

# Chapter 2: Disassembly

## Overview

This chapter provides step-by-step instructions for disassembling the *XI70KM-G* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

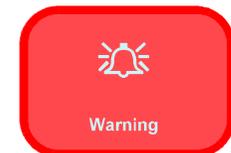
We suggest you completely review any procedure before you take the computer apart.

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.



## Disassembly

**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 pin 1 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 pin 1 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-borne 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.

## 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.



### 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.

## Disassembly

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### 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 the Battery:**

1. Remove the battery *page 2 - 5*

**To remove and install the Processor:**

1. Remove the battery *page 2 - 5*
2. Remove the processor *page 2 - 6*
3. Install the processor *page 2 - 9*

**To remove and install the Video Card:**

1. Remove the battery *page 2 - 5*
2. Remove the video card *page 2 - 10*
3. Install the video card *page 2 - 11*

**To remove the Keyboard:**

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 12*

**To remove the System Memory:**

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 13*

**To remove the M.2 SSD:**

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

**To remove the Wireless LAN Module:**

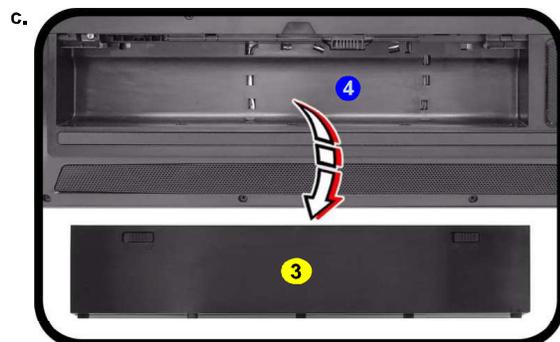
1. Remove the battery *page 2 - 5*
2. Remove the WLAN *page 2 - 18*

**To remove the CCD Module:**

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

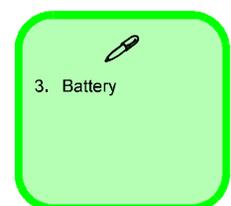
## Removing the Battery

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.
4. While holding the latch **2**, lift the battery **3** (*Figure 1b*) out of the compartment **4** (*Figure 1c*).



*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. Lift the battery.
- c. Remove the battery.



