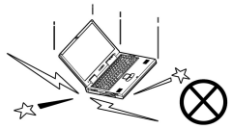
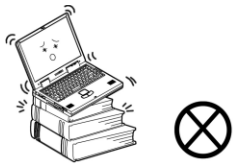
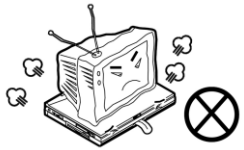
SERVICE MANUAL

notebook

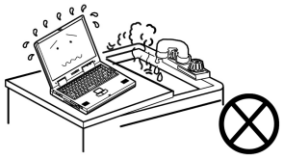
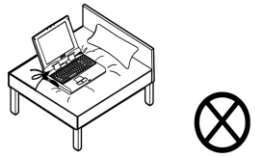
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

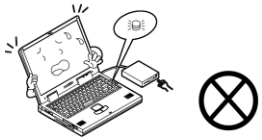
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

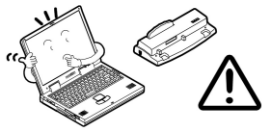
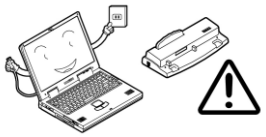
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*
			

3. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

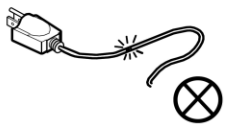
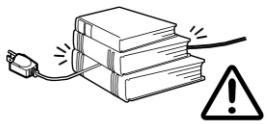
Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Level

Click the battery icon  in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on CD/DVD

This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Insert the battery and make sure it is locked in position.
4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
5. Attach the AC/DC adapter to the DC-In jack on the right of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
7. Press the power button to turn the computer "on".

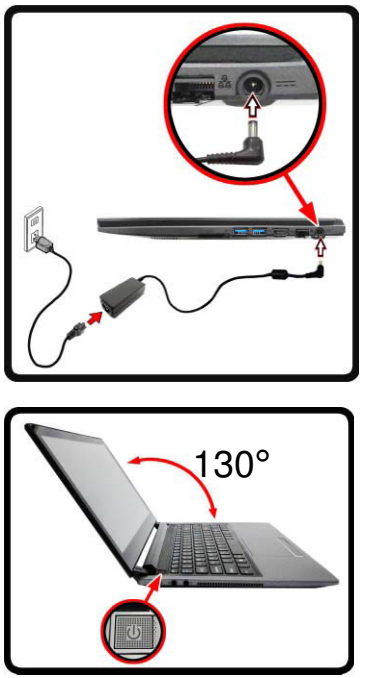


Figure 1
Opening the Lid/LCD/ Computer with AC/DC Adapter Plugged-In

Shut Down

Note that you should always shut your computer down by choosing the **Shut down** command in ***Windows*** (see below). This will help prevent hard disk or system problems.

Click the icon in the **Start Screen** and choose **Shut down** from the menu.

Or

Right-click the **Start button** at the bottom of the **Start Screen** or the **Desktop** and choose **Shut down or sign out > Shut down** from the context menu.

Specifications

Latest Specification Information

The specifications listed here are correct at the time of sending them to the press. Certain items (particularly processor types/speeds) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for more details.

CPU

The CPU is not a user serviceable part. Accessing the CPU in any way may violate your warranty.

Processor Options

Intel® Core™ i7 Processor
i7-5500U (2.40GHz)
4MB L3 Cache, **14nm**, DDR3L-1600MHz, TDP 15W
Intel® Core™ i5 Processor
i5-5200U (2.20GHz)
3MB L3 Cache, **14nm**, DDR3L-1600MHz, TDP 15W
Intel® Core™ i3 Processor
i3-5010U (2.10GHz), i3-5005U (2.00GHz)
3MB L3 Cache, **14nm**, DDR3L-1600MHz, TDP 15W
Intel® Pentium® Processor
3805U (1.90GHz)
2MB L3 Cache, **14nm**, DDR3L-1600MHz, TDP 15W

Intel® Celeron® Processor
3755U (1.70GHz), 3205U (1.50GHz)
2MB L3 Cache, **14nm**, DDR3L-1600MHz, TDP 15W

BIOS

64Mb SPI Flash ROM
AMI BIOS

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR3L 1600MHz** Memory
Memory Expandable up to 16GB

(The real memory operating frequency depends on the FSB of the processor.)

