Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***W230SS*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a lists the relevant parts you will have after the disassembly process is complete. **Note**: The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a will also provide any possible helpful information. A box with a contains warnings.

An example of these types of boxes are shown in the sidebar.

NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it**. Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it**. Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference**. Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry**. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power**. Avoid accidental shocks, discharges or explosions.
   - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
   - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge**. ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion**. As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean**. Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components**. When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

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.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove and install the Battery:

1. Remove the battery *page 2 - 5*
2. Install the battery *page 2 - 6*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*

To remove and install the Processor:

1. Remove the battery *page 2 - 5*
2. Remove the Processor *page 2 - 10*
3. Install the Processor *page 2 - 12*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 13*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 14*

To remove the 3G Module:

1. Remove the battery *page 2 - 5*
2. Remove the 3G module *page 2 - 15*

To remove the WLAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the WLAN module *page 2 - 16*

To remove the mSATA Module:

1. Remove the battery *page 2 - 5*
2. Remove the mSATA module *page 2 - 17*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the CCD module *page 2 - 18*

Removing and Installing the Battery

Battery Removal Procedure

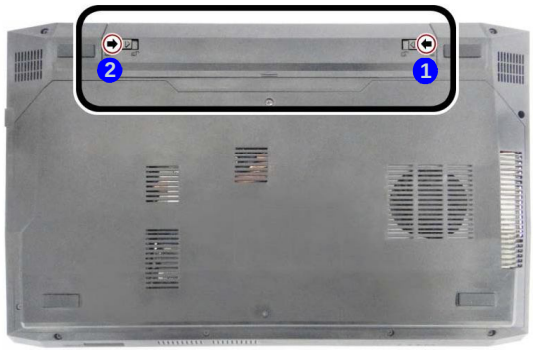
If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer off, and turn it over.
2. Slide the latch 1 in the direction of the arrow.
3. Slide the latch 2 in the direction of the arrow.
4. While holding the latch 2, slide the battery 3 (***Figure b***) out of the compartment.

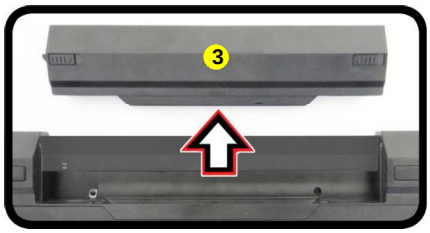
Figure 1
Battery Removal

a. Slide the latch 1 in the direction of the arrow. and slide the latch 2 in the direction of the arrow.
b. Slide the battery out of the bay as indicated.

a.



b.



3. Battery

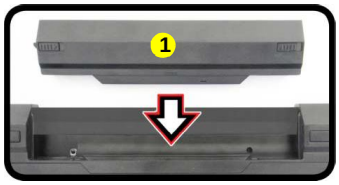
Figure 2
Battery Installation

a. Slide the battery straight into the compartment.
b. Lock the battery as indicated.

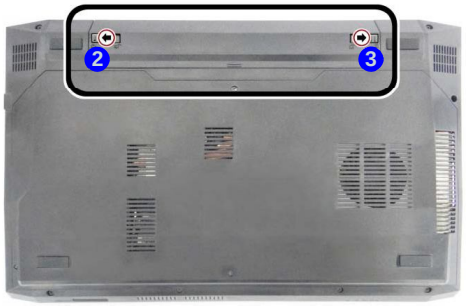
Battery Installation Procedure

1. Slide the battery 1 straight into the compartment (note that there are grooves on the side of the battery which should align up with the battery compartment).
2. Lock the battery in place by sliding the latches in the direction of arrows 2 & 3.

a.



b.



