

[English Help](#)[Deutsche Hilfe](#)[Aide en Français](#)[Ayuda en Español](#)

## Getting Started

This online document, *GoBook<sup>®</sup> MR-1 Help*, contains all the information you need to set up and use your GoBook MR-1. For information on printing, navigating or otherwise using *GoBook MR-1 Help*, see the [How to Use This Help System](#) topics. If you have suggestions for how we may improve this document, please see [Documentation Feedback](#).

## Unpacking Your System

Inside your packaging you will find:

[Standard Parts](#)

[Standard Features](#)

[Optional Features](#)

[Optional Parts and Accessories](#)

## Where to Look For Information

[About Your Computer](#)

[About Windows](#)

## Turning Off the Computer

Turning off the computer properly is important to maintaining your GoBook MR-1.

 To Turn off Your Computer

Select **Start, Turn Off Computer, Turn off** and follow the instructions on the screen, or press the [power button](#) briefly.

**WARNING** do not press and hold the power button to shut the notebook off as this may cause damage to the system components

If you are going to be away from the computer for a short period, there are ways to conserve power without shutting down the system. See [Power Management](#) and [Battery Tips](#) for details.

**NOTE** If you are unable to shut down your computer normally, follow the instructions in [Troubleshooting](#).

**CAUTION** Shutting off the computer improperly may result in data loss.

## Startup Problems?

If your computer does not startup properly, try these solutions first:

- Connect the [AC adapter](#) to charge the battery if it is not charged

**NOTE** *Push the DC jack firmly into the computer until it “clicks.”* If the AC adapter is connected and functioning properly, the Power LED on the AC adapter should be lit as well as the [External Power LED](#) on the GoBook MR-1.

- If the AC adapter is connected but the unit will still not turn on, make sure the electrical outlet you are using is working
- Check to make sure the battery is installed and charged properly
- If the battery does not begin charging, perform the following:
  1. [Remove the battery](#)
  2. Connect the AC adapter
  3. Turn on the computer by pressing the [Power Button](#)
  4. [Reinstall the battery](#). The [Battery LED](#) is a steady blue while the battery is charging

## Tips for New Owners

- **Take responsibility for backup**  
Back up files often. Users who need to manage large amounts of data may wish to use backup devices
- **Don't leave passwords anywhere on your notebook or carrying case**
- **Be careful when placing your notebook on an airport security conveyor belt**  
In most airports, security conveyor belts are safe for computers. If you are not sure, ask the security staff. You should keep a close eye on your computer
- **Tape your business card to the notebook and accessories**  
In the workplace, notebooks and accessories may often look exactly alike, leading to equipment mix-ups. Prevent such mix-ups by placing your name on your equipment
- **Install antivirus software**
- **Develop ergonomic work habits**  
The science of ergonomics studies the relationship between health and a suitable work environment. For more information on ergonomics, contact your nearest computer bookstore, or local library. The Internet also has information on this and other related subjects

**NOTE** Using a computer for extended periods of time with a poor workstation setup and incorrect work habits can cause health problems

## Safety

Read these instructions carefully. Following these guidelines will help prevent damage to your computer and help protect your personal safety.

- Read and follow all warnings and instructions marked on the product and noted in this documentation, including the [Notices and Compliance](#) section
- The first time you use your computer, we recommend that you carefully read the section on [Power Management](#) to familiarize yourself with basic battery information and ensure optimum performance
- **CAUTION** This notebook computer is designed (only) to be used with the Manufacturer provided dedicated AC Adapter or Vehicle Adapter
- Unplug the computer from the power outlet before cleaning. Use a damp cloth for cleaning. Aerosols, solvents, or strong detergents are not recommended cleaning solutions and may void your warranty. For system decontamination recommendations please contact your service technician
- Slots and openings in the computer case are for ventilation purposes. Do not block or cover these openings or the system could overheat
- Do not place the product on a soft surface such as a bed, sofa, or rug where the ventilation slots and openings may be blocked
- Do not place this product near or over a radiator or heat register

- Do not place this product in a built-in installation unless proper ventilation is provided
- Do not store the computer at temperatures above 167°F (75°C) or below -67°F (-55°C)
- Do not step on or place anything on the power cord
- Do not slam the display lid when you close it
- Do not place any object on top of the computer when the display is closed
- If you use the computer with an extension cord, ensure that the total ampere ratings of all the devices sharing the extension do not exceed the rating of the extension cord or the rating of the wall outlet
- Do not push foreign objects into the computer through any of the slots or openings. Dangerous voltages are present, which could cause electric shock, fire, or damage sensitive components
- The computer is designed to withstand spills. If a spill occurs, power off the computer and wipe it down before continuing to use the computer
- For best results, use a power strip with a built-in surge protector. Do not use inferior extension cords as this may result in damage to your computer
- FAA regulations require that all transmit/receive devices be turned off during flight. If you have radios in your computer (including GPS) and your computer is equipped with a radio on/off switch, please use it to turn your radios off during flight. If you have radios and you do not have a switch to turn the radios off, either leave your computer off during flight or contact your help desk for assistance

