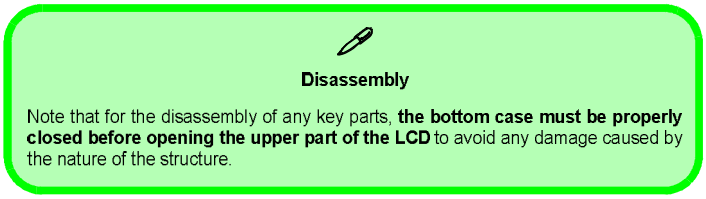
Chapter 2: Disassembly



Overview

This chapter provides step-by-step instructions for disassembling the ***X370SNV / X370SNW*** 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.

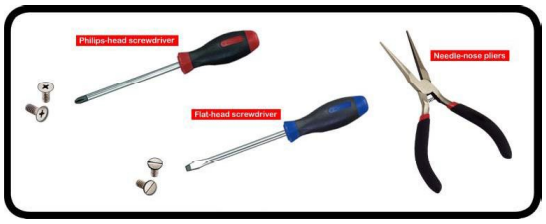
An example of these types of boxes are shown in the sidebar.

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.

(For Computer Models Supplied with Light Blue Cleaning Cloth) Some computer models in this series come supplied with a light blue cleaning cloth. To clean the computer case with this cloth follow the instructions below.

- Power off the computer and peripherals.
- Disconnect the AC/DC adapter from the computer.
- Use a little water to dampen the cloth slightly.
- Clean the computer case with the cloth.
- Dry the computer with a dry cloth, or allow it time to dry before turning on.
- Reconnect the AC/DC adapter and turn the computer on.

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 - 7*

To remove and install the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 9*
3. Install the keyboard *page 2 - 11*

To remove and install the Heatsink:

1. Remove the battery *page 2 - 5*
2. Remove the heatsink *page 2 - 12*
3. Install the heatsink *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 and install the M.2 SSD:

1. Remove the battery *page 2 - 5*
2. Remove the M.2 SSD *page 2 - 15*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the WLAN *page 2 - 18*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the CCD module *page 2 - 20*

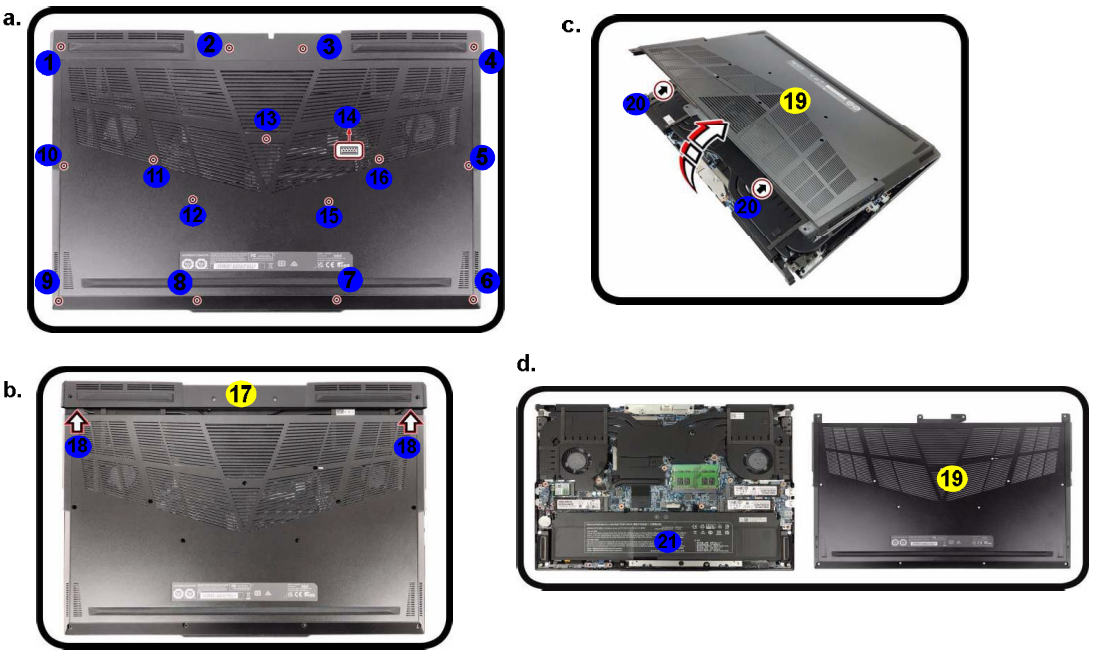
Removing and Installing the Battery

Battery Removal Procedure

1. Turn **off** the computer, turn it over.
2. Remove screws 1 - 16 (*Figure 1a*).
3. Slide the rear cover 17 out in the direction of the arrow at point 18 (*Figure 1b*).
4. Carefully lift the bottom case 19 up in the direction of the arrow at point 20 (*Figure 1c*).
5. The battery will be visible at point 21 on the computer (*Figure 1d*).