## Disassembly

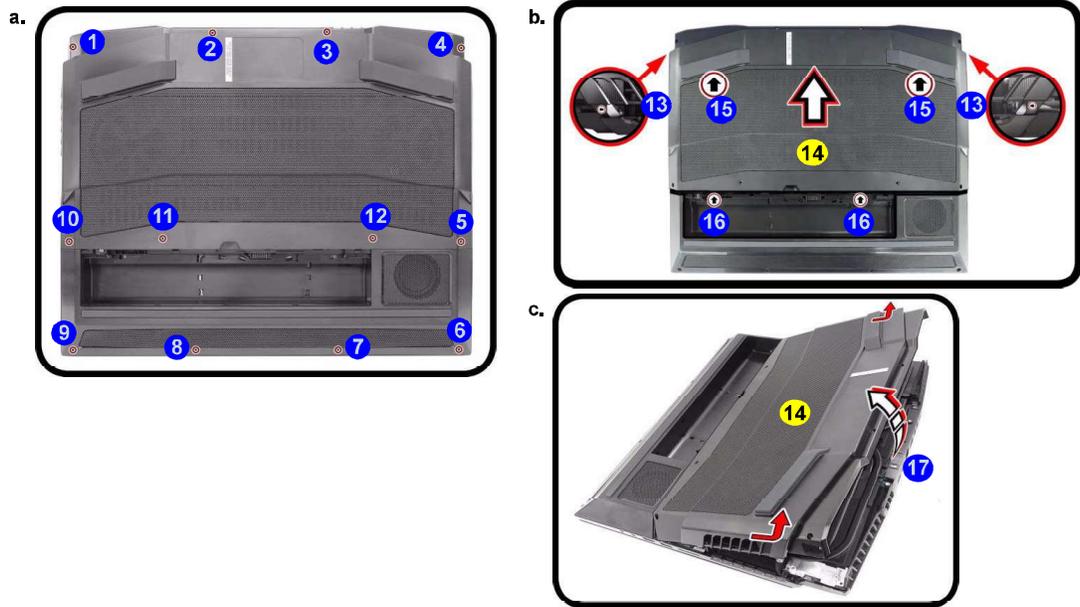
*Figure 2*  
Processor  
Removal

- Remove the screws.
- Slide the bottom cover out,
- Remove the bottom cover,

## Removing and Installing the Processor

### Processor Removal Procedure

- Turn **off** the computer, remove the battery (*page 2 - 5*) and bottom cover (*page 2 - 6*).
- Remove screws **1 - 12** (*Figure 2a*).
- Make sure that the structure at both ends **13** of the bottom cover are in position. Slide the bottom cover **14** out in the direction of the arrow by pressing at point **15 - 16** until its released (*Figure 2b*).
- Carefully lift the bottom cover **14** up in the direction of the arrow **17** as shown (*Figure 2c*).

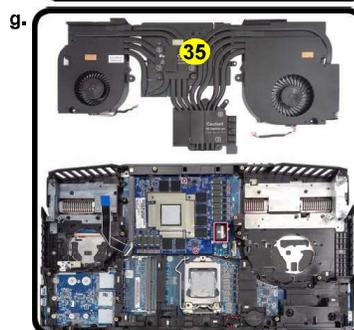
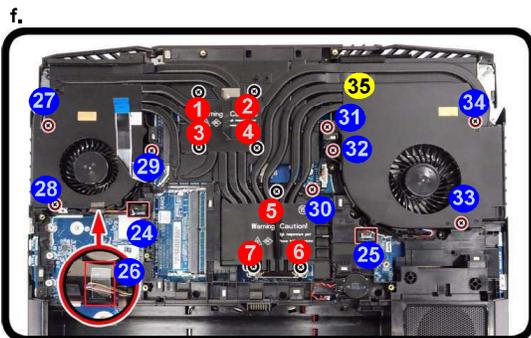
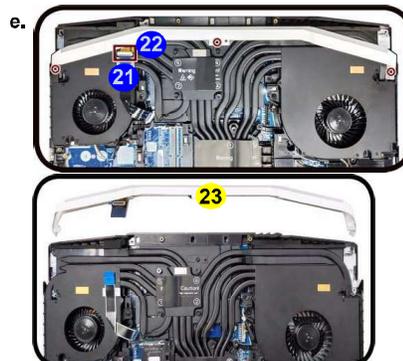


14. Bottom Cover

- 12 Screws

## Disassembly

5. Remove the bottom cover **14** and screws **18 - 20** (*Figure 3d*).
6. Remove the adhesive tape **21** and carefully disconnect the light bar cable from the locking collar socket **22**. Remove the light bar **23** (*Figure 3e*).
7. Disconnect the cable **24 - 25**, remove the tape **26** and screws **1 - 7** in the order indicated on the label (i.e screw **7** first through to screw **1** last) and screws **27 - 34** from the CPU fan & heat sink unit **35** (*Figure 3f*).
8. Carefully (it may be hot) remove the heat sink unit **35** as shown (*Figure 2hf*).



*Figure 3*  
**Processor  
Removal (cont'd)**

- d. Remove the SD cover and screws.
- e. Remove the adhesive tape and disconnect the light bar cable. Remove the light bar.
- f. Disconnect the fan cable and remove the tape and screws as directed.
- g. Carefully remove the heat sink unit.

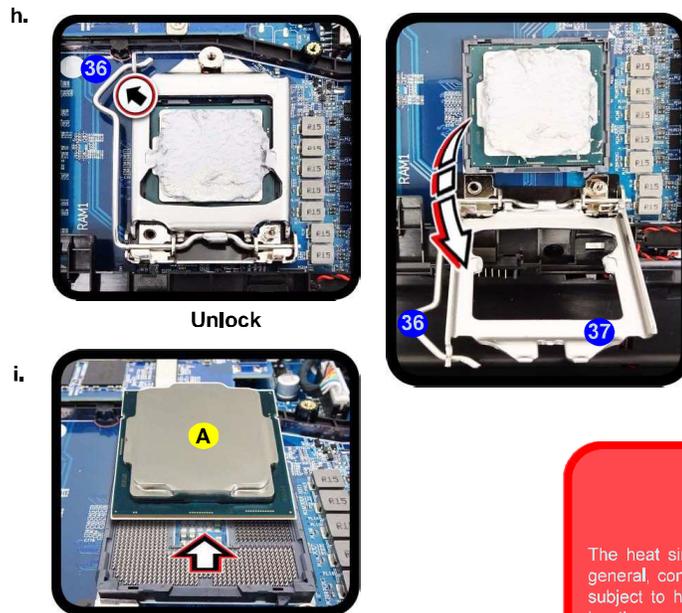


## Disassembly

### Figure 4 Processor Removal (cont'd)

- h. Move the latch and bracket fully in the direction indicated to unlock the CPU.
- i. Lift the CPU out of the socket.