Storage

One Changeable 2.5" 7mm (h) SATA HDD/SSD

(**Factory Option**) One mSATA Solid State Drive (SSD)

LCD Options

14" (35.56cm) HD/HD+/FHD

Audio

High Definition Audio Compliant Interface
2 * Built-In Speakers
Built-In Microphone

Video Adapter

Intel GPU (CPU integrated)

Intel HD Graphics 5500 (Core i7/i5/i3 CPU)
Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)
Microsoft DirectX®11.1 Compatible

Intel HD Graphics (Pentium/Celeron CPU)
Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)
Microsoft DirectX®11.1 Compatible

Security

Security (Kensington® Type) Lock Slot
BIOS Password
Intel® PTT
(**Factory Option**) TPM 2.0

Pointing Device

Built-in Touchpad

Keyboard

“WinKey” keyboard (with embedded numeric keypad)

Mini Card Slots

Slot 1 for **WLAN and Bluetooth** Combo Module
Slot 2 for mSATA **SSD**
Or
(**Factory Option**) Slot 2 for **M.2 3G/4G** Module

Card Reader

Embedded Multi-In-1 Card Reader
- MMC (MultiMedia Card) / RS MMC
- SD (Secure Digital) / Mini SD / SDHC/ SDXC

Communication

Built-In Gigabit Ethernet LAN

1.0M HD PC Camera Module

(**Factory Option**) 3G or 4G M.2 Module

WLAN/ Bluetooth Half Mini-Card Modules:

(**Factory Option**) Intel® Wireless-AC 3160 Wireless LAN (**802.11ac**) + Bluetooth 4.0

(**Factory Option**) Intel® Wireless-AC 7260 Wireless LAN (**802.11ac**) + Bluetooth 4.0

(**Factory Option**) Intel® Wireless-N 7260 Wireless LAN (**802.11b**/**g**/**n**) + Bluetooth 4.0

(**Factory Option**) Third-Party Wireless LAN (**802.11b**/**g**/**n**) + Bluetooth 4.0

Interface

Two USB 3.0 Ports

One HDMI-Out Port

One Headphone-Out Jack

One Microphone-In Jack

One RJ-45 LAN Jack

One DC-in Jack

Environmental Spec

Temperature

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Power

Full Range AC/DC Adapter

AC Input: 100 - 240V, 50 - 60Hz

DC Output: 19V, 3.42A (**65W**)

Removable 4 Cell Smart Lithium-Ion Battery Pack, 44.6WH

Dimensions & Weight

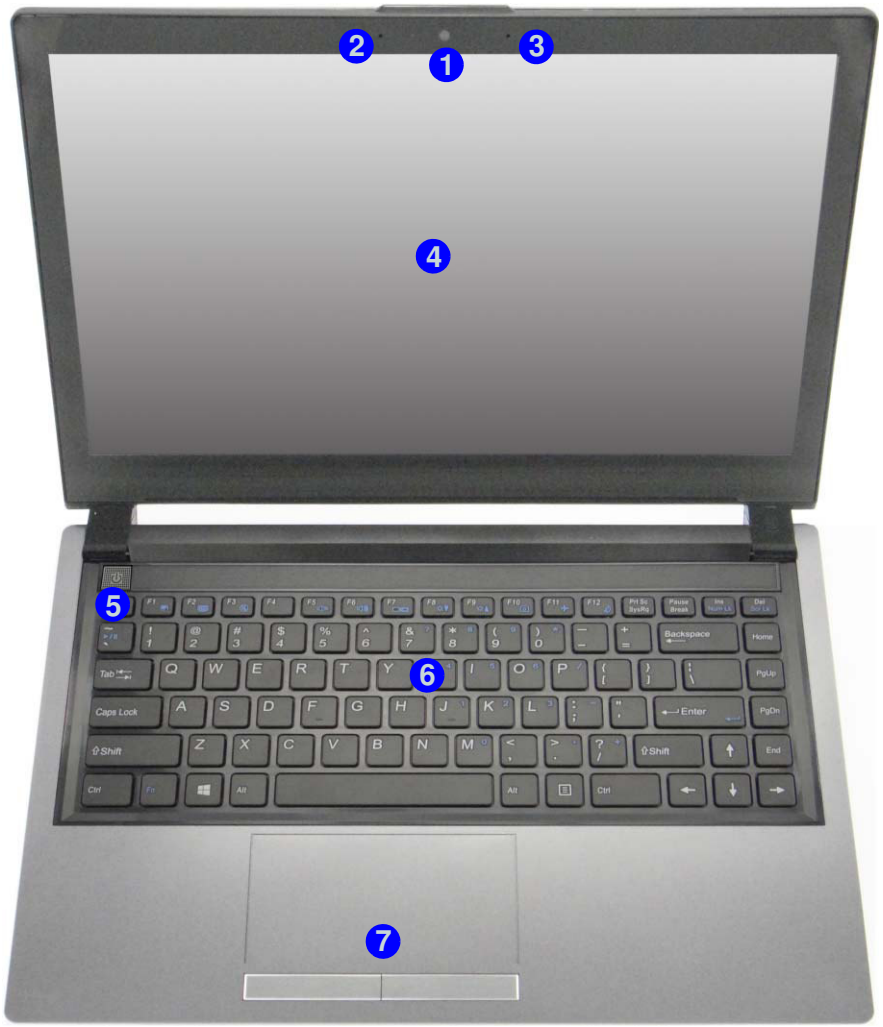
340mm (w) * 240mm (d) * 21mm (h)