## **Service and Upgrade Safety and Precautions**

- Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks and may void your warranty. Refer all servicing to qualified service personnel
- Unplug this product from the wall outlet and refer servicing to authorized service personnel under the following conditions:
  - When the power cord or plug is damaged or frayed
  - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition
  - If the product exhibits a distinct change in performance, indicating a need for service
- Do not upgrade or service this computer without prior authorization from the manufacturer. Damage caused by servicing that is not authorized may void your warranty
- Before performing any manufacturer authorized service or upgrade, first follow these instructions:
  - Prevent damage from static electricity by following ESD precautions
  - Place the computer on a clean, flat surface
  - Turn off the computer and disconnect the power supply

- Undock the computer if it is in a docking device (such as an office dock or vehicle dock)
- Disconnect any attached peripherals
- Disconnect any attached network, telephone or telecommunication line
- Remove any media in your computer's slots or bays
- Remove the battery (See [Battery Removal](#))
- Remove the hard drive (See [Hard Disk Drive Removal](#))

## Battery Pack Safety and Precautions

- **WARNING!** There is danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries promptly and according to the manufacturer's instructions
- **WARNING!** Batteries may explode if not handled properly. Do not disassemble, open, puncture or dispose of battery packs in a fire. The battery pack could burst or explode releasing hazardous chemicals
- **WARNING!** Keep battery packs away from children
- Observe the safety instructions printed on the battery
- Only use approved Li-Polymer (standard -- 29WHr) or (optional secondary) Li-Ion (extended -- 50WHr) battery packs with your computer and replace the battery pack only with the approved part
- Do not abuse, deliberately pierce, or subject the battery pack to excessive impact
- Immediately discontinue use of the battery if it appears damaged or abnormal in any way, consult your local provider for advice
- Do not immerse the battery pack in liquid
- Do not short together the battery connections. Do not store the battery pack with metallic objects due to the risk of short circuit
- Battery chemical leakage is harmful. In the unlikely event of battery leakage; DO NOT TOUCH. In case of accidental contact with the eyes or skin, immediately wash with running water and seek medical advice. In the case of accidental ingestion, seek immediate medical attention
- Follow [Battery Tips](#) for use and storage.

## Keyboard Operation

Your GoBook MR-1 is easiest to use when held in both hands. Due to the unit's compact construction, it takes a little practice to become proficient with it's operation.

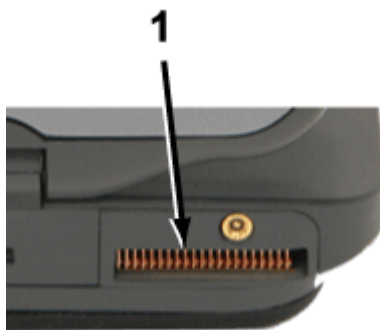
### How to Use the GoBook MR-1

Open the display and hold the unit in both hands with your fir





on the on either side of the keyboard (as shown to the right).

**NOTE** Make sure your fingers do not wrap around the back of the unit and cover the fan outlet (1) as the unit may over-heat.



## Operating the Keyboard and Controls

Use one thumb to press the [power button](#) at the top center of the keyboard. Once the unit has powered up, use your left thumb to operate the controls on the left side (such as the mouse buttons, direction pad, Escape, Tab, Windows and Zoom keys). Use your right thumb to operate the controls on the right side (such as the Micro Joystick, Touchpad, Backspace, Enter, and Illumination Keys).

If you need to use a Function Key combination, hold down an **Fn** key with one thumb and with the other to press the second key. For example, to turn the volume up or down, press and hold the **Fn** key with your right thumb and the  or  keys with your left.

If you need a **Ctrl+Alt+(key)** combination, use one thumb to press and hold the **Ctrl** and **Alt** keys and the opposite thumb to press the combination key. For example, when using the [Zoom](#) function press the [Zoom key](#). Then press and hold the left **Ctrl** and **Alt** keys with your left thumb and use your right thumb to press **M** to zoom in or **N** to zoom out.

**NOTE:** For ease of use, the standard **Ctrl+Alt+Del** key combination can be activated by pressing the [Ctrl+Alt+Del](#) special key just below the power button, as well as using the **Ctrl+Alt+Del** keystroke combination.