9. Press down and hold the latch **36** (with the latch held down you will be able to release it).
10. Move the latch **36** and bracket **37** fully in the direction indicated to unlock the CPU (**Figure 4h**).
11. Carefully (it may be hot) lift the CPU **A** up out of the socket (**Figure 4i**).
12. See **page 2 - 9** for information on inserting a new CPU.
13. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (**DO NOT FORCE IT!**).



#### 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.

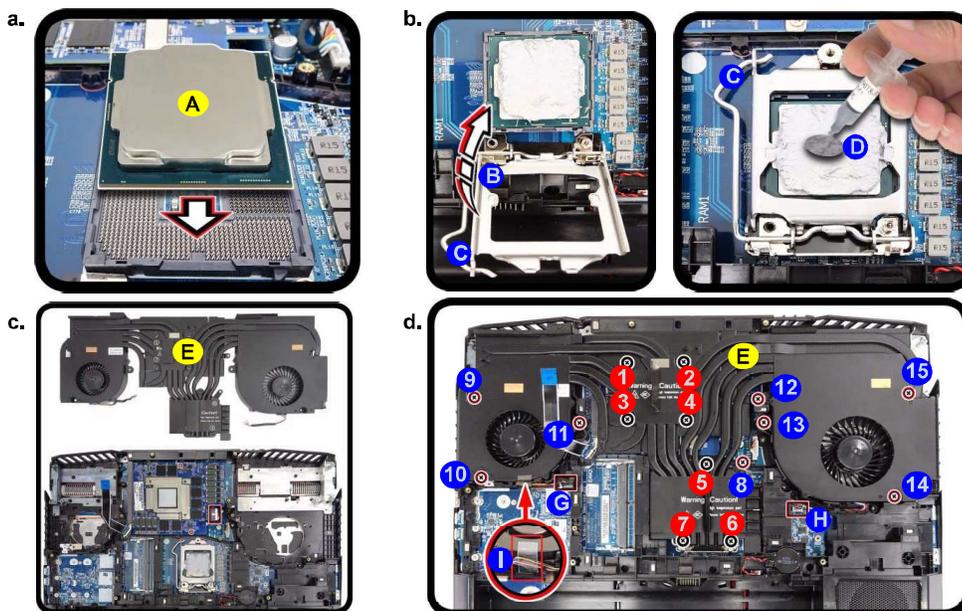
A. CPU

**Processor Installation Procedure**

1. Insert the CPU **A**, pay careful attention to the pin alignment (*Figure 5a*), it will fit only one way (DO NOT FORCE IT!).
2. Move the bracket **B** and latch **C** fully in the direction indicated to lock the CPU.
3. Apply the thermal grease **D** to the top of the CPU as shown (*Figure 5b*).
4. Insert the heat sink **E** as indicated in *Figure 5c*.
5. Tighten the CPU heat sink screws in the order **1** - **7** (the order as indicated on the label), **8** - **15** (*Figure 5d*). Note that the screw lock torque value is 1.7KG when tightening screws using electric screwdriver.
6. Connect the CPU fan cable **G** - **H**, then replace the tape **I**. Replace the bottom cover by carefully inserting the tab in place (make sure to align the tabs at both sides - see point **13** on *page 2 - 6*) and then tighten the screws.

*Figure 5*  
**Processor Installation**

- a. Insert the CPU.
- b. Move the latch and bracket fully in the direction indicated to lock the CPU. Apply thermal grease.
- c. Insert the heatsink.
- d. Tighten the screws.



  
**Screw-Type**

Screws **1** - **4** have silver color springs  
Screw **5** has a black color spring  
Screws **6** & **7** have 5 colors springs

  
A. CPU  
E. Heat Sink

- 15 Screws

## Disassembly

*Figure 6*  
Video Card Removal Procedure

- The video card will be visible at point **1** on the mainboard.
- Disconnect the cable and remove the screws.
- The video card will pop up.
- Remove the video card.