1.8kg (Barebone with Battery)

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. PC Camera
2. PC Camera LED
3. Built-In Microphone
4. LCD
5. Power Button
6. Keyboard
7. Touchpad & Buttons



External Locator - Front & Right Side Views

FRONT VIEW

Figure 2
Front View

1. LED Indicator

RIGHT SIDE VIEW

Figure 3
Right Side View

1. Multi-in-1 Card Reader
2. USB 3.0 Ports
3. HDMI-Out Port
4. RJ-45 LAN Jack
5. DC-In Jack

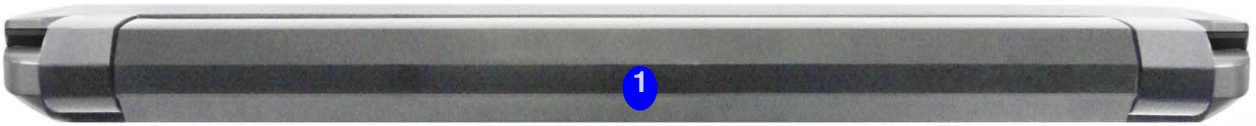
External Locator - Left Side & Rear View

Figure 4
Left Side View

1. Security Lock Slot
2. Microphone-In Jack
3. Headphone-Out Jack
4. Vent/Fan Intake/ Outlet

Figure 5
Rear View

1. Battery



External Locator - Bottom View

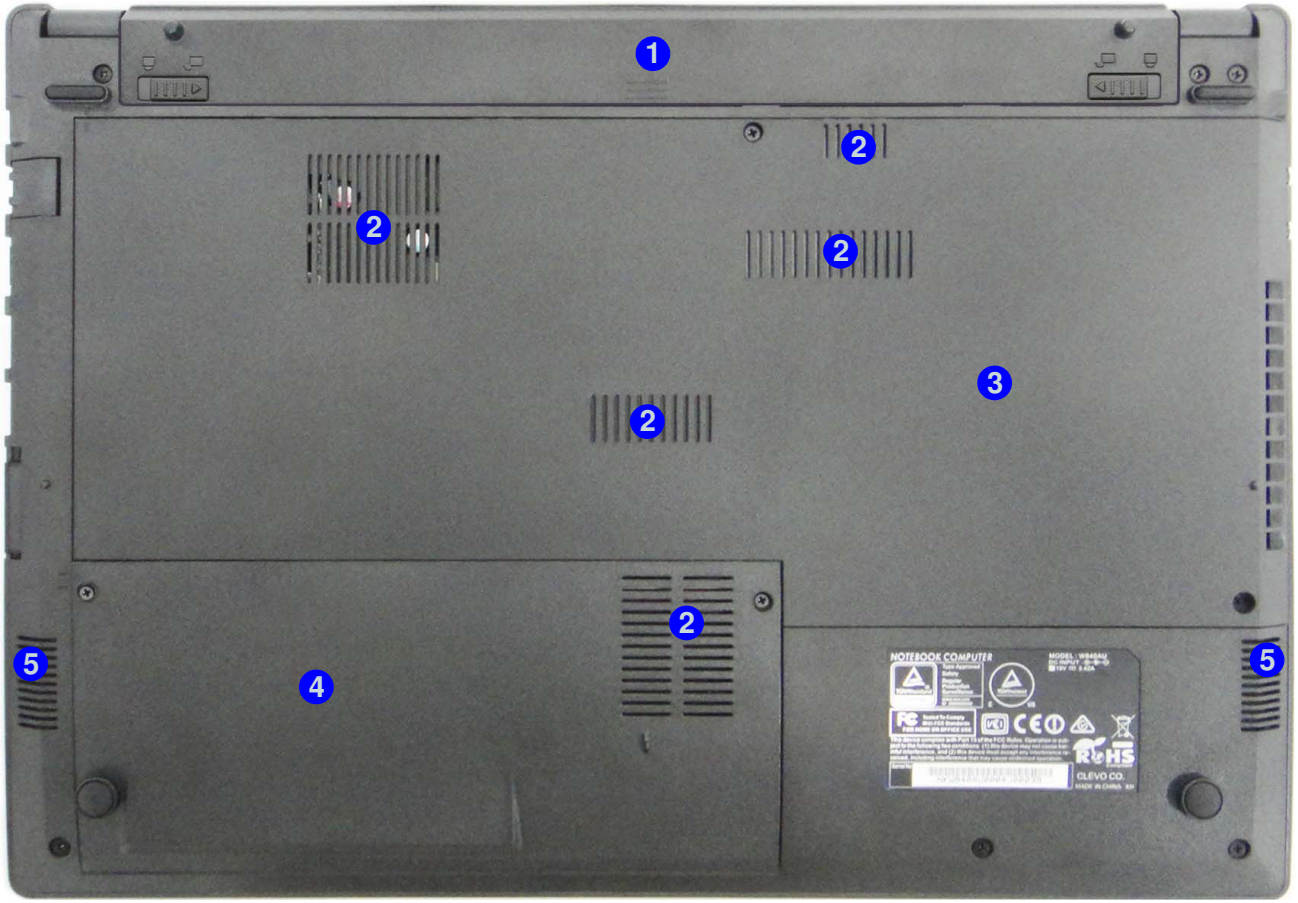


Figure 6
Bottom View

1. Battery
2. Vent/Fan Intake/ Outlet
3. Component Bay Cover
4. HDD Bay
5. Speakers

Overheating