Figure 1
Battery Removal

a. Remove the screws.
b. Slide the rear cover out.
c. Lift the bottom case.
d. Locate the battery.



17. Rear Cover
19. Bottom Case

- 16 Screws

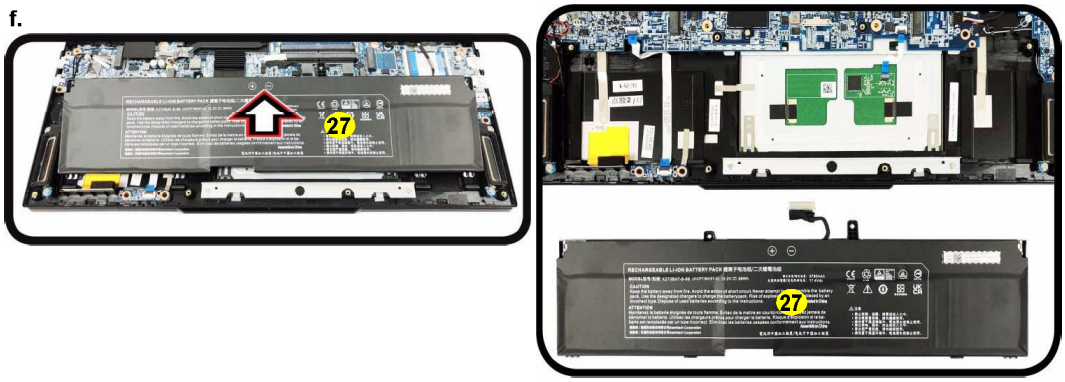
Figure 2
Battery Removal

e. Disconnect the cable and remove the screws.
f. Lift the battery off the computer.

6. Carefully disconnect the cable 22, then remove screws 23 - 26 (*Figure 2d*).
7. Lift the battery 27 off the computer (*Figure 2e*).
8. Reverse the process to install a new battery (do not forget to replace all the screws and bottom cover - take care when replacing bottom cover to avoid damaging the inner tab).

e.

f.



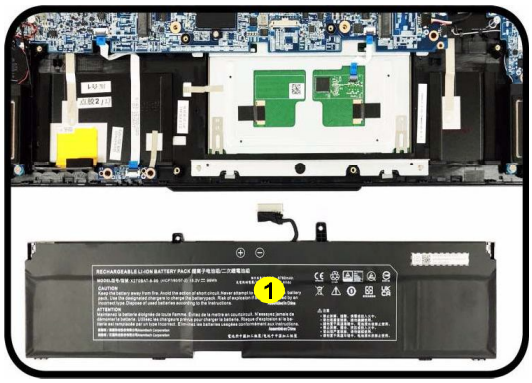
27. Battery

- 4 Screws

Battery Installation Procedure

1. Insert the battery (1) into the computer (*Figure 3a*).
2. Connect the cable (2), then tighten screws (3) - (6) (*Figure 3b*).

a.



b.

Figure 3
Battery Installation

a. Insert the battery in the computer.
b. Connect the cable and tighten the screws.

1. Battery

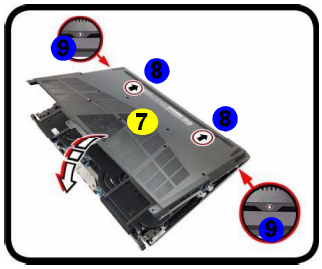
- 4 Screws

Figure 4
Battery Removal

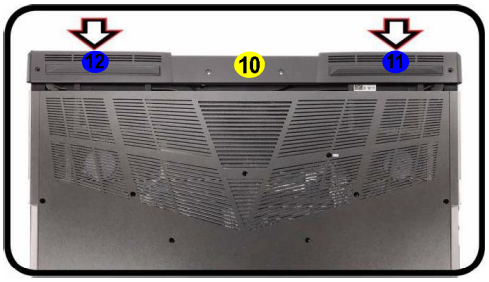
c. Insert the bottom case.
b. Slide the rear cover in.
e. Tighten the screws.

