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.**

   ![Warning]
   
   **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.
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.
Preface

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 at the rear 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 135 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.
# Introduction

## Specifications

### Processor Options

- **Intel® Core™ i7 Processor**
  - i7-4980HQ (2.80GHz), i7-4870HQ (2.50GHz), i7-4710HQ (2.50GHz)
  - 6MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 47W

### Core Logic

- Intel® HM87 Chipset

### BIOS

- AMI BIOS (48Mb SPI Flash-ROM)

### LCD

- 15.6" (39.62cm), 16:9, QFHD (3840x2160)/ WQHD+ (2880x1620)/FHD (1920x1080)

### Video Adapter

- **Intel® Integrated GPU and NVIDIA® Discrete GPU**
  - Supports Microsoft Hybrid Graphics
  - **Intel® HD Graphics 5200 (Core i7-4980HQ/i7-4870HQ CPU Integrated)**
    - Dynamic Frequency (Intel Dynamic Video Memory Technology for up to 1.7GB)
    - Microsoft DirectX®11.1 Compatible
  - **Intel® HD Graphics 4600 (Core i7-4710HQ CPU Integrated)**
    - Dynamic Frequency (Intel Dynamic Video Memory Technology for up to 1.7GB)
    - Microsoft DirectX®11.1 Compatible
  - **NVIDIA Discrete GPU**
    - NVIDIA® GeForce GTX 980M
    - 4GB GDDR5 Video RAM
    - Microsoft DirectX®12 Compatible

### Memory

- Four 204 Pin SO-DIMM Sockets Supporting DDR3L 1600MHz Memory
  - (The real memory operating frequency depends on the FSB of the processor.)
  - Memory Expandable from 4GB (minimum) up to 32GB (maximum)

### Storage

- **(Factory Option)** Two SATA M.2 2280 SSDs supporting RAID level 0/1
- Or
- **(Factory Option)** One PCIe M.2 2280 SSD

- **Two Changeable 2.5" (h) SATA (Serial) Hard Disk Drives (HDDs)/SSDs (1st: 7.0mm (h) & 2nd: 7.0mm/9.5mm (h))**
  - supporting RAID Level 0/1

### Security

- Security (Kensington® Type) Lock Slot
- BIOS Password
- **(Factory Option)** Fingerprint Reader Module
- Trusted Platform Module 2.0

### Pointing Device

- Built-in Touchpad (scrolling key functionality integrated)