To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Removing the Battery

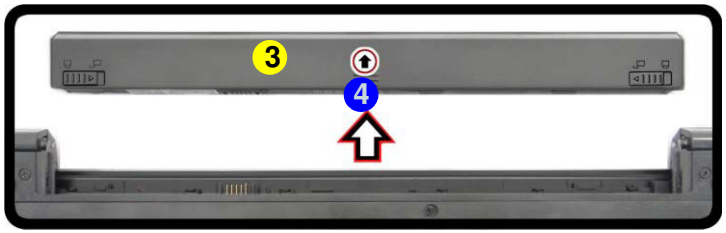
1. Turn the computer **off**, and turn it over.
2. Slide the latch 1 in the direction of the arrow (*Figure 1a*).
3. Slide the latch 2 in the direction of the arrow, and hold it in place (*Figure 1a*).
4. Slide the battery 3 in the direction of the arrow 4 (*Figure 1b*).
5. Reinsert the battery as illustrated below 5 (*Figure 1c*).

Figure 1
Battery Removal

a. Slide the latch and hold it in place.
b. Slide the battery out.
c. Reinsert the battery.

a.

b.



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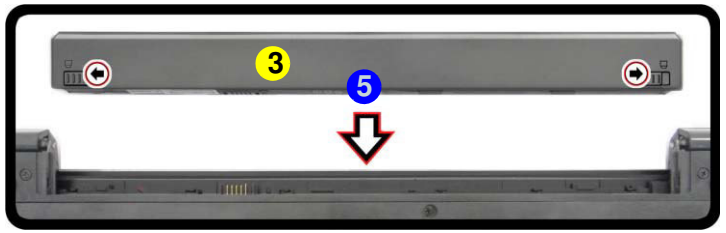


3. Battery

Figure 2
RAM Module Removal

a. Remove the screws.
b. Slide the component bay cover out.
c. Remove the component bay cover.

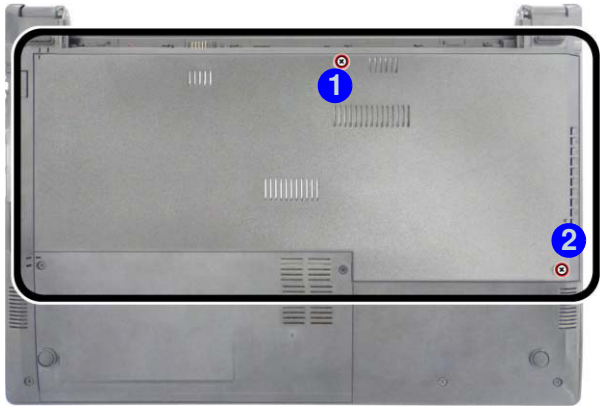
Removing the System Memory (RAM)