3. Carefully insert the bottom case 7 up in the direction of the arrow at point 8 (***Figure 3c***). Take care to avoid damaging the inner tab 9 when inserting the bottom cover as shown.
4. Slide the rear cover 10 in the direction of the arrow while pressing at points 11 - 12 to tighten screws 13 & 14 respectively (***Figure 3d***).
5. Continue to tighten the rest of the screws 15 - 28 (***Figure 3e***).

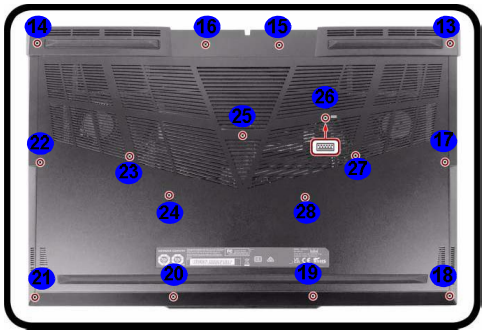
c.



d.



e.



7. Bottom Case
10. Rear Cover

- 16 Screws

Removing and Installing the Keyboard

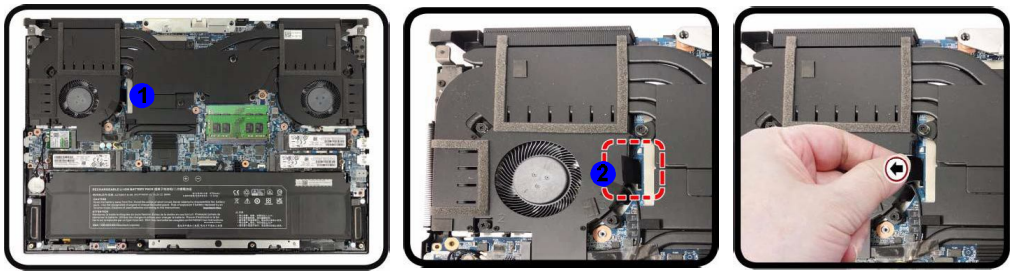
Keyboard Removal Procedure

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. The keyboard adhesive mylar will be visible at point 1 on the computer. Pull the adhesive mylar 2 out to release the keyboard (*Figure 5a*).
3. Open it up with the LCD on a flat surface before pressing at point 3 to release the keyboard module (use the special eject stick 4 to do this) while releasing the keyboard in the direction of the arrow 5 as shown (*Figure 5b*).

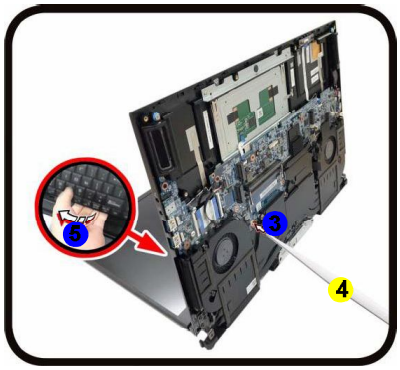
Figure 5
Keyboard Removal

a. Remove the adhesive mylar from the keyboard.
b. Use a special eject stick to push the keyboard out while releasing the keyboard as shown.

a.



b.



4. Eject Stick

Figure 6
Keyboard Removal (cont'd.)

c. Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
d. Remove the keyboard.

4. Carefully lift the keyboard 6 up, being careful not to bend the keyboard ribbon cable 7. Disconnect the keyboard ribbon cable 7 from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins 8 away from the base (***Figure 6c***).
5. Carefully lift the keyboard 6 off the computer (***Figure 6d***).

c.

d.

Re-inserting the Keyboard

When re-inserting the keyboard firstly, align the keyboard tabs at the bottom of the keyboard with the slots in the case.

