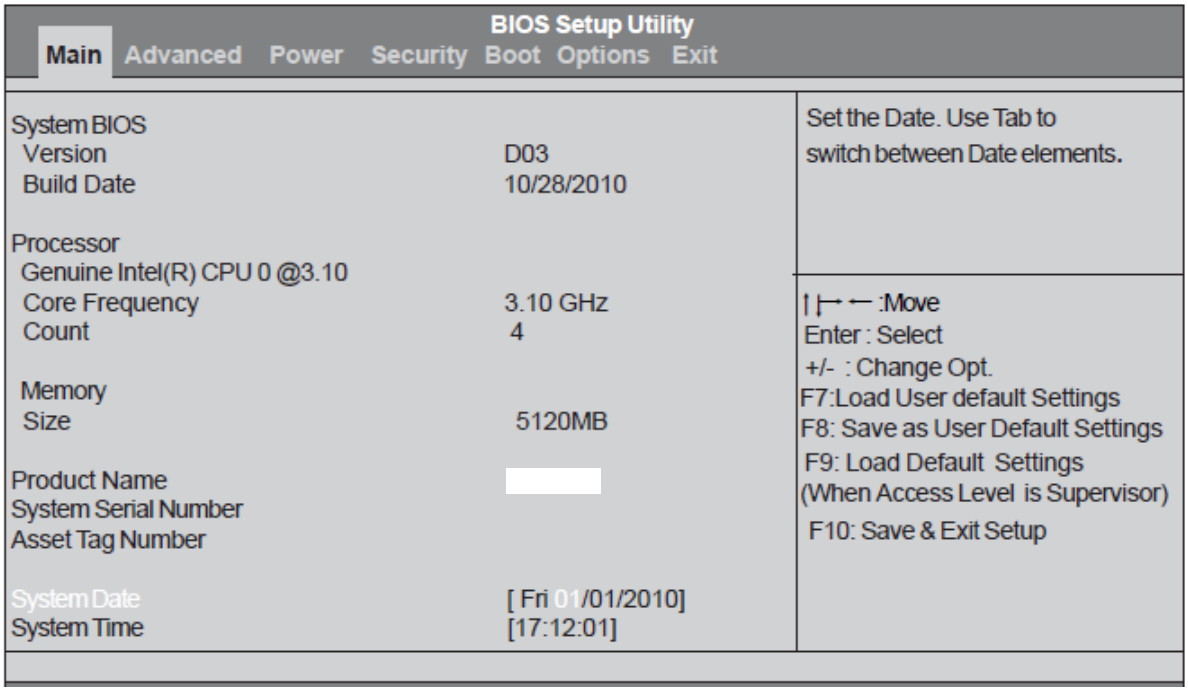
Setup Utility Menus

The Setup Utility has six menus for configuring the various system functions. These include:

- Main
- Advanced
- Power
- Security
- Boot Options
- Exit

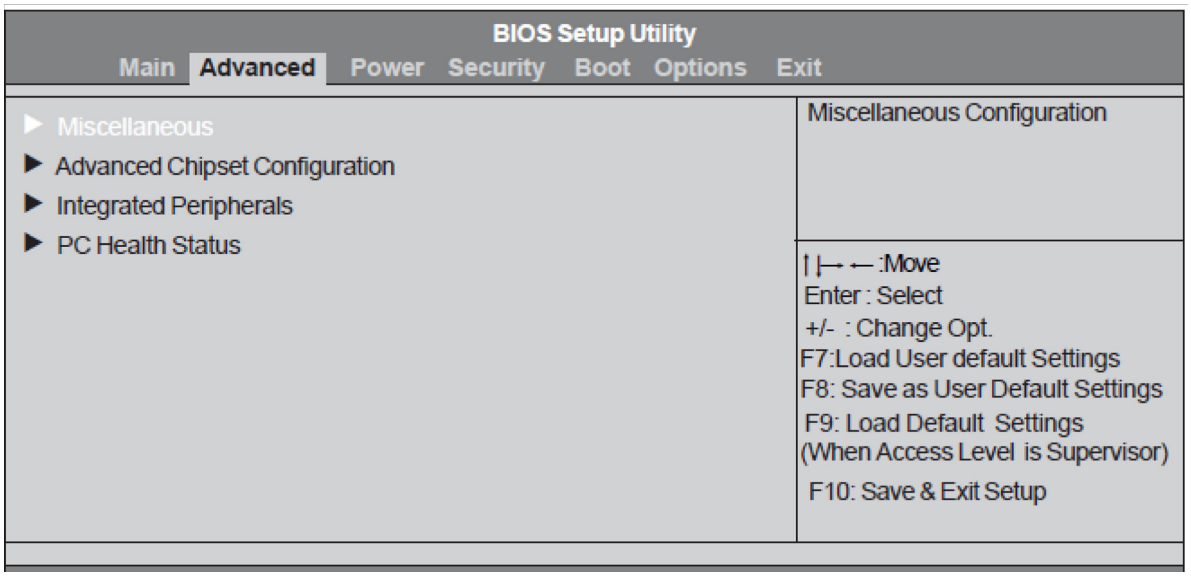
NOTES
- The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your computer.
- In the descriptive tables following each of the menu screen illustrations, settings in **boldface** are the default and suggested settings.

Main menu



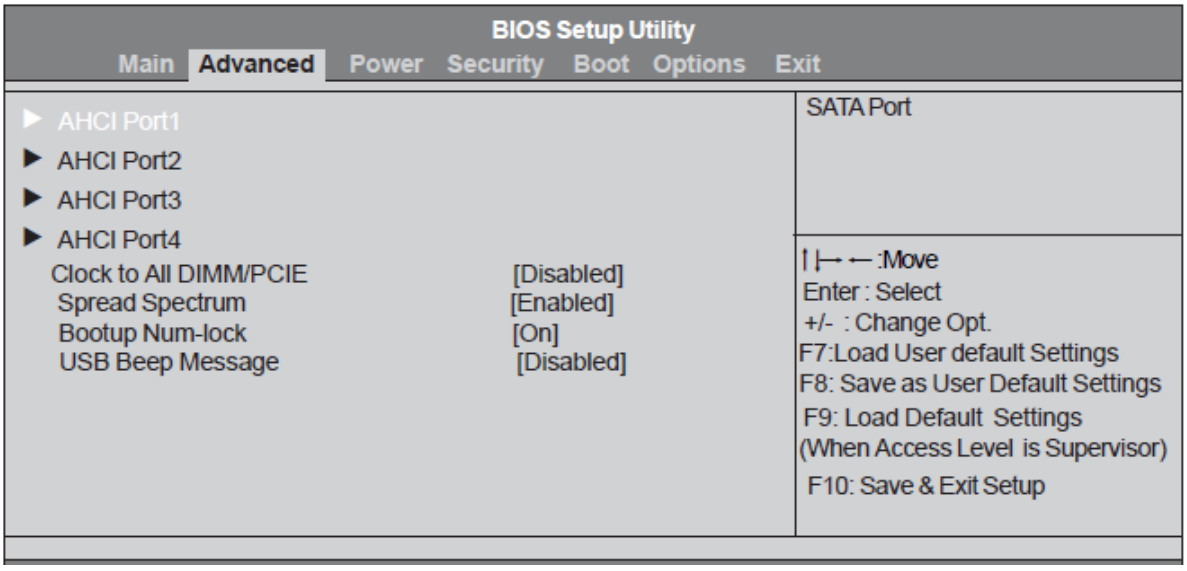
Field	Description
System BIOS	
Version	Current system BIOS version
Build Date	Date when the system BIOS was built.
Processor	
<model>	Processor model installed
Core Frequency	Core frequency of the installed processor
Count	Multi-core factor of the installed processor (number of processor cores)
Memory	
Size	Size of system memory detected during boot-up
Product Name	Official model name of the computer.
System Serial Number	System serial number.
Asset Tag Number	System asset tag number
System Date	Sets the system date.
System Time	Sets the system time.

Advanced menu



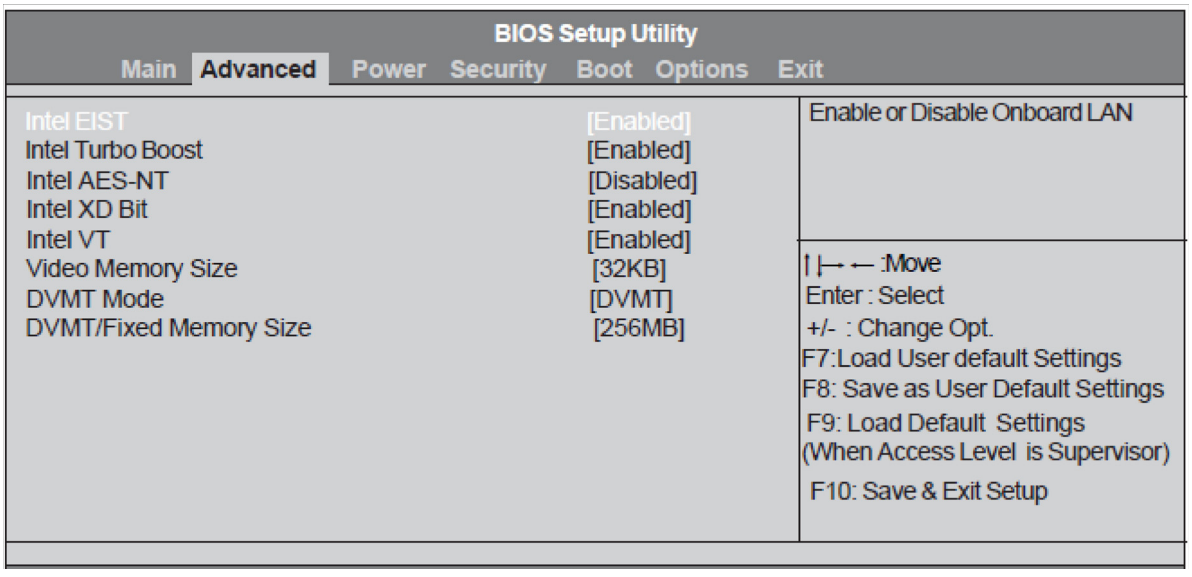
Field	Description
Miscellaneous	Access this submenu to view the properties of installed SATA devices and configure miscellaneous system settings.
Advanced Chipset Configuration	Access this submenu to enable or disable various Intel technology functions and configure video memory settings.
Integrated Peripherals	Access this submenu to enable or disable operation modes for the onboard I/O controllers.
PC Health Status	Access this submenu to view current level of system/processor/PCH temperature, voltages, and fan speed.

Miscellaneous submenu



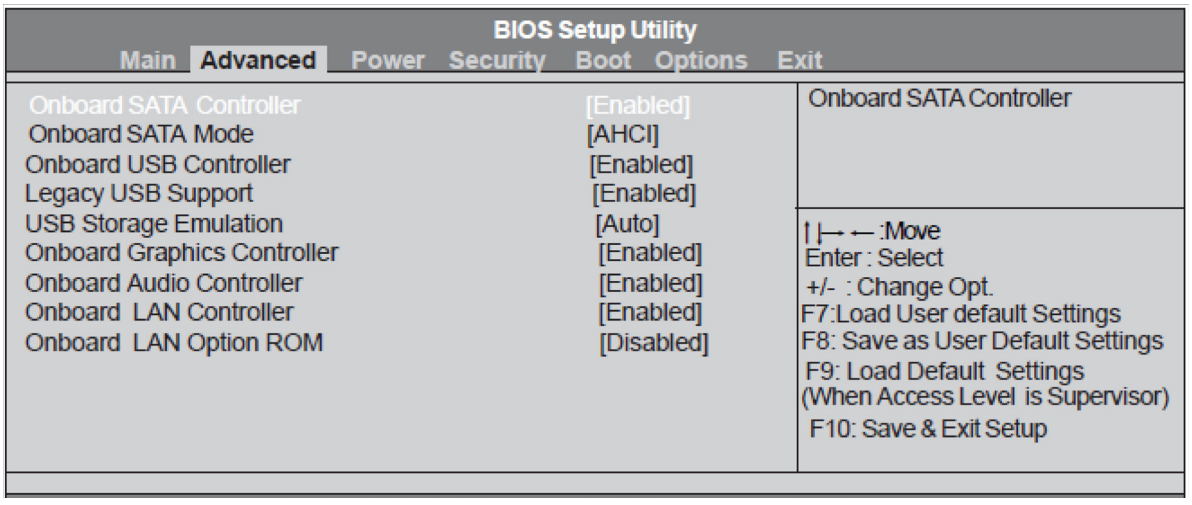
Field	Description	Value
AHCI Port 1-4	Your computer supports four SATA channels, each channel allows one SATA device to be installed. Press **Enter** to display the individual configuration screen of installed SATA drive(s).	
Clock to All DIMM/ PCI/PCIE	When enabled, clock signals will be sent to the PCI and memory slots regardless of whether the slot is occupied or not.	Disabled **Enabled**
Spread Spectrum	When the mainboard's clock generator pulses, the extreme values of the pulses creates EMI (electromagnetic interference). Set this field to Enabled to reduce this EMI level. This reduces interference problems with other electronics in the area. **Note**: Remember to disable the Spread Spectrum feature if you are overclocking. A slight jitter can introduce a temporary boost in clock speed causing the overclocked processor to lock up.	Disabled **Enabled**
Bootup Num-Lock	If you set this item to On, the keyboard Num Lock key will be active when the computer boots up.	**On** Off
USB Beep Message	Select whether to allow the BIOS to emit error beeps or display error messages during USB device enumeration.	**Disabled** Enabled

Advanced Chipset Configuration submenu



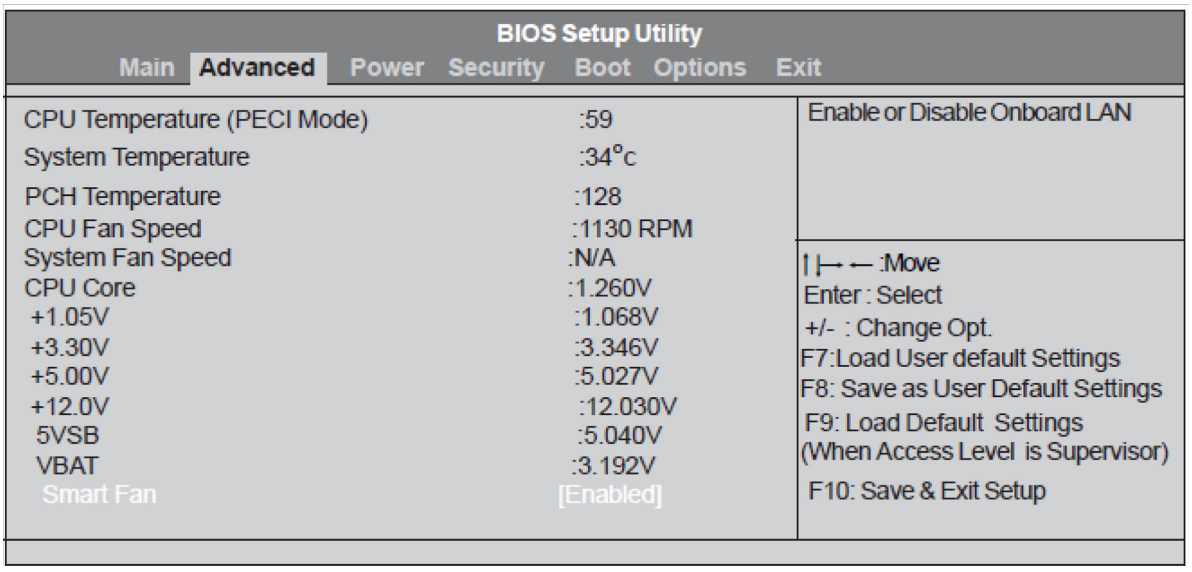
Field	Description	Value
Intel EIST	Select whether to enable the Enhanced Intel SpeedStep Technology. EIST allows a compliant OS to dynamically adjust the processor voltage and core frequency based on system usage. This can result in decreased average power consumption and decreased average heat production. **Note:** After enabling EIST in BIOS Setup, you need to enable it on your operating system as well. Consult your OS documentation for related instructions.	Disabled **Enabled**
Intel Turbo Boost	Select whether to enable the Intel Turbo Boost Technology. This technology allows a dynamic increase in CPU clock-speed based on current work demand.	Disabled **Enabled**
Intel AES-NI	Select whether to enable the Intel Advanced Encryption Standard New Instructions (AES-NI) encryption standard. When enabled, speed for applications performing encryption and decryption using the AES is improved.	**Disabled** Enabled
Intel XD Bit	Select whether to enable the Intel Execute Disable Bit Technology. XD Bit is a hardware-based security feature that can reduce exposure to viruses and malicious-code attacks and prevent harmful software from executing and propagating on the computer or network.	Disabled **Enabled**
Intel VT	Select whether to enable the Intel Virtualization Technology. VT allows a single platform to run multiple operating systems in independent partitions.	Disabled **Enabled**
Video Memory Size	Displays the size of video memory detected during boot-up. This applies to systems supporting the ATI HyperMemory technology.	**32 MB** 128 MB 256 MB
DVMT Mode	Select the Intel Dynamic Video Memory Technology mode.	**DVMT** Fixed
DVMT/Fixed Memory Size	Select to specify the maximum memory size that can be allocated as graphics memory using the Intel Dynamic Video Memory Technology.	128 MB **256 MB** Maximum

Integrated Peripherals submenu



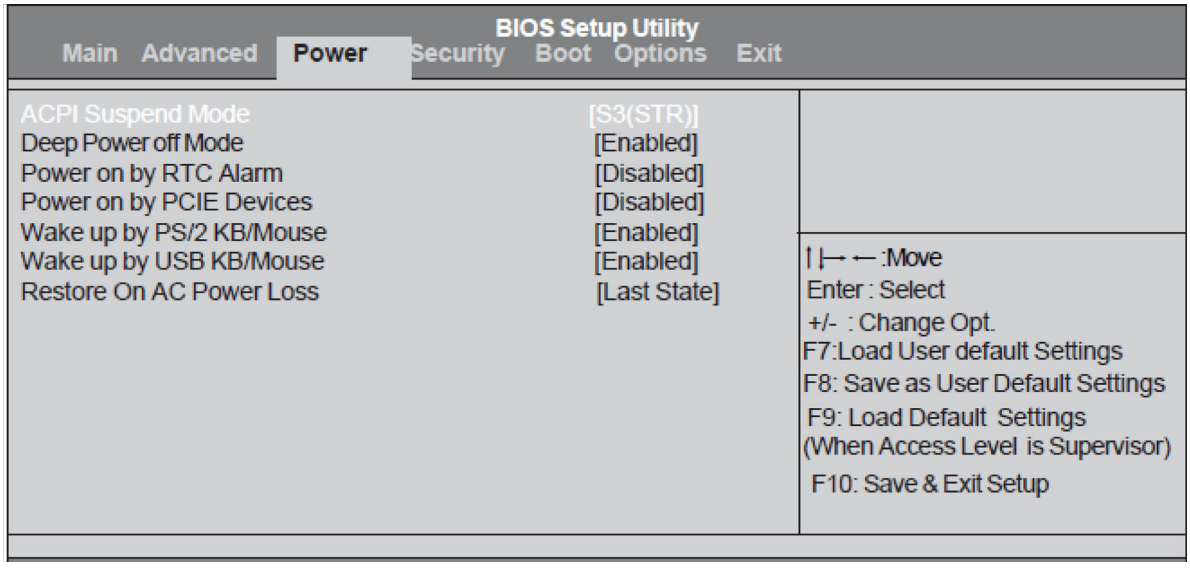
Field	Description	Value
Onboard SATA Controller	Enables or disables the onboard SATA controller.	Disabled **Enabled**
Onboard SATA Mode	Set the operating mode for the onboard SATA controller.	**AHCI** Native IDE
Onboard USB Controller	Enables or disables the onboard USB controller.	Disabled **Enabled**
Legacy USB Support	Enables or disables support for a USB mouse and USB keyboard. When enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.	Disabled **Enabled**
USB Storage Emulation	If set to Auto, a USB devices with a capacity of equal or less than 2 GB will be emulated as a bootable floppy disk.	**Auto** Floppy Hard Disk
Onboard Graphics Controller	Enables or disables the onboard graphics controller.	Disabled **Enabled**
Onboard Audio Controller	Enables or disables the onboard audio controller.	Disabled **Enabled**
Onboard LAN Controller	Enables or disables the onboard LAN controller.	Disabled **Enabled**
Onboard LAN Option ROM	Enables or disables the onboard LAN option ROM function.	Enabled **Disabled**

PC Health Status submenu



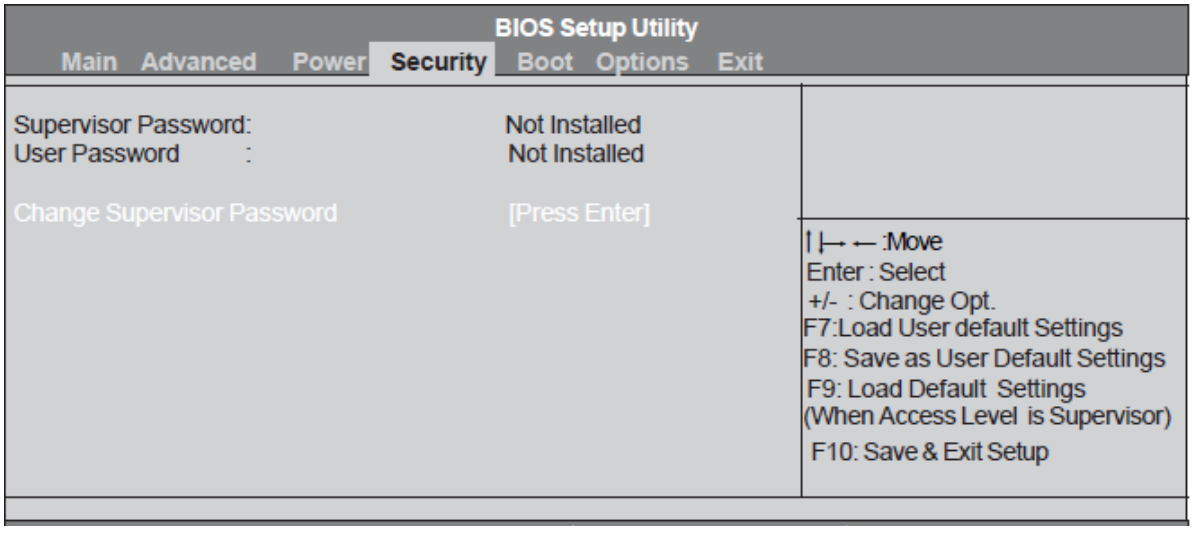
Field	Description	Value
CPU Temperature (PECI Mode) System Temperature PCH Temperature CPU Fan Speed System Fan Speed CPU Core +1.05V +3.30V +5.00V +12.0V 5VSB VBAT	These items lets you monitor the parameters for critical voltages, temperatures and fan speeds.	
Smart Fan	When enabled, fan speed will speed up or slow down depending on the system temperature.	Disabled **Enabled**

Power menu



Field	Description	Value
ACPI Suspend Mode	Use this item to define how your system suspends. Default value is S3 (STR), the suspend mode is suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.	S1 (POS) **S3 (STR)**
Deep Power Off Mode	Enables or disables compliance to the Energy-using Products Lot 6 Directives (EuP Lot 6).	Disabled **Enabled**
Power On by RTC Alarm	Enables or disables the system to wake up from a power-saving mode when an RTC alarm occurs.	**Disabled** Enabled
Power On by PCIE Devices	Enables or disables the system to wake up from a power-saving mode when an installed PCIe LAN card received an incoming call.	**Disabled** Enabled
Power On by Onboard LAN	Enables or disables the system to wake up from a power-saving mode when the onboard LAN controller received a network message.	**Disabled** Enabled
Wake Up by PS/2 KB/Mouse	Enables or disables the system to wake up from a power-saving mode when a PS/2 keyboard or mouse is used.	Disabled **Enabled**
Wake Up by USB KB/Mouse	Enables or disables the system to wake up from a power-saving mode when a USB keyboard or mouse is used.	Disabled **Enabled**
Restore On AC Power Loss	Select the power state when an AC power loss occurs. • Last State - The computer reverts to the last power state before the power loss occurred. • Off - The computer remains off until the power button is pressed. • On - The computer switches back on after the AC power loss.	**Last State** Off On

Security menu



Field	Description	Value
Supervisor Password	Displays the supervisor password status. When set to Installed, this password will allow the user to access and change all settings in the Setup Utility.	Installed Not Installed
User Password	Displays the user password status. Only the following menus will be accessible when this password is used to logged in: • System Date and System Time • Exit Without Saving The **F9** key (Load Default Settings) will also be unavailable.	
Change Supervisor Password	Press **Enter** to change the supervisor password.	
Change User Password	Press **Enter** to change the user password. Note that this field: • is only accessible when a supervisor password is set; • is cleared when the supervisor password is cleared.	
Security Option	This field is only visible when the supervisor or user password is installed. • Setup – User will be prompted to enter the password when trying to access the Setup Utility. • System – User will be prompted to enter the password both during boot-up and when trying to access the Setup Utility.	**Setup** System
Boot Sector Virus Protection	This field is not visible when the onboard SATA controller mode is set to either AHCI or RAID. If disabled, when anything attempts to access the boot sector or the hard disk partition table, there will be no warning message.	**Disabled** Enabled

Note the following before you define a system password:

- The maximum length of password contains 8 alphanumeric characters. The following keys are valid:
  - A-Z, a-z (case-insensitive)
  - 0-9
  - ` - + [ ] \ ; ' , . /,
  - Special keypad characters: 0-9 / * - +
- When you are prompted to enter a password, you have three tries before the system halts. Do not forget your password. If you forget your password, you may have to return your computer to your dealer to reset it.

To set a system password:

NOTE You need to set a supervisor password first before setting the user password.

1. Select Change Supervisor Password or Change User Password, then press **Enter**.

   The password box appears.

2. Type a password then press **Enter**.

IMPORTANT Be very careful when typing your password because the characters do not appear on the screen. Only shaded blocks representing each typed character are visible.

3. Retype the password to verify the first entry, then press **Enter**.

   You will be prompted to save the new password.

4. Press **Enter**.
5. Press **F10** to save the password and close the Setup Utility.

To change a system password:

1. Select Change Supervisor Password or Change User Password, then press **Enter**.

   The password box appears.

2. Type the original password, then press **Enter**.
3. Type a new password, then press **Enter**.
4. Retype the new password to verify the first entry, then press **Enter**.

   You will be prompted to save the new password.

5. Press **Enter**.
6. Press **F10** to save the password and close the Setup Utility.

To remove a system password:

NOTE When the supervisor password is removed, the user password will also be remove.

1. Select Change Supervisor Password or Change User Password, then press **Enter**.

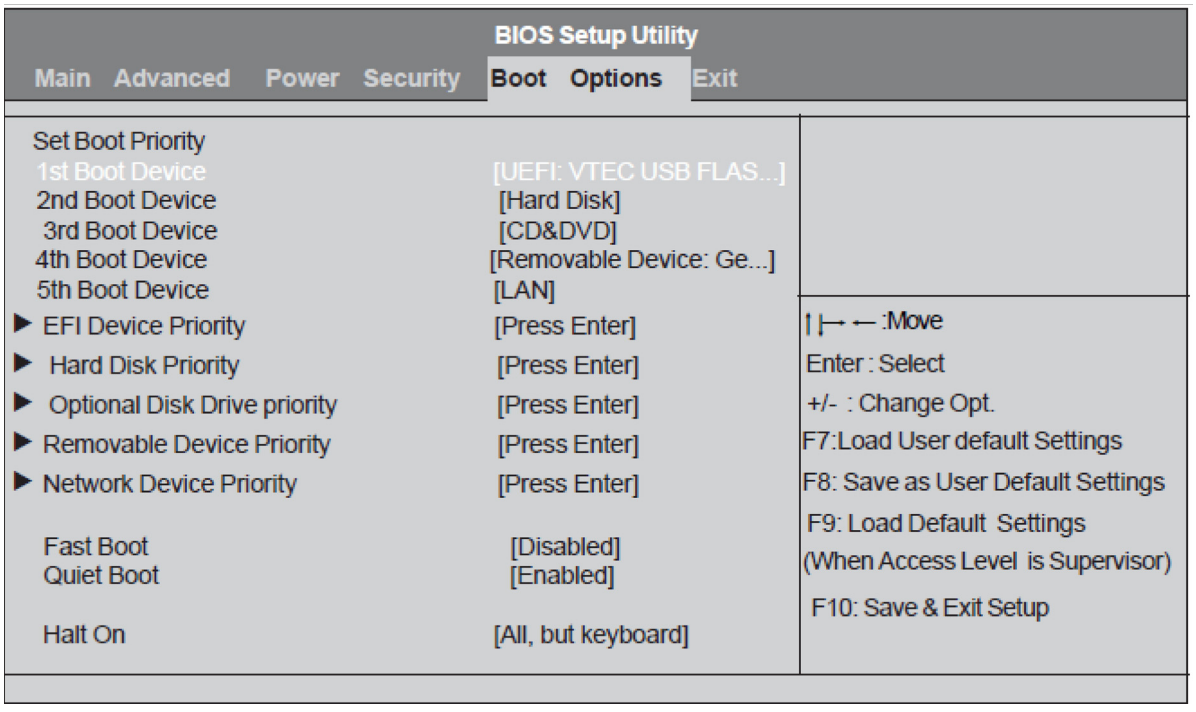
   The password box appears.

2. Type the original password, then press **Enter**.
3. Press **Enter** twice without entering anything in the new and confirm password fields.

   You will be prompted to confirm the password removal.

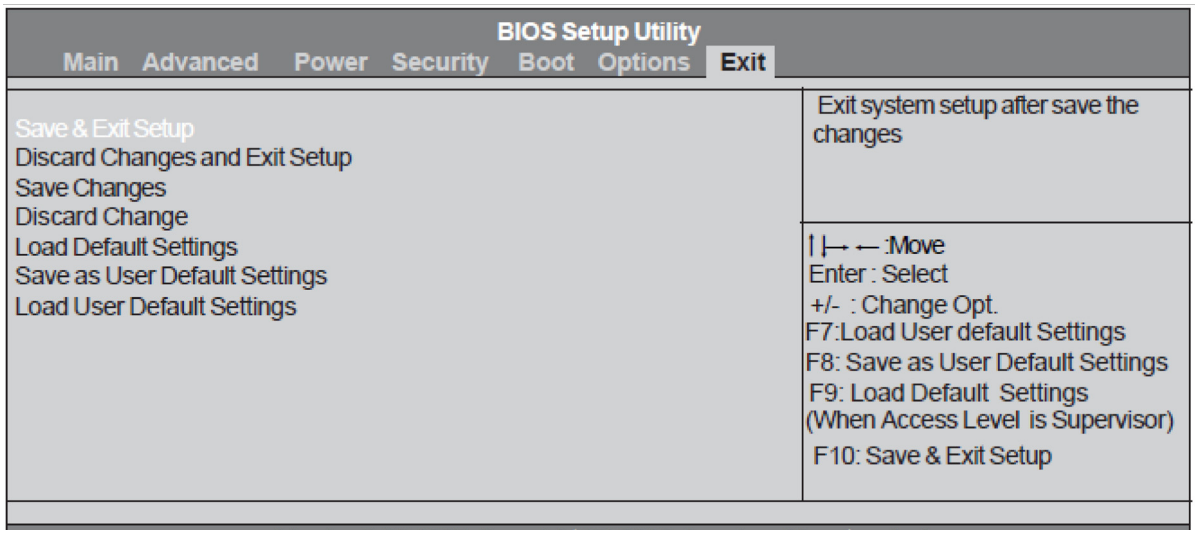
4. Press **Enter**.
5. Press **F10** to save the changes you made and close the Setup Utility.