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR3L Up to 1600 MHz. The SO-DIMM modules supported are 1024MB and 2048MB **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

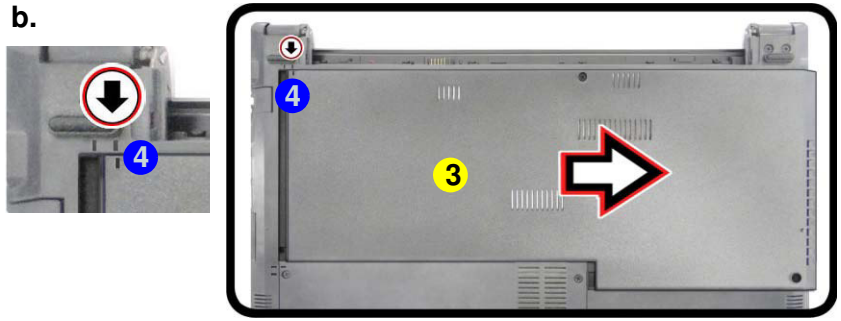
Memory Upgrade Process

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*).
2. Locate the component bay cover and remove screws 1 - 2 (*Figure 2a*).
3. Slide the bay cover 3 until the cover and case indicators 4 are aligned (*Figure 2b*).
4. The RAM modules will be visible at point 5 on the mainboard (*Figure 2b*).

a.



b.



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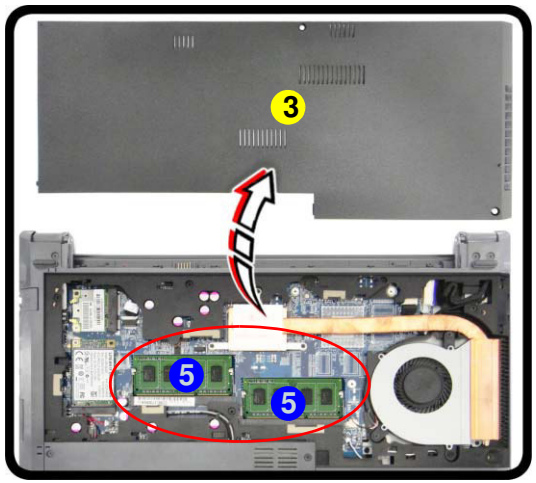


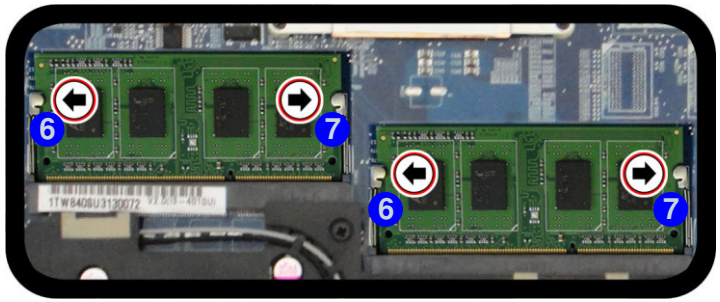
3. Component Bay Cover

5. Gently pull the two release latches (6 & 7) on the sides of the memory socket in the direction indicated by the arrows (*Figure 2b*). The RAM module 8 will pop-up, and you can then remove it.
6. Pull the latches to release the second module if necessary.
7. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
8. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE IT; it should fit without much pressure.
9. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
10. Reinsert the component bay cover by placing it on the bottom case assembly, and make sure the case markers line up 9.
11. Apply downward pressure and sliding the cover in the direction of arrow 10.
12. Replace the screws and battery (see *page 2 - 6*).
13. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

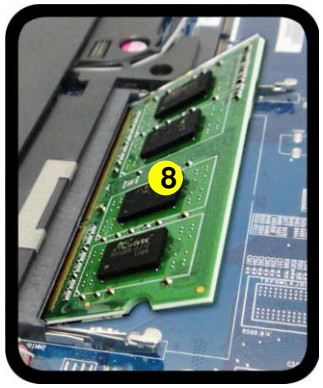
Figure 3
RAM Module Removal (contd)

d. Pull the release latches to remove the module(s).
e. Remove the module(s).
f. Reinstall the component bay cover.

d.



e.