The [Micro Joystick](#) or the [Touchpad](#) are the easiest ways to move the cursor around the keyboard. Use the Micro Joystick for coarse movement and the Touchpad for fine control (or use the method that works best for you). Use the Left [Mouse Button](#) or double-tap the Touchpad to select objects. Use the Right [Mouse Button](#) to open pop-up menus.

The [Direction Pad](#) moves the cursor up, down, right or left within a print document or form. Use it in combination with the **Fn** keys to move across and between pages.

## Best Practices for the GoBook MR-1

This section provides the GoBook MR-1 with recommended practices intended to maximize the service life of the equipment and provide resolution to common issues. For more detailed discussions of care, maintenance and troubleshooting, see the sections below:

- [Operating with Battery Power](#)
- [Customizing Your BIOS Settings](#)
- [Maintenance and Storage](#)

- [Troubleshooting](#)

## General Daily Operations

- 1. Missing Port Covers and Doors:** Inspect for broken, loose or missing parts and fasteners.
  - a. Missing port covers or doors create contaminant entry points which may lead to system failure.
  - b. Replacement port covers are available as field kits. contact your support representative for order requests.
- 2. Screen Cleaning:** The GoBook MR-1 display, with proper usage and cleaning, will last for the anticipated field life of the product (3 to 5 years) without significant degradation in view ability or function.
  - a. For mild cleaning tasks use the micro-fiber, cleaning cloth provided with your unit. Tougher contaminants such as oily fingerprints may require light dampening with clean water, and will be effective for most contaminants without damaging the screen surface. This method should always be tried before stronger solutions are considered.
  - b. For tougher cleaning tasks, a mixture of isopropyl alcohol and Water (50/50) used with the cleaning cloth is effective and will not damage the touchscreen surface.
  - c. Never use paper products such as paper towels or wipes to clean the display surface. Paper products are abrasive and act much like fine sandpaper causing irreversible damage to the screen surface and anti-glare hard coat.
  - d. Both replacement Display Cleaning Cloths and approved Display Cleaning solution are available as Field Kits. Contact your support representative for order requests.
- 3. Screen Overlay Use:** A screen overlay is recommended for environments with high contaminant potential.
  - a. A Screen overlay provides protection from damage caused by use of foreign objects or surface contaminants, and maximizes the useful life of the screen surface.
  - b. Worn, scratched, or otherwise damaged screen overlays can be replaced.
  - c. Contaminants on the screen overlay surface should be removed by following the same cleaning methods noted above.
  - d. The screen overlay has a negligible impact on overall display brightness/viewability and provides enhanced screen clarity while maximizing the screen surface useful life.
  - e. Screen Overlays are available as Field Kits. Contact your Support Representative for order requests.
- 4. Use of the Touch Screen Stylus:** If your GoBook MR-1 has the optional integrated touchscreen use the included stylus. Foreign objects such as ball point pens or hand tools should never be used for touchscreen input; they will cause damage to the screen surface.
  - a. A clean finger tip can be used for touchscreen input with out damaging the screen surface. Fingertip use may introduce contaminants to the touchscreen surface and increase periodic screen cleaning requirements.
  - b. Replacement Styli are available as Field Kits. Contact your Support Representative for order requests.

**NOTE** Available Field Kits and can be ordered through the [iCare Servenet Portal](#), or by contacting the Client Care Center (CCC) at 800-638-9270, option 2. Access to the iCare Servenet Portal requires a Username and Password. Portal access will be setup upon request.

**5. Ensure that the computer is stored within its specified temperature range.**

- a. Storage Temperature -67° F to 167° F (-55° C to 75° C)

**6. Conserve battery charge when possible to maximize battery life during daily use.**

- a. Partial discharge/charge cycles are preferred compared to draining the battery completely and recharging.

**7. Avoid prolonged exposure to temperature extremes.**

- a. Cold temperature extremes may result in reduced available energy from the battery. This energy is recoverable as the battery warms to a nominal temperature of 68° F (20°C).
- b. Prolonged exposure to high temperatures can result in a permanent reduction in available energy from the battery.
- c. Battery charging is disabled below 32° F (0°C) and above 113° F (45°C) to protect the lithium ion cells in the battery.

**8. Power Down:** Exit all applications, and shutdown or reboot at the end of each work day. If the computer is left powered overnight, ensure that all applications are closed and perform a restart prior to beginning daily operations.

- a. This practice ensures that all applications (and system resources used by those applications) are reinitialized each work day.
- b. Unless an application is specifically designed for 24/7 operation, a daily practice of restarting (resetting) an application can minimize the potential for a wide variety of operational anomalies often perceived as a hardware failure.