Boot Options menu



Field	Description	Value
Set Boot Priority 1st Boot Device 2nd Boot Device 3rd Boot Device 4th Boot Device 5th Boot Device	Displays the device assigned to the specified boot sequence. The Setup Utility attempts to boot the operating system in this order. By default, the computer searches for boot devices in the following order: • EFI environment • Hard disk • Optical drive (CD/DVD) • Removable device • Network boot (LAN)	
EFI Device Priority	Press Enter to set the boot priority for the EFI (Extensible Firmware Interface) environment.	
Hard Disk Priority	Press Enter to set the boot priority for the hard drive.	
Optical Disc Drive Priority	Press Enter to set the boot priority for the optical drive.	
Removable Device Priority	Press Enter to set the boot priority for a removable USB drive.	
Network Device Priority	Press Enter to set the boot priority for a network boot.	
Fast Boot	When enabled, the system starts up more quickly by eliminating some of the POST routines.	**Disabled** Enabled
Quiet Boot	When enabled, BIOS will show a full screen logo when booting; if disabled, BIOS will show the diagnostic POST screen when booting.	Disabled **Enabled**
Halt On	Determines whether the system will stop for an error during the POST. Options include: • All, but Keyboard - If a keyboard error is detected, BIOS will pause the system. • All Errors - Any error detected will pause the system. • No Errors - BIOS will ignore any errors detected during POST	**All, But Keyboard** All Errors No Errors

Exit menu



Field	Description
Save and Exit Setup	Save changes made and close the Setup utility. Keyboard shortcut: F10
Discard Changes and Exit Setup	Discard changes made and close the Setup utility.
Save Changes	Save all changes made to the Setup utility.
Discard Changes	Discard all changes made to the Setup utility and load the previous configuration settings.
Load Default Settings	Load the factory default settings for all Setup parameters. Keyboard shortcut: F9
Save as User Default Settings	Save the current configuration settings as user default values. Keyboard shortcut: F8
Load User Default Settings	Load the user default settings for all Setup parameters. Keyboard shortcut: F7

Chapter 3

System Disassembly

This chapter provides step-by-step instructions on how to disassemble the computer for maintenance and troubleshooting purposes.

Disassembly Tools

In performing the disassembly process, you will need the following tools:

- Wrist-grounding strap and conductive mat for preventing electrostatic discharge
- Philips screwdriver
- Hex screwdriver
- Flat screwdriver
- Scissors (for cutting cable ties)

NOTES

- To reinstall the system components and assemble the unit, perform the disassembly procedures in reverse.
- The screws for the different components vary in size. During the disassembly process, group the screws with their corresponding components to avoid mismatches when putting back the components.

Pre-disassembly Procedure

Before proceeding with the disassembly procedure, perform the steps listed below:

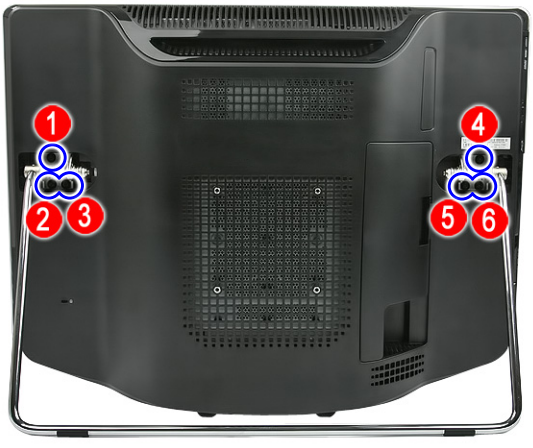
1. Make sure that the optical disc drive and the card reader slot are empty.
2. Turn off the power to the computer and all peripherals.
3. Unplug the power cord from the computer.
4. Unplug the network cable and all connected peripheral devices from the computer.
5. Place the computer on a flat, steady surface with the rear cover facing upward.

Disassembly Procedures

Removing the Computer Stand

1. Perform the “Pre-disassembly Procedure” on page 25.
2. Use a flat screwdriver to pry off the plastic shells covering the computer stand screws.

3. Remove the screws securing the computer stand.



Quantity	Color	Torque	Part Number
6	Black	4.0–4.5 kgf-cm	86.00N85.266

4. Remove the computer stand.

Removing the I/O Cable Cover

1. Perform the “Pre-disassembly Procedure” on page 25.
2. Press the I/O cable cover release tab (**a**), then remove the I/O cable cover (**b**).

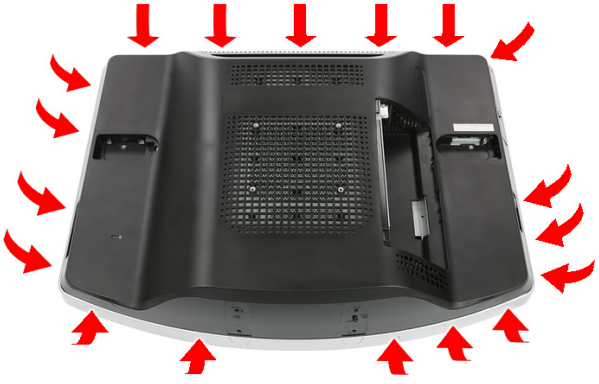
Removing the Rubber Feet

1. Perform the “Pre-disassembly Procedure” on page 25.
2. Use a flat screwdriver to pry off the rubber feet from the computer base.

Removing the Rear Cover

1. Remove the computer stand by following the procedure described on page 26.
2. Remove the I/O cable cover and the rubber feet by following the procedures described on page 27.
3. Use a flat screwdriver to carefully pry loose the rear cover from the front bezel.

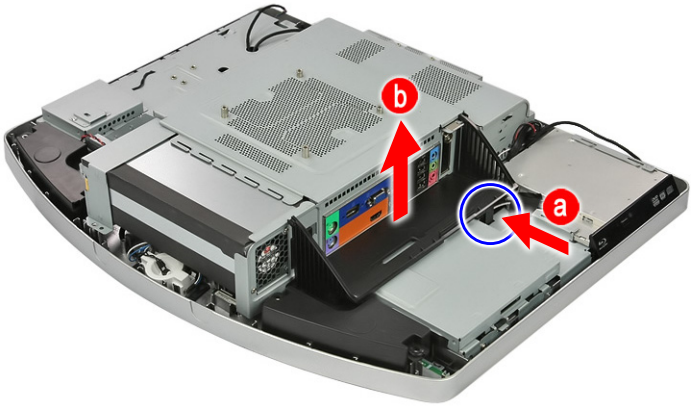
   The picture below shows the location of the plastic snaps securing the rear cover to the front bezel.



4. Toggle the cover from left to right to loosen its hold on the front bezel, then detach the rear cover.

Removing the I/O Cable Plate

1. Remove the rear cover by following the procedure described in the previous section.
2. Push the latch to disengage the I/O cable plate from the chassis (**a**), then remove the I/O cable plate (**b**).

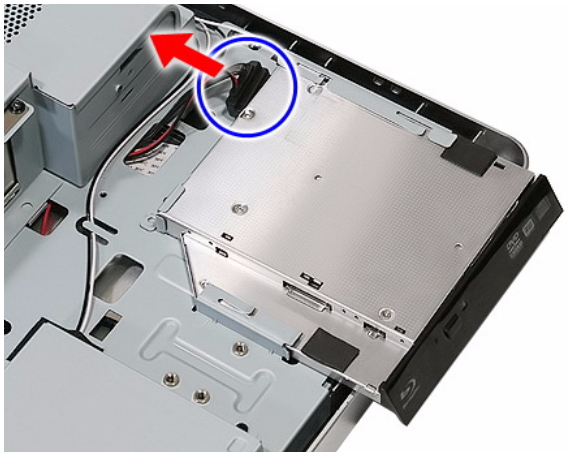


Removing the Optical Disc Drive

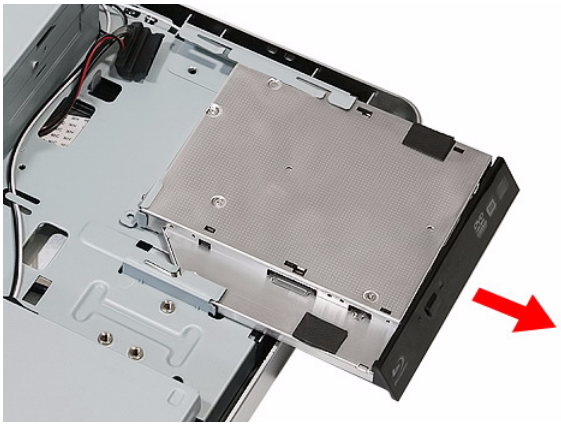
1. Remove the rear cover by following the procedure described on page 28.
2. Detach the tape securing the WLAN antenna cables to the ODD, then pull the cables away from the ODD.
3. Remove the screw securing the ODD.

Quantity	Color	Torque	Part Number
1	Chrome	4.0–4.5 kgf-cm	86.00B75.240

4. Slide the ODD outward, then disconnect the ODD SATA cable from the drive.



5. Remove the ODD from the chassis.



6. Remove the screw securing the ODD bracket.

Quantity	Color	Torque	Part Number
1	Chrome	1.3–1.5 kgf-cm	86.7A122.4R0

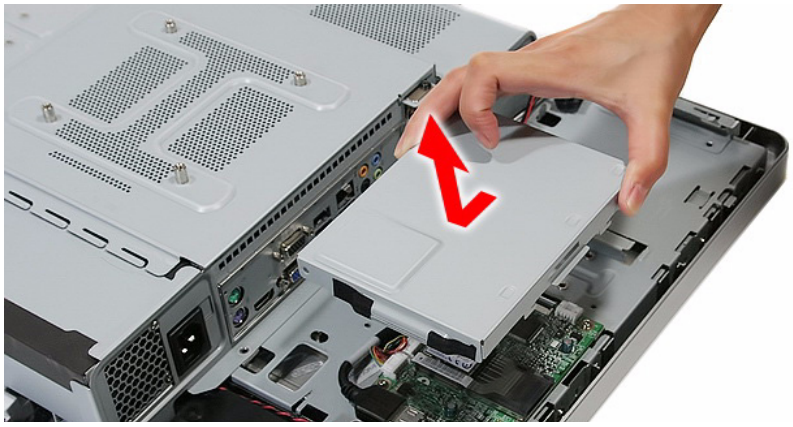
7. Detach the ODD bezel from the module.

Removing the Wireless Module

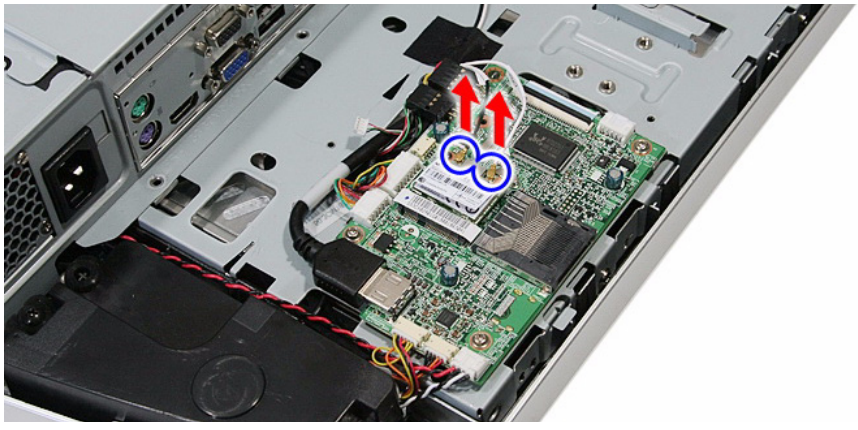
1. Remove the rear cover by following the procedure described on page 28.
2. Remove the screw securing the scaler board cover.

Quantity	Color	Torque	Part Number
1	Chrome	4.0–4.5 kgf-cm	86.00B75.240

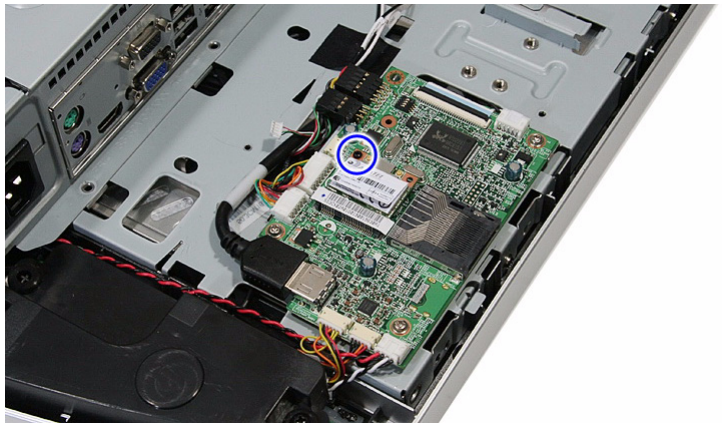
3. Slide the scaler board cover towards the speaker area to disengage the cover tabs from the chassis, then remove the scaler board cover.



4. Disconnect the antenna cables from the WLAN module.

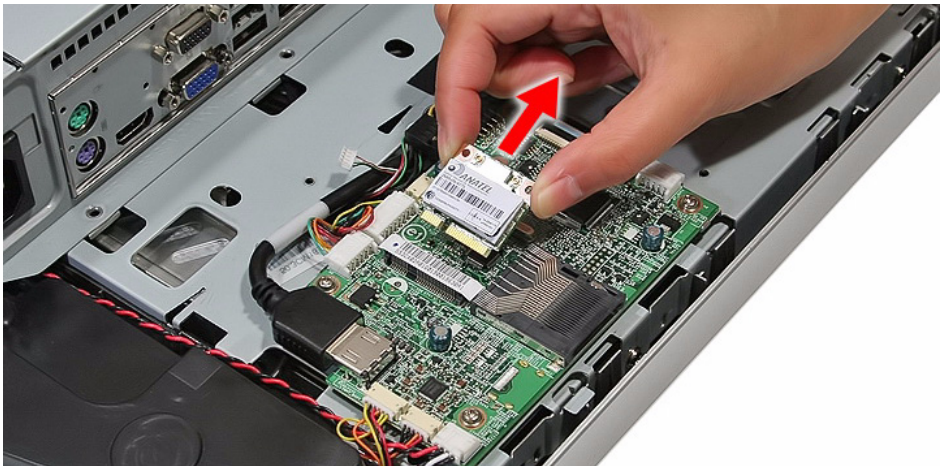


5. Remove the screw securing the WLAN module.



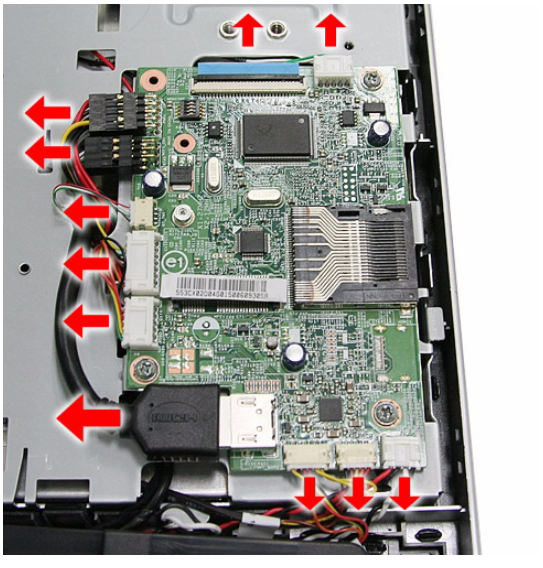
Quantity	Color	Torque	Part Number
1	Chrome	1.3–1.5 kgf-cm	86.7A122.4R0

6. Remove the WLAN module.

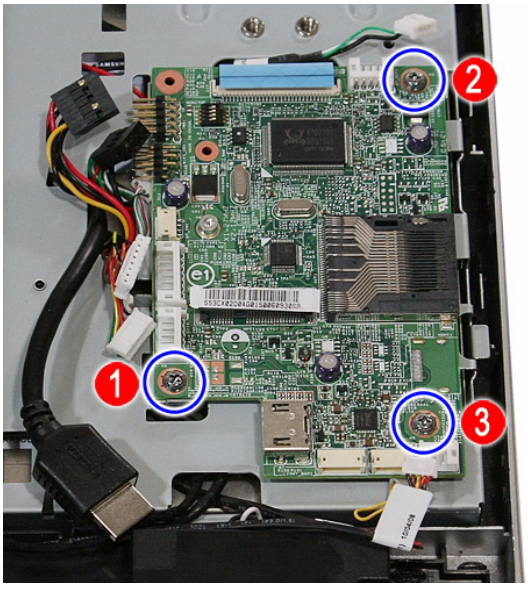


Removing the Scaler Board

1. Remove the rear cover by following the procedure described on page 28.
2. Remove the scaler board cover by following steps 2 and 3 of the previous section.
3. Disconnect all the cables from the scaler board.

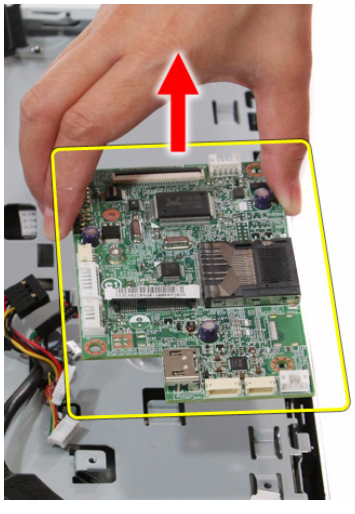


4. Remove the screws securing the scaler board.



Quantity	Color	Torque	Part Number
3	Chrome	4.0 kgf-cm	86.00B75.240

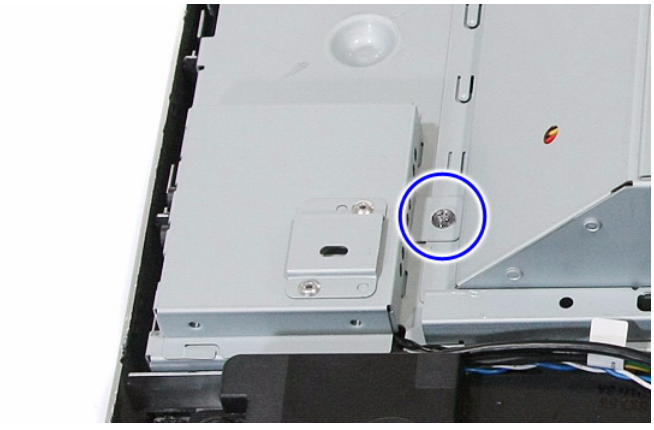
5. Remove the scaler board.



A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.

Removing the USB/Audio Board

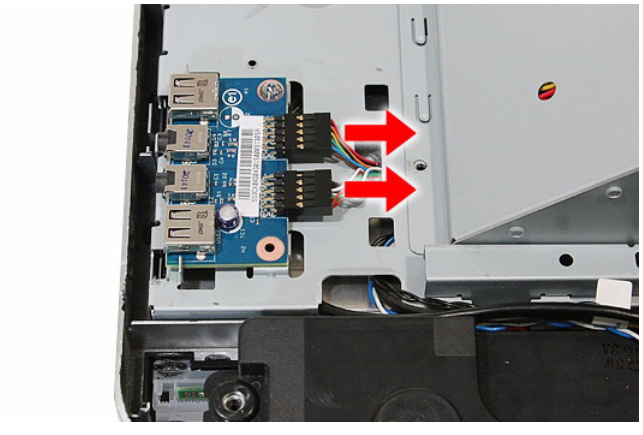
1. Remove the rear cover by following the procedure described on page 28.
2. Remove the screw securing the USB/audio board cover.



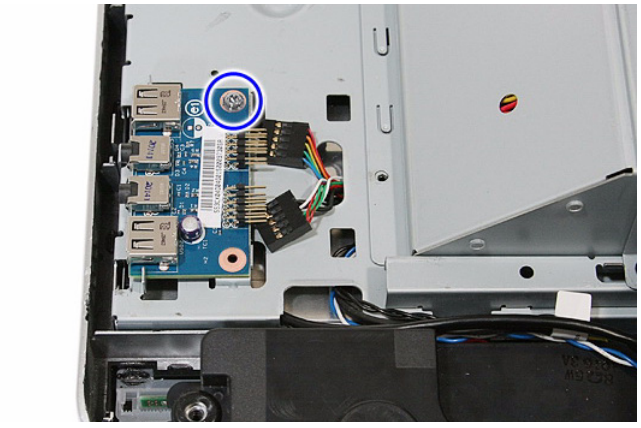
Quantity	Color	Torque	Part Number
1	Chrome	4.0–4.5 kgf-cm	86.00B75.240

3. Slide the USB/audio board cover outward to disengage the cover tabs from the chassis, then remove the USB/audio board cover.

4. Disconnect the two cables from the USB/audio board.

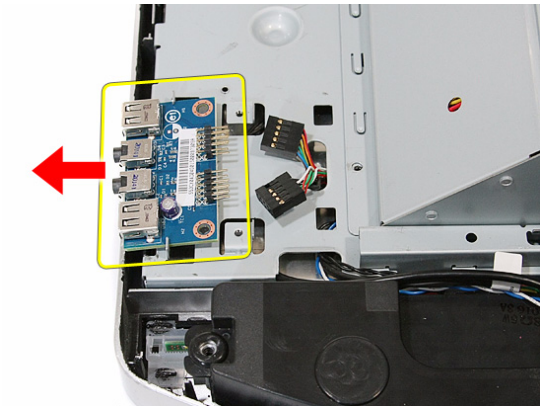


5. Remove the screws securing the USB/audio board.



Quantity	Color	Torque	Part Number
1	Chrome	4.0 kgf-cm	86.00B75.240

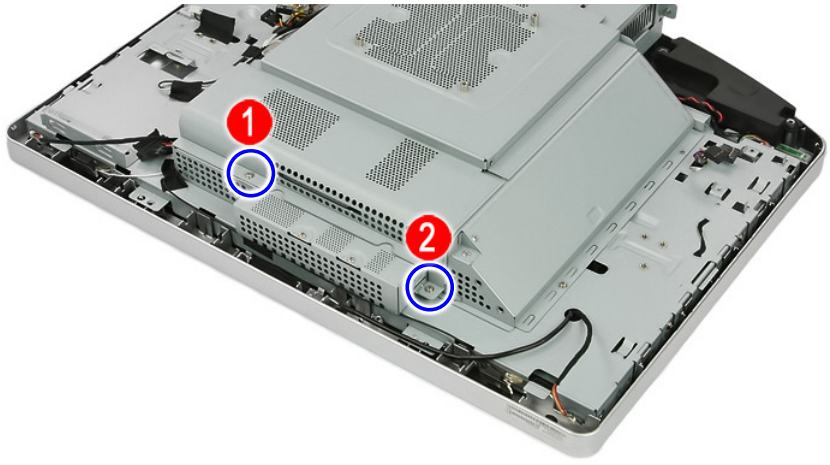
6. Slide the USB/audio board out of its tabs.



A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.

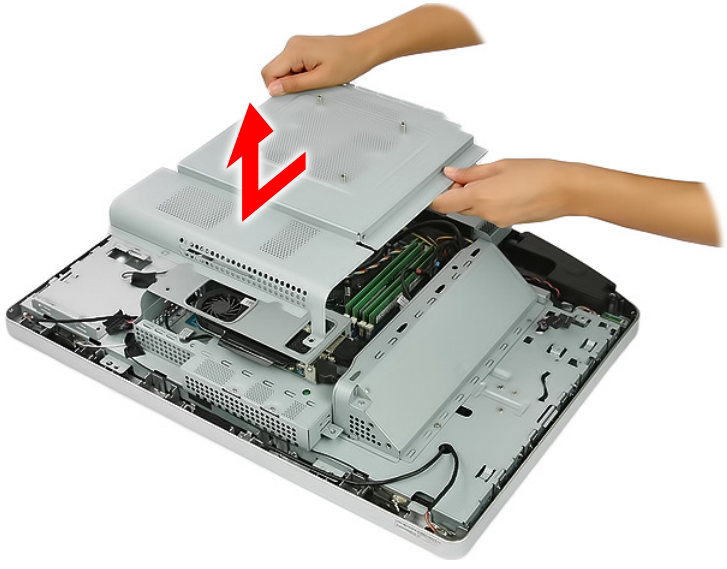
Removing the Wall Mount Plate

1. Remove the rear cover by following the procedure described on page 28.
2. Remove the screws securing the wall mount plate.



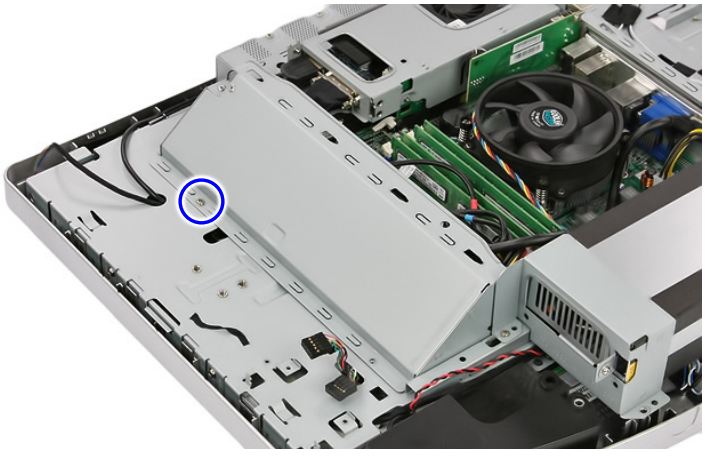
Quantity	Color	Torque	Part Number
2	Chrome	4.0–4.5 kgf-cm	86.00B75.240

3. Slide the wall mount plate towards the HDD area to disengage the plate tabs from the chassis, then remove the wall mount plate.



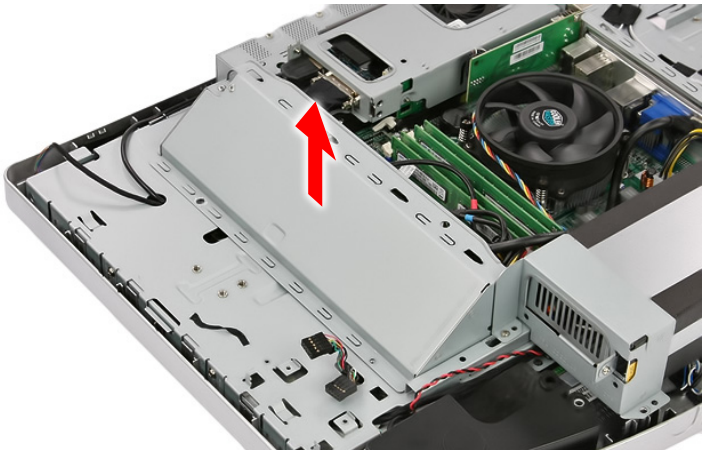
Removing the Side Board Cover

1. Remove the wall mount plate by following the procedure described on the previous section.
2. Remove the screw securing the side board cover.



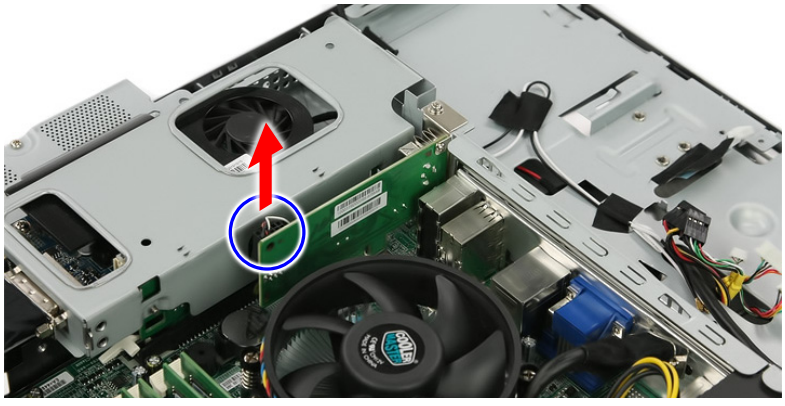
Quantity	Color	Torque	Part Number
1	Chrome	4.0–4.5 kgf-cm	86.00B75.240

3. Remove the side board cover.



Removing the TV Tuner Card

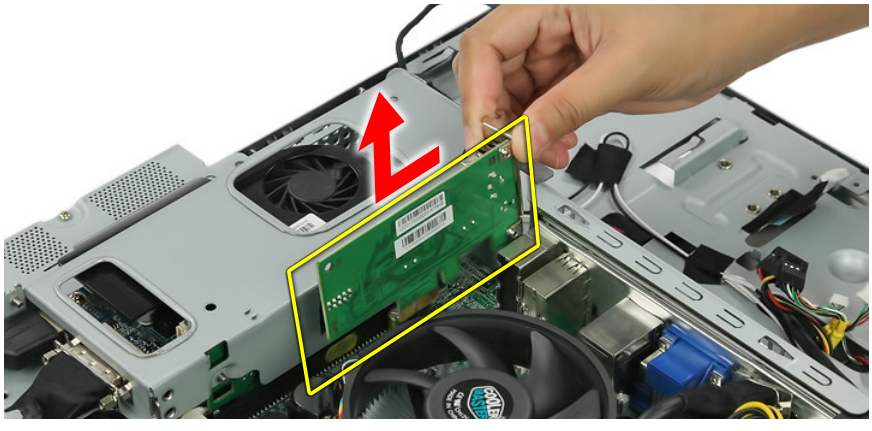
1. Remove the wall mount plate by following the procedure described in the previous section.
2. Disconnect the TV tuner card cable.



3. Remove the screw securing the TV tuner card bracket.

Quantity	Color	Torque	Part Number
1	Chrome	4.0–4.5 kgf-cm	86.00B75.240

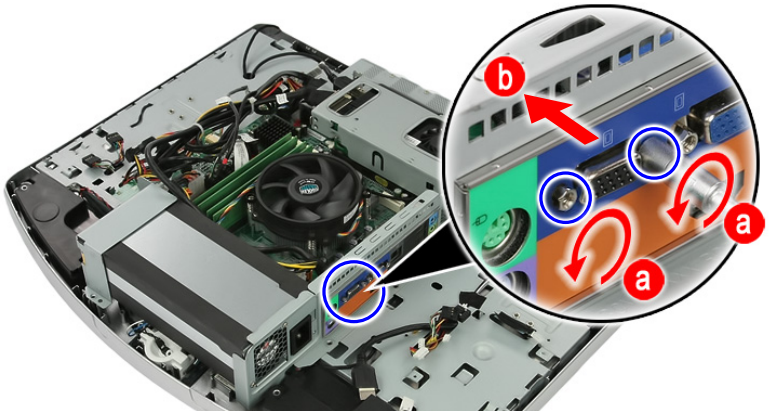
4. Disconnect TV tuner card from its expansion slot.



A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.

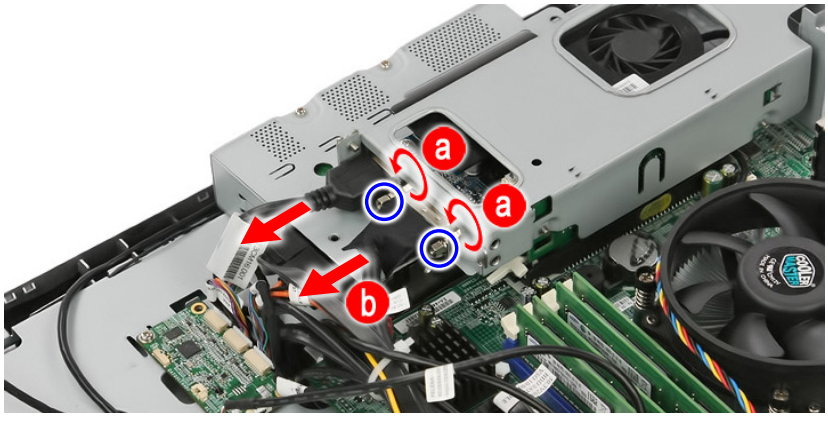
Removing the Graphics Card

1. Remove the wall mount plate by following the procedure described on page 36.
2. Remove the hex screws securing the DVI cable to the I/O panel cover (**a**), then detach the cable from the panel cover (**b**).



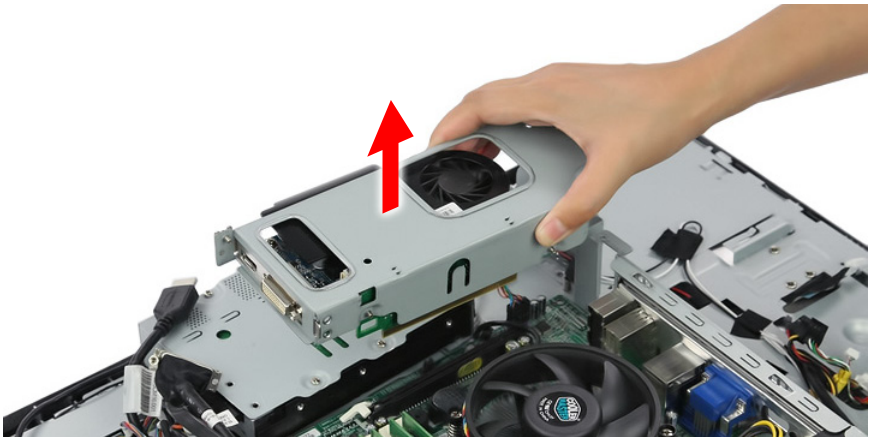
Quantity	Color	Torque	Part Number
2	Chrome	4.5 kgf-cm	86.80536.7R2

3. Disconnect the HDMI cable from the graphics card. Remove the hex screws securing the DVI cable to the graphics card (**a**), then detach the cable from the card (**b**).