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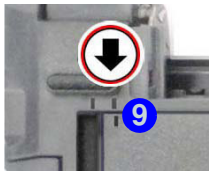
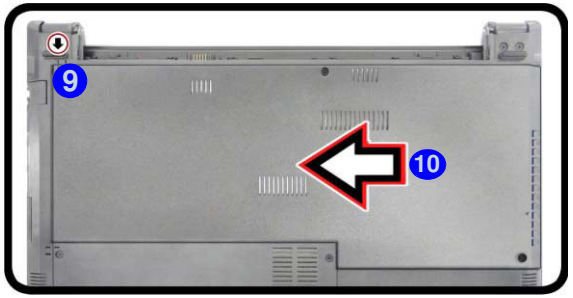




Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

8. RAM Module

Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm or 7mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Figure 4
HDD Assembly Removal

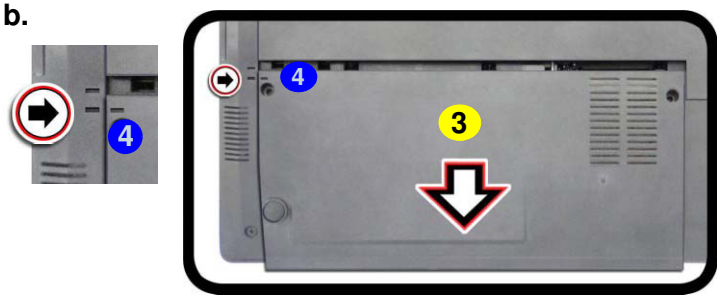
a. Remove the screws.
b. Remove the cover.

Hard Disk Upgrade Process

1. Turn **off** the computer, turn it over.
2. Locate the hard disk bay cover and remove screws 1 - 2 from the bottom cover (***Figure 4a***).
3. Slide the bay cover 3 until the cover and case indicators 4 are aligned (***Figure 4b***).

a.

b.



3. Hard Disk Bay Cover

- 2 Screws

HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

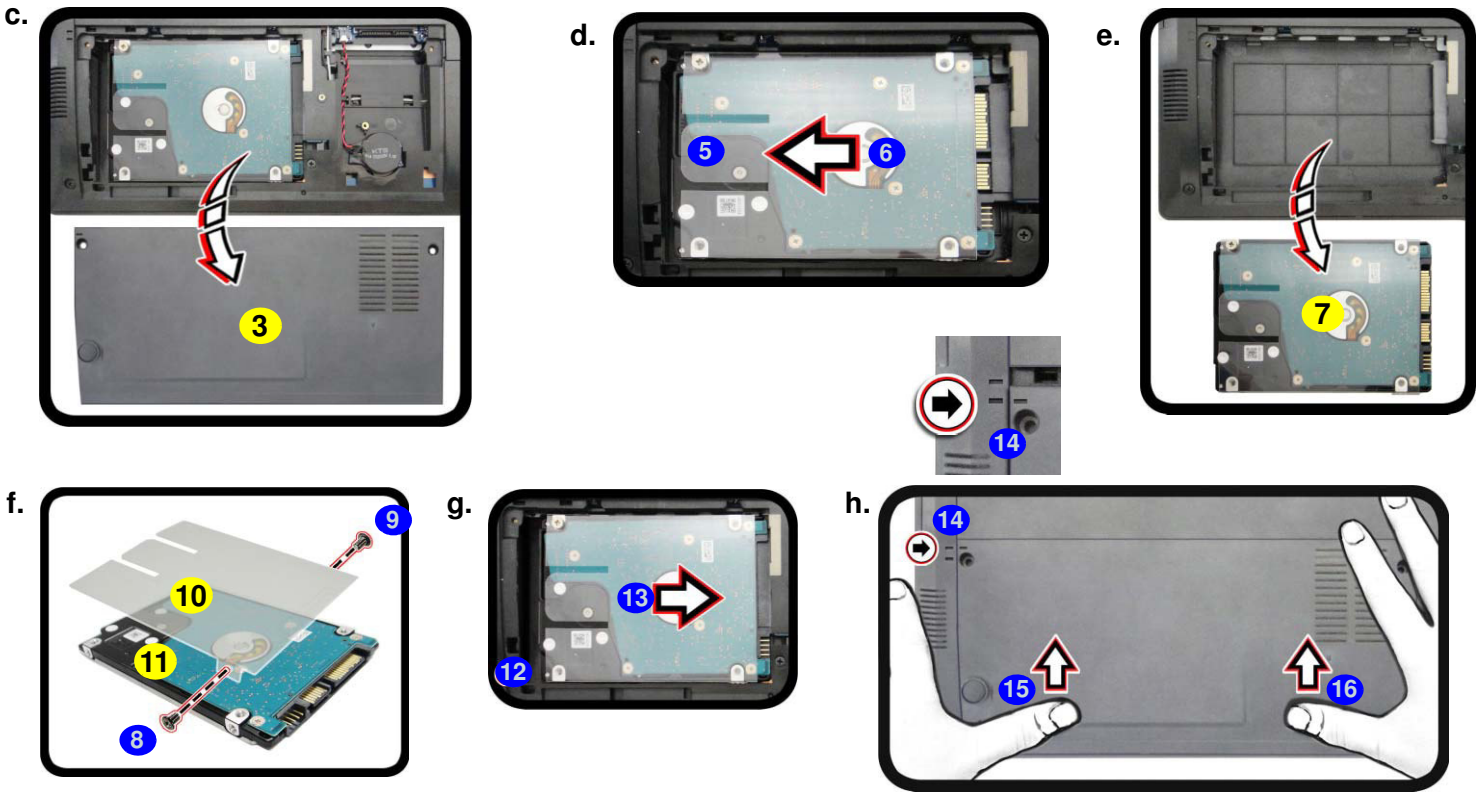
You have all the CD-ROMs and FDDs required to install your operating system and programs.