1. Battery

Removing the Hard Disk Drive

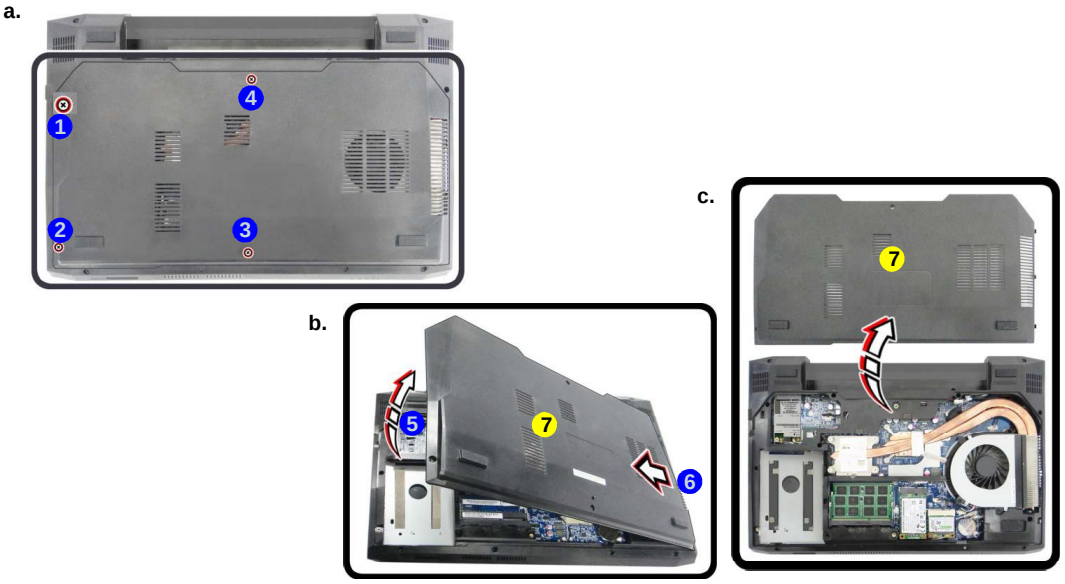
The hard disk drive is mounted in a removable case and can be taken out to accommodate other 2.5" SATA hard disk drives with a height of 9.5mm or 7mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's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

Hard Disk Upgrade Process

1. Turn off the computer, and turn it over and remove the battery (*page 2 - 5*).
2. Locate the hard disk bay cover and remove screws 1 - 4.
3. Lift and pull the bay cover in the direction of the arrow 5 and 6.
4. Remove the bay cover 7.

Figure 3
HDD Assembly Removal

a. Remove the screws.
b. Lift and pull the bay cover.
c. Remove the cover.



7. Component Bay Cover

- 4 Screws

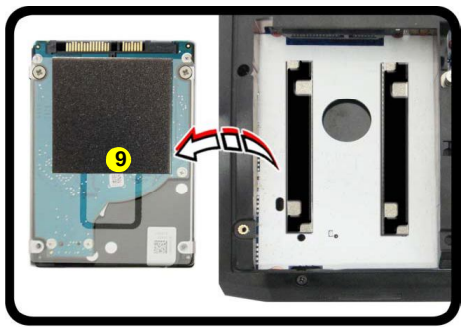
Figure 4
HDD Assembly Removal (cont'd.)

d. Slide the hard disk assembly out.
e. Lift the hard disk assembly out off the computer.
f. Remove the screws to release the hard disk from the mylar.

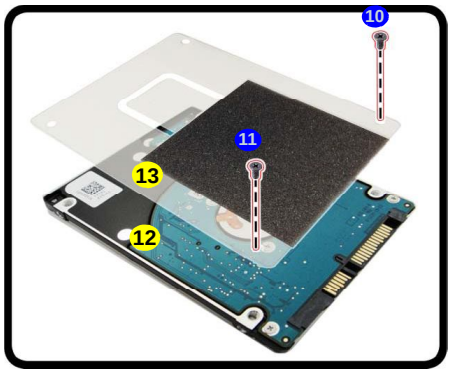
5. Grip the tab and slide the hard disk in the direction of arrow 8 (*Figure 4e*).
6. Lift the hard disk assembly 9 out of the computer.
7. Remove screws 10 - 11.
8. Separate the hard disk 12 and hard disk mylar 13 .
9. Reverse the process to install a new hard disk.

d.

e.



f.