Quantity	Color	Torque	Part Number
2	Chrome	4.5 kgf-cm	86.80536.7R2

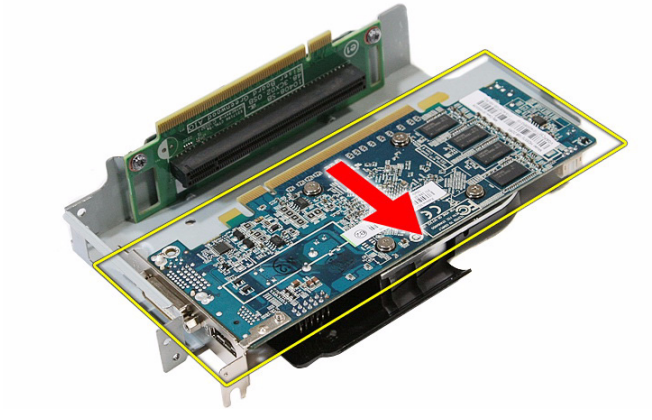
4. Disconnect the graphics card assembly from its expansion slot.



5. Remove the screw securing the graphics card bracket.

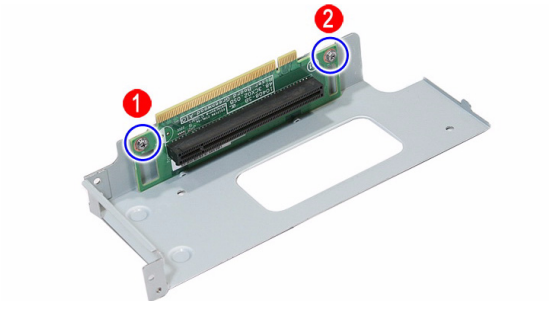
Quantity	Color	Torque	Part Number
1	Chrome	4.0–4.5 kgf-cm	86.00B75.240

6. Disconnect the graphics card from its riser board.



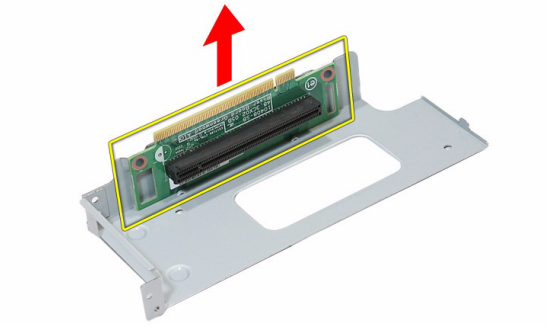
A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.

7. Remove the screws securing the riser board.



Quantity	Color	Torque	Part Number
2	Chrome	4.0–4.5 kgf-cm	86.00B75.240

8. Remove the riser board from its bracket.

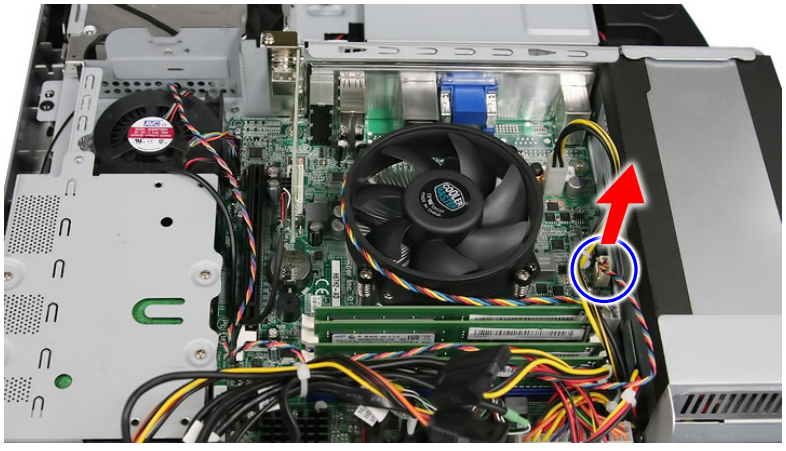


A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.

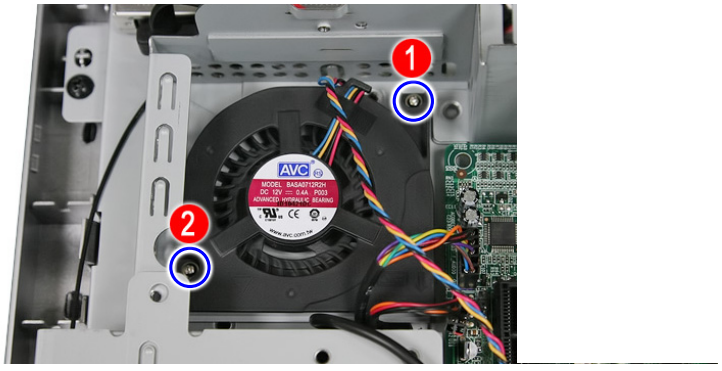
Removing the System Fan

1. Remove the wall mount plate by following the procedure described on page 36.
2. Remove the graphics card assembly by following the procedures described on page 39.
3. Cut the cable tie securing the system cables.

   Make sure you have a replacement cable tie for when you reassemble the machine back.
4. Disconnect the system fan cable from the mainboard.

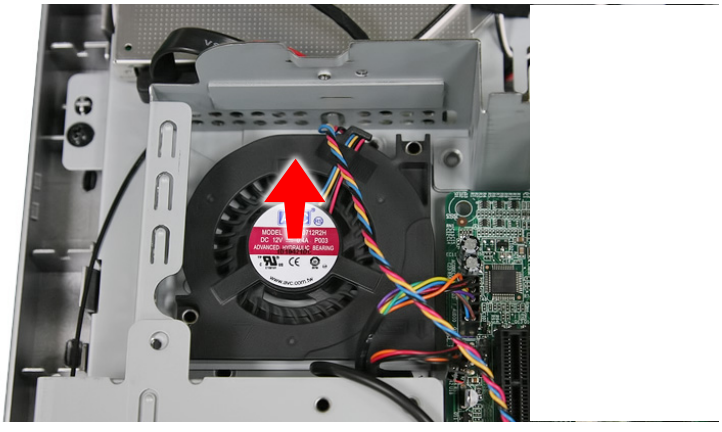


5. Remove the screws securing the system fan.



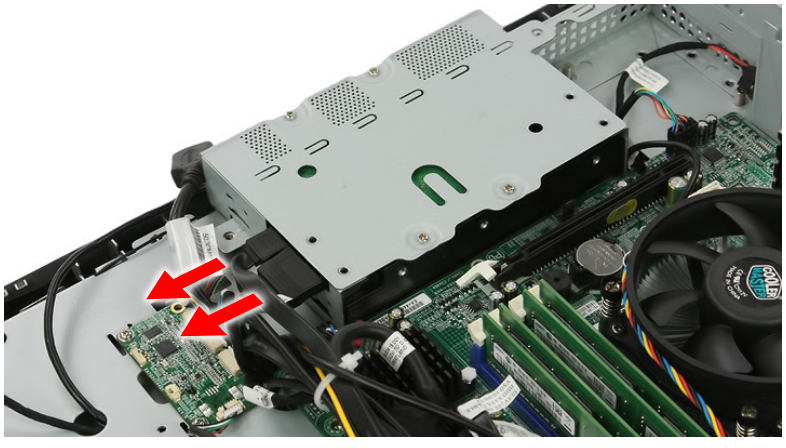
Quantity	Color	Torque	Part Number
2	Chrome	1.7 kgf-cm	86.7A122.4R0

6. Remove the system fan from the chassis.

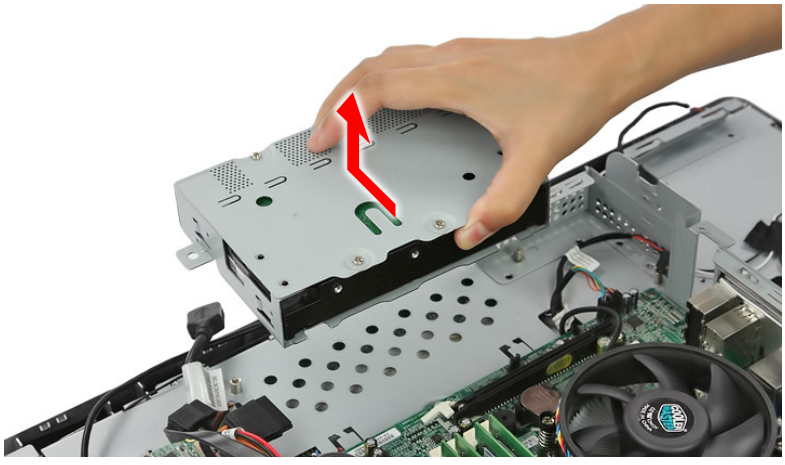


Removing the Hard Disk Drive

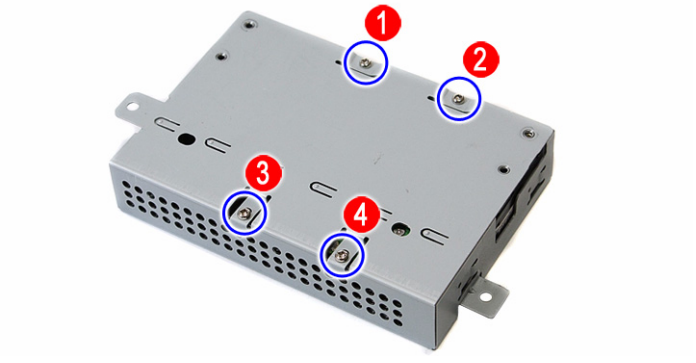
1. Remove the graphics card by following the procedure described on the previous section.
2. Disconnect the power and SATA cables from the hard drive.



3. Slide the HDD assembly outward to disengage the assembly from the chassis, then remove the HDD assembly.

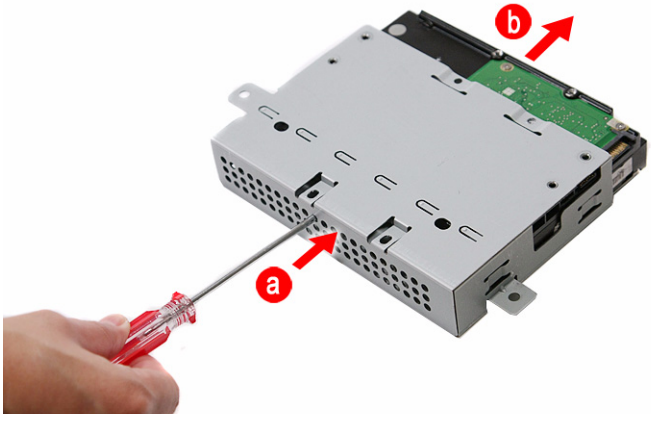


4. Remove the screws securing the hard drive to its cage.



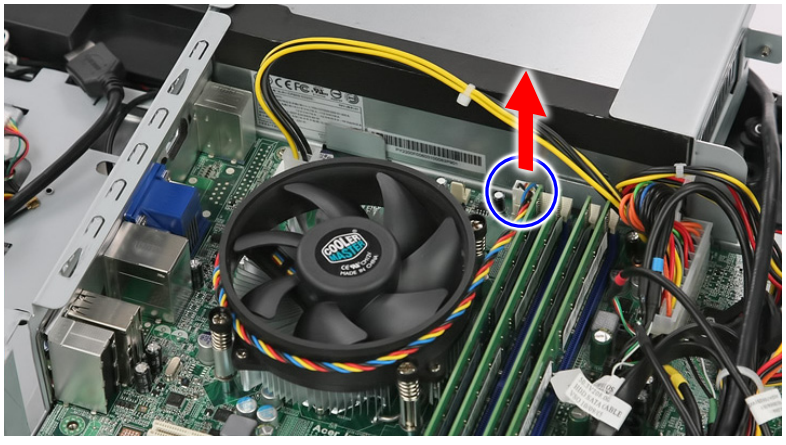
Quantity	Color	Torque	Part Number
4	Chrome	4.0–4.5 kgf-cm	86.00J44.C60

5. Use a small metal screwdriver to push the hard drive out of its cage (**a**), then pull out the drive out (**b**).

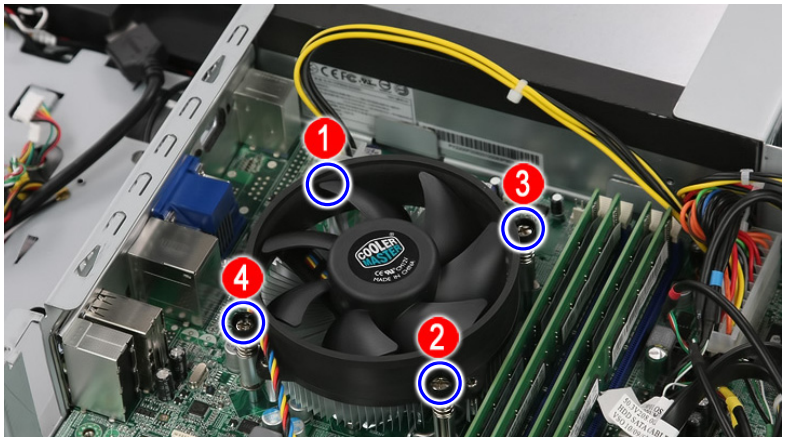


Removing the Heat Sink Fan (HSF) Assembly

1. Remove the wall mount plate by following the procedure described on page 36.
2. Disconnect the HSF cable from its mainboard connector.

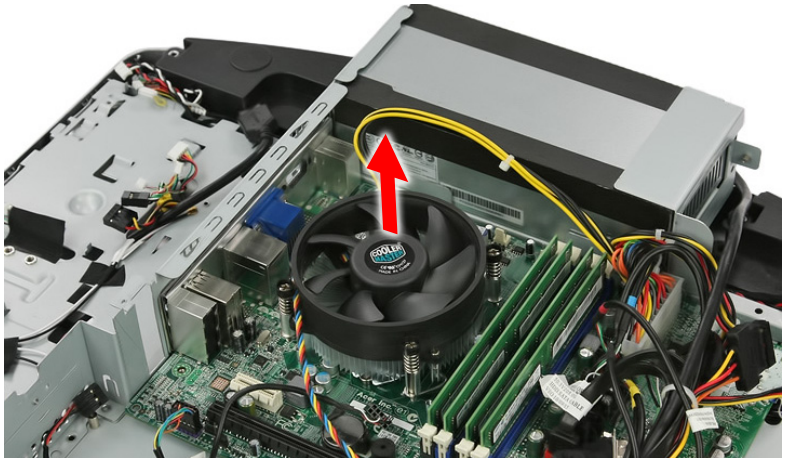


3. Loosen the HSF's spring-loaded screws in a diagonally opposite pattern (an "X" pattern).



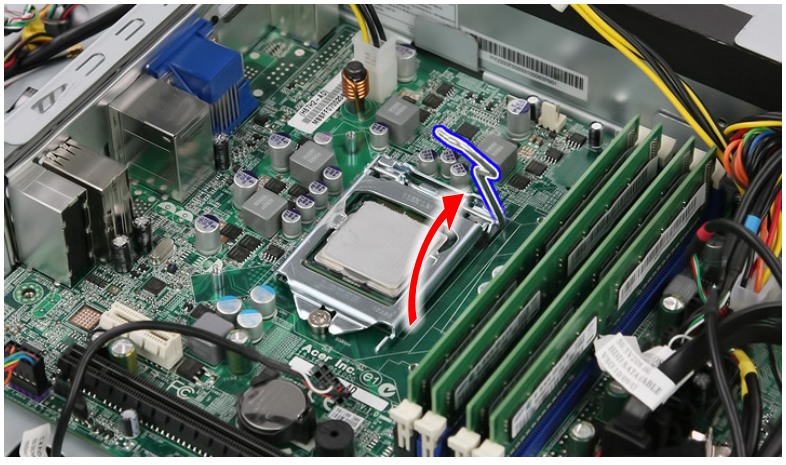
Quantity	Color	Torque	Part Number
4	Chrome	4.0–4.5 kgf-cm	–

4. Remove the HSF assembly.

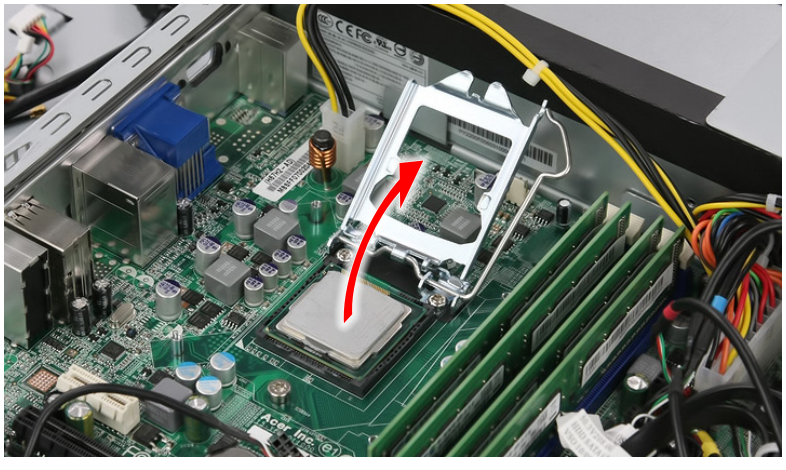


Removing the Processor

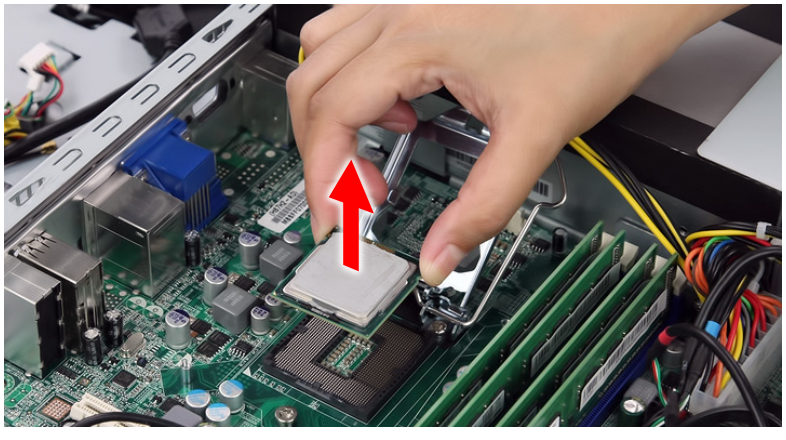
1. Remove the HSF assembly by following the procedure described on the previous section.
2. Disengage the load lever from its latch, then rotate it to the open position.



3. Open the retention plate to expose the socket body.



4. Gently lift the processor out of its socket.



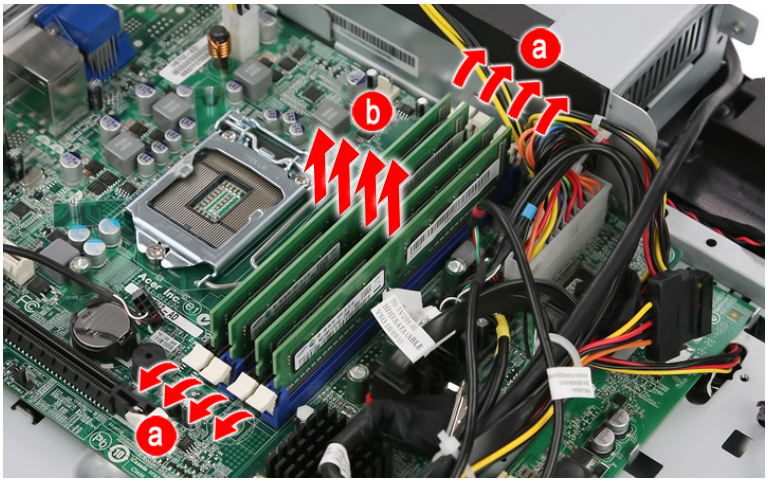
CAUTION DO NOT lay the processor on its base to avoid bending or damaging the pins underneath it.

IMPORTANT When installing a processor:

- Note the golden arrow on the corner to make sure the processor is properly oriented over the socket.
- Moisten a soft cloth with isopropyl alcohol and clean the processor die to remove any thermal grease residue. Wipe the die surface several times to make sure that no particles or dust contaminants are evident. Allow the alcohol to evaporate before continuing. Apply just enough thermal grease to evenly coat the surface of the processor die.

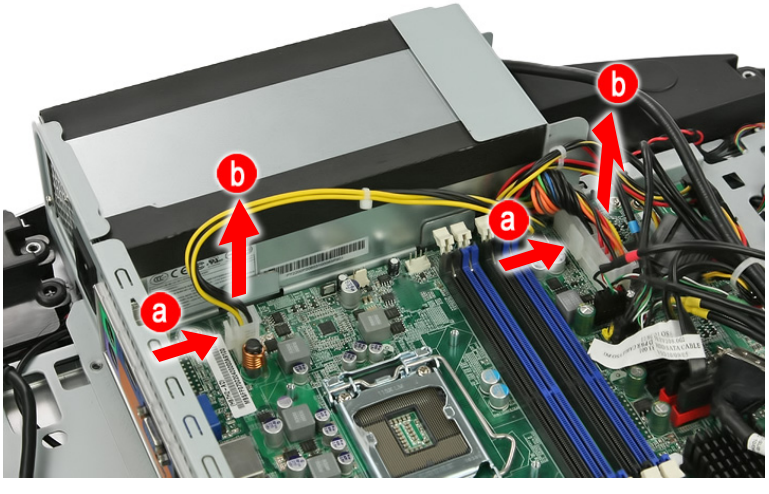
Removing the Memory Modules

1. Remove the wall mount plate by following the procedure described on page 36.
2. Open the holding clips securing the memory modules (**a**), then remove the memory modules from the DIMM slots (**b**).

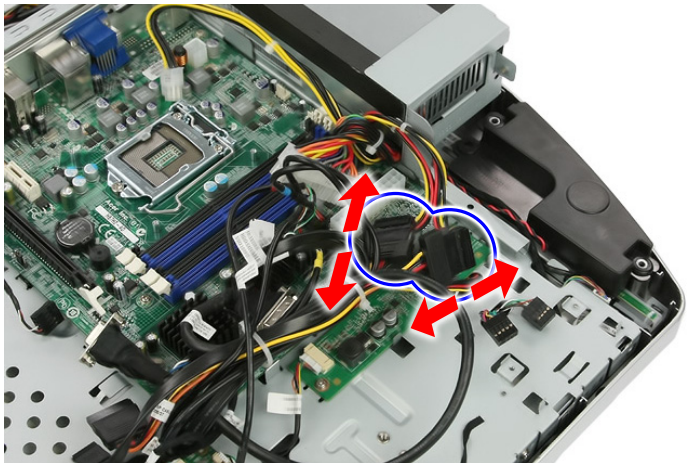


Removing the Power Supply Unit

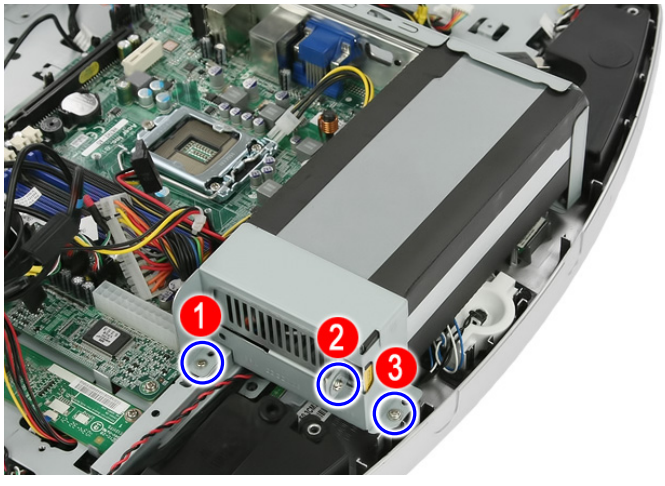
1. Remove the wall mount plate by following the procedure described on page 36.
2. Disconnect the 4-pin and 24-pin ATX power cables from their mainboard connectors.
   a. Press the top portion of the cable's retaining latch
   b. Pull the cable straight up from its connector.



3. Disconnect the PSU extension cable.

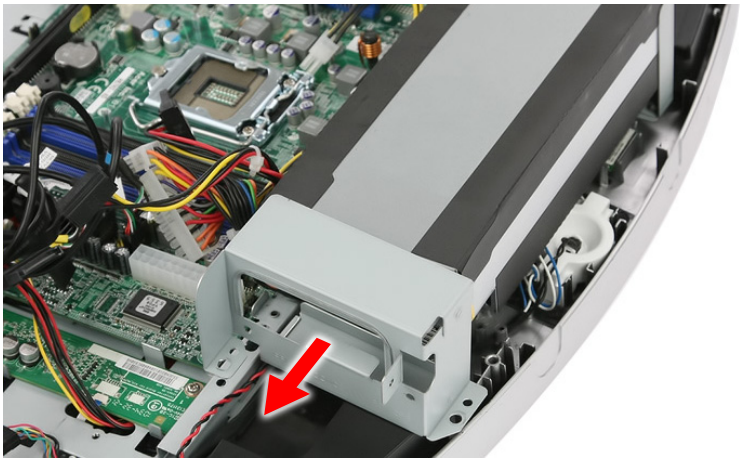


4. Remove the screws securing the PSU bracket.

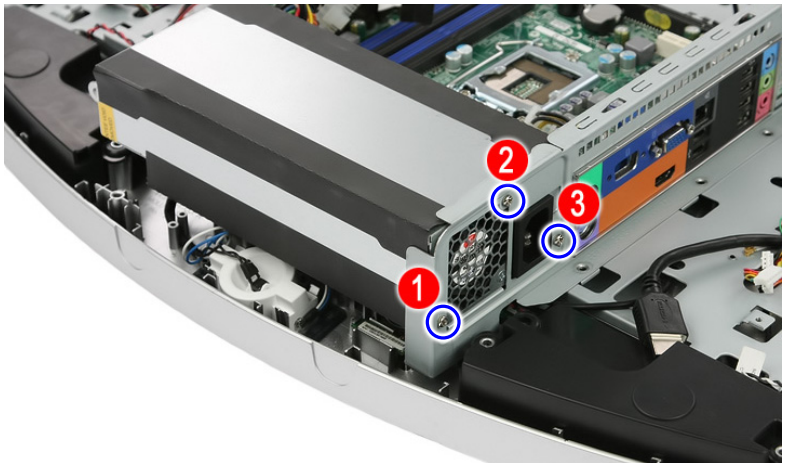


Quantity	Color	Torque	Part Number
1 (#2)	Black	4.0 kgf-cm	86.3AR26.8R0
2 (#1 and 3)	Chrome	4.0 kgf-cm	86.00J44.C60

5. Detach the PSU bracket from the power supply unit.

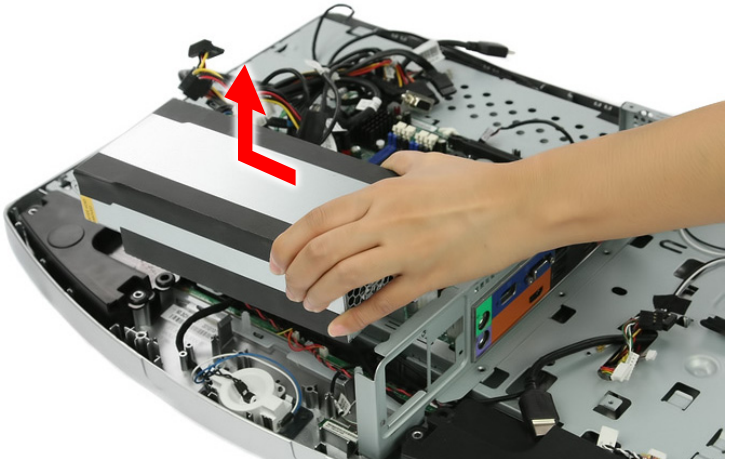


6. Remove the screws securing the PSU to the chassis.



Quantity	Color	Torque	Part Number
3	Chrome	4.0 kgf-cm	86.00J44.C60

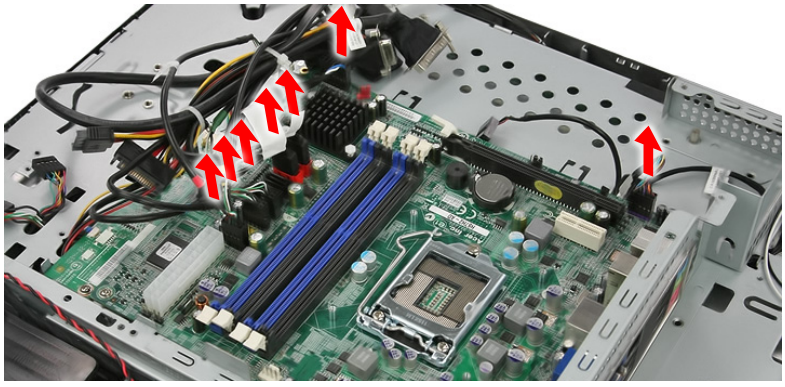
7. Remove the power supply unit from the chassis.



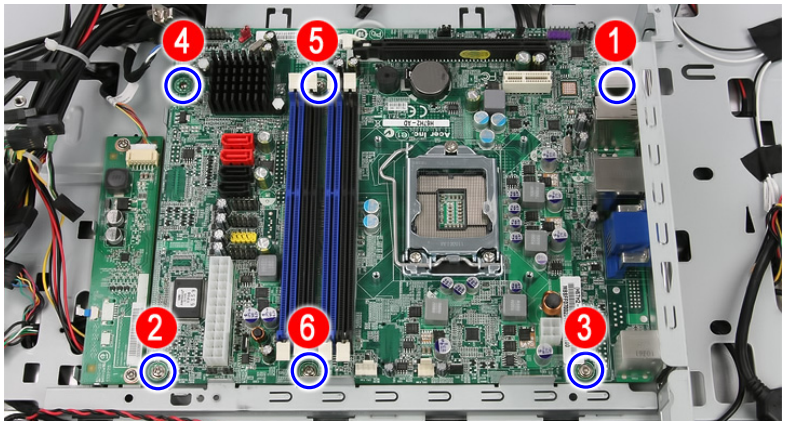
Removing the Mainboard

1. Remove the wall mount plate by following the procedure described on page 36.
2. Remove the TV tuner and graphics cards by following the procedures described on pages 38 and 39.
3. Remove the system fan by following the procedure described on page 41.
4. Remove the hard drive by following the procedure described on page 42.
5. Remove the HSF assembly by following the procedure described on page 44.
6. Remove the processor by following the procedure described on page 45.
7. Remove the memory modules by following the procedure described on page 46.

8. Disconnect all cables from the mainboard.

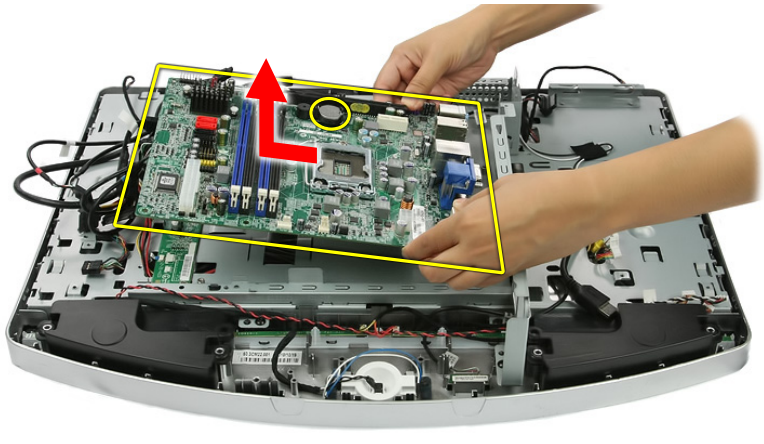


9. Remove the screws securing the mainboard.



Quantity	Color	Torque	Part Number
6	Chrome	4.0 kgf-cm	86.00B75.240

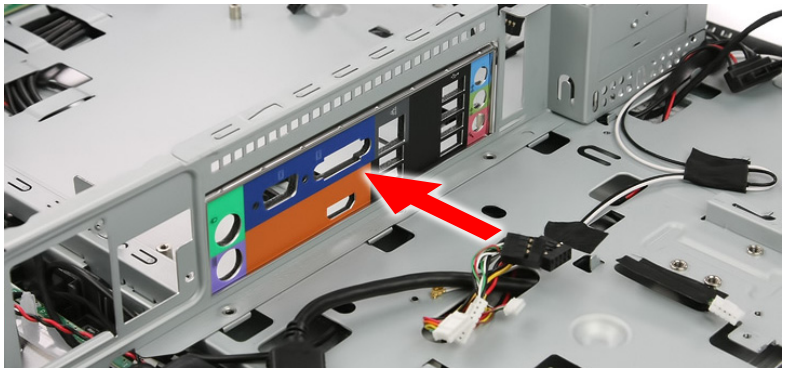
10. Remove the mainboard.



- A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.
- The RTC battery has been highlighted with a yellow circle in the above image. Detach the RTC battery and follow local regulations for disposing it.