### Keyboard

- Full-size Winkey Illuminated White-LED Keyboard (with numeric keypad)
<table>
<thead>
<tr>
<th>Audio</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Definition Audio Compliant Interface</td>
<td>Built-In Gigabit Ethernet LAN</td>
</tr>
<tr>
<td>S/PDIF Digital Output</td>
<td>2.0M FHD PC Camera Module</td>
</tr>
<tr>
<td>Two Speakers</td>
<td>(Factory Option) M.2 3G/4G Module</td>
</tr>
<tr>
<td>Sound Blaster Audio</td>
<td>WLAN/Bluetooth M.2 Modules:</td>
</tr>
<tr>
<td>ANSP™ 3D sound technology on headphone output</td>
<td>(Factory Option) Intel® Wireless-AC 7265 Wireless LAN (802.11ac) + Bluetooth 4.0</td>
</tr>
<tr>
<td>Built-In Array Microphone</td>
<td>(Factory Option) Intel® Wireless-N 7265 Wireless LAN (802.11b/g/n) + Bluetooth 4.0</td>
</tr>
<tr>
<td><strong>Note:</strong> External 5.1CH Audio Output Supported by Headphone, Microphone and S/PDIF Out Jacks</td>
<td>(Factory Option) Intel® Wireless-AC 3160 Wireless LAN (802.11ac) + Bluetooth 4.0</td>
</tr>
<tr>
<td>Interface</td>
<td>(Factory Option) Third-Party Wireless LAN 802.11b/g/n + Bluetooth 4.0</td>
</tr>
<tr>
<td>Three USB 3.0 Ports (Including one AC/DC Powered USB port)</td>
<td>(Factory Option) Qualcomm® Atheros Killer Wireless-AC 1525 Wireless LAN (802.11ac) + Bluetooth 4.0</td>
</tr>
<tr>
<td>One eSATA Port (USB 3.0 Port Combined)</td>
<td>Environmental Spec</td>
</tr>
<tr>
<td>One HDMI-Out Port</td>
<td>Temperature</td>
</tr>
<tr>
<td>Two Mini DisplayPorts (1.2)</td>
<td>Operating: 5°C - 35°C</td>
</tr>
<tr>
<td>One S/PDIF Out Jack</td>
<td>Non-Operating: -20°C - 60°C</td>
</tr>
<tr>
<td>One Headphone/Speaker-Out Jack</td>
<td>Relative Humidity</td>
</tr>
<tr>
<td>One Microphone-In Jack</td>
<td>Operating: 20% - 80%</td>
</tr>
<tr>
<td>One RJ-45 LAN Jack</td>
<td>Non-Operating: 10% - 90%</td>
</tr>
<tr>
<td>One DC-In Jack</td>
<td>Power</td>
</tr>
<tr>
<td>Card Reader</td>
<td>Embedded 4-Cell Polymer Battery Pack, 60WH</td>
</tr>
<tr>
<td>Embedded Multi-In-1 Push-Push Card Reader</td>
<td>Full Range AC/DC Adapter</td>
</tr>
<tr>
<td>MMC (MultiMedia Card) / RS MMC</td>
<td>AC Input: 100 - 240V, 50 - 60Hz</td>
</tr>
<tr>
<td>SD (Secure Digital) / Mini SD / SDHC/SDXC</td>
<td>DC Output: 19.5V, 9.23A or 19V, 9.5A (180W)</td>
</tr>
<tr>
<td>M.2 Slots</td>
<td>Dimensions &amp; Weight</td>
</tr>
<tr>
<td>Slot 1 for Combo WLAN and Bluetooth Module</td>
<td>385mm (w) * 271mm (d) * 28.8mm (h)</td>
</tr>
<tr>
<td>Slot 2 for SATA or PCIe SSD</td>
<td>2.5kg (Barebone with 60WH Battery)</td>
</tr>
<tr>
<td>(Factory Option) Slot 3 for SATA SSD or 3G/4G Module</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

1. PC Camera
2. *PC Camera LED  
   *When the PC camera is in use, the LED will be illuminated.
3. Built-In Array Microphone
4. LCD
5. Speakers
6. Power Button
7. Keyboard
8. Touchpad & Buttons
9. Fingerprint Reader (Optional)
Introduction

**Figure 2**
Front View
1. LED Indicator

**Figure 3**
Right Side View
1. S/PDIF-Out Jack
2. Microphone-In Jack
3. Headphone-Out Jack
4. Multi-in-1 Card Reader
5. USIM Card Reader (for 3G/4G USIM Cards)
6. USB 3.0 Ports
7. RJ-45 LAN Jack
8. Security Lock Slot
1. Introduction

**Figure 4**
Left Side View
1. Vent
2. HDMI-Out Port
3. Powered USB 3.0 Port
4. Mini DisplayPorts

**Figure 5**
Rear View
1. Vent
2. DC-In Jack
3. Combined eSATA/USB 3.0 Port
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.
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.

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.
Removing the Keyboard

1. Turn off the computer, turn it over.
2. Remove screws 1 - 2 from the bottom of the computer.
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 1a).
4. Carefully lift the keyboard 6 up, being careful not to bend the keyboard ribbon cable 7. Disconnect the keyboard ribbon cable from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins 8 away from the base (Figure 1b).
5. Carefully lift the keyboard 6 off the computer (Figure 1c).

Figure 1
Keyboard Removal

a. Remove the screws from the bottom of the computer and then eject the keyboard using a special eject stick to push the keyboard out while releasing the keyboard as shown.
b. Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
c. Remove the keyboard.