12. Hard Disk
13. Hard Disk Mylar

- 2 Screws

Hard Disk Size Note (Foam Rubber Insert)

Note that the hard disks pictured on the following pages are all 9.5mm(H) hard disk drives. In some cases 7mm(H) hard disk drives will be installed. For more information contact your distributor/supplier, and bear in mind your warranty terms.

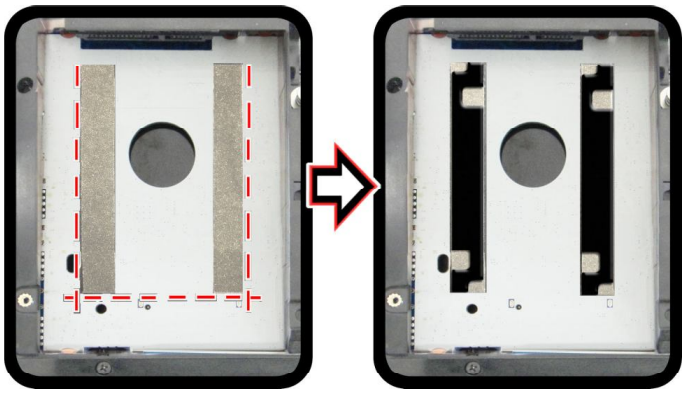


Figure 5
Foam Rubber Insert for 7mm(H) HDDs

- If you are replacing a 9.5mm(H) HDD with a 7mm(H) HDD then insert the foam rubber insert (as shown above).
- If you are replacing a 7mm(H) HDD with a 9.5mm(H) HDD then remove the foam rubber insert.

Removing and Installing the Processor

Processor Removal Procedure

1. Turn off the computer, and turn it over, remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 7*).
2. The CPU heat sink will be visible at point A on the mainboard.
3. Remove/loosen screws 7, 6, 5, 4, 3, 2, 1, the reverse order indicated on the label (*Figure 6b*).
4. Grip the heat sink tab 8 and carefully lift the heat sink 9 up straight (**do angle it as you lift it**) about a centimeter in order to clear the fan unit, and then angle it around 45° to remove it from the computer.

Figure 6
Processor Removal

a. Locate the heat sink.
b. Remove/loosen the screws.
c. Grip the heat sink tab and carefully lift the heat sink up and off the computer.

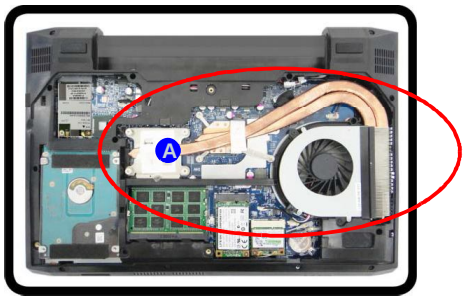
Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

9. CPU Heat Sink

- 7 Screws

a.



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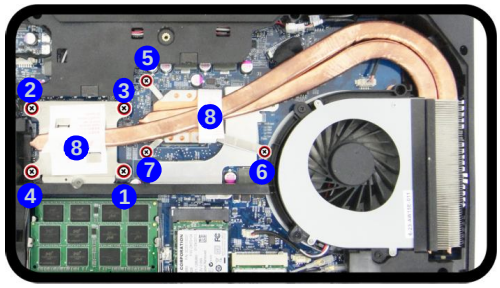

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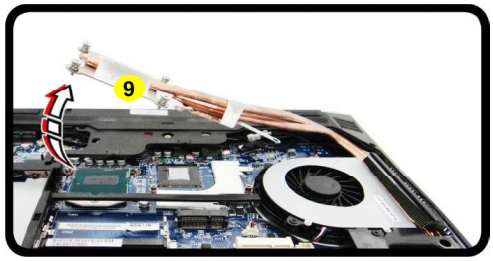