If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

4. Remove the HDD bay cover 3 (*Figure 5c*).
5. Grip the tab 5 and slide the hard disk assembly in the direction of arrow 6 (*Figure 5d*).
6. Lift the hard disk assembly 7 out of the bay (*Figure 5e*).
7. Remove the screws 8 - 9 and the hard disk cover 10 from the hard disk 11 (*Figure 5f*).
8. Replace the HDD assembly by using a finger to push it in at point 12 in the direction of arrow 13.
9. Reinsert the HDD bay cover by placing it on the bottom case assembly, and make sure the case markers line up 14.
10. Apply downward pressure with both thumbs at points 15 & 16 and slide the cover in the direction of the arrows as illustrated.
11. Replace the screws and battery (see *page 2 - 8*).

Figure 5
HDD Assembly Removal (cont'd.)

c. Remove the HDD bay cover.
d. Grip the tab and slide the HDD assembly in the direction of the arrow.
e. Lift the HDD assembly out of the bay.
f. Remove the screws and cover from HDD.
g. Reinstall HDD assembly.
h. Replace the HDD bay cover.



3. HDD Bay Cover
7. HDD Assembly
10. HDD Cover
11. HDD

- 2 Screws

Removing the SSD Module

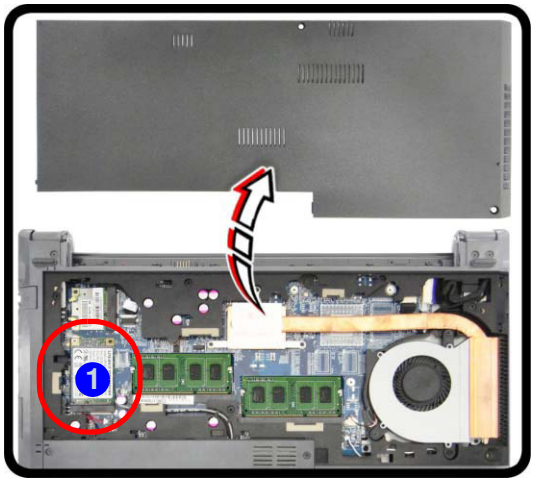
1. Turn **off** the computer, turn it over, remove the battery (***page 2 - 5***) and component bay cover (***page 2 - 6***).
2. The SSD module will be visible at point 1 on the mainboard (***Figure 6a***).
3. Remove the screw 2 (***Figure 6b***)
4. The SSD module 3 (***Figure 6c***) will pop-up, and you can remove it from the computer.
5. Replace the SSD by angling it as illustrated, and then fit the connector firmly into the slot.
6. The SSD module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
7. Press the SSD module down towards the mainboard and replace screw 2 and the component bay cover.

Figure 6
SSD Module Removal

a. Locate the SSD.
b. Remove the screw.
c. The SSD module will pop up.

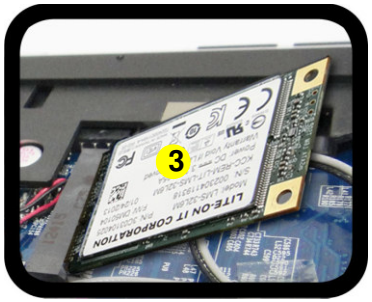
Note: Make sure you reconnect the antenna cable to the "1 + 2" socket (***Figure 7b***).

a.



b.

c.