Caution

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



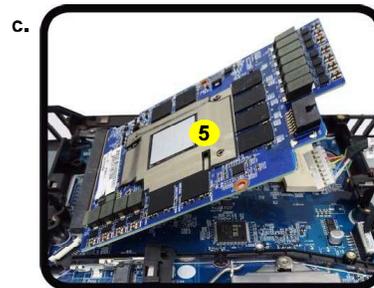
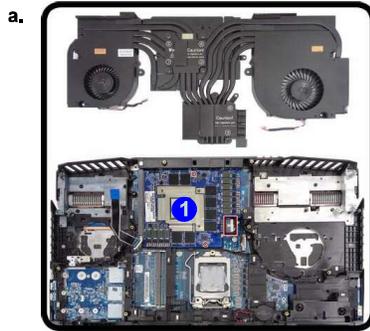
5. Video Card

- 2 Screws

## Removing and Installing the Video Card

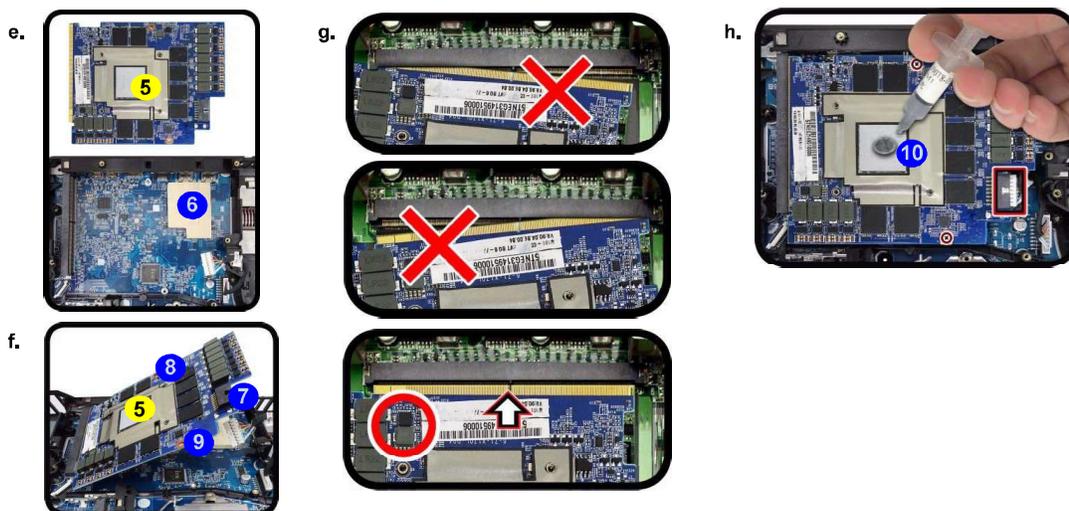
### Video Card Removal Procedure

- Turn **off** the computer, remove the battery ([page 2 - 5](#)), bottom cover ([page 2 - 6](#)), and heatsink ([page 2 - 7](#)).
- The video card will be visible at point **1** on the mainboard ([Figure 6a](#)).
- Disconnect cable **2** and remove screws **3** & **4** from the video card ([Figure 6b](#)).
- The video card **5** will pop up ([Figure 6c](#)).
- Remove the video card **5** ([Figure 6d](#)).



### Video Card Installation Procedure

1. Make sure that the thermal pad **6** is in placed as shown (*Figure 7e*).
2. Prepare to fit the video card **5** into the slot by holding it at about a 30° angle (*Figure 7f*).
3. The card needs to be fully into the slot, and the video card and socket have a guide-key and pin which align to allow the card to fit securely (*Figure 7g*).
4. Fit the connectors firmly into the socket, straight and evenly.



- e. Place the thermal pad.
- f. Insert the video card at a 30 degree angle.
- g. Fit the connectors straight and even, and secure the card with the screws.
- h. Apply thermal grease.