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.
**Removing the Battery**

1. Turn the computer off, and turn it over.
2. Remove the SD card cover and screws \( \text{(Figure 2a)} \).
3. Carefully lift the bottom case \( \text{(Figure 2b)} \) up in the direction of the arrow and remove it.
4. The battery will be visible at point \( \text{(Figure 2c)} \).

---

**Figure 2**

**Battery Removal**

- a. Remove the SD cover and screws.
- b. Remove the bottom case.
- c. Locate the battery.

---

**Screw Size**

Note that the size of screw \( \text{2} \) \& \( \text{5} \) is M2.5 x 8L.

---

1. SD Card Cover
2. Bottom Case
- 14 Screws
5. Carefully disconnect the cable 19, then remove screws 20 - 22 (Figure 3b).
6. Lift the battery 23 off the computer (Figure 3e).
7. Reinsert the bottom case starting from point 24 as shown (Figure 3f) to avoid damaging the rear eSATA/USB 3.0 port. Tighten the screws to secure the bottom case in place.

**Figure 3**

Battery Removal (cont’d.)

d. Disconnect the cable and remove the screws.
e. Lift the battery off the computer.
f. Reinsert the bottom case and tighten the screws.
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.

Hard Disk Disassembly Process

1. Turn off the computer, and remove the battery (page 2 - 6).
2. The HDD will be visible at point 1 on the mainboard (Figure 4a).
3. Remove screws 2 - 4 from the HDD assembly (Figure 4b).

a. Locate the HDD.
b. Remove the 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.
Disassembly

4. Slightly lift and pull the hard disk in the direction of arrow 5 (Figure 5c).
5. Lift the hard disk assembly 6 out of the bay 7 (Figure 5d).
6. Remove screws 8 - 15 and bracket 16 from the hard disk 17 (Figure 5e).
7. Reverse the process to install a new hard disk (do not forget to replace the screws).

---

**Installing 9.5mm or 7mm HDD**

Note that the hard disks pictured on the following pages are all 7mm(h) hard disk drive.

In some cases 9.5mm(h) hard disk drives will be installed. It can only be installed on the upper slot.

There are two hard disk drive options:
- **Two** changeable 2.5’’ (6cm) **7.0mm (h) SATA** (Serial) Hard Disk Drives/Solid State Drives (SSD) supporting RAID level 0/1
- **One** changeable 2.5’’ (6cm) **9.5mm (h) SATA** (Serial) Hard Disk Drive/Solid State Drive (SSD)

For more information, contact your distributor/supplier, and bear in mind your warranty terms.

---

**Figure 5**
HDD Assembly
Removal (cont’d.)

c. Slightly lift and pull the HDD in the direction of the arrow.
d. Lift the HDD assembly out of the bay.
e. Remove the screws and bracket from the HDD.

---

6. HDD Assembly
16. HDD Bracket
17. HDD

- 8 Screws
Disassembly

Figure 6
RAM-1 Module Removal

a. The RAM modules will be visible at point 1.
b. Remove the screws and lift the shielding plate out.

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.

Memory-1 Upgrade Process
1. Turn off the computer, turn it over, remove the keyboard (page 2 - 5).
2. The RAM modules will be visible at point 1 after removing the shielding plate (Figure 6a).
3. Remove screws 2 - 5 and lift the shielding plate 6 off the computer (Figure 6b).

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 main memory can be expanded up to 16GB. The SO-DIMM modules supported are 1024MB and 2048MB DDR3L Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Turn off the computer, turn it over, remove the keyboard (page 2 - 5).
2. The RAM modules will be visible at point 1 after removing the shielding plate (Figure 6a).
3. Remove screws 2 - 5 and lift the shielding plate 6 off the computer (Figure 6b).