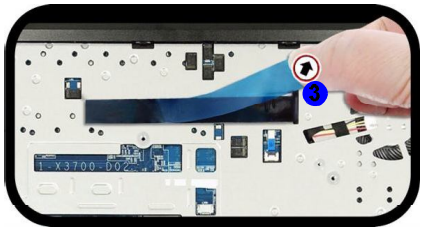
6. Keyboard

Keyboard Installation Procedure

1. Make sure to insert 1 a part of the adhesive mylar 2 and then install it properly in the location as shown (***Figure 7a***).
2. Pull the mylar cover 3 to reveal the adhesive side of the mylar (***Figure 7b***).
3. Carefully connect the keyboard ribbon cable 4 to the locking collar socket 5 and then insert the keyboard 6 in place (***Figure 7c***).
4. Make sure to press the keyboard downward in the indicated area as shown 7 to ensure that it sticks to the adhesive mylar (***Figure 7d***). Apply pressure atleast 2kg for 10 seconds.

a.

b.



c.

d.

Figure 7
Keyboard Installation

a. Install the adhesive mylar.
b. Remove the mylar cover.
c. Connect the keyboard ribbon cable to the locking collar socket and insert the keyboard in place.
d. Make sure to press the keyboard toward the computer.

Re-inserting the Keyboard

When re-inserting the keyboard firstly, align the keyboard tabs at the bottom of the keyboard with the slots in the case.

6. Keyboard

Removing and Installing the Heatsink

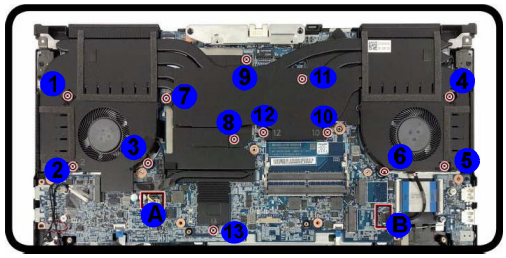
Heatsink Removal Procedure

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Disconnnect cables A - B and remove screws 1 - 13 from the heatsink unit in the order indicated (i.e. screw 13 first throught to screw 1 last - see *Figure 8a*).
3. Carefully (it may be hot) remove the heatsink 14 using a tool to lever the heatsink up (*Figure 8b*).

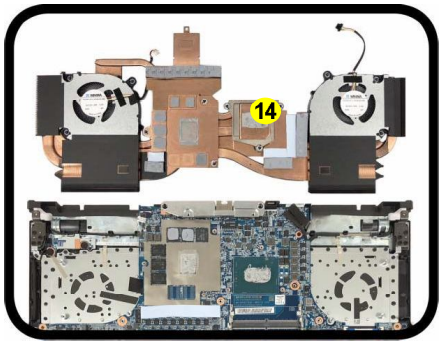
Figure 8
Heatsink Removal

a. Disconnect the cable and remove the screws in the correct order.
b. Carefully remove the heatsink unit.

a.



b.



14. Heatsink

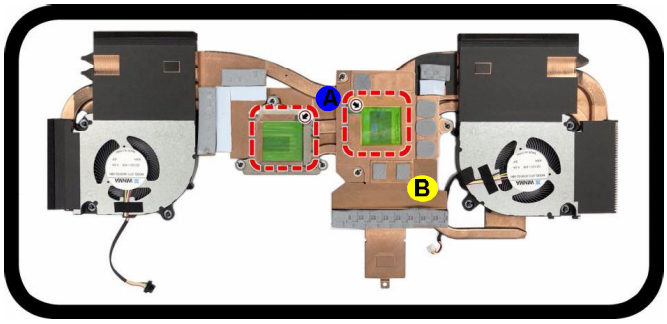
Heatink Installation Procedure

1. Remove the sticker A from the heatsink unit (if it is a new unit - *Figure 9a*).
2. Insert the heatsink B and tighten the heatsink screws in the order 1 - 13 indicated on the label and reconnect the cables C - D (*Figure 9b*).
3. Replace the battery, bottom cover and tighten the screws (*page 2 - 5*).

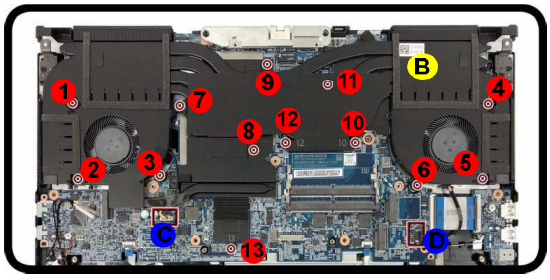
Figure 9
Heatsink Installation

a. Remove the sticker from the heatsink unit.
b. Insert the heat sink. Tighten the screws and reconnect the cables.

a.



b.



B. Heatsink

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.