  
**Caution**

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



5. Video Card

- 2 Screws

5. DO NOT attempt to push one end of the card in ahead of the other.
6. The card's pin alignment will allow it to only fit one way. **Make sure the module is seated as far into the socket as it will go.** DO NOT FORCE the card; it should fit without much pressure.
7. Connect the cable **7** and secure the card with screws **8** & **9** (*Figure 6 on page 2 - 10*).
8. Apply the whole tube of thermal grease **10** to the center of the main VGA chip as shown (*Figure 7h*).
9. Place the heat sink back on the card, and secure the screws in the order indicated in *Figure 3 on page 2 - 7*.
10. Reinsert the component bay cover, and secure with the screws as indicated in *Figure 5 on page 2 - 9*.

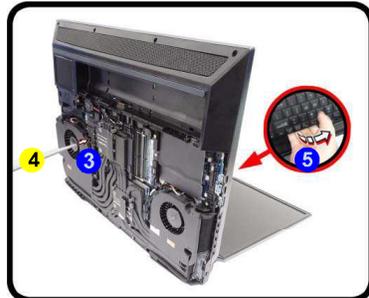
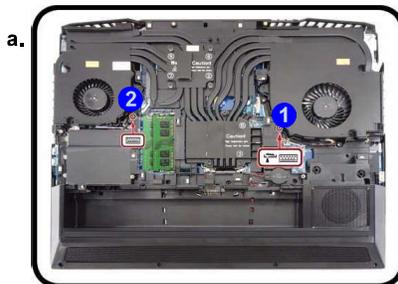
## Disassembly

*Figure 8*  
Keyboard Removal

- Remove the screws and press at point 3 to un-snap keyboard from the bottom of the computer.
- Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
- Remove the keyboard.

## Removing the Keyboard

- Turn off the computer, turn it over, remove the battery (page 2 - 5) and bottom cover (page 2 - 6).
- Remove screws 1 - 2 from the bottom of the computer
- 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 8a)
- Carefully loosen the three side locks and then slide to 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 (Figure 8b).
- Carefully lift the keyboard 6 off the computer (Figure 8c).



### 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.



- Eject Stick
- Keyboard

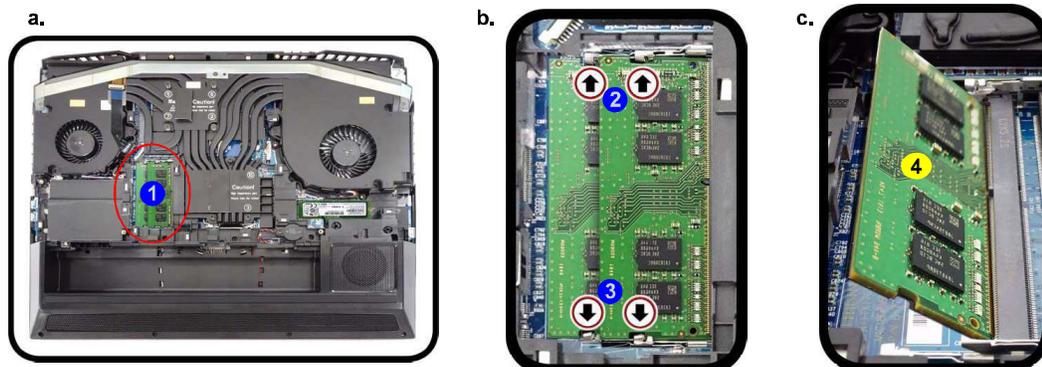
- 2 Screws

## Removing the System Memory (RAM)

The computer has four memory sockets for 260 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 3200 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. *You must first install modules in slots 1 & 3 on the mainboard bottom area, before installing modules in slots 2 & 4 underneath the keyboard.*

### Memory 1 & 3 Upgrade Process

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
2. The RAM-1 & 3 modules will be visible at point **1** on the mainboard ([Figure 9a](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 9b](#)). The RAM module **4** will pop-up ([Figure 9c](#)), 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 - 6](#)).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.