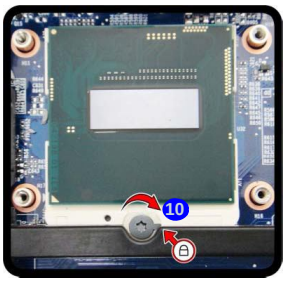
5. Turn the release latch 10 towards the unlock symbol to release the CPU (*Figure 7d*).
6. Carefully (it may be hot) lift the CPU 11 up and out of the socket (*Figure 7e*).
7. Reverse the process to install a new CPU.
8. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

Figure 7
Processor Removal (cont'd)

d. Turn the release latch to unlock the CPU.
e. Lift the CPU out of the socket.

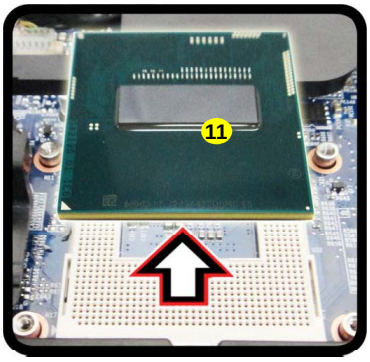
d.

Unlock



Lock

e.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

11. CPU

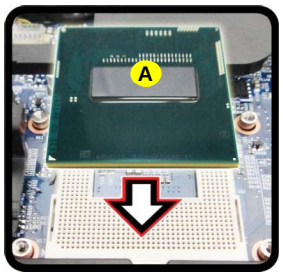
Figure 8
Processor Installation

a. Insert the CPU.
b. Turn the release latch towards the lock symbol.
c. Insert the heat sink.
d. Tighten the screws.

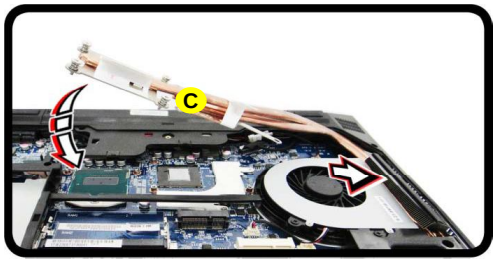
Processor Installation Procedure

1. Insert the CPU (A) (***Figure 8a***), pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch (B) towards the lock symbol (***Figure 8b***).
2. Insert the heat sink (C) at an angle of around 30° as indicated in ***Figure 8c***.
3. Tighten the CPU heat sink screws in the order (1), (2), (3), (4), (5), (6) & (7) (the order as indicated on the label and ***Figure 8d***).
4. Replace the component bay cover.

a.

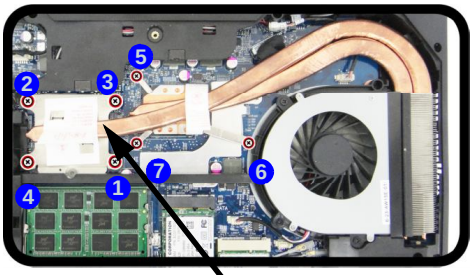


c.



b.

d.



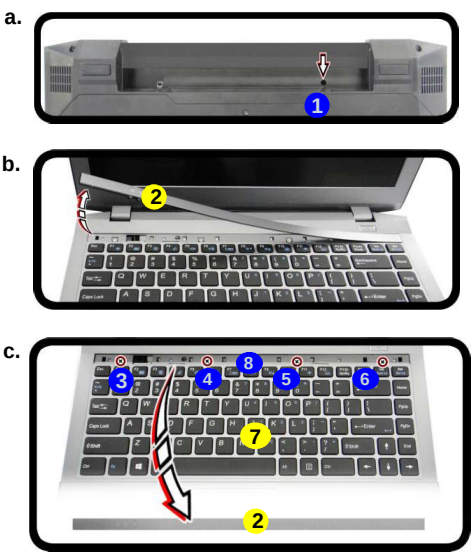
Note:
Tighten the screws in the order as indicated on the label.