4. RAM Module

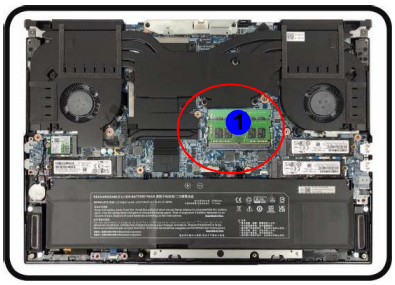
Removing the System Memory (RAM)

The computer has four memory sockets for 262 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR5 Up to 5600 MHz. The main memory can be expanded up to 64GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

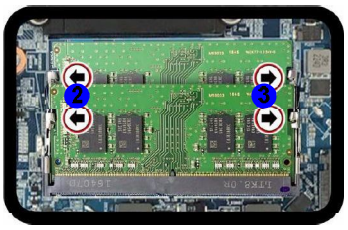
Memory Upgrade Process

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. The RAM-2 modules will be visible at point 1 on the mainboard (*Figure 10a*).
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.
5. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
6. 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.
7. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
8. Replace the bottom cover and the screws (see *page 2 - 5*).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

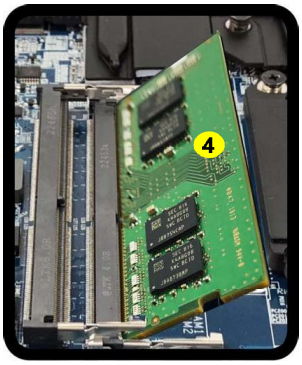
a.



b.



c.



Removing the M.2 SSD Module

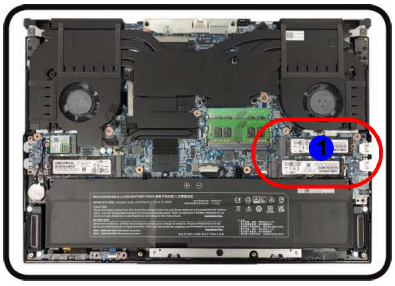
M.2 SSD-1 Removal Procedure

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. The M.2 SSD module will be visible at point 1 on the mainboard (*Figure 11a*).
3. Remove the screw 2 (*Figure 11b*).
4. The M.2 SSD module 3 (*Figure 11c*) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace the screws and thermal pad).

Figure 11
M.2 SSD-1 Module Removal

a. Locate the M.2 SSD.
b. Remove the screw.
c. The M.2 SSD module will pop up.

a.



b.

c.

Thermal Pad

Make sure to place the thermal pad's adhesive side down on the mainboard's surface as illustrated.

3.M2 SSD Module

- 1 Screw

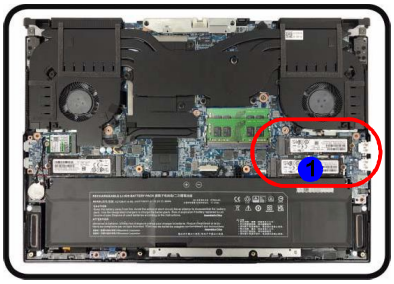
Figure 12
M.2 SSD-2 Module Removal

a. Locate the M.2 SSD.
b. Remove the screw.
c. The M.2 SSD module will pop up.

M.2 SSD-2 Removal Procedure

1. Turn **off** the computer, remove the battery (***page 2 - 5***).
2. The M.2 SSD module will be visible at point 1 on the mainboard (***Figure 12a***).
3. Remove the screw 2 (***Figure 12b***).
4. The M.2 SSD module 3 (***Figure 12c***) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace the screws and thermal pad).

a.



b.

c.

3.M2 SSD Module

- 1 Screw

Thermal Pad

Make sure to place the thermal pad's adhesive side down on the mainboard's surface as illustrated.

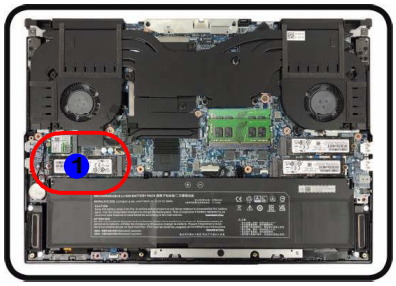
M.2 SSD-3 Removal Procedure

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. The M.2 SSD module will be visible at point 1 on the mainboard (*Figure 13a*).
3. Remove the screw 2 (*Figure 13b*).
4. The M.2 SSD module 3 (*Figure 13c*) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace the screws and thermal pad).