*Figure 9*  
**RAM-1 & 3**  
**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 Modules

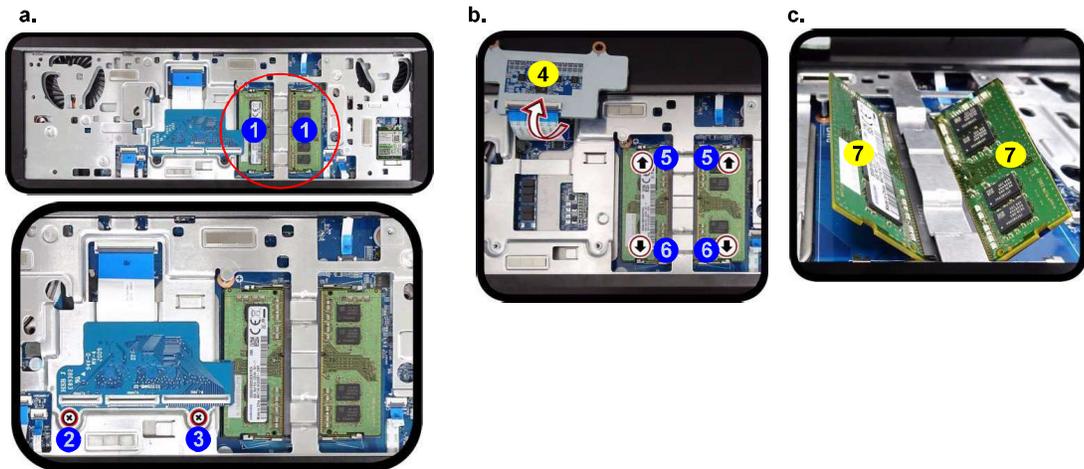
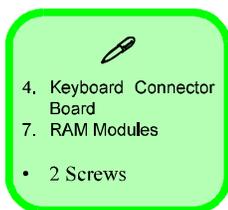
## Disassembly

*Figure 10*  
**RAM-2 & 4 Module Removal**

- The RAM modules will be visible at point ① on the mainboard.
- Remove the keyboard connector board.
- Pull the release latches.
- Remove the module.

### Memory 2 & 4 Upgrade Process

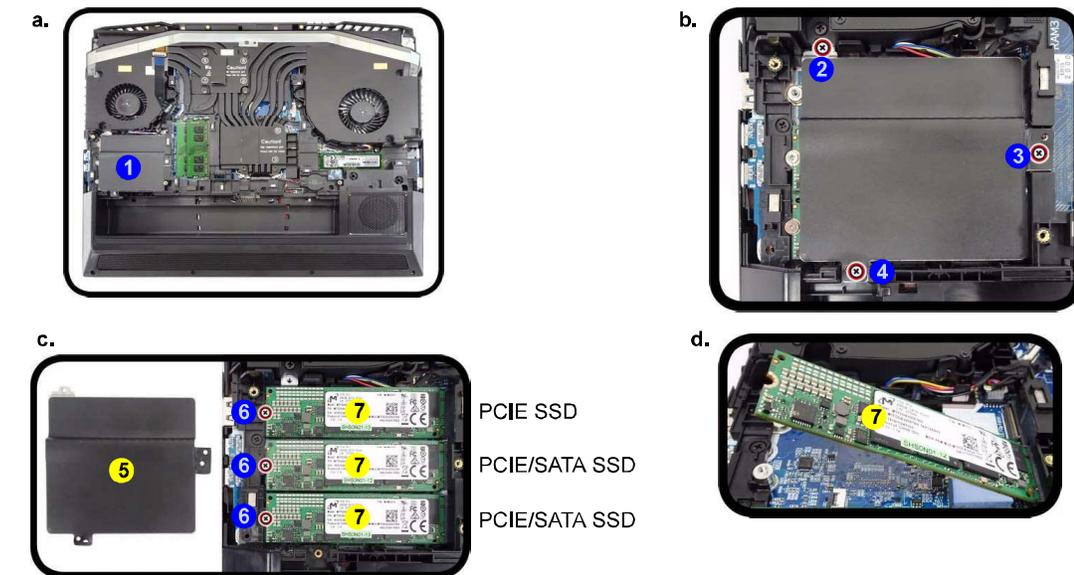
- Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)) and keyboard ([page 2 - 12](#)).
- The RAM-2 & 4 modules will be visible at point ① on the mainboard ([Figure 9a](#)).
- Remove screws ② - ③ and remove the keyboard connector board ④ as shown ([Figure 9b](#)).
- Gently pull the two release latches (⑤ & ⑥) on the sides of the memory socket in the direction indicated by the arrows ([Figure 9c](#)). The RAM module ⑦ will pop-up ([Figure 9d](#)), and you can then remove it.
- Pull the latches to release the second module if necessary.
- Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
- 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.
- Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
- Replace the keyboard connector board, screws and keyboard (see [page 2 - 6](#)).
- Restart the computer to allow the BIOS to register the new memory configuration as it starts up.