A. CPU
C. Heat Sink

- 7 Screws

Removing the Keyboard

1. Turn off the computer, and turn it over and remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 7*).
2. Use a screwdriver to carefully push out the center cover 2 at point 1.
3. Turn the computer over, unsnap the center cover 2 upward from the center of the computer (*Figure 9b*).
4. Remove screws 3 - 6 from the keyboard (*Figure 9c*).
5. Carefully lift the keyboard 7 up from point 8, being careful not to bend the keyboard cables.
6. Disconnect the keyboard ribbon cable 9 from the locking collar socket 10 and the keyboard LED cable 11 from its locking collar socket 12 (*Figure 9d*).
7. Carefully lift up the keyboard 7 (*Figure 9e*) off the computer.
8. Reverse the process to replace the keyboard (make sure to reconnect the keyboard cables).



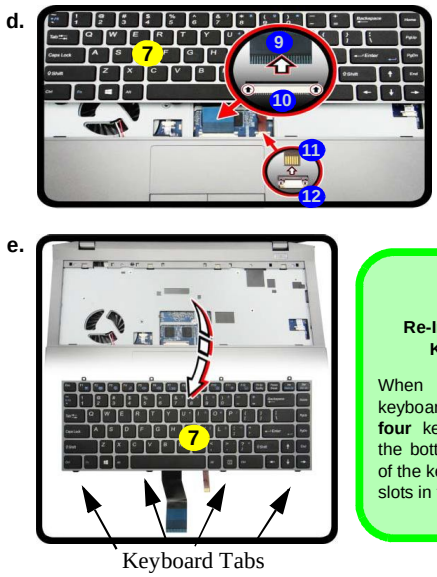


Figure 9
Keyboard Removal

a. Use a screwdriver to carefully push out the speakers cover at point 1.
b. Turn the computer over, unsnap the center cover module upward from the center of the computer.
c. Lift the LED cover module and remove the screws from the keyboard.
c. Carefully lift the keyboard up and disconnect the cables from the locking collar.
e. Remove the keyboard.

Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom (*Figure 9e*) of the keyboard with the slots in the case.

2. Center Cover
7. Keyboard

- 4 Screws

Removing the System Memory (RAM)

The computer has **two** memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) **DDR3L** type memory modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

Primary System Memory Upgrade Process

1. Turn **off** the computer, turn it over and remove the battery (*page 2 - 5*) and component bay cover (*page 2 - 7*).
2. The RAM modules will be visible at point 1 on the mainboard.
3. Gently pull the two release latches (2 & 3) on the sides of the memory socket in the direction indicated by the arrows (*Figure 10b*). The RAM module 4 will pop-up (*Figure 10c*), and you can then remove it.
4. Pull the latches to release the second module if necessary.

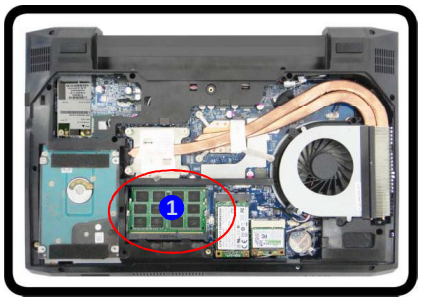
Figure 10
RAM Module Removal

a. The RAM modules will be visible at point 1 on the mainboard.
b. Pull the release latches.
c. Remove the module.

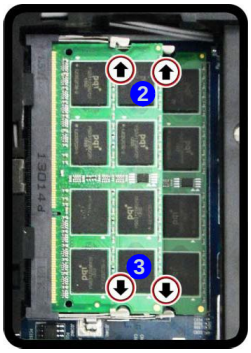
Contact Warning

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.

a.



b.