Figure 13
M.2 SSD-3 Module Removal

a. Locate the M.2 SSD.
b. Remove the screw.
c. The M.2 SSD module will pop up.

a.



b.

c.

Thermal Pad

Make sure to place the thermal pad's adhesive side down on the mainboard's surface as illustrated.

3.M2 SSD Module

- 1 Screw

Figure 14
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 14b***).

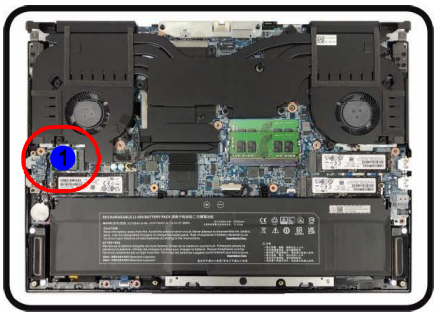
5.Wireless LAN Module

- 1 Screw

Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery (***page 2 - 5***).
2. The Wireless LAN module will be visible at point 1 on the mainboard (***Figure 14a***).
3. Carefully disconnect the cables 2 & 3, and then remove the screw 4 (***Figure 14b***)
4. The Wireless LAN module 5 (***Figure 14c***) will pop-up, and you can remove it from the computer.

a.



b.

c.

Wireless LAN, Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo modules are not labelled. The cables/covers (each cable will have either a black or transparent cable cover) are color coded for identification as outlined in the table below.

Module Type	Antenna Type	Cable Color	Cable Cover Type
WLAN/WLAN & Bluetooth Combo	WM 1	Black	Transparent
	WM 2	Black	White

Cable 1 is usually connected to antenna 1 on the module, and cable 2 to antenna 2.

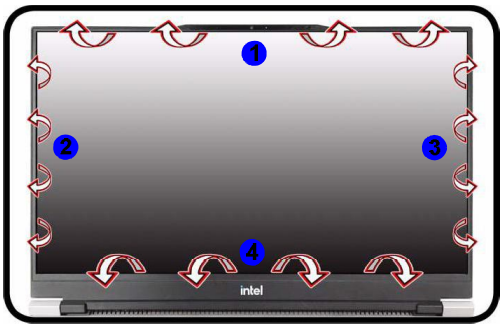
Removing the CCD

1. Turn **off** the computer, turn it over to remove the battery (*page 2 - 5*).
2. Lay the computer down on a flat surface with the top case up forming a 120 degree angle.
3. Carefully run your fingers around the inner frame of the LCD cover to lift at points 1 - 4 as indicated by the arrows (*Figure 15a*).
4. Remove the LCD cover 5 (*Figure 15b*).

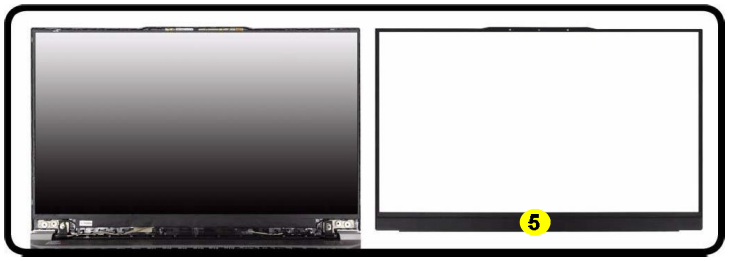
Figure 15
CCD Removal

a. Carefully release the inner frame of the LCD mylar at the points indicated by the arrows.
b. Remove the LCD front cover.

a.



b.



5. LCD Cover

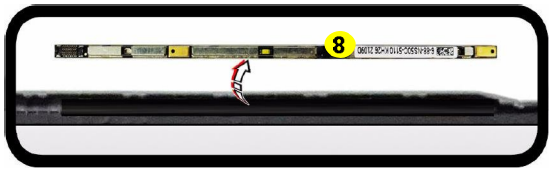
5. Disconnect the cable 6 from the locking collar socket by releasing the locking collar pins 7 away from the base (*Figure 16c*).
6. Remove the CCD module 8 (*Figure 16d*).
7. Reverse the process to install a new CCD module.

Figure 16
CCD Removal (cont'd)

c. Disconnect the cable from the locking collar socket.
d. Remove the CCD module.

c.

d.



8. CCD Module