**9. Use of the MR-1 in a [Vehicle Dock](#):**

- a. Never attempt to operate the GoBook MR-1 or read the display while driving. This is extremely distracting and may increase potential of accidents.
- b. Always close the display lid while the vehicle is in motion. During travel, the vehicle may present an increased level of vibration to the mounting solution. This vibration can be amplified when the display in an upright/opened position causing accelerated hinge wear.

## Power Management

**1. Power Management Applications:** The use of GoBook MR-1 Power Saver application is recommended to provide maximum battery run time and prolong battery service life. Default settings allow the unit to enter a Standby/Suspend state after a set period of inactivity. Extending or Disabling the Standby/Suspend time-out period will increase power consumption and reduce operational time on battery power.

- a. The GoBook MR-1 will resume/wake from Standby with keyboard activity.

**2. Shutdown:** Shutdown the GoBook MR-1 when it will not be used for extended periods to conserve battery



power. Depending on the configuration of the GoBook MR-1 there are specific considerations:

- a. **Basic Configuration** – No RF Modems or external device connections. When using a basic configuration unit, there are no special considerations for power management.
- b. **Integrated RF Devices** – Disable integrated or user installed RF devices when not in use as they can consume battery power unnecessarily
- c. **Externally connected devices** – Some externally connected devices may be powered by the GoBook MR-1. It is best to exit any application utilizing these devices prior to powering off. Restarting the application should reinitialize the device. Externally connected devices or peripherals using GoBook MR-1 battery power may result in reduced battery run times.

## File Management

1. **Backups:** It is good practice to backup essential data and files periodically since any data or files stored in volatile memory (RAM) can be lost in the event of a hard reset or unexpected shutdown. Contacts, tasks, calendar, email, and documents should be safeguarded against loss.
  - a. Save important files to non-volatile memory (External backup media, Server Based backup storage, etc.)
  - b. Utilize Windows provided Backup applications or a third party application to back up essential data.
2. **Periodically perform housekeeping of files:**
  - a. Uninstall unused drivers and applications.
  - b. Delete unneeded files and cleanup folders.
  - c. Routinely run Check Disk and Disk Defragmenter utilities to ensure file structure is clean and optimized.
3. **Check Disk Process:**
  - a. **Go to Start, My Computer**
  - b. Right click on the **C:** drive and select **Properties**
  - c. Select the **Tools** tab
  - d. Select the “**Check Now...**” button.
  - e. Check **Automatically fix file system errors** and **Scan for and attempt recovery of bad sectors.**
  - f. Select the **Start** button.
  - g. Select **run at the next boot** when prompted.
  - h. Restart the computer.
4. **Disk Defragmenter Process:**
  - a. Go to **Start, My Computer**

- b. Right click on the **C:** drive and select **Properties**
- c. Select the **Tools** tab
- d. Select the **“Defragment Now...”** button.
- e. Ensure drive **C:** is selected in the volume display.
- f. Click the **Defragment** button.
- g. When notified that defragmentation is complete, close all applications and restart the computer.

## Battery Charging

1. **Charge the battery at room temperature** (approximately 68°F [20°C]) for best results. Charge acceptance is optimum at this temperature and requires the least amount of time to fully recharge. At room temperature the GoBook MR-1 battery requires up to four (4) hours to recharge from a fully discharged state.
2. **Charge the GoBook MR-1 Battery at the end of each work day:**
  - c. Exit all applications and power off.
  - d. Connect to external power; Verify External Power LED.
  - e. Verify charge indicator LED.
3. **At the beginning of each work day:**
  - a. Check for battery charge status (Recommend Fully Charged)
4. **During each work day:**
  - a. Connect AC Charger, Vehicle Dock, or Vehicle Power Adapter whenever possible.
  - b. Verify charging indicator LED.

## Storage

1. **Storing the GoBook MR-1 for five (5) days or less**
  - a. Install the battery pack and connect the unit to external power and allow the battery pack to fully charge. The charging LED will be on solid while charging and go off when battery charging is completed.
  - b. Shut down the GoBook MR-1 and store in a cool, dry location.
2. **Storing the GoBook MR-1 for longer than five (5) days.**
  - a. Li-Polymer or Lithium Ion batteries can be permanently damaged if the unit is stored for extended periods requiring battery replacement.
  - b. If the computer will be stored for more than 5 days, backup files and data, fully charge the battery, then discharge it to 40% and remove the battery.

- c. The GoBook MR-1 and battery should be stored in a cool, dry location.

### 3. When storing Li-Polymer or Li-Ion battery packs for extended periods, consider these factors

- a. Fully charged Li-Polymer or Li-Ion battery packs deteriorate faster than partly discharged ones. For ideal storage, charge the packs to 100% and then discharge them to a 40% charge before storage.
- b. Do not allow stored Li-Polymer or Li-Ion packs to discharge completely, as this may permanently damage them. Stored packs should be recharged to 40% capacity every six (6) months.
- c. Storing packs at temperatures near 0°C (32°F) slows down self-discharge and battery aging; packs that are stored for a long period should be kept at low temperatures where practical.