## Removing and Installing the M.2 SSD Module

### M.2 SSD-1, 2 & 3 Module Removal Procedure

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*) and bottom cover (*page 2 - 6*).
2. The M.2 SSD module will be visible at point **1** on the mainboard (*Figure 11a*).
3. Remove screw **2 - 4** to release the bracket cover **5** (*Figure 11b*).
4. Remove the screws **6** (*Figure 11c*).
5. The M.2 SSD module **7** (*Figure 11d*) will pop-up.



*Figure 11*  
M.2 SSD-1, 2 & 3  
Module Removal

- a. Locate the M.2 SSD.
- b. Remove screws to release the bracket cover.
- c. Remove the screw.
- d. The M.2 SSD module will pop up.

5. Bracket Cover  
7. M.2 SSD Module

- 1 Screw

**Disassembly**

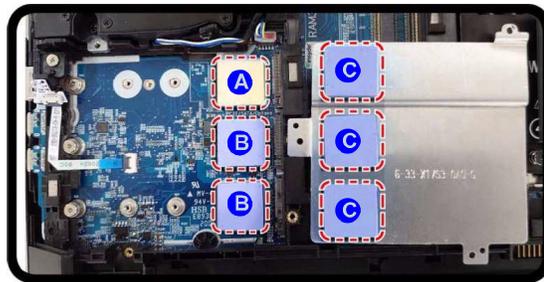
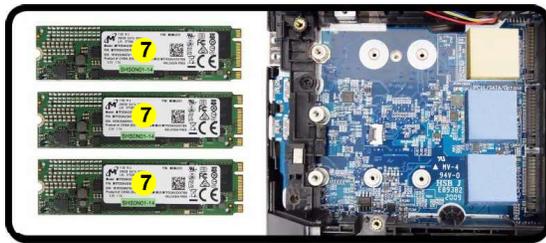
*Figure 12*  
**M.2 SSD-1, 2 & 3**  
**Module Removal**  
**(cont'd)**

e. Remove the module.

6. Remove the M.2 SSD module **7** (*Figure 12e*) from the computer.
7. Reverse the process to install a new module. Make sure that the thermal pad **A**, **B** & **C** are in placed as shown below.

e.

- PCIE SSD
- PCIE/SATA SSD
- PCIE/SATA SSD





**Thermal Pad Size**

The size of the thermal pad are as follows:

- A** (17.3 \* 17.3 \* 2.75T)
- B** (17.3 \* 17.3 \* 5.25T)
- C** (17.3 \* 17.3 \* 2.00T)

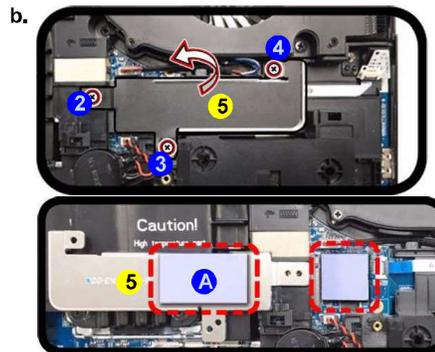
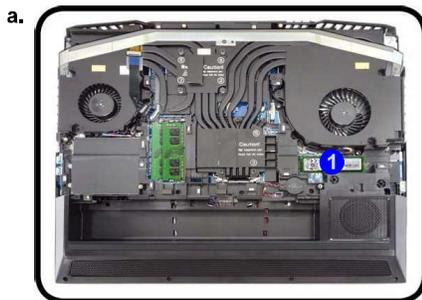
## Disassembly

*Figure 13*  
**M.2 SSD-4 Module Removal**

- Locate the M.2 SSD.
- Remove the screws and bracket cover.
- Remove the screw.
- The M.2 SSD module will pop up.

### M.2 SSD-4 Module Removal Procedure

- Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*) and bottom cover (*page 2 - 6*).
- The M.2 SSD module will be visible at point **1** on the mainboard (*Figure 11a*).
- Remove screws **2 - 4** and lift the bracket cover **5** up from the mainboard (*Figure 11b*).
- Remove the screw **6** (*Figure 11c*).
- The M.2 SSD module **7** (*Figure 11d*) will pop-up, and you can remove it from the computer.
- Reverse the process to install a new module. Make sure that the thermal pad **A**, **B** are placed accordingly as shown below.