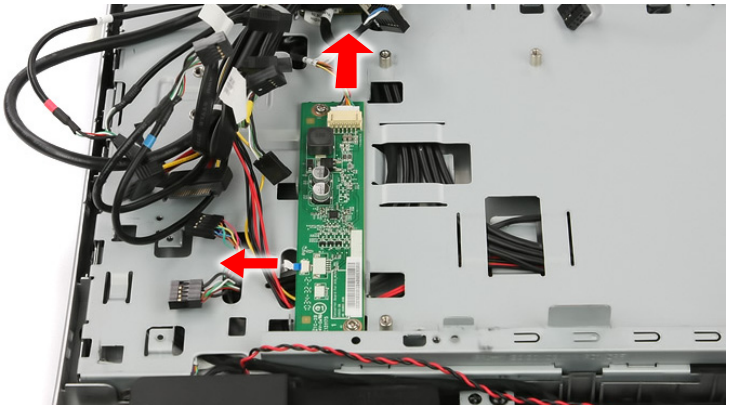
Removing the I/O Shield

1. Remove the mainboard by following the procedure described on the previous section.
2. Push the I/O shield to remove it from the chassis.

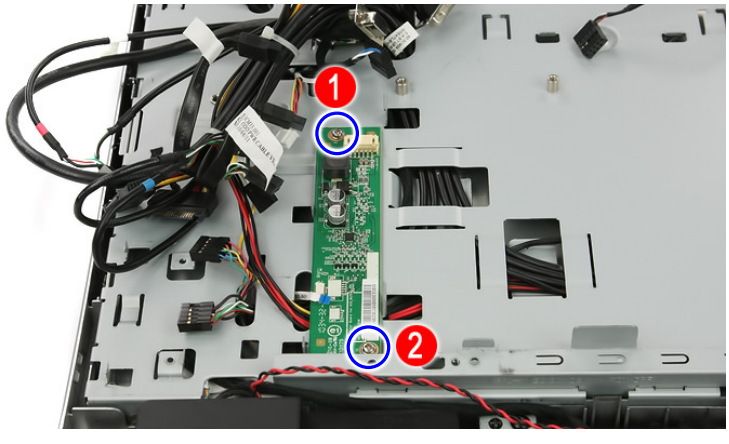


Removing the Converter Board

1. Remove the mainboard by following the procedure described on the previous section.
2. Disconnect all cables from the converter board.

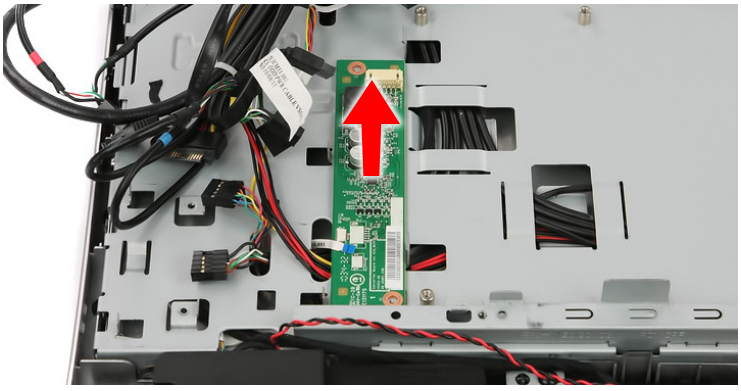


3. Remove the screws securing the converter board.



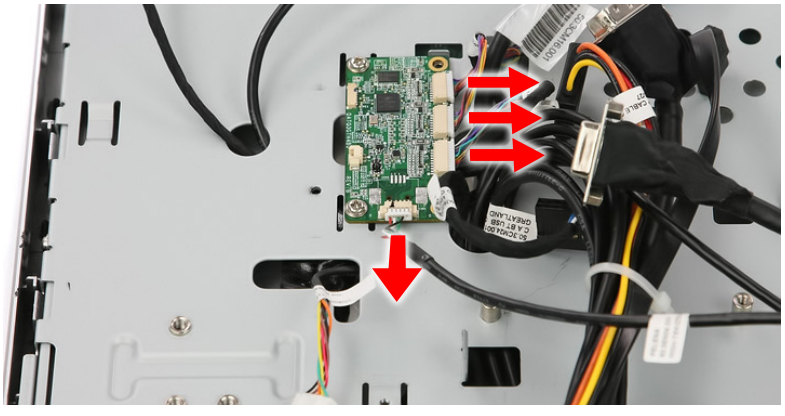
Quantity	Color	Torque	Part Number
2	Chrome	4.5 kgf-cm	86.00B75.240

4. Remove the converter board.

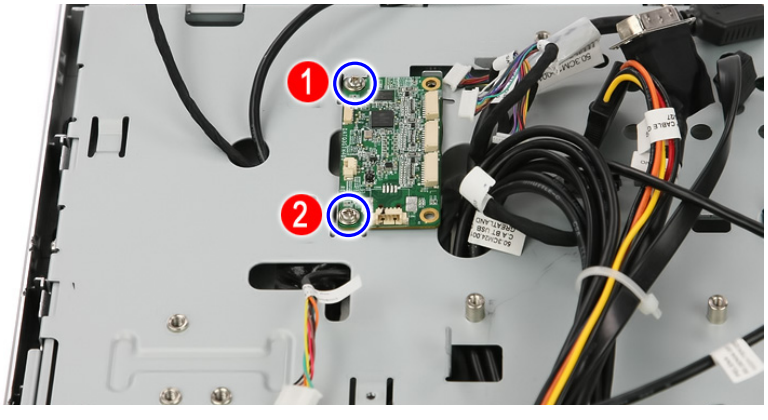


Removing the Touchscreen Control Board

1. Remove the mainboard by following the procedure described on page 48.
2. Disconnect all cables from the touchscreen control board.



3. Remove the screws securing the touchscreen control board.



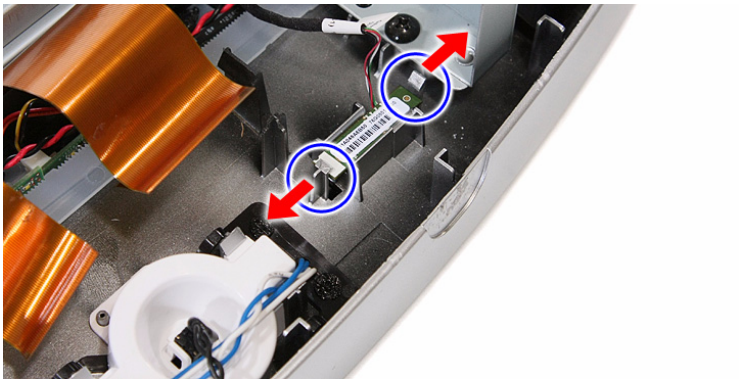
Quantity	Color	Torque	Part Number
2	Chrome	4.5 kgf-cm	86.00B75.240

4. Remove the touchscreen control board.

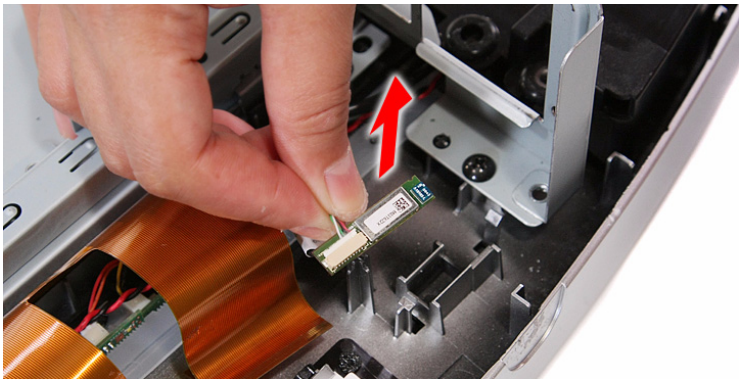
NOTE The succeeding sections on how to remove the Bluetooth module, power button assembly, speakers, and LCD assembly use pictures that show an LCD touchscreen panel with film cables on the bottom side. This LCD touchscreen panel model differ from the model used in the Packard Bell oneTwo L5860 / L5861 computer.

Removing the Bluetooth Module

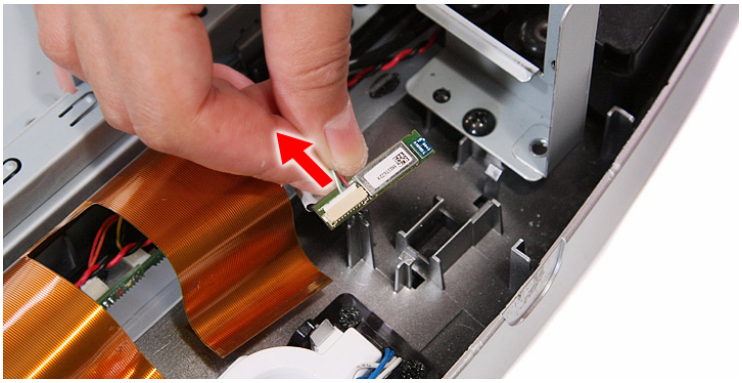
1. Remove the PSU by following the procedure described on page 46.
2. Push the tabs securing the Bluetooth module.



3. Remove the Bluetooth module from the front bezel and turn it over to expose the cable connector underneath it.

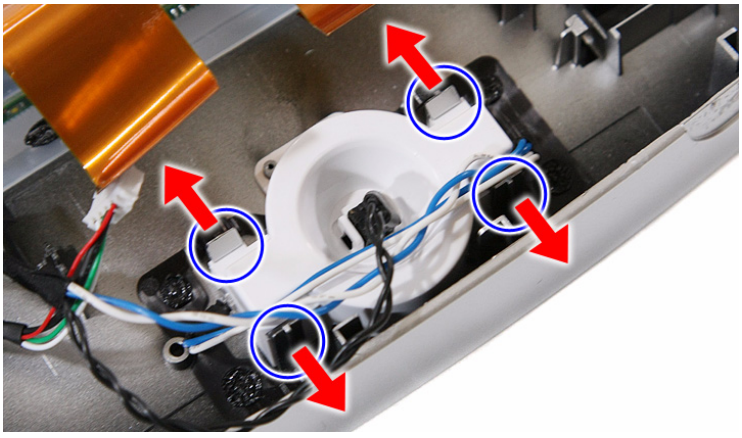


4. Disconnect the Bluetooth cable from the module.

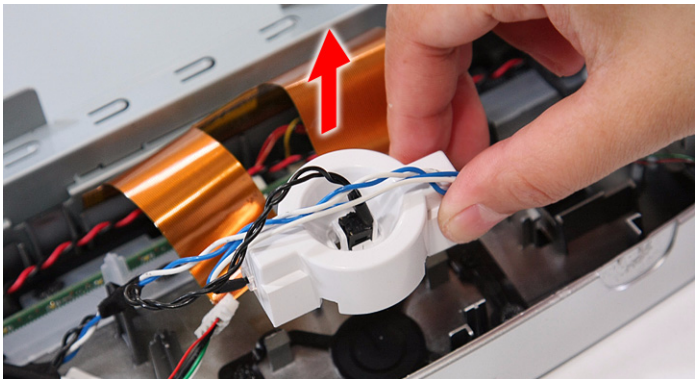


Removing the Power Button Assembly

1. Remove the PSU by following the procedure described on page 46.
2. Push the tabs securing the power button assembly.

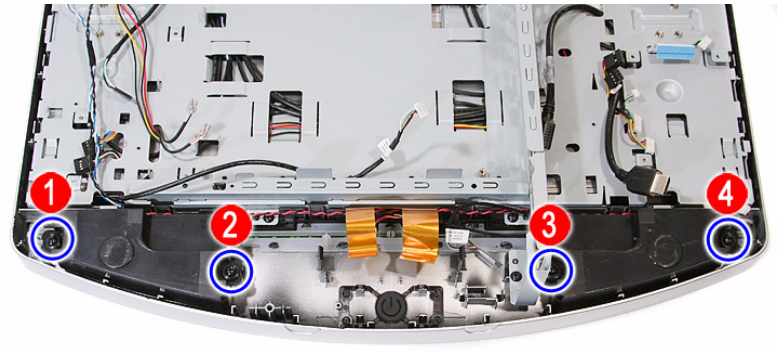


3. Remove the power button assembly from the front bezel.



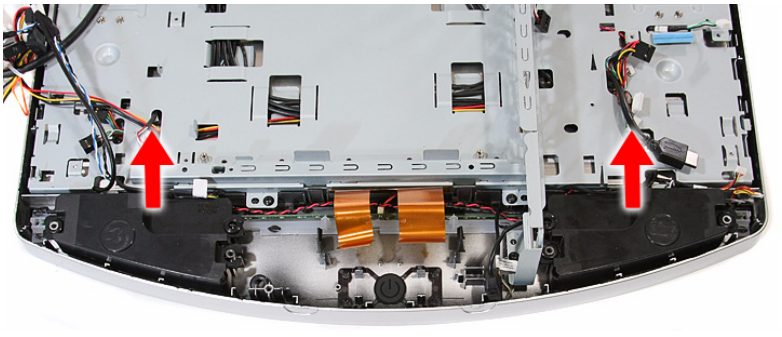
Removing the Speakers

1. Remove the PSU by following the procedure described on page 46.
2. Remove the touchscreen control board by following the procedure described on page 51.
3. Remove the Bluetooth module by following the procedure described on page 52.
4. Remove the screws securing the speakers.



Quantity	Color	Torque	Part Number
4	Black	4.5 kgf-cm	86.3AR26.8R0

5. Remove the speakers and set it aside on top of the chassis

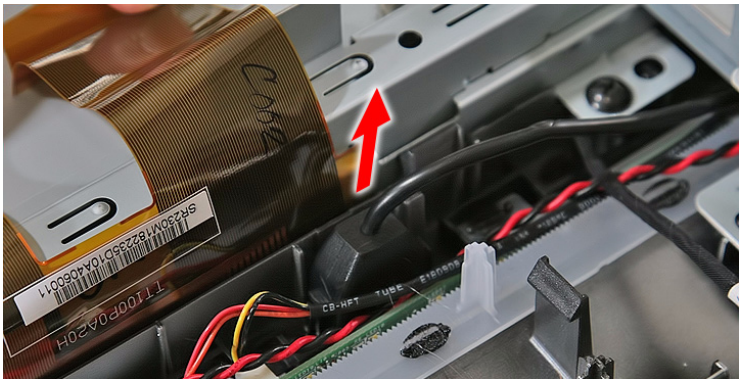


Removing the LCD Assembly

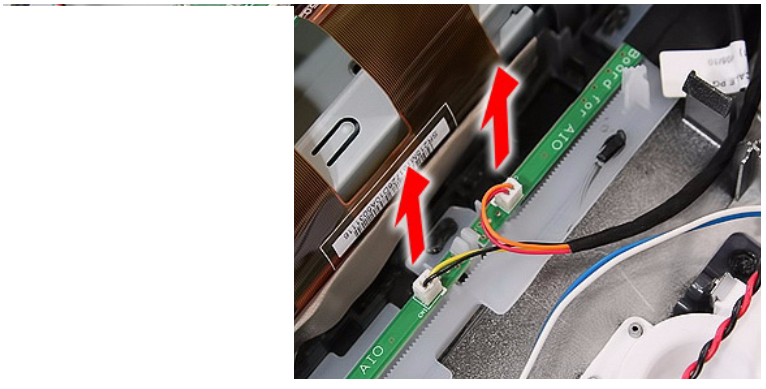
IMPORTANT *For oneTwo L5861 only*: If the LCD touchscreen panel becomes defective, the LCD panel with the touchscreen film and the touchscreen control board should be replace. Return all three components for RMA.

1. Remove the I/O cable plate by following the procedure described on page 28.
2. Remove the optical drive by following the procedure described on page 29.
3. Remove the scaler board by following the procedure described on page 32
4. Remove the USB/audio board by following the procedure described on page 34.
5. Remove the mainboard by following the procedure described on page 48.
6. Remove the PSU by following the procedure described on page 46.

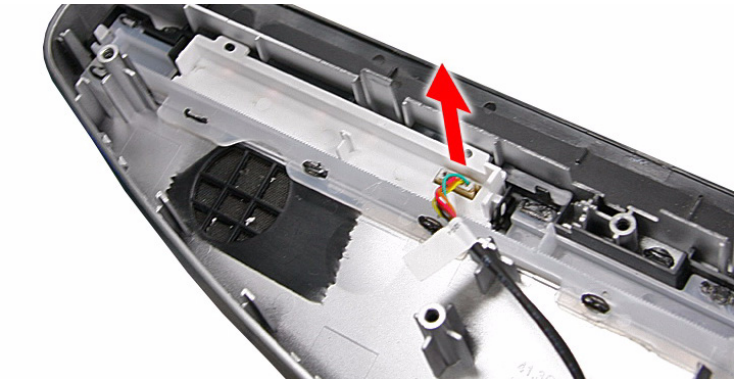
7. Disconnect the IR cable from the front bezel.



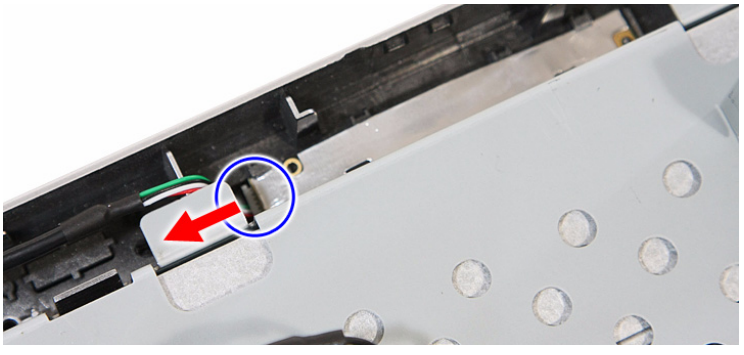
8. Disconnect the light bar cables from the light bars.



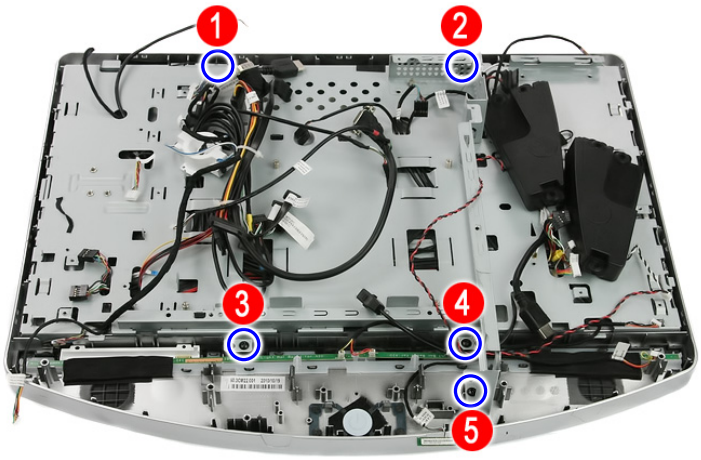
9. Disconnect the capacitive LED board cable.



10. Disconnect the webcam cable.

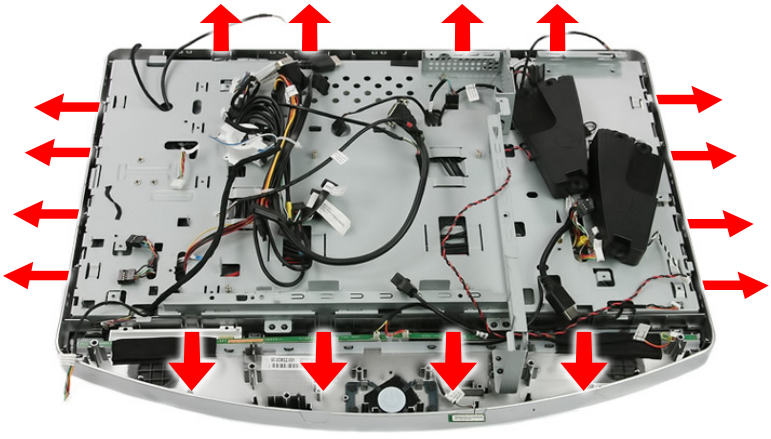


11. Remove the screws securing the LCD assembly.

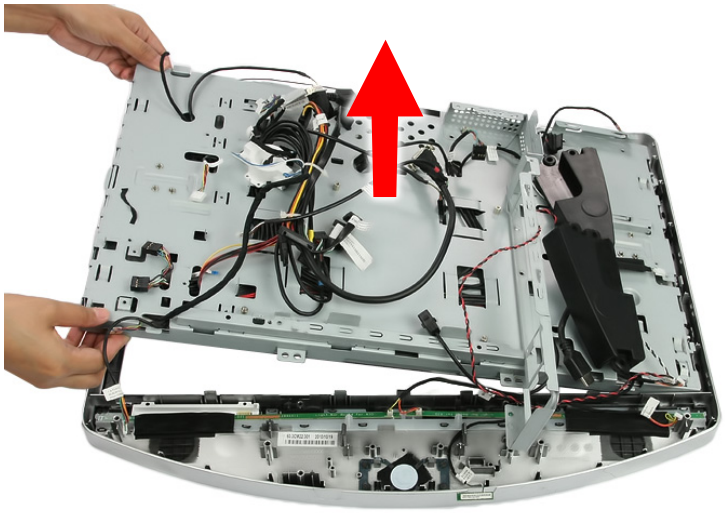


Quantity	Color	Torque	Part Number
5	Black	4.0 kgf-cm	86.3AR26.8R0

12. Push back the plastic snaps securing the LCD assembly to the front bezel.

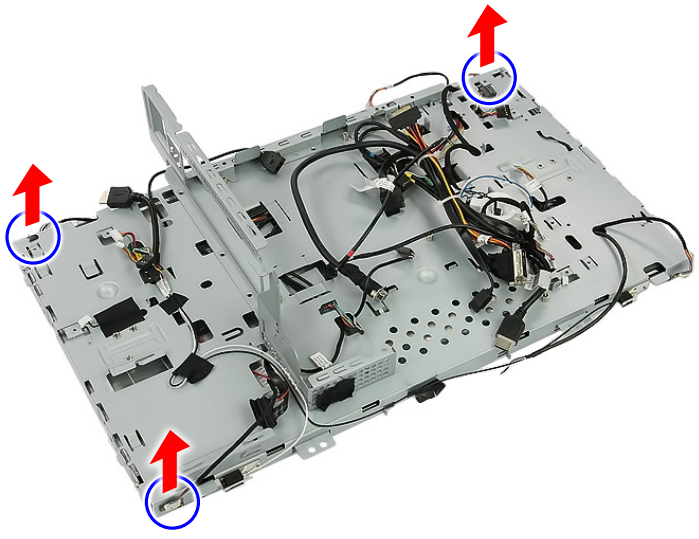


13. Detach the LCD assembly from the front bezel.

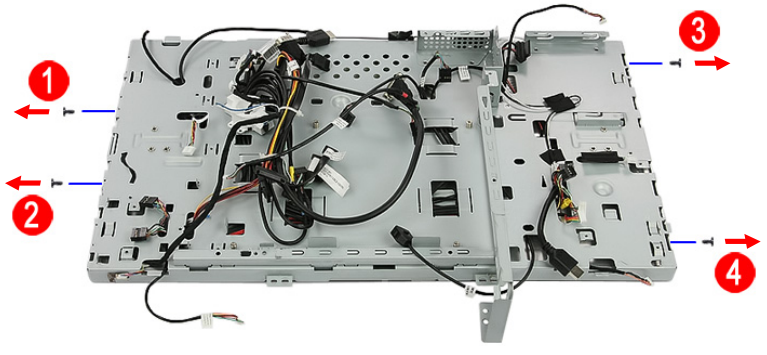


Removing the Chassis

1. Remove the LCD assembly by following the procedure described on page 54.
2. Disconnect the touchscreen image sensor cables from their connectors located on the corners of the chassis highlighted in below picture.

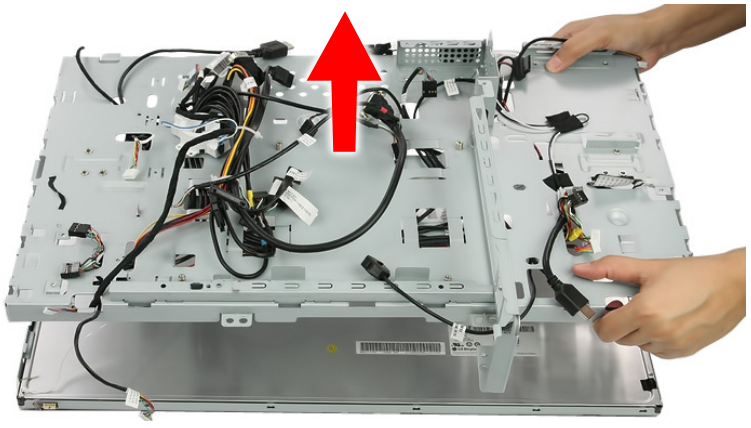


3. Remove the screws securing the chassis to the LCD panel.

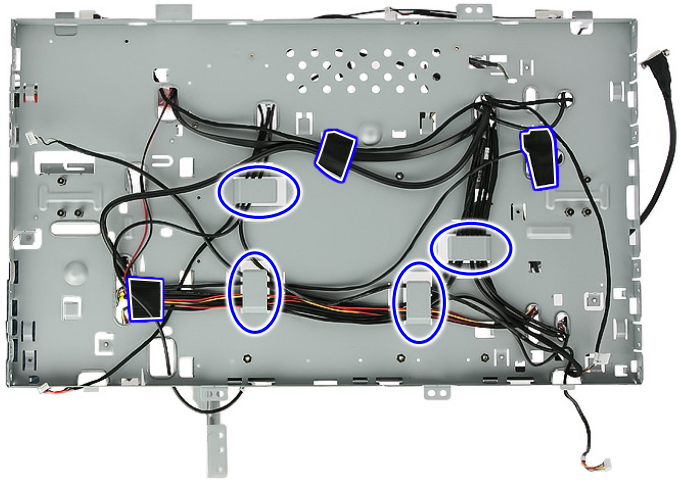


Quantity	Color	Torque	Part Number
4	Chrome	4.5 kgf-cm	86.00B75.240

4. Remove the chassis from the LCD panel.



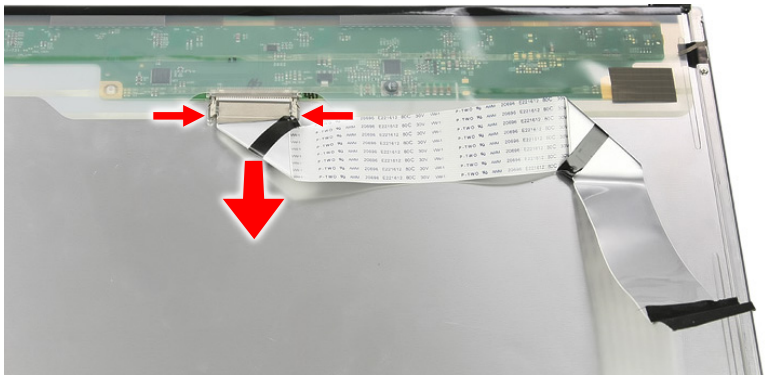
5. Remove the tapes securing the system cables, then release the cables from their chassis latches.



6. Detach the tapes securing the WLAN antennas cables, then pry off the antennas from the top corners of the chassis.

Removing the LCD LVDS Cable

1. Remove the chassis by following the procedure described on page 57.
2. Press the two sides of the LCD cable connector then pull to disconnect the cable from the LCD board.

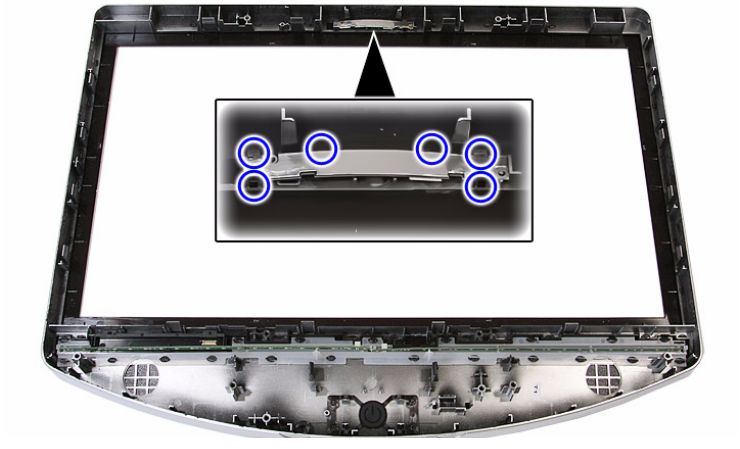


Removing the LCD Panel Bracket

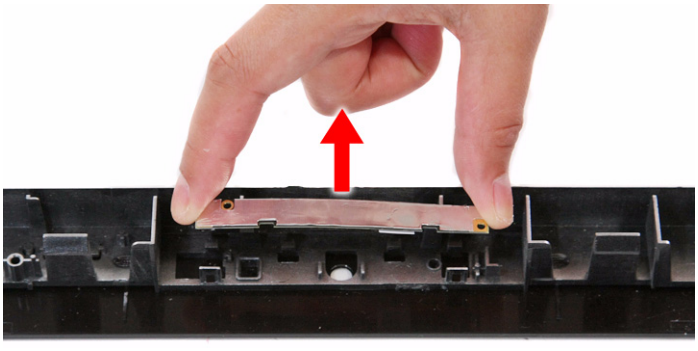
1. Remove the chassis by following the procedure described on page 57.
2. Remove the bracket from the LCD panel.

Removing the Webcam Module

1. Remove the LCD assembly by following the procedure described on page 54.
2. Remove the black tape protecting the webcam module.
3. Push the tabs securing the webcam module.

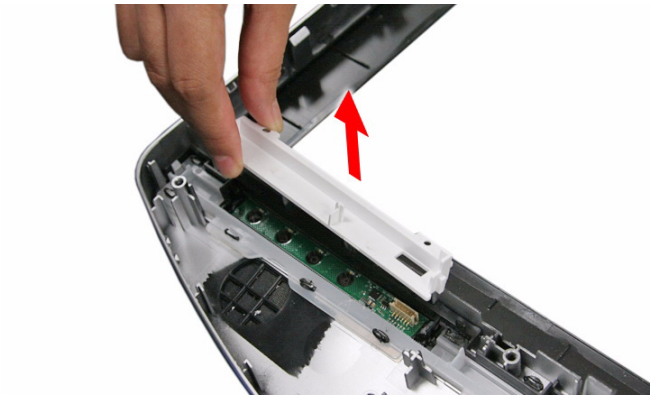


4. Remove the webcam module.

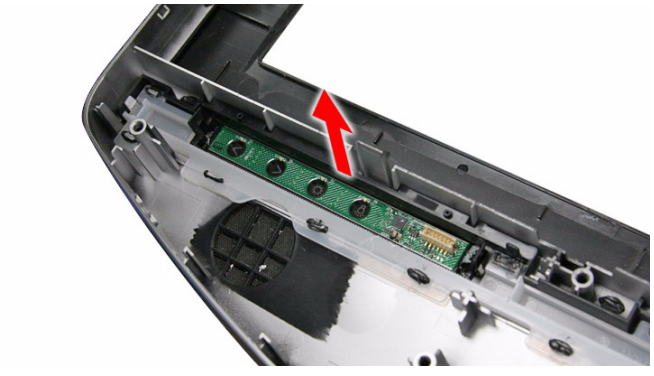


Removing the Capacitive LED Board

1. Remove the LCD assembly by following the procedure described on page 54.
2. Remove the capacitive LED board cover.



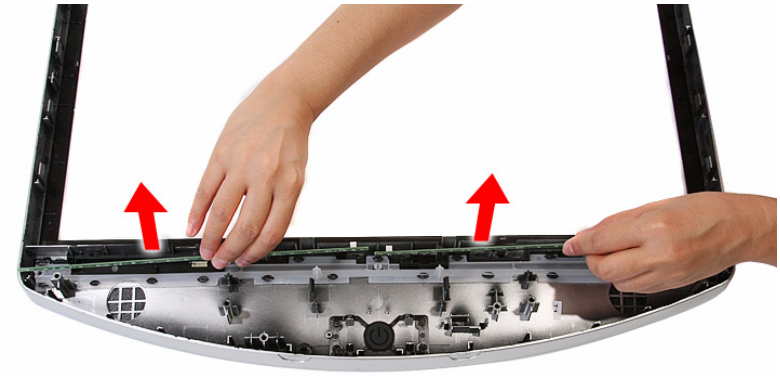
3. Pry the capacitive LED board from the front bezel.



Removing the Light Bars

1. Remove the LCD assembly by following the procedure described on page 54.
2. Remove the black tape protecting the light bars.
3. Push the tabs securing both ends of the two light bars.

4. Remove the light bars from the front bezel.



Chapter 4

Troubleshooting

This chapter lists the POST error indicators and BIOS beep codes. Instructions for general troubleshooting, BIOS recovery and clearing CMOS data are also provided.