**NOTE** Store batteries as close to 0°C (32°F) as practical without allowing the batteries to freeze or reach 0°C (32°F).

- d. If you store battery packs at normal ambient temperatures, use the following charge policy to maintain battery pack condition –
  - i. Store batteries within the temperature range of 15°C to 30°C (59°F to 86°F).
  - ii. Charge installed packs every 5 days to maintain their charge capacity.
  - iii. Charge uninstalled packs every six (6) months to 100%, then discharge to 40% and return to storage.

## Troubleshooting

These are basic troubleshooting tips. For more complete help with [troubleshooting](#), see the section at the end of this Help file.

### 1. [Battery Power – Battery does not charge](#)

### 2. [Battery Power – short run time](#)

### 3. Lock-ups

- a. Determine if the touchscreen, touchpad or keyboard inputs are recognized.
- b. Attempt to close any programs that are not responding (press the **Ctrl+Alt+Del** key and click on the **Task Manager** button).
- c. If Task Manager does not list any suspect programs/applications, perform a reboot.
- d. Restart applications and try the specific operation again.
- e. If the Shut down Menu does not respond, press and hold the power button for approximately 10 seconds to perform a forced shutdown. NOTE Any unsaved data will be lost when using this shutdown method.
- f. Power on, boot to Windows, and restart the RF applications, if this does not resolve the problem image corruption is likely. Re-image the GoBook MR-1 and try again.

### 4. RF Communications

- a. If coverage is historically good at this location, check the signal strength. Reposition the computer slightly to increase signal strength. Wait approximately five (5) minutes. Determine if there is RF activity. Applications provided with RF devices generally provide diagnostic capability.
- b. If not resolved, exit all applications, restart the applications, and try RF communications again.
- c. If not resolved, connect external power and perform a restart.
- d. Restart applications and try RF communications again.

## 5. Additional Information is Available

- a. The "GoBook MR-1 Quick Start Guide" included with the original shipment packaging.
- b. The GoBook MR-1 factory installed Windows image includes a resident [Help and Support](#) file with a link on the desktop; alternately Help can be accessed via the following path: **Start, All Programs, Mobile Computer Tools**.
- c. Please contact your Support Representative for any additional questions.

## Getting Familiar with Your Computer

The GoBook MR-1 computer is a rugged, weather-sealed notebook computer system designed for the demanding environment of the mobile worker. It is a superior work tool for collecting, managing, and communicating information in the field.

This section describes the external and internal features of your GoBook MR-1 computer.