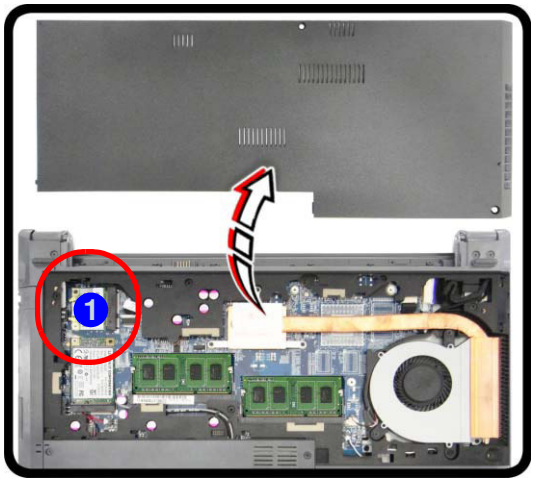
3.SSD Module

- 1 Screw

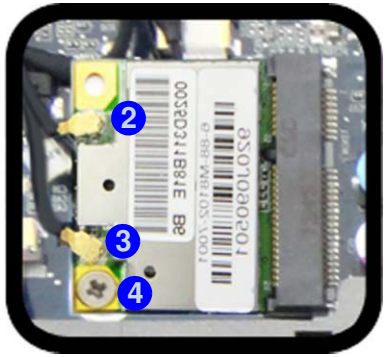
Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*) and keyboard (*page 2 - 12*).
2. The Wireless LAN module will be visible at point 1 on the mainboard (*Figure 7a*).
3. Carefully disconnect the cable 2 & 3, and then remove the screw 4 (*Figure 7b*)
4. The Wireless LAN module 5 (*Figure 7c*) will pop-up, and you can remove it from the computer.

a.



b.



c.

Figure 7
Wireless LAN Module Removal

a. Locate the WLAN.
b. Disconnect the cables and remove the screw.
c. The WLAN module will pop up.

Note: Make sure you reconnect the antenna cable to the "1 + 2" socket (*Figure 7b*).

5.Wireless LAN Module

- 1 Screw

Figure 8
Keyboard Removal

a. Lift the center cover.
b. Remove the center cover and screws.
c. Disconnect the keyboard ribbon cable from the locking collar socket.

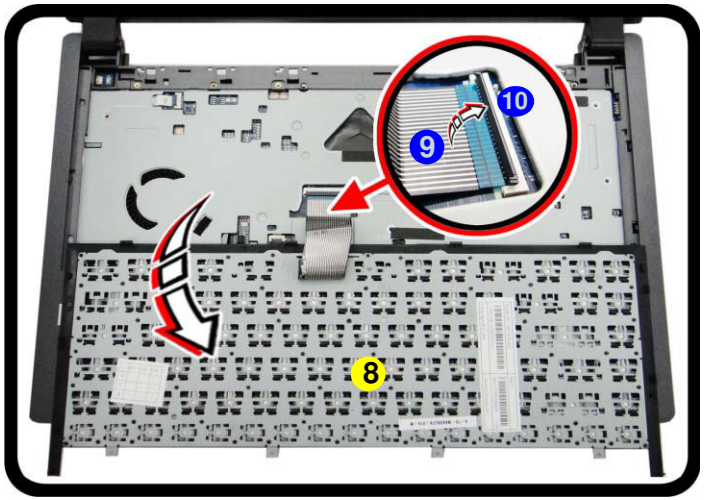
Removing the Keyboard

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*).
2. Lift the center cover at point 1 toward the direction of the arrow 2 (*Figure 8a*).
3. Remove the center cover module 3 and screws 4 - 7 (*Figure 8b*).
4. Carefully lift the keyboard 8 up, being careful not to bend the keyboard ribbon cable 9 (*Figure 8c*).
5. Disconnect the keyboard ribbon cable from the locking collar socket 10 (*Figure 8c*).

a.

b.

c.



3.Center Cover Module
8.Keyboard

- 2 Screws

6. Carefully lift up the keyboard (8) off the computer (*Figure 9d*).
7. Reverse the process to install a new keyboard.
8. Replace the center cover module as shown (*Figure 9e*).

Figure 9
Keyboard Removal (cont'd.)

d. Remove the keyboard.
e. Remove the keyboard shielding plate.

d.

e.