Hardware Diagnostic Procedure

1. Obtain as much detail as possible about the symptoms of the system failure.
2. Verify the symptoms by attempting to recreate the failure by running the diagnostic tests or repeating the same operation.
3. Refer to “Power System Check” procedure on the next section and the “Beep Codes” section on page 78 to determine which corrective action to take.

System Check Procedures

IMPORTANT The diagnostic tests described in this chapter are only intended to test Acer products. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.

Power System Check

If the system can be powered on, skip this section. Proceed to the “System Internal Inspection” procedure on the next page.

If the system will not power on, do the following:

- Check if the power cable is properly connected to the AC power jack and a functional AC power source.
- Check if the voltage selector switch is set to the correct voltage setting.

System External Inspection

1. Inspect the power and LED indicators on the front panel. Go to “Front View” section on page 3 for the location and description of the LED behaviour.
2. Make sure that the ventilation slots on the rear panel are not blocked.
3. Make sure that there is no point of contact in the system that can cause a power short.

   If the cause of the failure is still can not be determined, perform the “System Internal Inspection” procedure described on the next page.

System Internal Inspection

1. Turn off the power to the computer and all peripherals.
2. Unplug the power cord from the computer.
3. Unplug the network cable and all connected peripheral devices from the computer.
4. Place the computer on a flat, steady surface.
5. Remove the TV stand and the rear cover.
6. Remove the wall mount plate.
7. Verify that the processor, memory module(s), and expansion board(s) are properly seated.
8. Verify that all power and data cables are firmly and properly attached to the installed drives.
9. Verify that all cable connections inside the system are firmly and properly attached to their appropriate mainboard connectors.
10. Verify that all components are Acer-qualified and supported.
11. Reinstall the wall mount plate.
12. Reinstall the rear cover and the TV stand.
13. Power on the system.

    If the cause of the failure is still can not be determined, review the POST messages and BIOS checkpoints during the system startup.

Checkpoints

A checkpoint is either a byte or word value output to I/O port 80h. The BIOS outputs checkpoints during bootblock and Power-On Self Test (POST) to indicate the task the system is currently executing. Checkpoints are very useful in aiding software developers or technicians in debugging problems that occur during the pre-boot process.

Viewing BIOS Checkpoints

Viewing all checkpoints generated by the BIOS requires a checkpoint card, also referred to as a POST card or POST diagnostic card. These are ISA or PCI add-in cards that show the value of I/O port 80h on a LED display. Checkpoints may appear on the bottom right corner of the screen during POST. This display method is limited, since it only displays checkpoints that occur after the video card has been activated.

NOTE Please note that checkpoints may differ between different platforms based on system configuration. Checkpoints may change due to vendor requirements, system chipset or option ROMs from add-in PCI devices.

Boot Block Initialization Code Checkpoints

The boot block initialization code sets up the chipset, memory, and other components before system memory is available. The following table describes the type of checkpoints that may occur during the boot block initialization portion of the BIOS.

Checkpoint	Description
Before D1	Early chipset initialization is done. Early super I/O initialization is done including RTC and keyboard controller. NMI is disabled.
D1	Perform keyboard controller BAT test. Check if waking up from power management suspend state. Save power-on CPUID value in scratch CMOS.
D0	Go to flat mode with 4GB limit and GA20 enabled. Verify the bootblock checksum.
D2	Disable CACHE before memory detection. Execute full memory sizing module. Verify that flat mode is enabled.

Checkpoint	Description
D3	If memory sizing module not executed, start memory refresh and do memory sizing in bootblock code. Do additional chipset initialization. Re-enable CACHE. Verify that flat mode is enabled.
D4	Test base 512 KB memory. Adjust policies and cache first 8 MB. Set stack.
D5	Bootblock code is copied from ROM to lower system memory and control is given to it. BIOS now executes out of RAM.
D6	Both key sequence and OEM specific method is checked to determine if BIOS recovery is forced. Main BIOS checksum is tested. If BIOS recovery is necessary, control flows to checkpoint E0. See the “Boot Block Recovery Code Checkpoints” section for more information.
D7	Restore CPUID value back into register. The Bootblock Runtime interface module is moved to system memory and control is given to it. Determine whether to execute serial flash.
D8	The Runtime module is uncompressed into memory. CPUID information is stored in memory.
D9	Store the Uncompressed pointer for future use in PMM. Copying Main BIOS into memory. Leaves all RAM below 1 MB Read-Write including E000 and F000 shadow areas but closing SMRAM.
DA	Restore CPUID value back into register. Give control to BIOS POST (ExecutePOSTKernel). See the “POST Code Checkpoints” section for more information.

Boot Block Recovery Code Checkpoints

The boot block recovery code gets control when the BIOS determines that a BIOS recovery is required because the user has forced the update or the BIOS checksum is corrupt. Refer to “BIOS Recovery” section on page 81 for more information. The following table describes the type of checkpoints that may occur during the boot block recovery portion of the BIOS.

Checkpoint	Description
E0	Initialize the floppy controller in the super I/O. Some interrupt vectors are initialized. DMA controller is initialized. 8259 interrupt controller is initialized. L1 cache is enabled.
E9	Set up floppy controller and data. Attempt to read from floppy.
EA	Enable ATAPI hardware. Attempt to read from ARMD and ATAPI CDROM.
EB	Disable ATAPI hardware. Jump back to checkpoint E9.
EF	Read error occurred on media. Jump back to checkpoint EB.
E9 or EA	Determine information about root directory of recovery media.
F0	Search for pre-defined recovery file name in root directory.
F1	Recovery file not found.
F2	Start reading FAT table and analyze FAT to find the clusters occupied by the recovery file.
F3	Start reading the recovery file cluster by cluster.
F5	Disable L1 cache.
FA	Check the validity of the recovery file configuration to the current configuration of the flash part.
FB	Make flash write enabled through chipset and OEM specific method. Detect proper flash part. Verify that the found flash part size equals the recovery file size.
F4	The recovery file size does not equal the found flash part size.
FC	Erase the flash part.
FD	Program the flash part.

Checkpoint	Description
FF	The flash has been updated successfully. Make flash write disabled. Disable ATAPI hardware. Restore CPUID value back into register. Give control to F000 ROM at F000:FFF0h.

POST Code Checkpoints

The POST code checkpoints are the largest set of checkpoints during the BIOS preboot process. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS.

Checkpoint	Description
03	Disable NMI, Parity, video for EGA, and DMA controllers. Initialize BIOS, POST, Runtime data area. Also initialize BIOS modules on POST entry and GPNV area. Initialized CMOS as mentioned in the Kernel Variable "wCMOSFlags."
04	Check CMOS diagnostic byte to determine if battery power is OK and CMOS checksum is OK. Verify CMOS checksum manually by reading storage area. If the CMOS checksum is bad, update CMOS with power-on default values and clear passwords. Initialize status register A. Initializes data variables that are based on CMOS setup questions. Initializes both the 8259 compatible PICs in the system
05	Initializes the interrupt controlling hardware (generally PIC) and interrupt vector table.
06	Do R/W test to CH-2 count reg. Initialize CH-0 as system timer.Install the POSTINT1Ch handler. Enable IRQ-0 in PIC for system timer interrupt. Traps INT1Ch vector to "POSTINT1ChHandlerBlock."
08	Initializes the CPU. The BAT test is being done on KBC. Program the keyboard controller command byte is being done after Auto detection of KB/MS using AMI KB-5.
0A	Initializes the 8042 compatible Key Board Controller.
0B	Detects the presence of PS/2 mouse.
0C	Detects the presence of Keyboard in KBC port.
0E	Testing and initialization of different Input Devices. Also, update the Kernel Variables. Traps the INT09h vector, so that the POST INT09h handler gets control for IRQ1. Uncompress all available language, BIOS logo, and Silent logo modules.
13	Early POST initialization of chipset registers.
24	Uncompress and initialize any platform specific BIOS modules. GPNV is initialized at this checkpoint.
30	Initialize System Management Interrupt.
2A	Initializes different devices through DIM. See DIM Code Checkpoints section for more information.
2C	Initializes different devices. Detects and initializes the video adapter installed in the system that have optional ROMs.
2E	Initializes all the output devices.
31	Allocate memory for ADM module and uncompress it. Give control to ADM module for initialization. Initialize language and font modules for ADM. Activate ADM module.
33	Initializes the silent boot module. Set the window for displaying text information.
37	Displaying sign-on message, CPU information, setup key message, and any OEM specific information.
38	Initializes different devices through DIM. See DIM Code Checkpoints section for more information. USB controllers are initialized at this point.
39	Initializes DMAC-1 & DMAC-2.
3A	Initialize RTC date/time.

Checkpoint	Description
3B	Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system.

Checkpoint	Description
3C	Mid POST initialization of chipset registers.
40	Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, ... etc.) successfully installed in the system and update the BDA, EBDA…etc.
50	Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
52	Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory. Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
60	Initializes Num-Lock status and programs the KBD typematic rate.
75	Initialize Int-13 and prepare for IPL detection.
78	Initializes IPL devices controlled by BIOS and option ROMs.
7A	Initializes remaining option ROMs.
7C	Generate and write contents of ESCD in NVRam.
84	Log errors encountered during POST.
85	Display errors to the user and gets the user response for error.
87	Execute BIOS setup if needed / requested. Check boot password if installed.
8C	Late POST initialization of chipset registers.
8E	Program the peripheral parameters. Enable/Disable NMI as selected.
90	Late POST initialization of system management interrupt.
A0	Check boot password if installed.
A1	Clean-up work needed before booting to OS.
A2	Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed.
A4	Initialize runtime language module. Display boot option popup menu.
A7	Displays the system configuration screen if enabled. Initialize the CPU's before boot, which includes the programming of the MTRR's.
A8	Prepare CPU for OS boot including final MTRR values.
A9	Wait for user input at config display if needed.
AA	Uninstall POST INT1Ch vector and INT09h vector. Deinitializes the ADM module.
AB	Prepare BBS for Int 19 boot.
AC	End of POST initialization of chipset registers.
B1	Save system context for ACPI.
00	Passes control to OS Loader (typically INT19h).

DIM Code Checkpoints

The Device Initialization Manager (DIM) gets control at various times during BIOS POST to initialize different system busses. The following table describes the main checkpoints where the DIM module is accessed.

Checkpoint	Description
2A	Initialize different buses and perform the following functions: Reset, Detect, and Disable (function 0); Static Device Initialization (function 1); Boot Output Device Initialization (function 2). Function 0 disables all device nodes, PCI devices, and PnP ISA cards. It also assigns PCI bus numbers. Function 1 initializes all static devices that include manual configured onboard peripherals, memory and I/O decode windows in PCI-PCI bridges, and noncompliant PCI devices. Static resources are also reserved. Function 2 searches for and initializes any PnP, PCI, or AGP video devices.
38	Initialize different buses and perform the following functions: Boot Input Device Initialization (function 3); IPL Device Initialization (function 4); General Device Initialization (function 5). Function 3 searches for and configures PCI input devices and detects if system has standard keyboard controller. Function 4 searches for and configures all PnP and PCI boot devices. Function 5 configures all onboard peripherals that are set to an automatic configuration and configures all remaining PnP and PCI devices.

POST Error Indicators

When a system error is detected during POST (Power On Self Text), the Setup utility will switch to diagnostic mode and will either:

- Displays a POST error message, or
- Emits a series of beep codes

POST Error Messages

POST error messages tell users what failure the system has detected. Some error messages could be related to a hardware device. Others may indicate a problem with a device configuration. In some cases an error message may include recommendations for troubleshooting or require that you press the **Enter** key to display recommendations. Follow the instructions on the screen. It is recommended that you correct the error before proceeding, even if the computer appears to boot successfully.

IMPORTANT If your system fails after you make changes in the Setup menus, reboot the computer, enter Setup again and load Setup defaults to correct the error.

Memory

Message	Description
Gate20 Error	The BIOS is unable to properly control the mainboard's Gate A20 function, which controls access of memory over 1 MB. This may indicate a problem with the mainboard.
Multi-Bit ECC Error	This message will only occur on systems using ECC enabled memory modules. ECC memory has the ability to correct single-bit errors that may occur from faulty memory modules. A multiple bit corruption of memory has occurred, and the ECC memory algorithm cannot correct it. This may indicate a defective memory module.
Parity Error	Fatal Memory Parity Error. System halts after displaying this message.
RAM R/W test failed	This message is displayed by the AMIBIOS8 when the RAM read/write test fails.
CMOS Memory Size Wrong	The base memory (memory below 1MB) size that is reported in the CMOS (offset 15h) mismatches with the actual size detected. This condition may occur when the hole is set at 512K base memory or when CMOS is corrupted.

Boot

Message	Description
Boot Failure...	This is a generic message indicating the BIOS could not boot from a particular device. This message is usually followed by other information concerning the device.
Invalid Boot Diskette	A diskette was found in the drive, but it is not configured as a bootable diskette.
Drive Not Ready	The BIOS was unable to access the drive because it indicated it was not ready for data transfer. This is often reported by drives when no media is present.
A: Drive Error	The BIOS attempted to configure the A: drive during POST, but was unable to properly configure the device. This may be due to a bad cable or faulty diskette drive.
B: Drive Error	The BIOS attempted to configure the B: drive during POST, but was unable to properly configure the device. This may be due to a bad cable or faulty diskette drive.
Insert BOOT diskette in A:	The BIOS attempted to boot from the A: drive, but could not find a proper boot diskette. Reboot and Select proper Boot device or Insert Boot Media in selected Boot device BIOS could not find a bootable device in the system and/or removable media drive does not contain media.
Reboot and select proper boot device or Insert boot media in selected boot device	BIOS could not find a bootable device in the system and/or removable media drive does not contain media.
NO ROM BASIC	This message occurs on some systems when no bootable device can be detected.

Storage Device

Message	Description
Primary Master Hard Disk Error	The IDE/ATAPI device configured as Primary Master could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Primary Slave Hard Disk Error	The IDE/ATAPI device configured as Primary Slave could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Master Hard Disk Error	The IDE/ATAPI device configured as Secondary Master could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Slave Hard Disk Error	The IDE/ATAPI device configured as Secondary Slave could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 3rd IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 3rd IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 4th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 4th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 5th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 5th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 6th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 6th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Primary Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Primary Master failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Primary Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Primary Slave failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Secondary Master failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Secondary Slave failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 3rd IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.

Message	Description
3rd Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 3rd IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 4th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 4th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 5th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 5th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 6th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 6th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
S.M.A.R.T. Capable but Command Failed	The BIOS tried to send a S.M.A.R.T. message to a hard disk, but the command transaction failed. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
S.M.A.R.T. Command Failed	The BIOS tried to send a S.M.A.R.T. message to a hard disk, but the command transaction failed. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
S.M.A.R.T. Status BAD, Backup and Replace	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure.This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
S.M.A.R.T. Capable and Status BAD	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.

Virus-related

Message	Description
BootSector Write!!	The BIOS has detected software attempting to write to a drive's boot sector. This is flagged as possible virus activity. This message will only be displayed if Virus Detection is enabled in AMIBIOS setup.
VIRUS: Continue (Y/N)?	If the BIOS detects possible virus activity, it will prompt the user. This message will only be displayed if Virus Detection is enabled in AMIBIOS setup.

System Configuration

Message	Description
DMA-1 Error	Error initializing primary DMA controller. This is a fatal error, often indication a problem with system hardware.
DMA-2 Error	Error initializing secondary DMA controller. This is a fatal error, often indication a problem with system hardware.
DMA Controller Error	POST error while trying to initialize the DMA controller. This is a fatal error, often indication a problem with system hardware.
Checking NVRAM... Update Failed	BIOS could not write to the NVRAM block. This message appears when the FLASH part is write-protected or if there is no FLASH part (System uses a PROM or EPROM).
Microcode Error	BIOS could not find or load the CPU Microcode Update to the CPU. This message only applies to INTEL CPUs. The message is most likely to appear when a brand new CPU is installed in a mainboard with an outdated BIOS. In this case, the BIOS must be updated to include the Microcode Update for the new CPU.
NVRAM Checksum Bad, NVRAM Cleared	There was an error in while validating the NVRAM data. This causes POST to clear the NVRAM data.
Resource Conflict	More than one system device is trying to use the same non-shareable resources (Memory or I/O).
NVRAM Ignored	The NVRAM data used to store Plug'n'Play (PnP) data was not used for system configuration in POST.
NVRAM Bad	The NVRAM data used to store Plug'n'Play (PnP) data was not used for system configuration in POST due to a data error.
Static Resource Conflict	Two or more Static Devices are trying to use the same resource space (usually Memory or I/O).
PCI I/O conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
PCI ROM conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
PCI IRQ conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
PCI IRQ routing table error	BIOS POST (DIM code) found a PCI device in the system but was unable to figure out how to route an IRQ to the device. Usually this error is causing by an incomplete description of the PCI Interrupt Routing of the system.
Timer Error	Indicates an error while programming the count register of channel 2 of the 8254 timer. This may indicate a problem with system hardware.
Refresh timer test failed	BIOS POST found that the refresh timer hardware failed to pass the Refresh Retrace Test.
Interrupt Controller-1 error	BIOS POST could not initialize the Master Interrupt Controller. This may indicate a problem with system hardware.
Interrupt Controller-2 error	BIOS POST could not initialize the Slave Interrupt Controller. This may indicate a problem with system hardware.

CMOS

Message Displayed	Description
CMOS Date/Time Not Set	The CMOS date and/or time are invalid. This error can be resolved by readjusting the system time in AMIBIOS Setup.
CMOS Battery Low	CMOS battery is low. This message usually indicates that the CMOS battery needs to be replaced. It could also appear when the user intentionally discharges the CMOS battery.
CMOS Settings Wrong	CMOS settings are invalid. This error can be resolved by using AMIBIOS Setup.
CMOS Checksum Bad	CMOS contents failed the Checksum check. Indicates that the CMOS data has been changed by a program other than the BIOS or that the CMOS is not retaining its data due to malfunction. This error can typically be resolved by using AMIBIOS Setup.

Miscellaneous

Message Displayed	Description
KBC BAT Test failed	Keyboard controller BAT test failed. This may indicate a problem with keyboard controller initialization.
Keyboard Error	Keyboard is not present or the hardware is not responding when the keyboard controller is initialized.
PS/2 Keyboard not found	PS/2 keyboard support is enabled in the BIOS setup but the device is not detected.
PS/2 Mouse not found	PS/2 mouse support is enabled in the BIOS setup but the device is not detected.
Keyboard/Interface Error	Keyboard controller failure. This may indicate a problem with system hardware.
Unlock Keyboard	PS/2 keyboard is locked. User needs to unlock the keyboard to continue the BIOS POST.
System Halted	The system has been halted. A reset or power cycle is required to reboot the machine. This message appears after a fatal error has been detected.
<INS> Pressed	Indicates that <INS> key is pressed during the BIOS POST. The POST will load and use default CMOS settings.
Password check failed	The password entered does not match the password set in the setup. This condition may occur for both Supervisor and User password verification.
Unknown BIOS error. Error code = 004Ah	This message is displayed when ADM module is not present in the AMIBIOS8 ROM.
Unknown BIOS error. Error code = 004Bh	This message is displayed when language module is not present in the AMIBIOS8 ROM.
Floppy Controller Failure	Error in initializing legacy Floppy Controller.

Index of Symptom-to-FRU Error Messages

To use the information in this section to diagnose a problem:

1. Find the error symptom in the left column.
2. If directed to a check procedure, replace the FRU indicated in the check procedure.

   If no check procedure is indicated, the first Action/FRU item listed in the right column is the most likely cause.

NOTE If you cannot find a symptom or an error in this list and the problem remains, see “Undetermined Problems” on page 65.

Processor/Processor Fan-related Symptoms

Symptom/Error	Action/FRU
Processor fan does not run but power supply fan runs.	• Ensure the system is not in power saving mode. • With the system powered on, measure the voltage of the processor fan connector. Its reading should be +12Vdc. If the reading shows normal, but the fan still does not work, then replace the heat sink fan. • Mainboard
Processor test failed.	• Processor • Mainboard

NOTE Normally, the processor fan should be operative, and the processor clock setting should be exactly set to match its speed requirement before diagnosing any processor problems.

Mainboard and Memory-related Symptoms

Symptom/Error	Action/FRU
Memory test failed.	• Memory module • Mainboard
Incorrect memory size shown or repeated during POST.	• Insert the memory modules in the DIMM sockets properly, then reboot the system. • Memory module • Mainboard
System works but fails to enter power saving mode when the Power Management Mode is set to Enabled.	• Enter CMOS Setup and load the default settings. In Windows systems, check settings in Power Management Property of the Control Panel. • Reload software from Recovery CD.
Blinking cursor only; system does not work.	• IDE drive connection/cables • IDE disk drives • See “Undetermined Problems”. • Mainboard

NOTE Ensure the memory modules are installed properly and the contact leads are clean before diagnosing any system problems.

Hard Disk Drive-related Symptoms

Symptom/Error	Action/FRU
Hard disk drive test failed.	• Enter CMOS Setup and load the default settings. • Hard disk drive cable • Hard disk drive • Mainboard
Hard disk drive cannot format completely.	• Enter CMOS Setup and load the default settings. • Hard disk drive cable • Hard disk drive • Mainboard
Hard disk drive has write error.	• Enter CMOS Setup and load the default settings. • Hard disk drive
Hard disk drive LED fails to light, but system operates normally.	• With the system power on, measure the voltage of the HDD LED connector. • HDD LED cable

NOTE Make sure the hard disk drive is configured correctly in CMOS Setup and that cable/jumper are set correctly before diagnosing any hard disk drive problems. (If only one drive is installed, please make sure the drive is connected to master connector or the drive is set to master.)

Optical Disc Drive-related Symptoms

Symptom/Error	Action/FRU
CD/DVD-ROM drive LED doesn't come on but works normally.	• Enter CMOS Setup and load the default settings. • DIMM • Mainboard
CD/DVD-ROM drive LED flashes for more than 30 seconds before LED shutting off. Software asks to reinstall disc. Software displays a reading CD/DVD error.	• CD/DVD-ROM may have dirt or foreign material on it. Check with a known good disc. • CD/DVD-ROM is not inserted properly. • CD/DVD-ROM is damaged.
CD/DVD-ROM drive cannot load or eject when the system is turned on and its eject button is pressed and held.	• Disconnect all cables from CD/DVD-ROM drive except power cable, then press the eject button to try to unload the disc. • CD/DVD-ROM drive power cable • CD/DVD-ROM drive
CD/DVD-ROM drive does not read and there are no messages are displayed.	• CD may have dirt or foreign material on it. Check with a known good disc. • Ensure the CD/DVD-ROM driver is installed properly. • CD/DVD-ROM drive.
CD/DVD-ROM drive can play audio CD but no sound output.	• Ensure the headphone jack of the CD/DVD-ROM has an output. • Turn up the sound volume. • Speaker power/connection/cable. • CD/DVD-ROM drive.

NOTE Make sure the optical disc drive is configured correctly in CMOS Setup, the cable/jumper are set correctly and the drive's optical lens is clean before diagnosing any optical drive problems.

Real-Time Clock-related Symptoms

Symptom/Error	Action/FRU
Real-time clock is inaccurate.	• Ensure the information in the Standard CMOS Feature of BIOS Setup is set correctly. • RTC battery • Mainboard

Audio-related Symptoms

Symptom/Error	Action/FRU
Audio software program invoked but no sound comes from speakers.	• Speaker power/connection/cable

Modem-related Symptoms

Symptom/Error	Action/FRU
Modem ring cannot wake up system from suspend mode.	• For an external modem, make sure Power on By Ring in BIOS Setup or Power Management is set to Enabled. For the PCI modem, make sure Wake up by PCI card is set to Enabled. • If a PCI modem card is used, reinsert the modem card to the PCI slot firmly or replace the modem card. • In Win 98, ensure the telephone application is configured correctly for your modem and set to receive messages and/or fax.
Data/fax modem software program invoked but cannot receive/send data/fax	• Ensure the modem card is installed properly.
Fax/voice modem software program invoked but has no sound output. (Data files are received normally; voice from modem cannot be produced, but system sound feature works normally.)	• Ensure the modem voice-in cable from modem adapter card is connected to the mainboard

Video and Monitor-related Symptoms

Symptom/Error	Action/FRU
Video memory test failed.Video adapter failed.	• Remove all non-factory-installed cards. • Load default settings (if screen is readable). • Mainboard
Display problem • Incorrect colors • No high intensity • Missing, broken, or incorrect characters • Blank monitor (dark) • Blank monitor (bright) • Distorted image • Unreadable monitor	• Monitor signal connection/cable • Monitor • Video adapter card • Mainboard
Display changing colors.	• Monitor signal connection/cable • Video adapter card • Mainboard

Printer-related Symptoms

Symptom/Error	Action/FRU
Printing failed.	• Ensure the printer driver is properly installed. Refer to the printer service manual. • Printer • Printer cable • Mainboard.
Printer problems.	• Refer to the service manual for the printer.

Keyboard-related Symptoms

Symptom/Error	Action/FRU
Some or all keys on keyboard do not work.	• Keyboard

Power Supply-related Symptoms

Symptom/Error	Action/FRU
Pressing the power button does not turn off the system. (Only unplugging the power cord from electrical outlet can turn off the system.)	• Ensure the Soft-off by PWR-BTTN in CMOS Setup (under Power Management) is not set to Instant-off. • Power switch cable assembly
Pressing the power button does not turn on the system	• Power switch cable assembly.
Executing software shutdown from Windows98 Start menu does not turn off the system. (Only pressing power button can turn off the system).	• Enter CMOS Setup and load the default settings. • Reload software from Recovery CD.
No system power, or power supply fan is not running.	• Power supply • Mainboard

Beep Codes

When no error message is displayed but the computer stops during POST, listen for beep codes.

Beep	Status	Possible Causes
One short beep.	System ready	System is OK.
Continuous one long beep	Memory not installed or memory error	• Something is wrong with the memory installed • There is problem accessing the memory (i.e., mainboard problem)
One long beep, then two short beeps and repeat	VGA not installed or VGA error	• The mainboard can not access the video card for some reasons. Either the video card is not working, its memory is not accessible, or its BIOS may be corrupt. • Something is wrong with the mainboard.
One long beep, then one short beep	BIOS failure	BIOS damaged. Processor jump to boot block to execute the default procedure.
Two short beeps.	CMOS failure	CMOS checksum error

Undetermined Problems

NOTE
- Verify that all attached devices are supported by the computer.
- Verify that the power supply being used at the time of the failure is operating correctly. (See “Power System Check” on page 63)

Follow the procedures below to isolate the failing FRU. Do not isolate non-defective FRU.

1. Power off the computer.
2. Visually check them for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Hard disk drive
   - DIMM
   - CD/DVD-ROM drive
   - Expansion boards
4. Power on the computer.
5. Determine if the problem has been resolved.
6. If the problem does not recur, reconnect the removed devices one at a time until you find the failed FRU.

   If the problem persists, replace the mainboard, and then LCD assembly (one at a time). Do not replace a non-defective FRU.

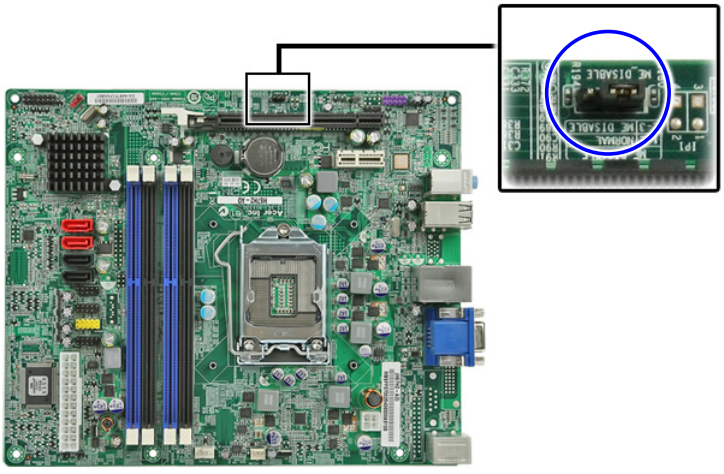
Configuring the ME Firmware

You need to disable the Manageability Engine (ME) firmware before updating the BIOS. Use the ME_DISABLE jumper to do this.

- 1-2 position: Normal operation (default)
- 2-3 position: ME disable

To disable the ME firmware:

1. Turn off the power to the computer and all peripherals.
2. Unplug the power cord from the computer.
3. Unplug the network cable and all connected peripheral devices from the computer.
4. Place the computer on a flat, steady surface with the rear cover facing upward.
5. Remove the computer stand, rubber feet, rear cover, and the I/O cable plate by following the procedures described on pages 26–28.
6. Remove the wall mount plate by following the procedure described on page 36.
7. Remove the graphics card and HDD assemblies by following the procedures described on pages 39–42.
8. If necessary, remove any other assemblies or cables that prevent access to the ME_DISABLE jumper.
9. Locate the ME_DISABLE jumper on the mainboard.



10. Remove the jumper block and set it over the 2-3 pins for 20 to 30 seconds.
11. Return the jumper block to its default 1-2 position.
12. Reinstall the graphics card and HDD assemblies.
13. Reinstall any any other assemblies or cables that have previously been removed.
14. Reinstall the wall mount plate, I/O cable plate, rear cover, rubber feet, and the computer stand.
15. Connect the power cord to the system.
16. Press the power button ⏻ to turn on the computer.
17. During POST, press **Delete** to access the Setup Utility.
18. Press **F9** to load the system default values.
19. Press **F10** to save the changes you made and close the Setup Utility.

Clearing CMOS

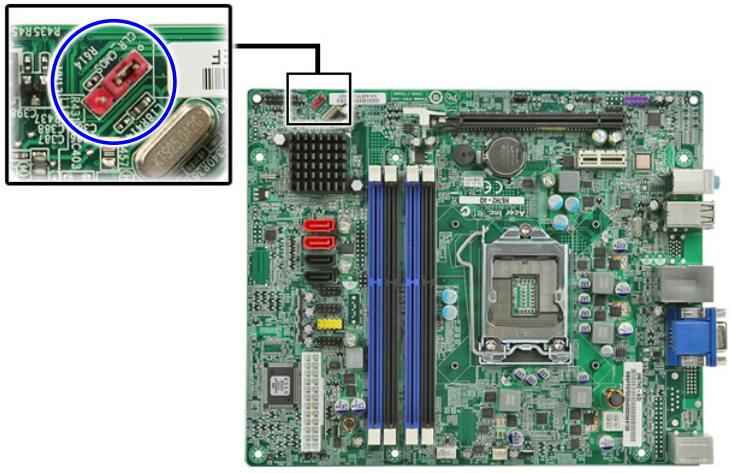
You may need to clear the Setup configuration values (CMOS) if the configuration has been corrupted, or if incorrect settings made in the Setup Utility caused error messages to be unreadable. This procedure will clear the BIOS supervisor password as well.

Use the CLR_CMOS jumper to clear the CMOS data.

- 1-2 position: Normal operation (default)
- 2-3 position: Clear CMOS data

To clear the CMOS data:

1. Turn off the power to the computer and all peripherals.
2. Unplug the power cord from the computer.
3. Unplug the network cable and all connected peripheral devices from the computer.
4. Place the computer on a flat, steady surface with the rear cover facing upward.
5. Remove the computer stand, rubber feet, rear cover, and the I/O cable plate by following the procedures described on pages 26–28.
6. Remove the wall mount plate by following the procedure described on page 36.
7. Remove the graphics card and HDD assemblies by following the procedures described on pages 39–42.
8. If necessary, remove any other assemblies or cables that prevent access to the CMOS clear jumper.
9. Locate the CLR_CMOS jumper on the mainboard.



10. Remove the jumper block and set it over the 2-3 pins for 20 to 30 seconds.
11. Return the jumper block to its default 1-2 position.
12. Reinstall the graphics card and HDD assemblies.
13. Reinstall any any other assemblies or cables that have previously been removed.
14. Reinstall the wall mount plate, I/O cable plate, rear cover, rubber feet, and the computer stand.
15. Connect the power cord to the system.
16. Press the power button ⏻ to turn on the computer.
17. During POST, press **Delete** to access the Setup Utility.
18. Press **F9** to load the system default values.
19. Press **F10** to save the changes you made and close the Setup Utility.

BIOS Recovery

When you boot up the computer and you hear one long beep, followed by a shorter one, the system BIOS is damaged. This maybe cause by an interruption during a BIOS flash procedure (e.g. a power outage) or a corrupted BIOS code, which will cause the system to go into an unbootable state.You need to access and execute the boot block program to reboot the computer and recover the regular BIOS code.