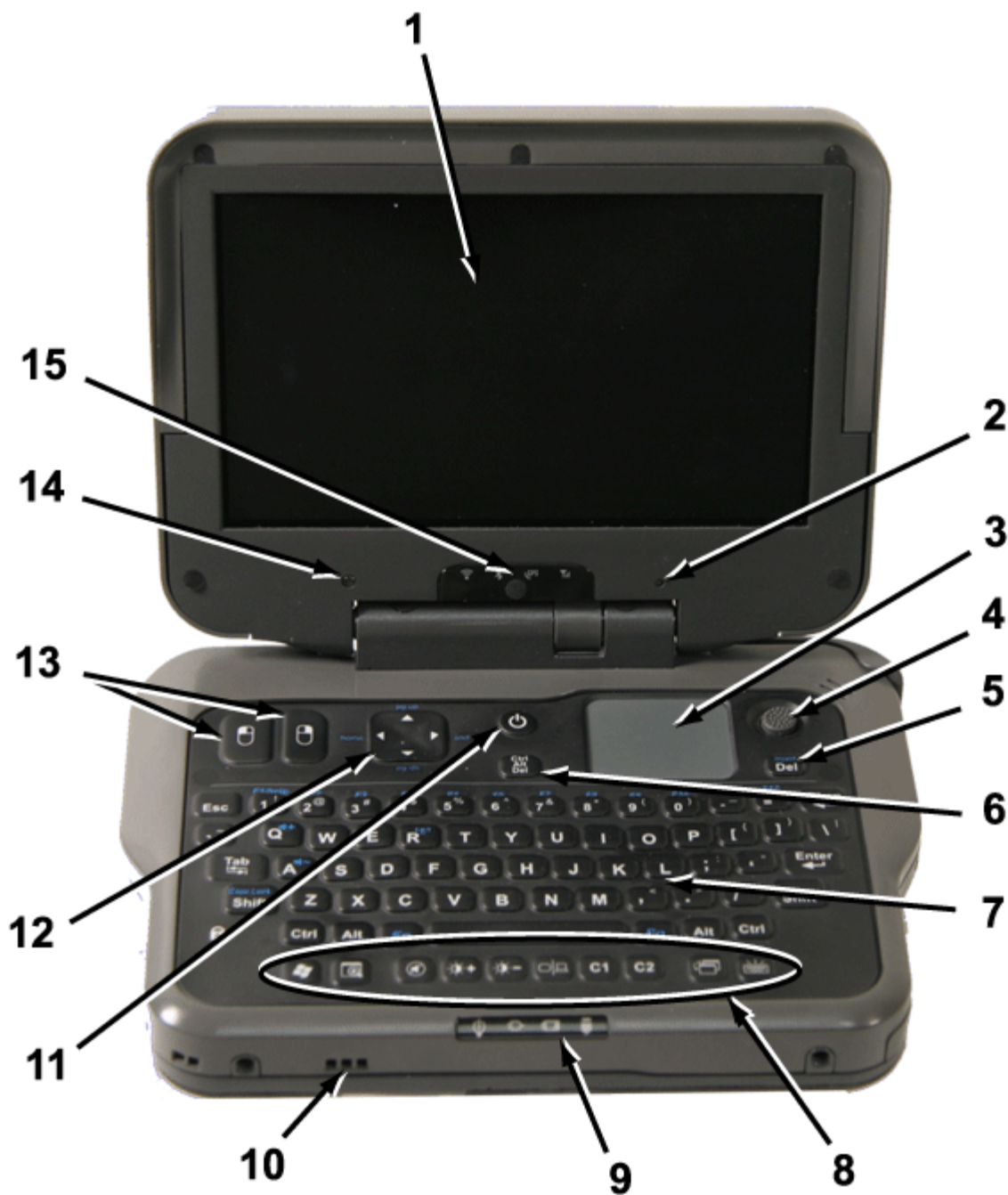
## Tour of Your Computer

This section shows all views of your computer with a summary of key features.



## Front View

*Hover the mouse over each number on the picture to see a description*



#	Feature	Description
1	<a href="#">Display</a>	5.6" WSVGA display (1024 x 600)
2	Internal Microphone	Integrated, weatherized microphone can be used with various software applications that require audio input
3	<a href="#">Touchpad</a>	Use for navigation
4	<a href="#">Micro Joystick</a>	A thumb-operated joystick for cursor control. Use for navigation like the touchpad or external mouse.
5	<a href="#">Del</a>	Delete Key
6	<a href="#">Ctrl+Alt+Del</a>	Special Key used instead of standard <b>Ctrl+Alt+Del</b> sequence for activating the Task Manager.
7	<a href="#">Keyboard</a>	Standard keyboard
8	<a href="#">Special Keys</a>	A number of keys designed for control of zoom function, audio, display and keyboard brightness, and customer application launch.

9	<a href="#">Unit Status LEDs</a>	LEDs below keyboard: Unit on, AC power present, Battery Charging, HDD activity
10	<a href="#">Speaker</a>	Integrated speaker for audio output
11	<a href="#">Power On/Off</a>	Press to power on or start shutdown. Press and hold for power off.
12	<a href="#">Direction Pad</a>	Use like arrow keys on conventional keyboard.
13	<a href="#">Mouse Buttons</a>	Use like left and right mouse buttons
14	<a href="#">Photo Sensor</a>	The photo sensor is used to adjust the LCD and keyboard backlight brightness in response to changing lighting conditions
15	<a href="#">Radio and Wireless Status LEDs</a>	Radio and Wireless LED Status Indicators: 802.11a/b/g, Bluetooth, GPS, Wireless WAN