6. RAM Shielding Plate
   • 4 Screws
4. Gently pull the two release latches (7 & 8) on the sides of the memory socket in the direction indicated by the arrows (Figure 8c). The RAM module 9 will pop-up (Figure 8d), and you can then remove it.
5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. 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.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
Disassembly

Memory-2 Upgrade Process

1. Turn off the computer, turn it over, remove the battery (page 2-6).
2. The RAM-2 modules will be visible at point 1 on the mainboard (Figure 8a).
3. Gently pull the two release latches (2 & 3) on the sides of the memory socket in the direction indicated by the arrows (Figure 8b). The RAM module 4 will pop-up (Figure 8c), 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.

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 M.2 SSD Module

1. Turn off the computer, turn it over, remove the battery (page 2 - 6).
2. The M.2 SSD module will be visible at point 1 on the mainboard (Figure 9a).
3. Remove the screw 2 (Figure 9b)
4. The M.2 SSD module 3 (Figure 9c) will pop-up, and you can remove it from the computer.

Figure 9
M.2 SSD Module Removal

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

3. M2 SSD Module
• 1 Screw
Disassembly

1. Turn off the computer, turn it over, remove the battery (page 2 - 6).
2. The Wireless LAN module will be visible at point 1 on the mainboard (Figure 10a).
3. Carefully disconnect the cables 2 & 3, and then remove the screw 4 (Figure 10b).
4. The Wireless LAN module 5 (Figure 10c) will pop-up, and you can remove it from the computer.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket (Figure 10b).
Wireless LAN, Combo, 3G & LTE Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo, 3G and LTE 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.

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Antenna Type</th>
<th>Cable Color</th>
<th>Cable Cover Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLAN/WLAN &amp; Bluetooth Combo</td>
<td>WM 1</td>
<td>Black</td>
<td>Transparent</td>
</tr>
<tr>
<td></td>
<td>WM 2</td>
<td>Gray</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WM 3</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>LTE Broadband</td>
<td>LTE 1</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>LTE 2</td>
<td>Gray</td>
<td></td>
</tr>
<tr>
<td>3G Broadband</td>
<td>3G 1</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>3G 2</td>
<td>Gray</td>
<td></td>
</tr>
</tbody>
</table>

Cable 1 is usually connected to antenna 1 (Main) on the module, and cable 2 to antenna 2 (Aux).
Removing and Installing the 3G / SATA Module

3G Removal Procedure

1. Turn off the computer, remove the battery (page 2 - 6).
2. Locate the module, it is visible at point \( \text{Figure 11a} \).
3. Carefully disconnect the cables 2 & 3, and then remove the screw 4 from the module (Figure 11b).
4. The module 3 will pop-up (Figure 11c).
5. Lift the module up off the computer (Figure 11d).

---

**Figure 11**

3G Module Removal

a. Locate the module.
b. Disconnect the cables and remove the screw.
c. The module will pop-up.
d. Lift the module up off the socket.

5. MSATA Module
   - 1 Screw
SATA Removal Procedure

1. Turn off the computer, remove the battery (page 2 - 6).
2. Locate the module, it is visible at point 1 (Figure 12a).
3. Remove the screw 2 from the module (Figure 12b).
4. The module 3 will pop-up (Figure 12c).
5. Lift the module 3 up and off the computer (Figure 12d).

---

Figure 12
SATA Module Removal

a. Locate the module.
b. Disconnect the cables and remove the screw.
c. The module will pop-up.
d. Lift the module up off the socket.

- M2 SATA Module
  - 1 Screw
3G / SATA Installation Procedure

1. Place the thermal pad 1 on the module as shown (Figure 13a).
2. Insert the module 2 in the computer (Figure 13b).
3. Tighten the screw 3 to secure it in place (Figure 13c).

---

Figure 13
3G / SATA Module Installation

a. Place the thermal pad.
b. Insert the module.
c. Tighten the screw.

---

1. Thermal Pad
2. M2 SATA Module
- 1 Screw

---

Be sure to place the thermal pad’s adhesive side down onto the module surface. The thicker thermal pad should be placed on the top side of the module as shown.
The thermal pad needs to be cut (along the two markers as shown) to fit the corresponding size of the module.