Note the following when restoring the BIOS settings:

- Make sure the computer is connected to a UPS unit during the BIOS recovery process.
- The BIOS recovery media should be prepared in a computer running the Windows XP or Windows Vista OS. A USB floppy, optical, or hard drive can be used.

Creating the BIOS Crisis Recovery Disk

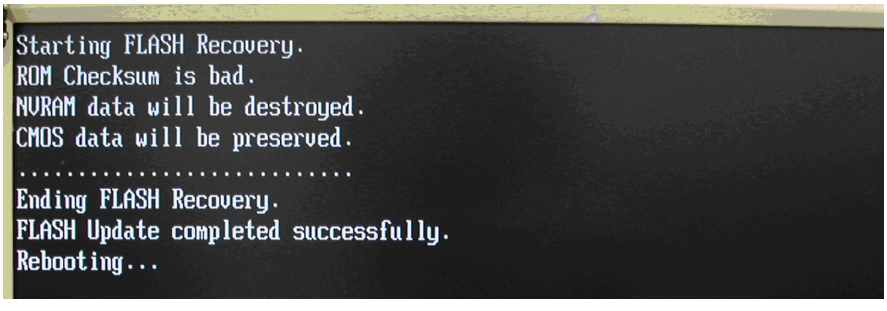
1. Set up a computer running the Windows XP or Windows Vista operating system and connect the BIOS recovery media.
2. Copy the target BIOS ROM file to the BIOS recovery media and rename it as “amiboot.rom”.
3. Eject the BIOS recovery media from the computer.

Performing a BIOS Recovery

NOTE This procedure is only applicable when the boot block section is still valid.

1. Shut down the BIOS failed-computer.
2. Connect the BIOS recovery media to the failed computer.
3. Press the power button to turn on the computer.

   The system will now execute the BIOS recovery process. When the process is complete, the computer will automatically reboot.



4. Eject the BIOS recovery media from the computer
5. Press **Delete** to run the CMOS Setup Utility.
6. Press **F9** to load the system default settings.
7. Select **Ok**, then press **Enter**.
8. Press **F10** to save the default settings and close the Setup utility.
9. Select **Ok**, then press **Enter**.

BIOS Update

Updating the BIOS in DOS Mode

1. Press the power button to turn on the computer and boot to DOS mode.
2. Key in 'cd dostool'. (Go to BIOS path like "A:\DOSTOOL")
3. Disable the ME firmware. See page 79 for instructions.
4. Key in 'flash4M.bat' or 'flash4M'.

```
A:\>cd d01

A:\D01>cd dostool

A:\D01\DOSTOOL>flash4m_
```

5. Press **Enter** to flash the system BIOS and ME firmware.

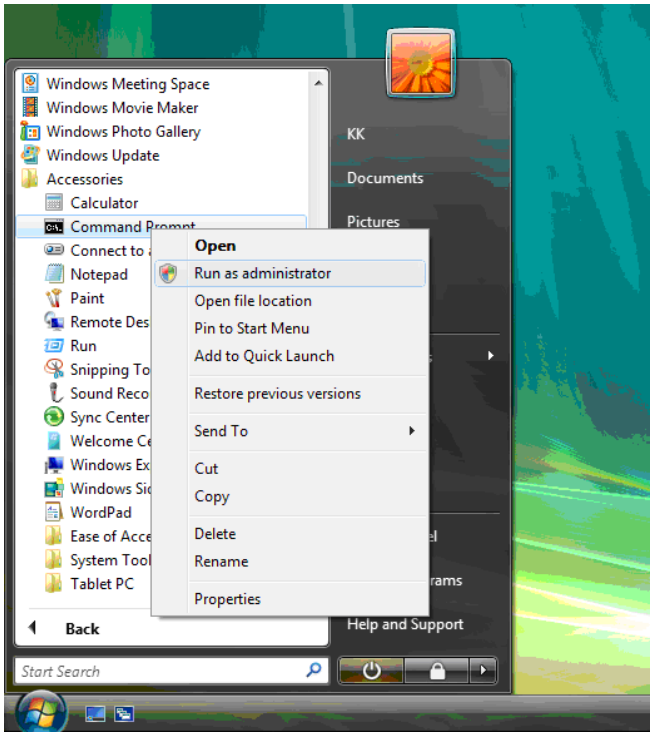
```
A:\D01\DOSTOOL>if exist LANgbe.bin fpt.exe /gbe /f LANgbe.bin

Intel (R) Flash Programming Tool. Version: 7.0.0.1135
Copyright (c) 2007-2010, Intel Corporation. All rights reserved.

Platform: Intel(R) H67 Express Chipset Revision: B1
Reading HSFSTS register... Flash Descriptor: Valid

    --- Flash Devices Found ---
    W25Q32    ID:0xEF4016    Size: 4096KB (32768Kb)

PDR Region does not exist.
Disabling the ME is not necessary.
ME is Disabled.
- Erasing Flash Block [0x003000] - 100% complete.
- Programming Flash [0x003000]    8KB of    8KB - 100% complete.
- Verifying Flash [0x003000]    8KB of    8KB - 100% complete.
RESULT: The data is identical.

FPT Operation Passed

A:\D01\DOSTOOL>if exist LANgbe.bin del LANgbe.bin

A:\D01\DOSTOOL>_
```

6. Shut down the computer and disconnect the power source.
7. Enable the ME firmware. See page 79 for instructions.
8. Clear the CMOS data. See page 80 for instructions.
9. Reboot the computer.

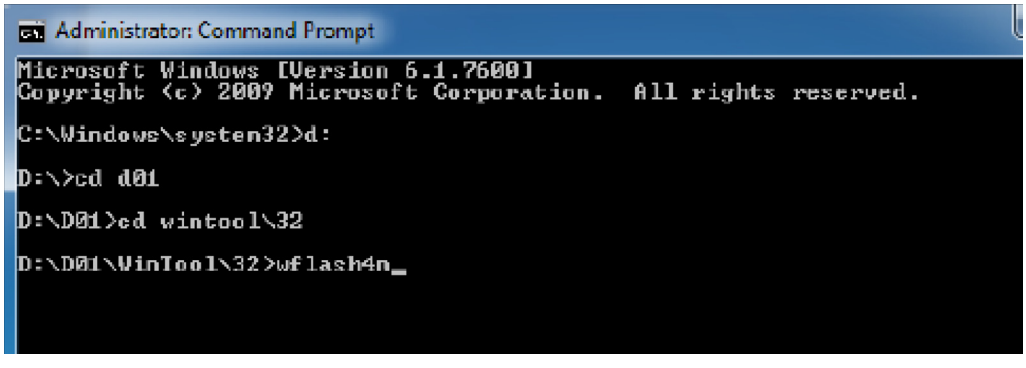
Updating the BIOS in Windows Mode

This BIOS updating procedure is for a computer running a 32- or 64-bit Windows OS.

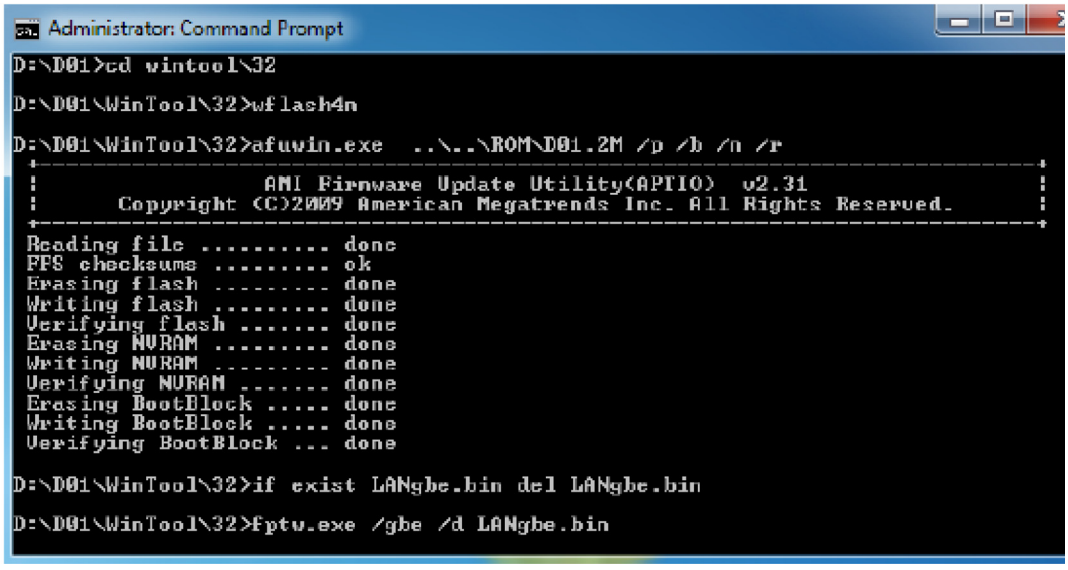
1. Disable the ME firmware. See page 79 for instructions.
2. Press the power button to turn on the computer.
3. Click **Start** | **Command Prompt** | **Run as administrator**.

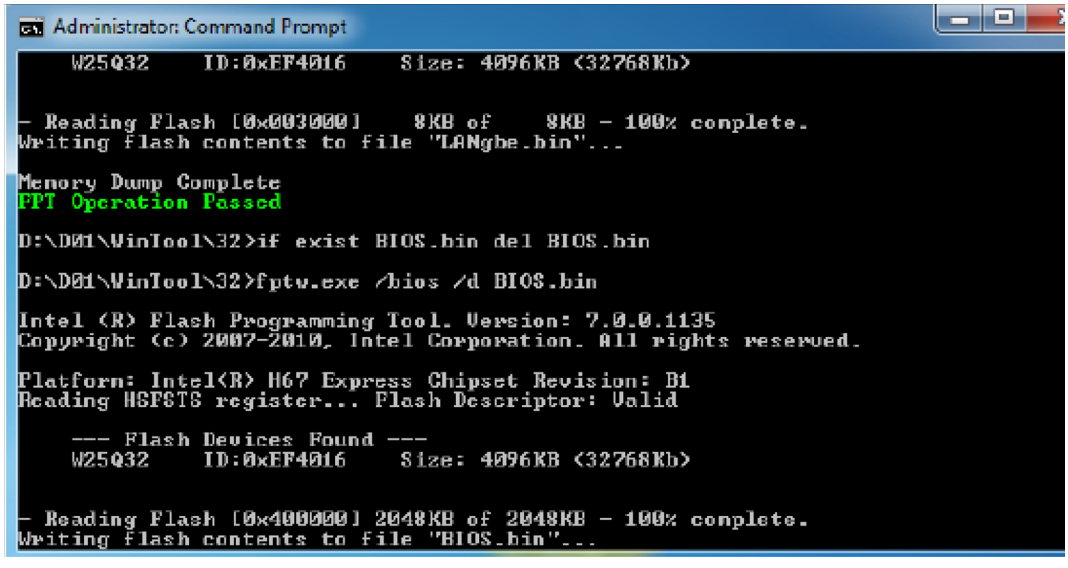


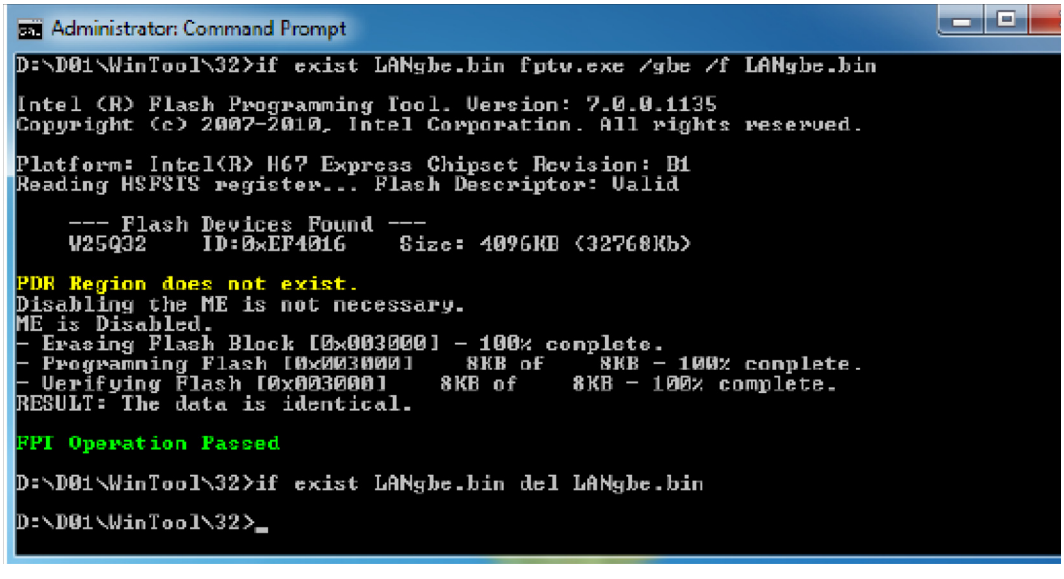
4. Perform the steps below if your computer is running 32-bit Windows.
   a. Key in 'cd wintool\32'. (Go to BIOS path like "D:\WinTool\32")
   b. Key in 'flash4M.bat' or 'flash4M'.



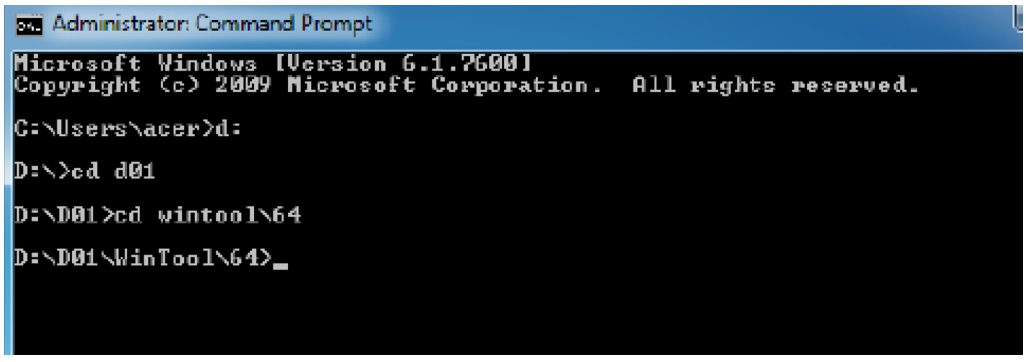
c. Press **Enter** to flash the ME firmware.



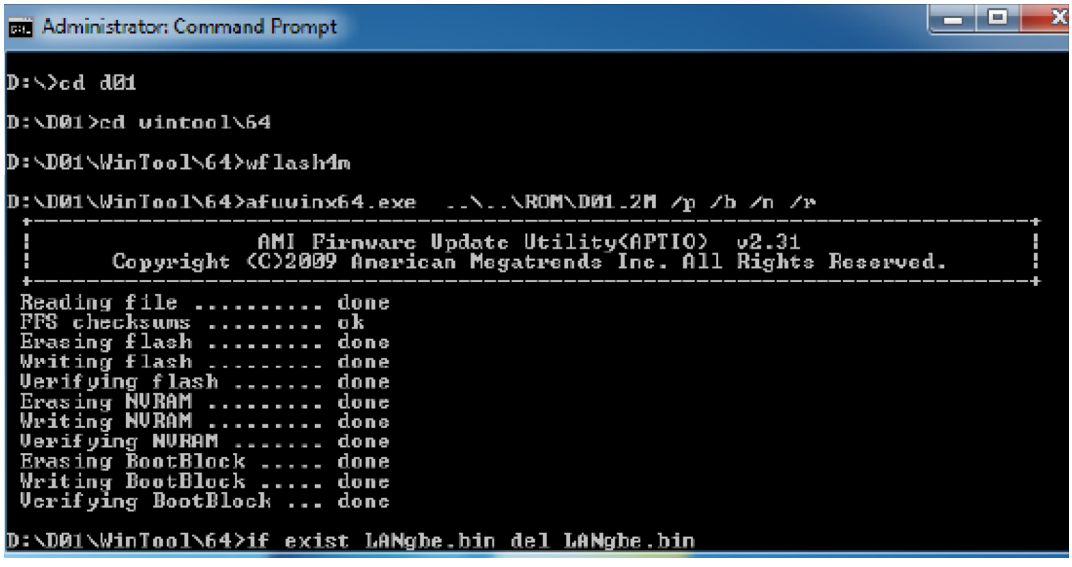


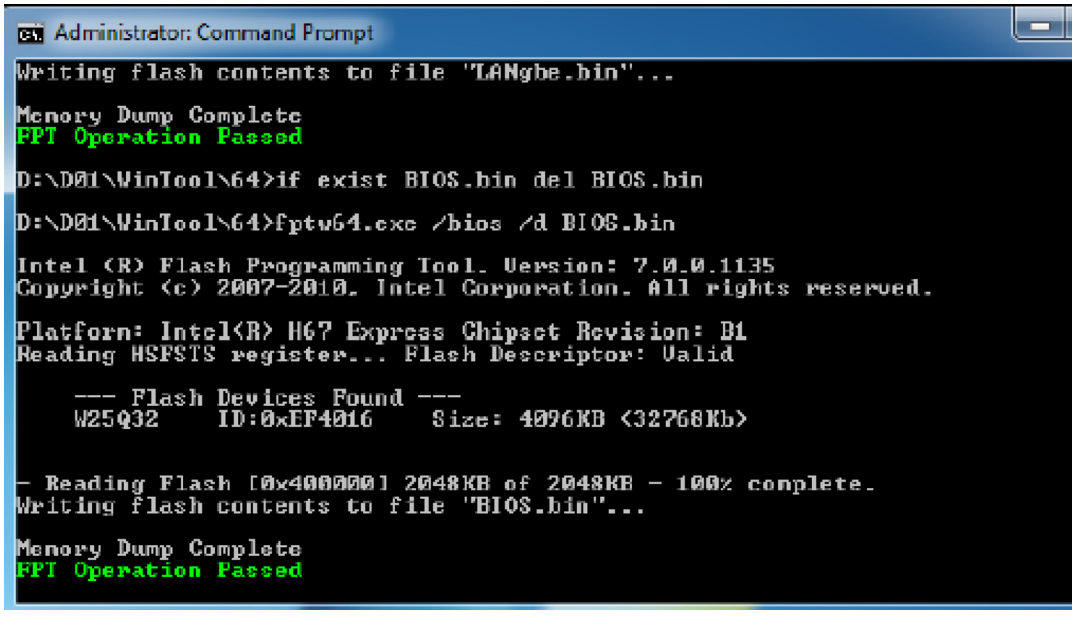


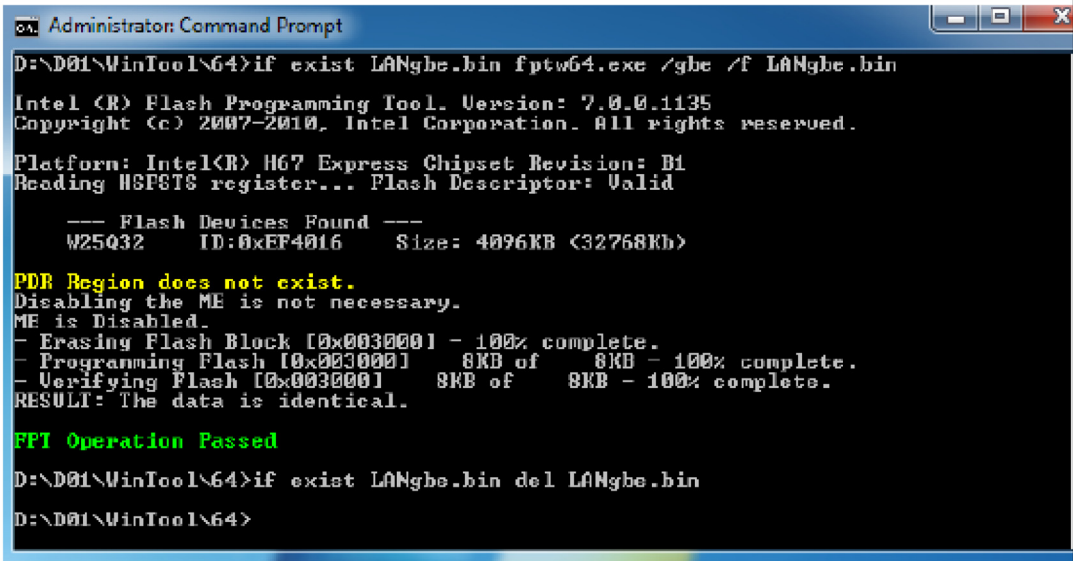
5. Perform the steps below if your computer is running 64-bit Windows.
   a. Key in 'cd wintool\64'. (Go to BIOS path like "D:\WinTool\64")
   b. Key in 'flash4M.bat' or 'flash4M'.



   c. Press **Enter** to flash the ME firmware.







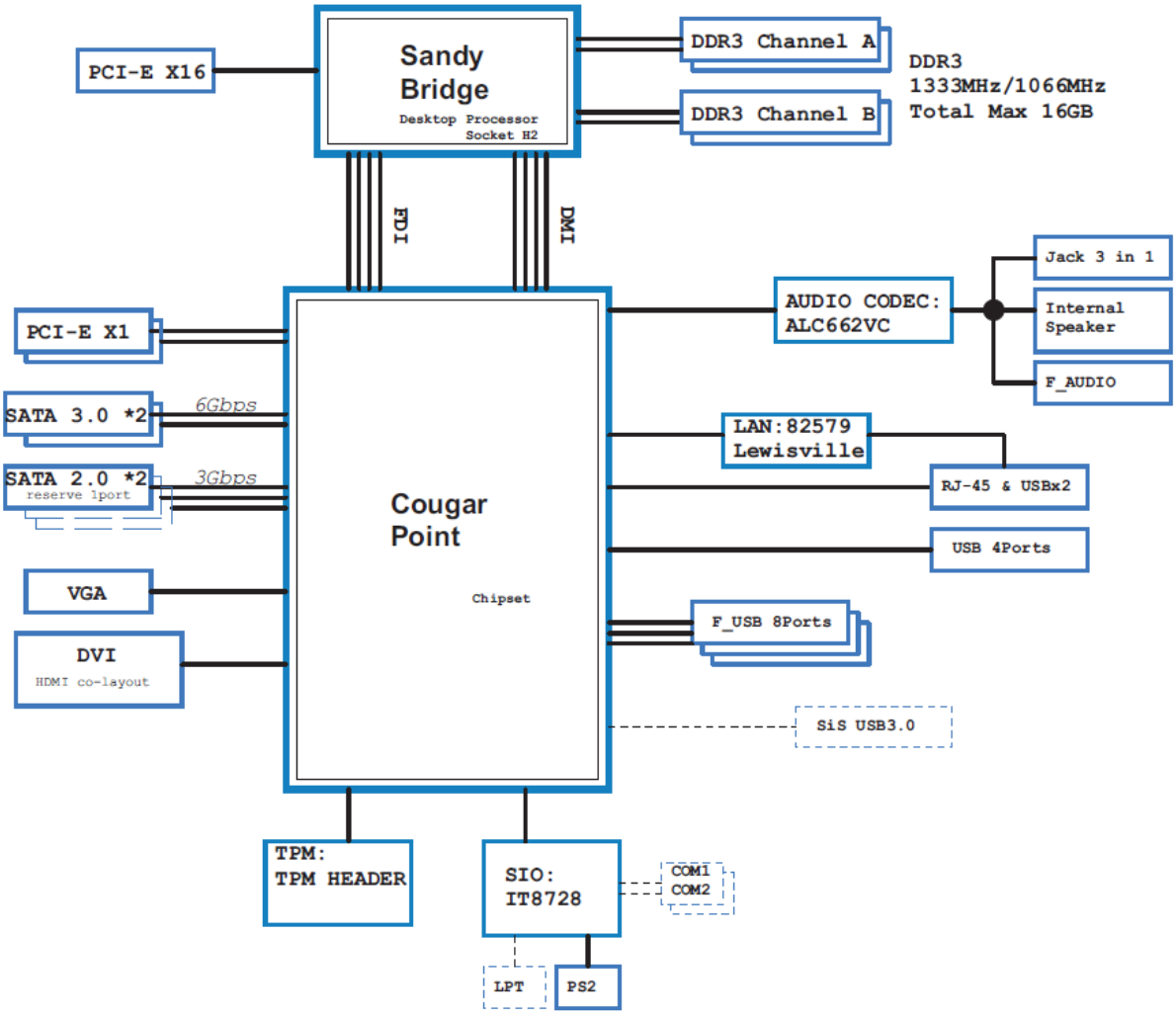
6. Shut down the computer and disconnect the power source.
7. Enable the ME firmware. See page 79 for instructions.
8. Clear the CMOS data. See page 80 for instructions.
9. Reboot the computer.

System Architecture

This chapter shows the block diagram and board layout of the Packard Bell oneTwo L5860 / L5861 computer.

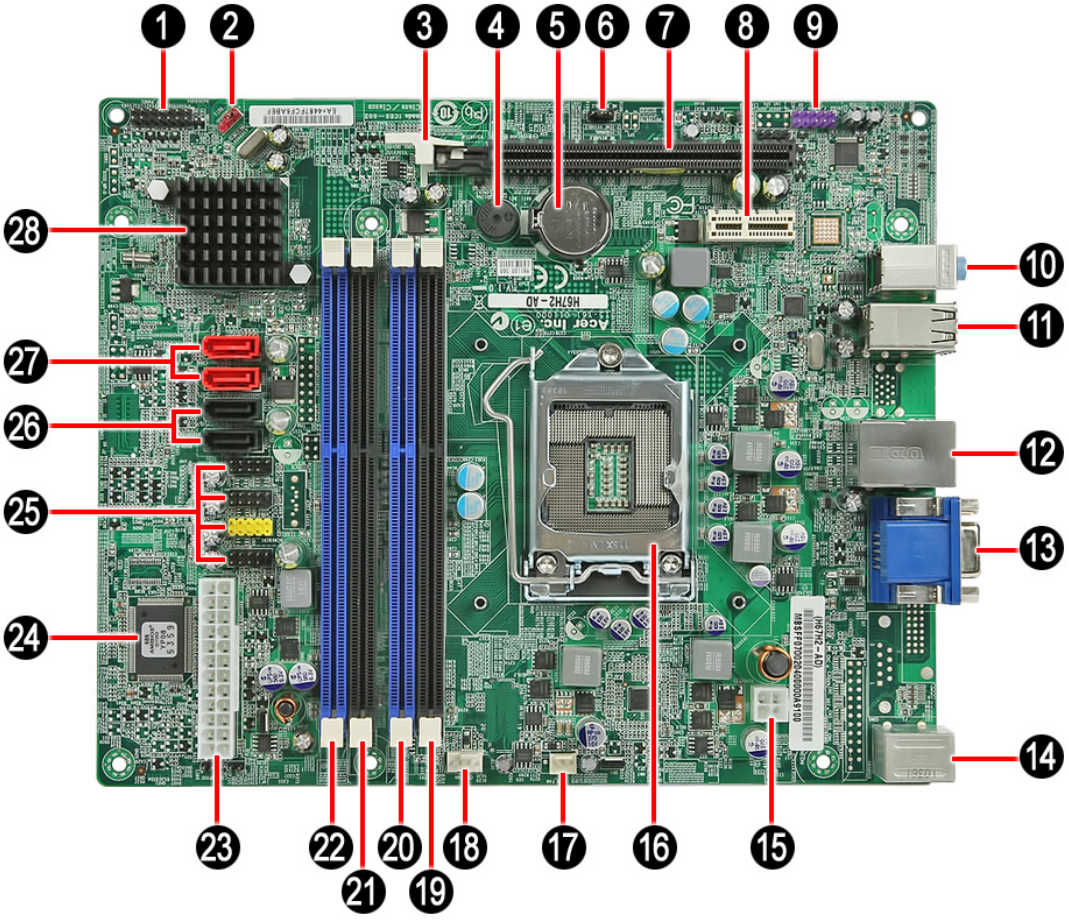
Block Diagram

The core subsystems of the Packard Bell oneTwo L5860 / L5861 computer are depicted in the following block diagram.



Mainboard Layout

This section shows the major mainboard components.



Item	Component	Item	Component
1	Power button/LED cable connector	15	4-pin ATX power connector
2	Clear CMOS jumper	16	Processor socket
3	PCIe expansion card lock	17	System fan cable connector
4	Internal buzzer	18	Heat sink fan cable connector
5	RTC battery	19	DDR3 slot 1
6	ME disable jumper	20	DDR3 slot 2
7	PCI Express 2.0 x16 expansion slot	21	DDR3 slot 3
8	PCI Express 2.0 x1 expansion slot	22	DDR3 slot 4
9	Right side audio jacks connector	23	24-pin ATX power connector
10	Line-in, line-out, and microphone jacks	24	SIO ITE 8728F-CX chipset
11	USB ports	25	Right side USB ports connectors
12	Left: Ethernet port Right: USB ports	26	SATA connectors
13	Left: Monitor port Right: HDMI port	27	Top: HDD SATA cable connector Bottom: ODD SATA cable connector
14	Left: PS/2 mouse port Right: PS/2 keyboard port	28	Intel H67 chipset

Chapter 6

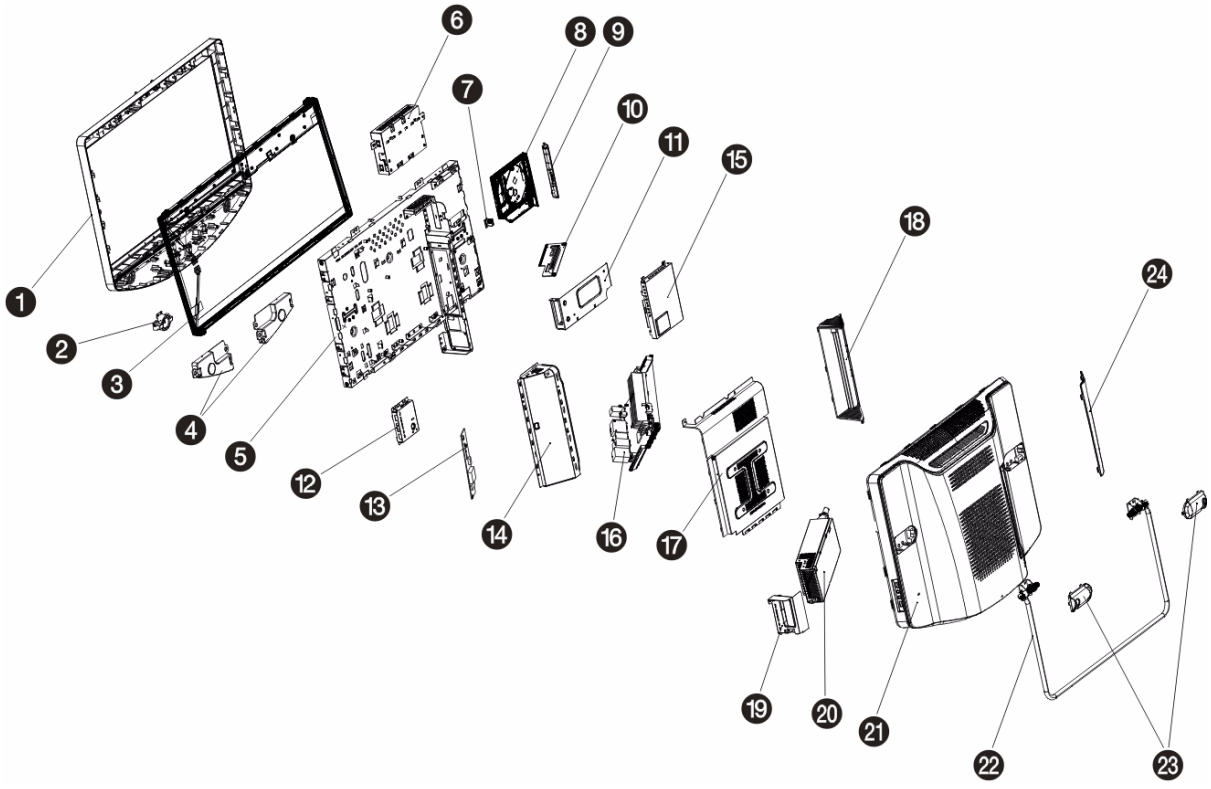
Field Replaceable Unit (FRU) List

This chapter gives you the FRU (Field Replaceable Unit) listing of the Packard Bell oneTwo L5860 / L5861 computer global configurations. Refer to this list when ordering for repair parts or for RMA (Return Merchandise Authorization).

IMPORTANT Part number changes will not be noted in this printed Service Guide. The part numbers listed in this Service Guide may differ from those given to regional AUTHORIZED SERVICE PROVIDERS. You MUST use the local FRU list provided by your regional office to order FRU parts for repair and service of customer machines. Make sure that you are using the most up-to-date information available on your regional web site or channel when ordering FRU parts.

NOTE Follow the local government regulations, or the rules set by your regional office on how to return or dispose of defective parts.