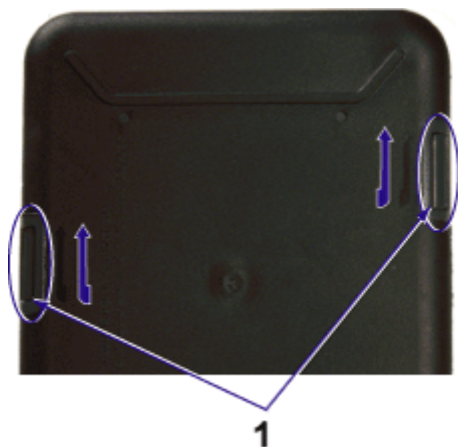
## Right Side View



#	Feature	Description
1	<a href="#">2.5 mm Audio in/out</a>	Jack for 2.5mm headset

*Note: The [Office Dock](#) allows for separate audio input/output jacks.*

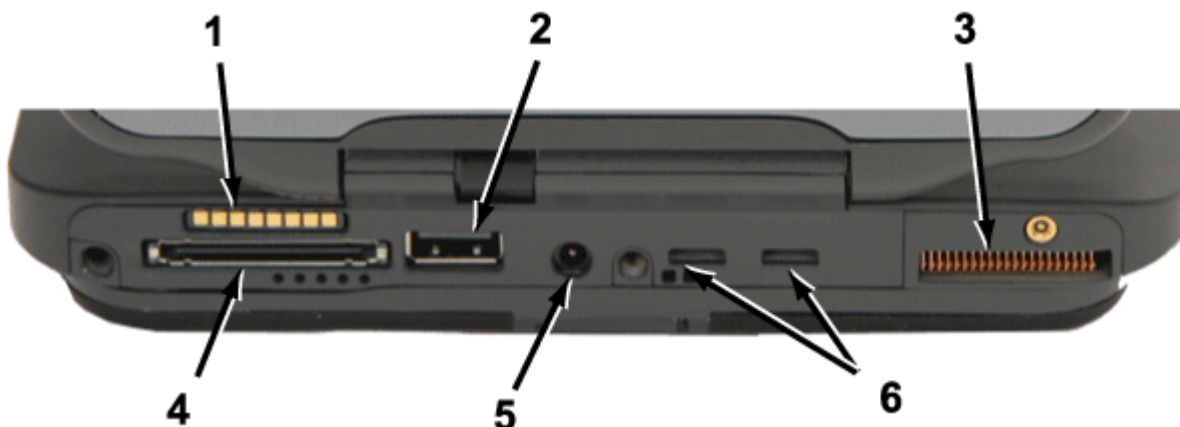
## Bottom View



#	Feature	Description
1	<a href="#">Battery release latches</a>	Press in on the latches (1) with your thumbs and slide the battery in the direction of the arrows to remove it from the back of the computer and access the hard drive or (optional) Expansion Module area.

## Back Edge View

Hover the mouse over each number on the picture to see a description




#	Feature	Description
1	Power Connector	For use with various optional docks and adapters such as the <a href="#">office</a> or <a href="#">vehicle docks</a> .
2	<a href="#">USB 2.0 port</a>	Connect additional devices to your GoBook MR-1, including flash memory drives, external hard drives, external optical drives, additional input devices (such as an external keyboard or mouse), digital cameras, digital music players, or any other USB device.
3	Cooling Fan Outlet	Air outlet for fan.  <b>NOTE</b> Make sure your fingers do not wrap around the back of the unit and cover the fan outlet (3) as the unit may over-heat.
4	<a href="#">Multi I/O Docking Connector</a>	The optional office and vehicle docks add additional connectivity to the GoBook MR-1.
5	<a href="#">DC-In Port</a>	Connect the included AC power cord here and to a 120 volt wall socket to provide power to the device. The battery automatically recharges whenever the AC power cord is plugged into this port and into a live wall socket.
6	Dock Insert Tab Slots	Tab Slots help hold the <a href="#">office dock</a> in position.

## Keyboard Basics

The GoBook MR-1 features:




- [Left and Right Mouse buttons](#)
- [Touchpad](#)
- [Micro Joystick](#)
- [Direction pad](#) (D-Pad)
- Dedicated [Ctrl+Alt+Del](#) key
- Thumb operated, back-lighted, [70-key keyboard](#)
- Twelve [function keys](#)
- 2 [Application launch buttons](#) (programmable buttons)
- [Zoom key](#)
- [Audio controls](#)
- [Special keys](#) for display brightness and keyboard back-lighting
- [Radio ON/OFF Hot Key](#) **Fn**+  (option)
- [Back-lit keyboard](#) key