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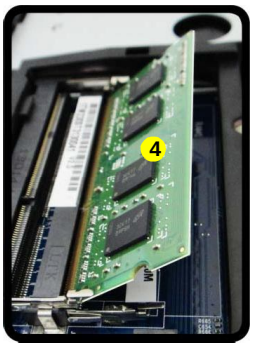


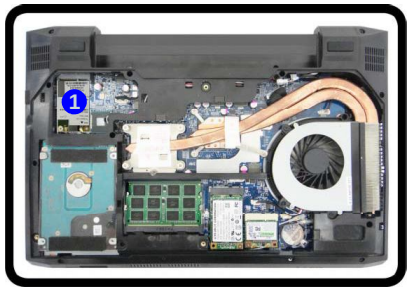
4. RAM Module

5. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
6. The 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 module in and down towards the mainboard until the slot levers click into place to secure the module.
8. Replace the bay cover and screws.
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Removing the 3G Module

1. Turn off the computer, turn it over and remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 7*).
2. The 3G module will be visible at point 1 on the mainboard (*Figure 11a*).
3. Carefully remove the screw 2 and disconnect cables 3 & 4 (*Figure 11b*).
4. The 3G module 5 (*Figure 11c*) will pop-up, and you can remove it from the computer (*Figure 11 d*).

a.



b.

c.

d.

Figure 11
3G Module Removal

a. Locate the 3G module.
b. Remove the screw and disconnect the cables.
c. The module will pop-up.
d. Remove the 3G module.

5. 3G Module

- 1 Screw

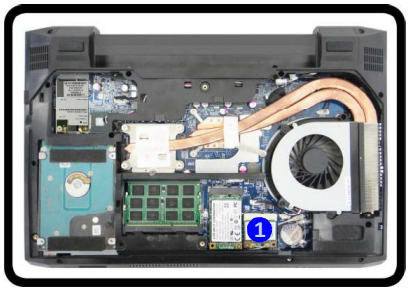
Figure 12
WLAN Module Removal

a. Locate the WLAN module.
b. Remove the screw and disconnect the cables.
c. The module will pop-up.
d. Remove the WLAN module.

Removing the WLAN Module

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

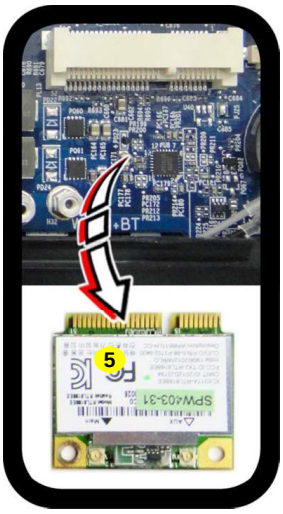
a.



b.

c.

d.



5. WLAN Module

- 1 Screw

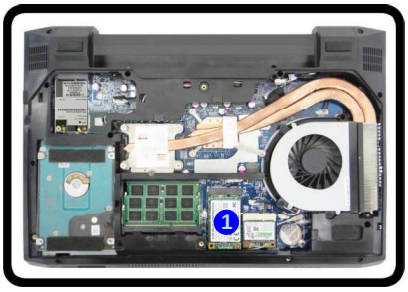
Removing the mSATA Module

1. Turn off the computer, turn it over and remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 7*).
2. The mSATA module will be visible at point 1 on the mainboard (*Figure 13a*).
3. Carefully remove the screw 2 (*Figure 13b*).
4. The mSATA module 3 (*Figure 13c*) will pop-up, and you can remove it from the computer (*Figure 13d*).

Figure 13
mSATA Module Removal

a. Locate the mSATA module.
b. Remove the screw.
c. The module will pop-up.
d. Remove the mSATA module.

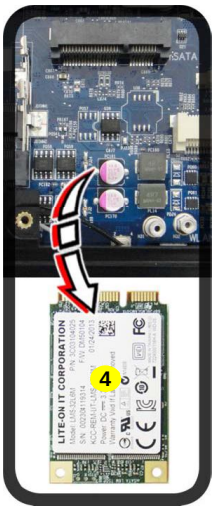
a.



b.

c.

d.



4. mSATA Module

- 1 Screw