Exploded Diagram

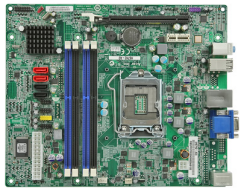
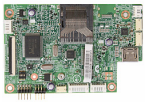


No.	Component	No.	Component
1	Front bezel	13	Converter board
2	Power button holder	14	Side board cover
3	LCD panel	15	Scaler board cover
4	Speakers	16	Mainboard
5	Chassis	17	Wall mount plate
6	HDD cage	18	I/O cable plate
7	ODD bracket	19	PSU bracket
8	Optical drive	20	Power supply unit
9	ODD bezel	21	Rear cover
10	Riser board	22	Computer stand
11	Riser board bracket	23	Computer stand shells
12	USB/audio board cover	24	LCD panel bracket

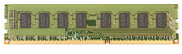
FRU Lists

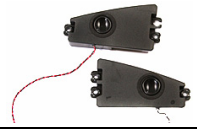
Packard Bell oneTwo L5860 FRU List

System Model: ACER_oTL5860_PELENA

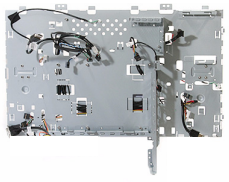
Category	Part Name	Part Number
Boards		
Mainboard		
	MAINBOARD KIT OTL5860 INTEL H67 W/RTC BATTERY W/O DDRIII DIMM & CPU & MEMORY	MB.U6B07.001
Scaler board		
	SCALER BOARD	55.U5R01.005
USB/audio board		
	FRONT BOARD	55.U5R01.003
Converter board		
	AIO CONVERTER BOARD	19.U6B01.001
Capacitive LED board		
	CAPACITIVE BUTTON BOARD GALLAPHER-TKSTWSGAL001	56.41010.491
	CAPACITIVE BUTTON BOARD NS-GALLAGHER-CY	56.41010.511
Light bars		
	LIGHT BAR BOARD	55.U5R01.004
TV tuner card		
	TV TUNER CARD AVERMEDIA H756 ATSC	TU.10500.080
Graphics card		
	VGA CARD ECS 89D386-303408 HD5450 512MB (64BIT) DDR3 DVI HDMI VGA LP BRACKET ROHS	VG.APC54.534
	VGA CARD ECS 89D386-469013 NV G315 512MB (64BIT) DDR3 DVI HDMI LP BRACKET ROHS	VG.PCPT3.164
	VGA CARD PCPARTNER 288-1E145-A01AC HD5450 512MB SDDR3 64BITS SAMSUNG DVI HDMI W/LP BRACKET ROHS	VG.ECS54.511
	VGA CARD PCPARTNER 288-1E145-C01AC HD5450 512MB 64BITS SDDR3 DVI+HDMI LP (NEW HYNIX -1.2)	VG.APC54.513

Category	Part Name	Part Number
Graphics card *(continuation)*	VGA CARD PCPARTNER 288-1E153-A00AC HD5450 512MB SDDR 3 (64BITS) SAMSUNG DVI HDMI W/LP BKT ROHS 4 LAYER	VG.APC54.511
	VGA CARD PCPARTNER 288-1E153-C00AC HD5450 512MB 64BITS SDDR3 DVI+HDMI LP 4 LAYER	VG.APC54.532
	VGA CARD PCPARTNER 288-2E142-A01AC ATI HD5570 1GB DDR 3 128BITS SAMSUNG DVI HDMI W/LP BRACKET ROHS	VG.APC55.732
	VGA CARD PCPARTNER 288-2E142-C01AC HD5570 1GB 128BITS SDDR3 DVI+HDMI LP (NEW HYNIX -1.2)	VG.APC55.711
	VGA CARD PCPARTNER NV 315 512MB 64BITS SDDR3 DVI+HDMI LP NEW HYNIX-1.2	VG.ECS31.5L1
	VGA CARD PCPARTNER NV GT420 1GB DDR3 HYNIX DVI/ HDMI/LP BRACKET ROHS	VG.PCPT4.211
	VGA CARD PCPARTNER NV GT420 1GB DDR3 SDI DVI/ HDMI/LP BRACKET ROHS	VG.PCPT4.212
Riser board		
	RISER BOARD FOR SHORT VGA	55.U5R01.006
USB 3.0 add-on card		
	USB 3.0 CARD AIO USED W/ CABLE	PA.14000.044
Webcam module		
	CAMERA 2M 1007 PARKORCHID C04PL037F	56.18022.521
	CAMERA 2M CHICONY CNFA21321004590L	56.18009.521
	CAMERA 2M PRIMAX 50-704A4WNT8	56.18007.521
Bluetooth module		
	BLUETOOTH BOARD MODULE V2.1+EDR CSR BLUECOR XAVI BC10B-04C1	54.U5R01.001
Wireless LAN module		
	WIRELESS LAN BOARD 802.11BGN REALTEK LITEON RTL8191SU 1TX2R H	NI.10200.041
Wireless antennas		
	WIRELESS ANTENNA MAIN WLAN GALLAGHER ACON	25.91331.001
	WIRELESS ANTENNA MAIN WLAN GALLAGHER WNC	25.91344.001
	WIRELESS ANTENNA AUX WLAN GALLAGHER ACON	25.91332.001
	WIRELESS ANTENNA AUX WLAN GALLAGHER WNC	25.91345.001
Processor		
	CPU INTEL CORE I5 2300 2.8G 6M 1333 95W D-2 LGA1155 SANDY BRIDGE QUAD CORE	KC.23001.CI5
	CPU INTEL CORE I5 2400 3.1G 6M 1333 95W K-0 LGA1155 SANDY BRIDGE	KC.24001.CI5
	CPU INTEL CORE I5 2400S 2.5G 6M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.24001.SI5
	CPU INTEL CORE I5 2500 3.3G 6M 1333 95W K-0 LGA1155 SANDY BRIDGE	KC.25001.CI5

Category	Part Name	Part Number
Processor *(continuation)*	CPU INTEL CORE I5 2500S 2.7G 6M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.25001.SI5
	CPU INTEL CORE I7 2600C 3.4G 8M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.26001.CI7
	CPU INTEL CORE I7 2600S 2.8G 8M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.26001.SI7
Heat sink fan		
	CPU HEATSINK AIR COOLER LGA1155	HI.10800.091
System fan		
	FAN	23.U6B01.001
Memory		
	MEMORY A-DATA UNB-DIMM DDRIII 1333 1GB AD63I1A0823EU LF 128*8 0.065UM	KN.1GB0B.036
	MEMORY APACER DDR3 1333MHZ 1G UNB-DIMM GU502203EP0201 LF 128*8 0.065UM	KN.1GB0H.015
	MEMORY DDR3 1333MHZ 1G UNBUFFERED DIMM W/O ECC F DIE (46NM)	KN.1GB07.002
	MEMORY KINGSTON DDR3 1333MHZ 1G ACR128X64D3U1333C9	KN.1GB01.031
	MEMORY UNIFOSA DDR3 1333MHZ 1G UNB-DIMM GU502203EP0201 LF 128*8 0.065UM	KN.1GB0C.010
	MEMORY ADATA DDR3 1333MHZ 2G UNB DIMM W/O ECC W/ELPIDA CHIP	KN.2GB0B.029
	MEMORY KINGSTON DDR3 1333MHZ 2G UNB ACR256X64D3U1333C9	KN.2GB03.022
	MEMORY NANYA UNB-DIMM DDRIII 1333 2GB NT2GC64B88B0NF-CG LF 256*8 0.055UM	KN.2GB0H.009
	MEMORY SAMSUNG DDR3 1333MHZ 2G UNB DIMM W/O ECC W/2G CHIP C DIE(46NM)	KN.2GB07.002
	MEMORY UNIFOSA DDR3 1333MHZ 2G UNB-DIMM GU512303EP0202 LF 128*8 0.065UM	KN.2GB0C.007
Hard drive		
	HDD 1.5TB 3.5" 5400RPM WD WD15EARS-22MVWB0 GP 5.4K	KH.15K08.003
	HDD 1.5TB 3.5" 7200RPM SATA SEAGATE BRINKS ST31500341AS 32MB CC4H 7	KH.15K01.002
	HDD 1TB 3.5" 5400RPM WD WD10EARS-22Y5B1 GP 5.4K	KH.01K08.008
	HDD 1TB 3.5" 7200RPM SATA II 32MB HGST HDS721010CLA332 JUPITER	KH.01K01.013
	HDD 1TB 7200RPM 3.5" SEAGATE ST31000528AS(PHARAOH BP) SATA II 32MB LF F/W:CC44	KH.01K07.003

Category	Part Name	Part Number
Hard drive *(continuation)*	HDD 3.5" 500GB 7200RPM SATA WD XL320M WD5000AAKS-22M9A0	KH.50007.012
	HDD 500G 7200RPM 3.5" SEAGATE ST3500418AS(PHARAOH PB) SATA II 16MB LF F/W:CC44	KH.50008.014
	HDD 500GB 3.5" 7200RPM SATA II 16MB HGST HDS721050CLA362 JUPITER	KH.50001.019
	HDD 320G 7200RPM 3.5" SEAGATE ST3320418AS(PHARAOH BP) SATA II 16MB LF F/W:CC44	KH.32008.016
	HDD 320GB 3.5" 7200RPM SATA II 16MB HGST HDS721032CLA362 JUPITER	KH.32001.020
	HDD 320GB 3.5" 7200RPM SATA II WD WD3200AAJS-22L7A0 XL320S	KH.32007.011
Optical drive		
	ODD HLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X GT31N LF W/O BEZEL SATA FOR HF+WINDOWS7	KU.0080F.014
	ODD PANASONIC BD RW 12.7MM TRLY DL4 4X UJ240A SATA	KU.00407.015
	ODD PLDS SUPER-MULTI DRIVE 12.7MM TRAY PLDS DS-8A5SH LF W/O BEZEL SATA FOR HF+WINDOWS7	KU.0080D.054
	ODD HLDS BD COMBO 12.7MM TRAY DL 4X CT21N LF W/O BEZEL 1.00 SATA FOR HF+WINDOWS7	KO.00407.004
	ODD PANASONIC BD COMBO 12.7MM TRAY DL 4X UJ141AL LF W/O BEZEL SATA FOR HF+WINDOWS7	KO.0040D.004
Speakers		
	SPEAKER GALLAGHER LEFT/RIGHT	23.U5R01.001
LCD panel		
	CCFL LCD LPL 23" WFHD NONE GLARE LM230WF5 TLC1 LF 300NIT 5MS G8	LK.23008.013
Case / Cover / Bracket / Assembly		
Front bezel		
	FRONT BEZEL FOR 23	60.U5Q01.001
Power button holder		
	HLDR POWER HOLDER PG	42.U5R01.002
Capacitive LED board cover		
	FUNCTION KEY COVER	42.U5R01.003

Category	Part Name	Part Number
Rear cover		
	BACK COVER FOR 23	60.U5R01.005
Computer stand		
	ASSEMBLY HINGE MODULE FOOT STAND	60.U5R01.007
I/O cable cover		
	WIRE COVER	42.U5R01.004
I/O cable plate		
	WIRE HOLDER	42.U5R01.005
Wall mount plate		
	ASSY MB COVER BRACKET PG	60.U5R01.004
Side board cover		
	INVERTER BOARD COVER	60.U5R01.003
Scaler board cover		
	SCALAR COVER BRACKET	33.U5R01.002
USB/audio board cover		
	FRONT IO BOARD BRACKET	60.U5R01.001
HDD cage		
	HDD BRACKET	33.U5R01.001

Category	Part Name	Part Number
ODD bracket		
	ODD BRACKET	33.SEW01.001
ODD bezel		
	ODD BEZEL FOR BD	42.U5M01.001
	ODD BEZEL FOR DVD-RW	60.GB501.001
Riser board bracket		
	RISER CARD BRACKET	33.U5R01.005
PSU bracket		
	POWER SUPPLY BRACKET	33.U5R01.003
Chassis		
	MAIN CHASSIS LED	60.U6B01.001
LCD panel bracket		
	LED BRACKET	33.U6B01.001
CRT port dummy cover		
	CRT COVER	42.SF601.001
HDMI port dummy cover	HDMI DUMMY COVER	42.SF601.002
Cables		
Power button/LED cable	POWER LED CABLE	50.3CM01.001
	POWER LED CABLE	50.3CM20.001
Light bar/capacitive LED function cable	FUNCTION KEY CABLE	50.3CM10.001
	FUNCTION KEY CABLE	50.3CM29.001
Light bar cable	LIGHT BAR CABLE	50.3CM09.001
	LIGHT BAR CABLE	50.3CM28.001
IR receiver cable	IR RECEIVER CABLE	50.U5M01.001
USB/audio board cable	USB CABLE	50.3CN04.001
	USB CABLE	50.3CN04.011
Microphone jack (right panel) cable	FIO MIC CABLE	50.3CM02.001
	FIO MIC CABLE	50.3CM21.001
Speaker cable	SPEAKER CABLE	50.3CM07.001
	SPEAKER CABLE	50.3CM07.002
	SPEAKER CABLE	50.3CM26.001
HDD SATA cable	HDD SATA CABLE	50.SAS01.001
	HDD SATA CABLE 15PIN	50.3CM12.001
	HDD SATA CABLE 15PIN	50.3CM30.001

Category	Part Name	Part Number
ODD SATA cable	ODD POWER CABLE	50.3CM33.001
	ODD POWER CABLE	50.3CM34.001
Converter board cable	INVERTER CABLE 23" WXGA	50.3CM08.001
	INVERTER CABLE 23" WXGA	50.3CM27.001
LCD LVDS cable	LVDS CABLE 23	50.U5R01.009
LED backlight cable	LED PANEL 23 CABLE	50.U6B01.003
Webcam cable	TOUCH CONTROL BOARD AND CAMERA CABLE	50.U6B01.002
Wireless LAN cable	WIRELESS CR CABLE	50.3CM04.001
	WIRELESS CR CABLE	50.3CM23.001
Bluetooth cable (mainboard to scaler board connection)	BLUETOOTH USB CABLE	50.3CM05.001
	BLUETOOTH USB CABLE	50.3CM24.001
Bluetooth cable (scaler board to Bluetooth module connection)	BLUETOOTH CABLE	50.3CM11.001
	BLUETOOTH CABLE	50.3CM15.001
DVI to D-Sub cable	DVI TO D-SUB CABLE	50.U5R01.025
DVI to VGA dongle connector	DVI TO VGA DONGLE CONNECTOR	D0.VGA26.P01
HDMI cable	HDMI CABLE 350MM W/O VGA CARD	50.GB901.001
	HDMI CABLE 600MM	50.U5R01.024
Power supply unit		
	POWER SUPPLY 220W CHICONYPOWER EPA CPB09-D220E AAGASSI	PY.22009.008
	POWER SUPPLY 220W CHICONYPOWER PFC CPB09-D220A AAGASSI	PY.22009.007
	POWER SUPPLY 220W CHICONYPOWER REGULAR CPB09-D220R AAGASSI	PY.22009.006
	POWER SUPPLY 220W EUP 115VAC/230V NPFC DELTA DPS-220UB A EUP	PY.2200F.004
	POWER SUPPLY 220W FULL EPS5.0 DELTA DPS-220UB-2 B EUP	PY.2200F.006
	POWER SUPPLY 220W PFC 230V DELTA DPS-220UB-1 A EUP	PY.2200F.005
AC power cord		
	POWER CORD 110V 3PIN UL USA	27.01518.0I1
	POWER CORD 125V 10A BLACK MEXICO	27.01518.A01
	POWER CORD 125V 7A 3G JAPAN	27.01518.181
	POWER CORD 1800MM 250V CHINA	27.01518.0K1
	POWER CORD 1800MM 250V EURO	27.01518.0J1
	POWER CORD 1800MM BLACK S.AFRAICA	27.01518.0Q1
	POWER CORD 1830MM BLACK TW I-SHENG	27.01518.0M1
	POWER CORD 250V 3PIN 1800MM UK	27.03118.031
	POWER CORD 250V 3PIN INDIA	27.01518.0P1
	POWER CORD AUSTRALIA WITH TESTED TAG	27.01518.0N1

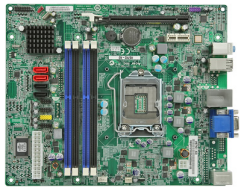
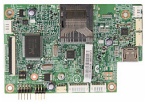
Category	Part Name	Part Number
Keyboard		
USB keyboard		
	KEYBOARD USB 105 KEY CHICONY BLACK UK	KB.USB03.268
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK BELGIUM	KB.USB03.254
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK CZECH	KB.USB03.265
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK DANISH	KB.USB03.264
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK DUTCH	KB.USB03.252
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK FRENCH	KB.USB03.269
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK GERMAN	KB.USB03.270
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK GREEK	KB.USB03.263
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK HEBREW	KB.USB03.257
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK HUNGARIAN	KB.USB03.262
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK ICELANDIC	KB.USB03.255
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK ITALIAN	KB.USB03.250
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK NORDIC	KB.USB03.271
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK POLISH	KB.USB03.258
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK PORTUGUESE	KB.USB03.249
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK ROMANIAN	KB.USB03.266
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK RUSSIAN	KB.USB03.261
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SLOVAK	KB.USB03.260
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SLOVENIAN	KB.USB03.259
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SPANISH	KB.USB03.248
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SWISS/G	KB.USB03.253
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK TURKISH	KB.USB03.267
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK US INTERNATIONAL	KB.USB03.247
	KEYBOARD USB 105 KEY CHICONY KU-0420 STANDARD BLACK ARABIC/ENGLISH	KB.USB03.272

Category	Part Name	Part Number
USB keyboard *(continuation)*	KEYBOARD USB 105 KEY CHICONY KU-0420 USB BLACK SWEDISH	KB.USB03.251
	KEYBOARD USB 105 KEY CHICONY KU-0420 USB NORWEGIAN	KB.USB03.256
Wireless keyboard		
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 105KS BLACK NORWEGIAN WITH PB LOGO	KB.RF403.195
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ARABIC/ENGLISH	KB.RF403.212
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK BELGIUM WITH PB LOGO	KB.RF403.193
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK CZECH WITH PB LOGO	KB.RF403.204
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK DANISH WITH PB LOGO	KB.RF403.203
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK DUTCH WITH PB LOGO	KB.RF403.191
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK FRENCH WITH PB LOGO	KB.RF403.208
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK GERMAN WITH PB LOGO	KB.RF403.209
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK GREEK WITH PB LOGO	KB.RF403.202
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK HEBREW WITH PB LOGO	KB.RF403.196
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK HUNGARIAN WITH PB LOGO	KB.RF403.201
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ICELANDIC WITH PB LOGO	KB.RF403.194
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ITALIAN WITH PB LOGO	KB.RF403.189
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK NORDIC WITH PB LOGO	KB.RF403.210
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK POLISH WITH PB LOGO	KB.RF403.197
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK PORTUGUESE WITH PB LOGO	KB.RF403.188
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ROMANIAN WITH PB LOGO	KB.RF403.205
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK RUSSIAN WITH PB LOGO	KB.RF403.200
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SLOVAK WITH PB LOGO	KB.RF403.199
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SLOVENIAN WITH PB LOGO	KB.RF403.198
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SPANISH WITH PB LOGO	KB.RF403.187
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SWEDISH WITH PB LOGO	KB.RF403.190

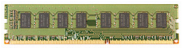
Category	Part Name	Part Number
Wireless keyboard *(continuation)*	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SWISS/G WITH PB LOGO	KB.RF403.192
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK TURKISH WITH PB LOGO	KB.RF403.206
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK UK WITH PB LOGO	KB.RF403.207
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK US INTERNATIONAL WITH PB LOGO	KB.RF403.186
Mouse		
USB mouse		
	MOUSE USB CHICONY MSU0960T-E93L	MS.11200.061
Wireless mouse		
	MOUSE RF2.4 CHICONY MG-0570T W	MS.11200.062
Screws	SCREW	86.U5M01.001
	SCREW	86.U5P01.001
	SCREW NO4-40 L6.5 PAN NI	86.00N03.B40
	SCREW PAN #6-32 L6 NI BOXER WZS	86.00J44.C60
	SCRW M TRUSS M4*8L TB BLACK NI	86.U5R01.003
	SCRW M2 CAP L4 NI	86.NBY01.003
	SCRW M3 CAP 6L BLK ZN H801	86.U5R01.005
	SCRW M4-P07 CAP 6L BLK ZN	86.U5R01.002
Accessory		
Remote control	REMOTE CONTROL PHILIPS RC2604301/01B MSFT CODE PAIR WITH OVU430008 EMEA FOR WINDOWS7	RT.11300.023
	REMOTE CONTROL PHILIPS RC2604302/01B MSFT CODE PAIR WITH OVU430008 US FOR WINDOWS7	RT.11300.022
	REMOTE CONTROL PHILIPS RC2604307/01BG PAIR WITH RV.11000.007 EMEA FOR WINDOWS7	RT.11300.021
	REMOTE CONTROL SMK RRS9003-3406E QUATRO PULSE US WITH BATTERY PACK FOR WINDOWS7	RT.11300.025
	REMOTE CONTROLLER PHILIPS RC2604701/01B MSFT CODE JAPAN; PAIR WITH OVU430005 WINDOWS7	RT.11300.024
USB dongle receiver	RECEIVER CHICONY DANGLE RECEIVER USB EXTERNAL	RV.11000.022

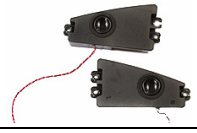
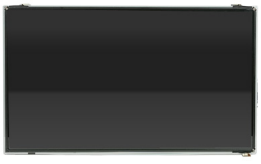
Packard Bell oneTwo L5861 FRU List

System Model: ACER_oTL5861_PELENA

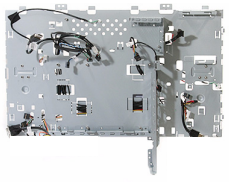
Category	Part Name	Part Number
Boards		
Mainboard		
	MAINBOARD KIT OTL5860 INTEL H67 W/RTC BATTERY W/ O DDRIII DIMM & CPU & MEMORY	MB.U6B07.001
Scaler board		
	SCALER BOARD	55.U5R01.005
USB/audio board		
	FRONT BOARD	55.U5R01.003
Converter board		
	AIO CONVERTER BOARD	19.U6B01.001
Capacitive LED board		
	CAPACITIVE BUTTON BOARD GALLAPHER-TKSTWSGAL001	56.41010.491
	CAPACITIVE BUTTON BOARD NS-GALLAGHER-CY	56.41010.511
Light bars		
	LIGHT BAR BOARD	55.U5R01.004
TV tuner card		
	TV TUNER CARD AVERMEDIA H756 ATSC	TU.10500.080
Graphics card		
	VGA CARD ECS 89D386-303408 HD5450 512MB (64BIT) DDR3 DVI HDMI VGA LP BRACKET ROHS	VG.APC54.534
	VGA CARD ECS 89D386-469013 NV G315 512MB (64BIT) DDR3 DVI HDMI LP BRACKET ROHS	VG.PCPT3.164
	VGA CARD PCPARTNER 288-1E145-A01AC HD5450 512MB SDDR3 64BITS SAMSUNG DVI HDMI W/LP BRACKET ROHS	VG.ECS54.511
	VGA CARD PCPARTNER 288-1E145-C01AC HD5450 512MB 64BITS SDDR3 DVI+HDMI LP (NEW HYNIX -1.2)	VG.APC54.513
	VGA CARD PCPARTNER 288-1E153-A00AC HD5450 512MB SDDR 3 (64BITS) SAMSUNG DVI HDMI W/LP BKT ROHS 4 LAYER	VG.APC54.511
	VGA CARD PCPARTNER 288-1E153-C00AC HD5450 512MB 64BITS SDDR3 DVI+HDMI LP 4 LAYER	VG.APC54.532

Category	Part Name	Part Number
Graphics card *(continuation)*	VGA CARD PCPARTNER 288-2E142-A01AC ATI HD5570 1GB DDR 3 128BITS SAMSUNG DVI HDMI W/LP BRACKET ROHS	VG.APC55.732
	VGA CARD PCPARTNER 288-2E142-C01AC HD5570 1GB 128BITS SDDR3 DVI+HDMI LP (NEW HYNIX -1.2)	VG.APC55.711
	VGA CARD PCPARTNER NV 315 512MB 64BITS SDDR3 DVI+HDMI LP NEW HYNIX-1.2	VG.ECS31.5L1
	VGA CARD PCPARTNER NV GT420 1GB DDR3 HYNIX DVI/ HDMI/LP BRACKET ROHS	VG.PCPT4.211
	VGA CARD PCPARTNER NV GT420 1GB DDR3 SDI DVI/ HDMI/LP BRACKET ROHS	VG.PCPT4.212
Riser board		
	RISER BOARD FOR SHORT VGA	55.U5R01.006
USB 3.0 add-on card		
	USB 3.0 CARD AIO USED W/ CABLE	PA.14000.044
Webcam module		
	CAMERA 2M 1007 PARKORCHID C04PL037F	56.18022.521
	CAMERA 2M CHICONY CNFA21321004590L	56.18009.521
	CAMERA 2M PRIMAX 50-704A4WNT8	56.18007.521
Bluetooth module		
	BLUETOOTH BOARD MODULE V2.1+EDR CSR BLUECOR XAVI BC10B-04C1	54.U5R01.001
Wireless LAN module		
	WIRELESS LAN BOARD 802.11BGN REALTEK LITEON RTL8191SU 1TX2R H	NI.10200.041
Wireless antennas		
	WIRELESS ANTENNA MAIN WLAN GALLAGHER ACON	25.91331.001
	WIRELESS ANTENNA MAIN WLAN GALLAGHER WNC	25.91344.001
	WIRELESS ANTENNA AUX WLAN GALLAGHER ACON	25.91332.001
	WIRELESS ANTENNA AUX WLAN GALLAGHER WNC	25.91345.001
Processor		
	CPU INTEL CORE I5 2300 2.8G 6M 1333 95W D-2 LGA1155 SANDY BRIDGE QUAD CORE	KC.23001.CI5
	CPU INTEL CORE I5 2400 3.1G 6M 1333 95W K-0 LGA1155 SANDY BRIDGE	KC.24001.CI5
	CPU INTEL CORE I5 2400S 2.5G 6M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.24001.SI5
	CPU INTEL CORE I5 2500 3.3G 6M 1333 95W K-0 LGA1155 SANDY BRIDGE	KC.25001.CI5
	CPU INTEL CORE I5 2500S 2.7G 6M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.25001.SI5
	CPU INTEL CORE I7 2600C 3.4G 8M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.26001.CI7
	CPU INTEL CORE I7 2600S 2.8G 8M 1333 65W D-2 LGA1155, SANDY BRIDGE	KC.26001.SI7

Category	Part Name	Part Number
Heat sink fan		
	CPU HEATSINK AIR COOLER LGA1155	HI.10800.091
System fan		
	FAN	23.U6B01.001
Memory		
	MEMORY A-DATA UNB-DIMM DDRIII 1333 1GB AD63I1A0823EU LF 128*8 0.065UM	KN.1GB0B.036
	MEMORY APACER DDR3 1333MHZ 1G UNB-DIMM GU502203EP0201 LF 128*8 0.065UM	KN.1GB0H.015
	MEMORY DDR3 1333MHZ 1G UNBUFFERED DIMM W/O ECC F DIE (46NM)	KN.1GB07.002
	MEMORY KINGSTON DDR3 1333MHZ 1G ACR128X64D3U1333C9	KN.1GB01.031
	MEMORY UNIFOSA DDR3 1333MHZ 1G UNB-DIMM GU502203EP0201 LF 128*8 0.065UM	KN.1GB0C.010
	MEMORY ADATA DDR3 1333MHZ 2G UNB DIMM W/O ECC W/ELPIDA CHIP	KN.2GB0B.029
	MEMORY KINGSTON DDR3 1333MHZ 2G UNB ACR256X64D3U1333C9	KN.2GB03.022
	MEMORY NANYA UNB-DIMM DDRIII 1333 2GB NT2GC64B88B0NF-CG LF 256*8 0.055UM	KN.2GB0H.009
	MEMORY SAMSUNG DDR3 1333MHZ 2G UNB DIMM W/O ECC W/2G CHIP C DIE(46NM)	KN.2GB07.002
	MEMORY UNIFOSA DDR3 1333MHZ 2G UNB-DIMM GU512303EP0202 LF 128*8 0.065UM	KN.2GB0C.007
Hard drive		
	HDD 1.5TB 3.5" 5400RPM WD WD15EARS-22MVWB0 GP 5.4K	KH.15K08.003
	HDD 1.5TB 3.5" 7200RPM SATA SEAGATE BRINKS ST31500341AS 32MB CC4H 7	KH.15K01.002
	HDD 1TB 3.5" 5400RPM WD WD10EARS-22Y5B1 GP 5.4K	KH.01K08.008
	HDD 1TB 3.5" 7200RPM SATA II 32MB HGST HDS721010CLA332 JUPITER	KH.01K01.013
	HDD 1TB 7200RPM 3.5" SEAGATE ST31000528AS(PHARAOH BP) SATA II 32MB LF F/W:CC44	KH.01K07.003
	HDD 3.5" 500GB 7200RPM SATA WD XL320M WD5000AAKS-22M9A0	KH.50007.012
	HDD 500G 7200RPM 3.5" SEAGATE ST3500418AS(PHARAOH PB) SATA II 16MB LF F/W:CC44	KH.50008.014
	HDD 500GB 3.5" 7200RPM SATA II 16MB HGST HDS721050CLA362 JUPITER	KH.50001.019

Category	Part Name	Part Number
Hard drive *(continuation)*	HDD 320G 7200RPM 3.5" SEAGATE ST3320418AS(PHARAOH BP) SATA II 16MB LF F/W:CC44	KH.32008.016
	HDD 320GB 3.5" 7200RPM SATA II 16MB HGST HDS721032CLA362 JUPITER	KH.32001.020
	HDD 320GB 3.5" 7200RPM SATA II WD WD3200AAJS-22L7A0 XL320S	KH.32007.011
Optical drive		
	ODD HLDS BD COMBO 12.7MM TRAY DL 4X CT21N LF W/O BEZEL 1.00 SATA FOR HF+WINDOWS7	KO.00407.004
	ODD PANASONIC BD COMBO 12.7MM TRAY DL 4X UJ141AL LF W/O BEZEL SATA FOR HF+WINDOWS7	KO.0040D.004
	ODD HLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X GT31N LF W/O BEZEL SATA FOR HF+WINDOWS7	KU.0080F.014
	ODD PANASONIC BD RW 12.7MM TRLY DL4 4X UJ240A SATA	KU.00407.015
	ODD PLDS SUPER-MULTI DRIVE 12.7MM TRAY PLDS DS-8A5SH LF W/O BEZEL SATA FOR HF+WINDOWS7	KU.0080D.054
Speakers		
	SPEAKER GALLAGHER LEFT/RIGHT	23.U5R01.001
LCD panel		
	*Non-touchscreen panel*	
	CCFL LCD LPL 23" WFHD NONE GLARE LM230WF5 TLC1 LF 300NIT 5MS G8	LK.23008.013
	Touchscreen panel	
	ASSEMBLY LCD MODULE 23" CCFL WFHD NONE GLARE A09 LF 300NIT 5MS 1000:1 HF	6M.U6C01.001
Touchscreen panel film		
	TOUCH PANEL 23" QUANTA WITH CONTROL BOARD	6K.U6C01.001
Case / Cover / Bracket / Assembly		
Front bezel		
	FRONT BEZEL FOR 23" W/CAMERA HOLE	60.U6C01.001
Power button holder		
	HLDR POWER HOLDER PG	42.U5R01.002
Capacitive LED board cover		
	FUNCTION KEY COVER	42.U5R01.003

Category	Part Name	Part Number
Rear cover		
	BACK COVER FOR 23	60.U5R01.005
Computer stand		
	ASSEMBLY HINGE MODULE FOOT STAND	60.U5R01.007
I/O cable cover		
	WIRE COVER	42.U5R01.004
I/O cable plate		
	WIRE HOLDER	42.U5R01.005
Wall mount plate		
	ASSY MB COVER BRACKET PG	60.U5R01.004
Side board cover		
	INVERTER BOARD COVER	60.U5R01.003
Scaler board cover		
	SCALAR COVER BRACKET	33.U5R01.002
USB/audio board cover		
	FRONT IO BOARD BRACKET	60.U5R01.001
HDD cage		
	HDD BRACKET	33.U5R01.001