#### Thermal Pad Size

The size of the thermal pad are as follows:

- A** (30\* 17.3 \* 2T)
- B** (17.3 \* 17.3 \* 5.25T)

 5.Bracket Cover  
7.M.2 SATA SSD Module  
8. Thermal Pad

- 4 Screws

## Disassembly

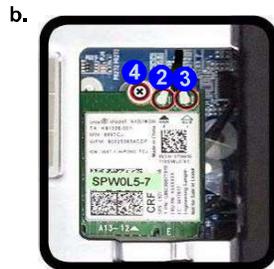
*Figure 14*  
**Wireless LAN  
 Module Removal**

- Locate the WLAN.
- Disconnect the cables and remove the screw.
- The WLAN module will pop up.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket (*Figure 14b*).

## Removing the Wireless LAN Module

- Turn off the computer, turn it over, remove the battery (*page 2 - 5*) and keyboard (*page 2 - 12*).
- The Wireless LAN module will be visible at point ① on the mainboard (*Figure 14a*).
- Carefully disconnect the cables ② & ③, and then remove the screw ④ (*Figure 14b*).
- The Wireless LAN module ⑤ (*Figure 14c*) will pop-up, and you can remove it from the computer.
- Reverse the process to install a new module.



5. Wireless LAN Module

- 1 Screw

## 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	WL 1	Black	Transparent
	WL 2	Black	White

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

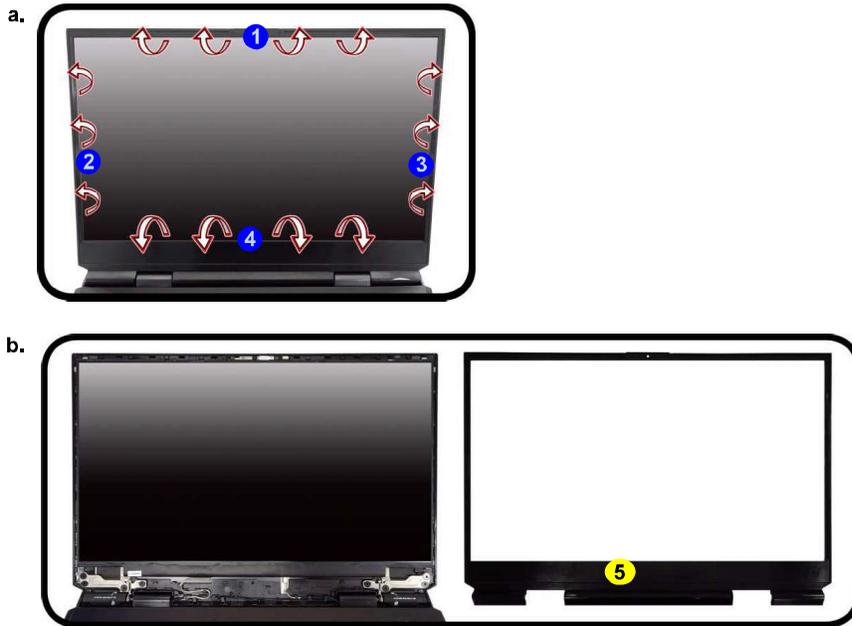
## Disassembly

*Figure 15*  
**CCD Removal**

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

## Removing the CCD

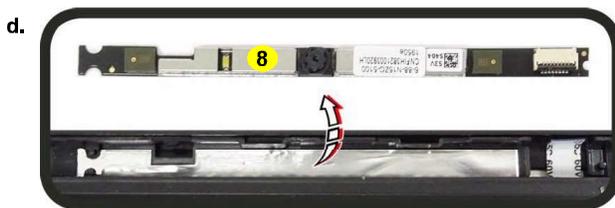
1. Turn off the computer, turn it over to remove the battery (*page 2 - 5*).
2. Lay the computer down on a flat surface with the top case up forming a 130 degree angle.
3. Carefully run your fingers around the mylar frame of the LCD panel to lift at points **1 - 4** as indicated by the arrows (*Figure 15a*).
4. Remove the LCD front cover **5** (*Figure 15b*).



  
 5. LCD Front Cover

## Disassembly

5. Disconnect the cable **6** from the locking collar socket by using a flat-head screwdriver to pry 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.