Category	Part Name	Part Number
ODD bracket		
	ODD BRACKET	33.SEW01.001
ODD bezel		
	ODD BEZEL FOR BD	42.U5M01.001
	ODD BEZEL FOR DVD-RW	60.GB501.001
Riser board bracket		
	RISER CARD BRACKET	33.U5R01.005
PSU bracket		
	POWER SUPPLY BRACKET	33.U5R01.003
Chassis		
	MAIN CHASSIS LED	60.U6B01.001
LCD panel bracket		
	LED BRACKET	33.U6B01.001
CRT port dummy cover		
	CRT COVER	42.SF601.001
HDMI port dummy cover	HDMI DUMMY COVER	42.SF601.002
Cables		
Power button/LED cable	POWER LED CABLE	50.3CM01.001
	POWER LED CABLE	50.3CM20.001
Light bar/capacitive LED function cable	FUNCTION KEY CABLE	50.3CM10.001
	FUNCTION KEY CABLE	50.3CM29.001
Light bar cable	LIGHT BAR CABLE	50.3CM09.001
	LIGHT BAR CABLE	50.3CM28.001
IR receiver cable	IR RECEIVER CABLE	50.U5M01.001
USB/audio board cable	USB CABLE	50.3CN04.001
	USB CABLE	50.3CN04.011
Microphone jack (right panel) cable	FIO MIC CABLE	50.3CM02.001
	FIO MIC CABLE	50.3CM21.001
Speaker cable	SPEAKER CABLE	50.3CM07.001
	SPEAKER CABLE	50.3CM07.002
	SPEAKER CABLE	50.3CM26.001
HDD SATA cable	HDD SATA CABLE	50.SAS01.001
	HDD SATA CABLE 15PIN	50.3CM12.001
	HDD SATA CABLE 15PIN	50.3CM30.001

Category	Part Name	Part Number
ODD SATA cable	ODD POWER CABLE	50.3CM33.001
	ODD POWER CABLE	50.3CM34.001
Converter board cable	INVERTER CABLE 23" WXGA	50.3CM08.001
	INVERTER CABLE 23" WXGA	50.3CM27.001
LCD LVDS cable	LVDS CABLE 23	50.U5R01.009
LED backlight cable	LED PANEL 23 CABLE	50.U6B01.003
Touchscreen image sensor cables	CABLE OPTICAL TOUCH L 10P HT PG	50.U6C01.001
	CABLE OPTICAL TOUCH L 8P HT PG	50.U6C01.003
	CABLE OPTICAL TOUCH L 9P HT PG	50.U6C01.002
Webcam cable	TOUCH CONTROL BOARD AND CAMERA CABLE	50.U6B01.002
Wireless LAN cable	WIRELESS CR CABLE	50.3CM04.001
	WIRELESS CR CABLE	50.3CM23.001
Bluetooth cable (mainboard to scaler board connection)	BLUETOOTH USB CABLE	50.3CM05.001
	BLUETOOTH USB CABLE	50.3CM24.001
Bluetooth cable (scaler board to Bluetooth module connection)	BLUETOOTH CABLE	50.3CM11.001
	BLUETOOTH CABLE	50.3CM15.001
DVI to D-Sub cable	DVI TO D-SUB CABLE	50.U5R01.025
DVI to VGA dongle connector	DVI TO VGA DONGLE CONNECTOR	D0.VGA26.P01
HDMI cable	HDMI CABLE 350MM W/O VGA CARD	50.GB901.001
	HDMI CABLE 600MM	50.U5R01.024
Power supply unit		
	POWER SUPPLY 220W CHICONYPOWER EPA CPB09-D220E AAGASSI	PY.22009.008
	POWER SUPPLY 220W CHICONYPOWER PFC CPB09-D220A AAGASSI	PY.22009.007
	POWER SUPPLY 220W CHICONYPOWER REGULAR CPB09-D220R AAGASSI	PY.22009.006
	POWER SUPPLY 220W EUP 115VAC/230V NPFC DELTA DPS-220UB A EUP	PY.2200F.004
	POWER SUPPLY 220W FULL EPS5.0 DELTA DPS-220UB-2 B EUP	PY.2200F.006
	POWER SUPPLY 220W PFC 230V DELTA DPS-220UB-1 A EUP	PY.2200F.005
AC power cord		
	POWER CORD 110V 3PIN UL USA	27.01518.0I1
	POWER CORD 125V 10A BLACK MEXICO	27.01518.A01
	POWER CORD 125V 7A 3G JAPAN	27.01518.181
	POWER CORD 1800MM 250V CHINA	27.01518.0K1
	POWER CORD 1800MM 250V EURO	27.01518.0J1
	POWER CORD 1800MM BLACK S.AFRAICA	27.01518.0Q1
	POWER CORD 1830MM BLACK TW I-SHENG	27.01518.0M1
	POWER CORD 250V 3PIN 1800MM UK	27.03118.031
	POWER CORD 250V 3PIN INDIA	27.01518.0P1
	POWER CORD AUSTRALIA WITH TESTED TAG	27.01518.0N1

Category	Part Name	Part Number
Keyboard		
USB keyboard		
	KEYBOARD USB 105 KEY CHICONY BLACK UK	KB.USB03.268
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK BELGIUM	KB.USB03.254
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK CZECH	KB.USB03.265
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK DANISH	KB.USB03.264
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK DUTCH	KB.USB03.252
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK FRENCH	KB.USB03.269
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK GERMAN	KB.USB03.270
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK GREEK	KB.USB03.263
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK HEBREW	KB.USB03.257
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK HUNGARIAN	KB.USB03.262
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK ICELANDIC	KB.USB03.255
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK ITALIAN	KB.USB03.250
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK NORDIC	KB.USB03.271
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK POLISH	KB.USB03.258
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK PORTUGUESE	KB.USB03.249
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK ROMANIAN	KB.USB03.266
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK RUSSIAN	KB.USB03.261
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SLOVAK	KB.USB03.260
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SLOVENIAN	KB.USB03.259
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SPANISH	KB.USB03.248
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK SWISS/G	KB.USB03.253
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK TURKISH	KB.USB03.267
	KEYBOARD USB 105 KEY CHICONY KU-0420 BLACK US INTERNATIONAL	KB.USB03.247
	KEYBOARD USB 105 KEY CHICONY KU-0420 STANDARD BLACK ARABIC/ENGLISH	KB.USB03.272

Category	Part Name	Part Number
USB keyboard *(continuation)*	KEYBOARD USB 105 KEY CHICONY KU-0420 USB BLACK SWEDISH	KB.USB03.251
	KEYBOARD USB 105 KEY CHICONY KU-0420 USB NORWEGIAN	KB.USB03.256
Wireless keyboard		
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 105KS BLACK NORWEGIAN WITH PB LOGO	KB.RF403.195
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ARABIC/ENGLISH	KB.RF403.212
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK BELGIUM WITH PB LOGO	KB.RF403.193
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK CZECH WITH PB LOGO	KB.RF403.204
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK DANISH WITH PB LOGO	KB.RF403.203
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK DUTCH WITH PB LOGO	KB.RF403.191
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK FRENCH WITH PB LOGO	KB.RF403.208
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK GERMAN WITH PB LOGO	KB.RF403.209
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK GREEK WITH PB LOGO	KB.RF403.202
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK HEBREW WITH PB LOGO	KB.RF403.196
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK HUNGARIAN WITH PB LOGO	KB.RF403.201
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ICELANDIC WITH PB LOGO	KB.RF403.194
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ITALIAN WITH PB LOGO	KB.RF403.189
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK NORDIC WITH PB LOGO	KB.RF403.210
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK POLISH WITH PB LOGO	KB.RF403.197
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK PORTUGUESE WITH PB LOGO	KB.RF403.188
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK ROMANIAN WITH PB LOGO	KB.RF403.205
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK RUSSIAN WITH PB LOGO	KB.RF403.200
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SLOVAK WITH PB LOGO	KB.RF403.199
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SLOVENIAN WITH PB LOGO	KB.RF403.198
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SPANISH WITH PB LOGO	KB.RF403.187
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SWEDISH WITH PB LOGO	KB.RF403.190

Category	Part Name	Part Number
Wireless keyboard *(continuation)*	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK SWISS/G WITH PB LOGO	KB.RF403.192
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK TURKISH WITH PB LOGO	KB.RF403.206
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK UK WITH PB LOGO	KB.RF403.207
	KEYBOARD RF2.4 105 KEY CHICONY WUG0570 BLACK US INTERNATIONAL WITH PB LOGO	KB.RF403.186
Mouse		
USB mouse		
	MOUSE USB CHICONY MSU0960T-E93L	MS.11200.061
Wireless mouse		
	MOUSE RF2.4 CHICONY MG-0570T W	MS.11200.062
Screws	SCREW	86.U5M01.001
	SCREW	86.U5P01.001
	SCREW NO4-40 L6.5 PAN NI	86.00N03.B40
	SCREW PAN #6-32 L6 NI BOXER WZS	86.00J44.C60
	SCRW M TRUSS M4*8L TB BLACK NI	86.U5R01.003
	SCRW M2 CAP L4 NI	86.NBY01.003
	SCRW M3 CAP 6L BLK ZN H801	86.U5R01.005
	SCRW M4-P07 CAP 6L BLK ZN	86.U5R01.002
Accessory		
Remote control	REMOTE CONTROL PHILIPS RC2604301/01B MSFT CODE PAIR WITH OVU430008 EMEA FOR WINDOWS7	RT.11300.023
	REMOTE CONTROL PHILIPS RC2604302/01B MSFT CODE PAIR WITH OVU430008 US FOR WINDOWS7	RT.11300.022
	REMOTE CONTROL PHILIPS RC2604307/01BG PAIR WITH RV.11000.007 EMEA FOR WINDOWS7	RT.11300.021
	REMOTE CONTROL SMK RRS9003-3406E QUATRO PULSE US WITH BATTERY PACK FOR WINDOWS7	RT.11300.025
	REMOTE CONTROLLER PHILIPS RC2604701/01B MSFT CODE JAPAN; PAIR WITH OVU430005 WINDOWS7	RT.11300.024
USB dongle receiver	RECEIVER CHICONY DANGLE RECEIVER USB EXTERNAL	RV.11000.022
Miscellaneous	GLUE FOR GLASS PANEL LEFT AND RIGHT 23	47.U6C01.002
	GLUE FOR GLASS PANEL TOP AND LOWER 23	47.U6C01.001

Appendix A

Model Definitions and Configurations

This appendix provides features summary for each of the Packard Bell oneTwo L5860 / L5861 computer model configurations.

Packard Bell oneTwo L5860 Model Configurations

Item	Specification	Specification
Project name	pElena_AIO	
Model name	oTL5860	
Acer part number	S1.U6B02.001	S1.U6B02.002
Description	oTL5860 Sample EMEA001 W7HP64PWW0101/Ci5-2400/2G*2/ 500G*1/NBDCB4XS/D23H/GT420/802.11 b/g/n/RF2.4/0420_PB/RF2.4/0420_PB/ VGA KIT	oTL5860 Sample EMEA002 W7HP64PWW0101/Ci5-2400/2G*2/ 500G*1/NBDCB4XS/D23H/GT420/802.11 b/g/n/RF2.4/0420_PB/RF2.4/0420_PB/ VGA KIT
Chassis	HX093I	
Base unit	EMEA001	EMEA002
Bezel	PAIO1023	
LCD panel	D23FHD	
Mainboard	pElena_AIO EIH67MK_USB3(N)_logo(Y)_Eup(Y)	
Processor	Ci5-2400	
DIMM 1	U2GBIII13	
DIMM 2	U2GBIII13	
Graphics card	Nvidia GT420 1GB DVI/HDMI LP	
Hard drive	D500GB7.2KS	
Optical drive	NBDCB4XS	
Card reader	Yes	
Add-on card	802.11 b/g/n (mini-card/USB)(half size) Kit	
Power supply unit	PFC 220W	Non-PFC 220W (8.5L) EuP
Keyboard	RF2.4/0420_PB	
Mouse	RF2.4/0420_PB	
Accessory	VGA Kit_DTX AIO	
Operating system	W7HP64	

Packard Bell oneTwo L5861 Model Configurations

Common features

- Project name: pElena_AIO
- Model name: oTL5861
- LCD: D23FHD
- Mainboard: pElena_AIO EIH67MK_USB3(N)_logo(Y)_Eup(Y)
- DIMM1: U2GBIII13
- Add-on card 1: 802.11 b/g/n (mini-card/USB)(half size) Kit
- Card reader: Yes
- Accessory: VGA Kit_DTX AIO
- Operating system: W7HP64

Acer Part No.	Base Unit	Description	Chassis	Bezel	CPU	DIMM2	HDD	ODD	VGA	TV tuner	Add-on card 1	PSU	KB	Mouse	Remote control
PW.U6CE2.030	EMEA004	oTL5861 CH EMEA004 W7HP64PNL8606/Ci5-2300/ 2G*2/1000G*1/NSM8XS/D23H/ GT420 1G/A756 DTX/802.11 b/g/ n/KB/RF2.4/0420_PB/VGA KIT	HX093I_L	PAIO10 23_L	Ci5-2300	U2GBII I13	D1000GB 5.4KS	NSM8 XS	Nvidia GT420 1GB DVI/ HDMI LP	PCIe/Digital/ DVB-T/ DTXAIO_Kit	802.11 b/g/n (mini-card/ USB)(half size) Kit	PFC 220W (8.5L) EuP	RF2.4/ 0420_PB	RF2.4/ 0420_PB	EMEA Win7 WMC
PW.U6C02.001	EMEA004	oTL5861 CH EMEA004 W7HP64PWW0101/Ci5-2300/ 2G*1+1G*1/640G*1/NSM8XS/ D23H/315 512M/802.11 b/g/n/ KB/mouse/VGA KIT	HX093I_L	PAIO10 23_L	Ci5-2300	U1GBII I13	D640GB7. 2KS	NSM8 XS	Nvidia 315 512MB HDMI/ DVI LP	N	802.11 b/g/n (mini-card/ USB)(half size) Kit	PFC 220W (8.5L) EuP	USB/0420_PB	USB/0420	N
PW.U6C02.002	EMEA004	oTL5861 CH EMEA004 W7HP64PWW0101/Ci5-2300/ 2G*2/1500G*1/NBDCB4XS/ D23H/GT420 1G/Bluetooth/KB/ RF2.4/0420_PB/VGA KIT	HX093I_L	PAIO10 23_L	Ci5-2300	U2GBII I13	D1500GB 5.4KS	NBDC B4XS	Nvidia GT420 1GB DVI/ HDMI LP	N	Bluetooth Kit	PFC 220W (8.5L) EuP	RF2.4/ 0420_PB	RF2.4/ 0420_PB	N
S1.U6C02.001	EMEA001	oTL5861 Sample EMEA001 W7HP64PWW0101/Ci5-2400/ 2G*2/500G*1/NBDCB4XS/D23H/ GT420/802.11 b/g/n/RF2.4/ 0420_PB/RF2.4/0420_PB/VGA KIT	HX093I	PAIO10 23	Ci5-2400	U2GBII I13	D500GB7. 2KS	NBDC B4XS	Nvidia GT420 1GB DVI/ HDMI LP	N	802.11 b/g/n (mini-card/ USB)(half size) Kit	PFC 220W (8.5L) EuP	RF2.4/ 0420_PB	RF2.4/ 0420_PB	N
S1.U6C02.002	EMEA002	oTL5861 Sample EMEA002 W7HP64PWW0101/Ci5-2400/ 2G*2/500G*1/NBDCB4XS/D23H/ GT420/802.11 b/g/n/RF2.4/ 0420_PB/RF2.4/0420_PB/VGA KIT	HX093I	PAIO10 23	Ci5-2400	U2GBII I13	D500GB7. 2KS	NBDC B4XS	Nvidia GT420 1GB DVI/ HDMI LP	N	802.11 b/g/n (mini-card/ USB)(half size) Kit	Non-PFC 220W (8.5L) EuP	RF2.4/ 0420_PB	RF2.4/ 0420_PB	N

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested for both the Home Basic and Home Premium editions of Microsoft's Windows Vista operating system.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the Packard Bell oneTwo L5860 / L5861 Vista Compatibility Test Report released by the Acer Mobile System Testing Department.

Item	Device Name	Vendor
Access Point	Air Station Wireless NFINITI [Model Num: WZR-G144N], 802.11n/g/b	Buffalo
	Buffalo Air Station NFINITI [ModeNum:WZR2-G300N], 802.11n/g/b	Buffalo
Bluetooth Access Point	Bluetooth Access Point [ModeNum:BT300]	X Bridge
Bluetooth Devices	Bluetooth Stereo Headset [ModeNum:HT820]	Motorola
	Bluetooth Mouse [ModeNum:097855020512]	Logitech
	Motorola Bluetooth Wireless Headset H300	Motorola
	Sony Ericsson Stereo Bluetooth Headset HBH-DS970	Sony
External LCD	P243W 24-inch LCD Monitor	Acer
	P244W 24-inch LCD Monitor	Acer
	SP2208WFP 22-inch LCD Monitor	Dell
	UltraSharp 3008WFP 30-inch LCD Monitor	Dell
	2407FPW 24-inch LCD Monitor	Dell
	UltraSharp E2408WFP 24-inch Widescreen HDMI	Dell
Earphone /Microphone	Hawk Stereo Headset 933	Hawk
Projector	3300MP Projector	Dell
SIM Card	FarEasTone 3G SIM Card	FarEasTone
	Chunghwa Telecom 3G SIM Card	Chunghwa Telecom
TV	W37G (HDMI)	Westinghouse
	TC-37MPK (VGA/HDMI)	Panasonic
USB 3G Card	Huawei Mobile Connect E220 USB Modem 3G (E220: HSDPA/UMTS/EDGE/GPRS/GSM)	Huawei
USB Camera	Canon Digital IXUS 860 IS Digital Compact Camera (8.0 MP CCD sensor/DIGIC III with Face Detection AF/AE/FE/28mm wide-angle lens with optical Image Stabilizer, Media storage: SD, SDHC, MMC, MMCplus, built-in SD 32 MB)	Canon
USB Storage Drive	6-in-1 Flash Card Reader/Writer	PQI
USB Flash Drive	Transcend JetFlash USB 2.0 Flash Drive V85 8 GB Memory Key	Transcend
	Apacer AH421 8 GB	Apacer
	A-Data PD16 Vista 16 GB	A-Data
	Transcend JetFlash USB 2.0 Flash Drive V10 16 GB Memory Key	Transcend

Item	Device Name	Vendor
USB HDD	2.5-inch Portable 80 GB Hard Disk	Transcend
USB ODD	DVD+R/RW (USB 2.0)	Plextor
USB Hub and Others	Huawei Mobile Connect E220 USB Modem 3G (E220: HSDPA/UMTS/EDGE/GPRS/GSM)	Huawei
	PowerSync USB2.0 4-Port Mini Hub (HU151W White)	PowerSync
	Techworks 4-Port USB2.0 Mini Hub (OW4PTUSBHB)	Techworks
USB Keyboard/Mouse	First Wheel Mouse	Logitech
	Internet Navigator Keyboard	Logitech
	Dell L30U 0N242F USB Keyboard	Dell
USB Printer	HP Deskjet F4280 All-in-One: Printer/ Scanner/Copier, 1200x2400 dpi)	HP
USB Speaker/Joystick	iFun USB Speaker (JS1200UA)	JS
	Dell USB Speaker	Dell
Wireless Printer	Photosmart C309 (CC35A) All-in-One Printer (4x6 photos/ CD/DVD/Quick Forms, /Scanner/Copier/Fax) Port: USB2.0/Ethernet/PictBridge/802.11g/BT	HP
	Photosmart C4580 All-in-One Printer (4x6 photos) /Scanner/ Copier Port: USB2.0/802.11g.b/Memory Card	HP
Memory Stick	High Speed 1 GB Memory Stick Pro Duo	Lexar
	MS PRO Dou 2 GB High Speed	Sony
	MS PRO 2 GB Memory Card	Sony
	SanDisk Memory Stick Micro (M2) 8GB Card	SanDisk
Multimedia Card	RS-MMC 128MB Memory Card	SanDisk
	RS-MMC Mobile 256MB Memory Card	PQI
	Transcend MMC plus 4GB Card	Transcend
	Turbo 200X 2GB MMC Card	A-DATA
SD Card	4GB SD PRO Memory Card	RiDATA
	SanDisk Multi-use SD Class 2 Memory Card 2GB	SanDisk
	SD Card 2 GB (150x Hi-Speed)	Apacer
	SanDisk MicroSDHC 4 GB Card with Adapter	SanDisk
	Kingston SDHC SD4 32 GB Card	Kingston
xD Card	Olympus xD-Picture Card M+ 2GB Speed Card	Olympus
	Fujifilm xD-Picture Card Type M 2 GB	Fujifilm

Approved Vendor List (AVL)

Component	Vendor	Key Specifications	Model	Acer Part Number
Mainboard kit	ECS	pElena_AIO EIH67MK_USB3(N)_logo(N)_Eup(Y)		MB.U6B07.001
Front bezel	Wistron	Wistron PB Bezel PAIO1023 for 23" w/i HX093I chassis	PAIO1023	PZ.11900.195
Chassis		Wistron(LY) Chassis xSFF HX093I for AIO GAIO_PAIO_1023 Bezel	HX093I	HS.13100.139
Heat sink fan	CM	CM iCooler LGA1156 AIO DP6-9KDSA-R2-GP w/i pure al 20mm w/ i 9225 fan for DTX AIO, 73W		HI.10800.091
Processor	Intel	Core i7-2600S (2.8G 8M DDR3 1333FSB) , D2 , 65W	Ci7-2600S	KC.26001.SI7
		Core i5-2500S (2.7G 6M DDR3 1333) , D2 , 65W	Ci5-2500S	KC.25001.SI5
		Core i5-2400S (2.5G 6M DDR3 1333) , D2 , 65W	Ci5-2400S	KC.24001.SI5
		I3-2100		KC.21001.CI3
		I3-2120		KC.21201.CI3
Memory	A-Data	DDRIII1333	AD63I1A0823EU	KN.1GB0C.010
		DDRIII1333	AD63I1B1624EU	KN.2GB0C.007
	Apacer	DDRIII1333	75.073C1.G02 0.065um	KN.1GB01.31
	Kingston	DDRIII1333	ACR128X64D3U1333C9 LF 128*8 0.07um	KN.1GB07.002
		DDRIII1333	ACR256X64D3U1333C9 LF 128*8 0.07um	KN.2GB07.002
	Nanya	DDRIII1333	NT2GC64B88B0NF-CG 256*8 50nm	KN.2GB03.022
	Samsung	DDRIII1333	M378B2873FHS-CH9 128*8 46nm	KN.1GB0B.036
		DDRIII1333	M378B5773CH0-CH9 256*8 46nm	KN.2GB0B.029
	Unifosa	DDRIII1333	GU502203EP0201 LF 128*8 0.065um	KN.1GB0H.015
		DDRIII1333	GU512303EP0202 LF 128*8 0.065um	KN.2GB0H.009
Hard drive	HGST	7200rpm 320GB HDS721032CLA362	Jupiter	KH.32007.011
		7200rpm 500GB HDS721050CLA362	Jupiter	KH.50007.012
		7200rpm 1000GB HDS721010CLA332	Jupiter	KH.01K07.003
	Seagate	7200rpm 320GB ST3320418AS	Pharoah BP	KH.32001.020
		7200rpm 500GB ST3500418AS	Pharaoh BP	KH.50001.019
		7200rpm 1000GB ST31000528AS	Pharoah BP	KH.01K01.013
		7200rpm 1500GB ST31500341AS	Brinks	KH.15K01.002

Component	Vendor	Key Specifications	Model	Acer Part Number
Hard drive *(continuation)*	WD	7200rpm 320GB WD3200AAJS-22L7A0 XL320S-3	XL320S-3	KH.32008.016
		7200rpm 500GB WD5000AAKS-22V1A0	XL500	KH.50008.014
		5400rpm 1000GB WD10EARS-22Y5B1	GP500M-2D	KH.01K08.008
		5400rpm 1500GB WD15EARS-22MVWB0	GP667	KH.15K08.003
Optical drive	HLDS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X	GT31N	KU.0080D.054
		ODD HLDS BD COMBO 12.7mm Tray DL 4X	CT21N	KO.0040D.004
	PLDS	ODD PLDS Super-Multi DRIVE 12.7mm Tray DL 8X	DS-8A5SH	KU.0080F.014
	Sony	ODD PANASONIC BD COMBO 12.7mm Tray DL 4X	UJ141AL	KO.00407.004
		ODD PANASONIC BD RW 12.7mm Tray DL 4X	UJ240A	KU.00407.015
TV tuner card (PCI-E x1)	AVerMedia	AVerMedia A756 TV Tuner Card PCIe single Pure Digital DVB-T(TU.10500.080) + IR receiver for H753_650mm(WST 50.3CM18.001)		TU.10500.081
Graphics card (PCI-E x16)	PCP	HD5570 1GB DDR 3 (128BITS) SAMSUNG DVI HDMI W/LP BKT ROHS		VG.APC55.711
		HD5570 1GB 128bits sDDR3 DVI+HDMI LP (New Hynix -1.2)		VG.APC55.732
		NV 315 512MB 64bits sDDR3 DVI+HDMI LP (New Hynix -1.2)		VG.PCPT3.164
		HD5450 512MB SDDR 3 (64BITS) SAMSUNG DVI HDMI W/LP BKT ROHS		VG.APC54.511
		HD5450 512MB SDDR 3 (64BITS) SAMSUNG DVI HDMI W/LP BKT ROHS 4 LAYER		VG.APC54.513
		HD5450 512MB 64bits sDDR3 DVI+HDMI LP (New Hynix -1.2)		VG.APC54.532
		HD5450 512MB 64bits sDDR3 DVI+HDMI LP 4 LAYER		VG.APC54.534
		GT420 1GB 128bit DVI-I+HDMI LP Hynix		VG.PCPT4.212
		GT420 1GB 128bit DVI-I+HDMI LP Samsung		VG.PCPT4.211
	ECS	NV G315 512MB (64BIT) DDR3 DVI HDMI LP BRACKET ROHS		VG.ECS31.5L1
		HD5450 512MB (64BIT) DDR3 DVI HDMI VGA LP BRACKET ROHS		VG.ECS54.511
USB 3.0 add-in card	IOI	USB 3.0 card (Acer Customized Low-Profile) Kit		PA.14000.044
WLAN module	Lite-On	WN6607LH (per pcs requried 2pcs of Antenna)	WN6607LH	NI.10200.042
Bluetooth module	Chicony	BC10B	BC10B-04C1	BT.14500.007
LCD panel	LGD	LM230WF5	TLC1	LK.23008.013

Component	Vendor	Key Specifications	Model	Acer Part Number
Power supply unit	Chicony	CPB09-D220R		PY.2200F.004
		CPB09-D220A		PY.2200F.005
		CPB09-D220E (FR 220W, ES)		PY.2200F.006
	Delta	DPS-220UB-3A		PY.22009.009
		DPS-220UB-4A		PY.22009.010
		DPS-220UB-5A		PY.22009.011
	Lite-On	PS-5221-06A2		PY.2200B.009
		PE-5221-08AF		PY.2200B.010
		PS-5221-9AB		PY.2200B.011
USB keyboard	Lite-On	USB/Godiva	Keyboard Lite-On SK-9020 USB 104KS Black US	KB.USB0B.283
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black UK	KB.USB0B.284
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Spanish Latin	KB.USB0B.285
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black English/Canadian French	KB.USB0B.286
		USB/Godiva	Keyboard Lite-On SK-9020 USB 104KS Black Traditional Chinese	KB.USB0B.287
		USB/Godiva	Keyboard Lite-On SK-9020 USB 104KS Black Thailand	KB.USB0B.373
		USB/Godiva	Keyboard Lite-On SK-9020 USB 109KS Black Japanese	KB.USB0B.374
		USB/Godiva	Keyboard Lite-On SK-9020 USB 109KS Black Brazilian Portuguese leverage the JA 109 key top cover	KB.USB0B.375
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black US International	KB.USB0B.378
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Spanish	KB.USB0B.379
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Portuguese	KB.USB0B.380

Component	Vendor	Key Specifications	Model	Acer Part Number
USB keyboard *(continuation)*		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Italian	KB.USB0B.381
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Swedish	KB.USB0B.382
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Dutch	KB.USB0B.383
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Swiss/G	KB.USB0B.384
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Belgium	KB.USB0B.385
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Icelandic	KB.USB0B.386
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Norwegian	KB.USB0B.387
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Hebrew	KB.USB0B.388
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Polish	KB.USB0B.389
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Slovenian	KB.USB0B.390
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Slovak	KB.USB0B.391
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Russian	KB.USB0B.392
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Hungarian	KB.USB0B.393
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Greek	KB.USB0B.394
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Danish	KB.USB0B.395
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Czech	KB.USB0B.396
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Romanian	KB.USB0B.397

Component	Vendor	Key Specifications	Model	Acer Part Number
USB keyboard *(continuation)*		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Turkish	KB.USB0B.398
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black French	KB.USB0B.399
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black German	KB.USB0B.400
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Nordic	KB.USB0B.401
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Arabic/English	KB.USB0B.402
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Arabic/French	KB.USB0B.403
		USB/Godiva	Keyboard Lite-On SK-9020 USB 105KS Black Swiss/FR	KB.USB0B.404
Wireless keyboard	Lite-On	RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 104KS Black US	KB.RF40B.083
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 104KS Black Traditional Chinese	KB.RF40B.084
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 104KS Black Thailand	KB.RF40B.085
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Spanish Latin	KB.RF40B.086
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 107KS Black Brazilian Portuguese	KB.RF40B.087
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 109KS Black Japanese	KB.RF40B.088
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black UK	KB.RF40B.089
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black English/ Canadian French	KB.RF40B.090
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black US International	KB.RF40B.093

Component	Vendor	Key Specifications	Model	Acer Part Number
Wireless keyboard *(continuation)*		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Spanish	KB.RF40B.094
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Portuguese	KB.RF40B.095
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Italian	KB.RF40B.096
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Swedish	KB.RF40B.097
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Dutch	KB.RF40B.098
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Swiss/G	KB.RF40B.099
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Belgium	KB.RF40B.100
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Icelandic	KB.RF40B.101
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Norwegian	KB.RF40B.102
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Hebrew	KB.RF40B.103
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Polish	KB.RF40B.104
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Slovenian	KB.RF40B.105
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Slovak	KB.RF40B.106
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Russian	KB.RF40B.107
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Hungarian	KB.RF40B.108
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Greek	KB.RF40B.109
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Danish	KB.RF40B.110

Component	Vendor	Key Specifications	Model	Acer Part Number
Wireless keyboard *(continuation)*		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Czech	KB.RF40B.111
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Romanian	KB.RF40B.112
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Turkish	KB.RF40B.113
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black French	KB.RF40B.114
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black German	KB.RF40B.115
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Nordic	KB.RF40B.116
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Arabic/English	KB.RF40B.117
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Arabic/French	KB.RF40B.118
		RF2.4/Godiva	Keyboard Lite-On SK-9061 RF2.4 105KS Black Swiss/FR	KB.RF40B.119
USB mouse	Logitech	USB/P5_PB	Logitech Optical mouse USB M-U0027-O with PB logo & polish cover	MS.11200.086
	Primax	USB/P5_PB	Primax Optical mouse USB MOFFUO with PB logo & polish cover	MS.11200.087
Wireless mouse	Chicony	RF2.4/0420_PB	Chicony mouse RF2.4 MG-0570T without logo	MS.11200.062
USB dongle receiver	Chicony	Chicony Dangle Receiver USB external receiver		RV.11000.022

Component	Vendor	Key Specifications	Model	Acer Part Number
MCE remote controller/receiver	Philips	Philips Remote Controller RC2604307/01BG for EMEA ;pair with RV.11000.007	EMEA Win7/Philips	RT.11300.021
		Philips Remote Controller RC2604301/01B MSFT code EMEA;pair with OVU430005	EMEA Win7 WMC	RT.11300.023
		Philips Remote Controller RC2604302/01B MSFT code US;pair with OVU430005	US Win7 WMC	RT.11300.022
		Philips Remote Controller RC2604701/01B MSFT code Japan; pair with OVU430005	US Win7 WMC	RT.11300.024
	SMK	SMK Remote Controller US RRS9003-3406E SMK Quatro Pulse;with Battery Pack	US Win7 WMC_SMK	RT.11300.025

Appendix C

Online Support Information

This appendix describes online technical support services available to help you repair your Acer products.

If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer branch offices and regional business units can access our website. However some information sources will require a user ID and password. These can be obtained directly from Acer CSD Taiwan.

Acer's website offers you convenient and valuable support resources whenever you need them.

In the Technical Information section you can download information on all Acer notebook, desktop, All-In-One (AIO) and server models including:

- Service guides for all models
- User's manuals
- Training materials
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included a PDF file to facilitate the problem-free downloading of our technical material.

Also available on this website are:

- Detailed information on Acer's International Traveler's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

We are always looking for ways to optimize and improve our services, so if you have any suggestions or comments, please do not hesitate to communicate these to us.