## Primary Keys

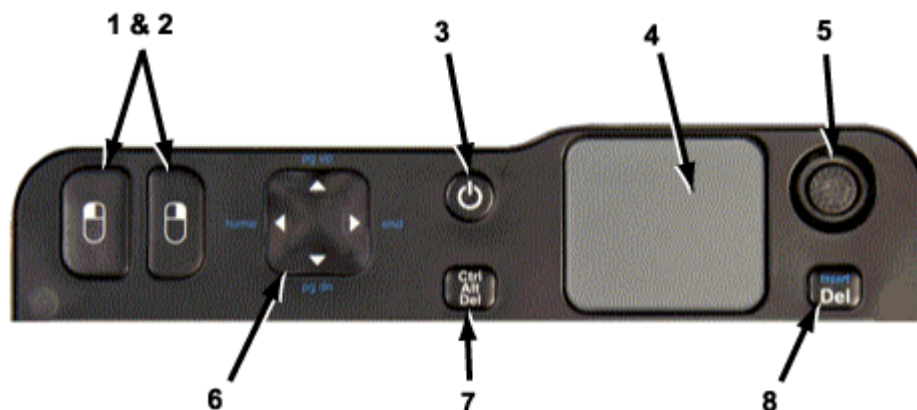


Key	Description
<b>Alt</b>	The <b>Alt</b> (alternate) key is used with other keys to perform special tasks. On some operating systems pressing <b>Ctrl+Alt+Del</b> twice soft reboots the computer .
<b>Bksp</b> ←	The <b>Backspace</b> key, sometimes represented on the keyboard as a left arrow, moves the cursor one position to the left. The character to the left of the cursor is erased.
<b>Ctrl</b>	The <b>Ctrl</b> (control) key works with other keys to perform a variety of functions.
<b>Enter</b>	The <b>Enter</b> key signals the computer that you have completed your entry. This is your way of telling the computer to process the information that you have entered.
<b>Esc</b>	The <b>Esc</b> (escape) key allows you to exit a pop-up window or message box.
<b>Shift</b>	The <b>Shift</b> key changes the keys <b>A</b> through <b>Z</b> to the UPPER CASE position. When you press an alphabetic key, the character appears as a capital letter. When you

	<p>press <b>Shift</b> with other keys, the characters on the upper part of the keys appear. For example, pressing <b>Shift+7</b> displays an ampersand (&amp;).</p> <p>Pressing the <b>Fn+Shift</b> key locks keys <b>A</b> through <b>Z</b> in the UPPER CASE position. Pressing the <b>Fn+Shift</b> key again returns the letters to lower case. While in the upper case mode, pressing the <b>Shift</b> key results in lowercase characters when entered. You still have to use the <b>Shift</b> key to display characters located on the upper portion of the keyboard. For example, press <b>Shift+8</b> to type an asterisk (*), even when the <b>Caps Lock</b> key is activated.</p> <p>The <b>Caps Lock</b> LED  lights when the keyboard is in Caps Lock mode.</p>
<b>Fn</b>	Some special <b>Fn (function) keys</b> have been established to perform important tasks when pressed and held with the <b>Fn</b> key. These keys are described later in this document. The <b>Fn</b> key legend is color keyed to other special keys on the keyboard.
<b>SPACEBAR</b>	Use the <b>SPACEBAR</b> to enter a space and move the cursor one character to the right.
<b>Tab</b>	The <b>Tab</b> key moves the cursor to the next tab stop or field. Tab stops are defined by your operating system or application program. Press the <b>Tab</b> key to move from one field or text box to another.

## The Navigation Section

The top portion of the keyboard has a number of navigation, special keys and items to aid you in moving the cursor and selecting items on the screen



#	Control	Description
1 & 2	<a href="#">Right and Left Mouse Buttons</a>	Use these buttons as you would use the left and right buttons on a desktop mouse.
3	<a href="#">Power Button</a>	Use this button to place the computer in standby mode or turn it off/on.
4	<a href="#">Touchpad</a>	The <a href="#">Touchpad</a> is used as you would use the touchpad on any notebook computer.
5	<a href="#">Micro Joystick</a>	A thumb-operated joystick for cursor control.
6	<a href="#">Direction Pad</a>	The Direction pad provides the same functions as the left, right, up and down arrows on a standard keyboard.
7	<b>Ctrl Alt Del</b>	Use the <b>Ctrl+Alt+Del</b> button to open the "Windows Task Manager" utility, which allows you to end monitor and terminate Applications and Processes that may be unstable.
8	<b>Insert Del</b>	This key deletes selected words or items. Pressing <b>Fn+Insert</b> inserts words or items.

## Mouse Buttons

The left most buttons on the Navigation section are the **left (1) and right (2) mouse buttons**. Use these buttons with the Touchpad, or Micro Joystick as you would use the left and right buttons on a desktop mouse.

## Power Button

Use the power button (3) to place the computer in standby mode or turn it off/on.

- Press once to turn start the computer
- Press once to place the computer in standby mode
- Press and hold 5 seconds to shut the computer off

## Touchpad

The [Touchpad](#) (4) is used as you would use the touchpad on any notebook computer.

## Micro Joystick

The Micro Joystick (5) is a thumb-operated joystick for cursor control. Use for navigation like the Touchpad or an external mouse. Place your right thumb on the Micro Joystick and move it in the direction you want the cursor to go.

## Direction Pad

The Direction pad (6) provides the same functions as the left, right, up and down arrows on a standard keyboard. The arrows on the direction pad are defined by the software application, but generally:

- The **UP ARROW** key moves the cursor up one line.
- The **DOWN ARROW** key moves the cursor down one line.
- The **RIGHT ARROW** key moves the cursor to the right one character.
- The **LEFT ARROW** key moves the cursor to the left one character.
- The **Fn+UP ARROW** key moves the cursor up one page.
- The **Fn+DOWN ARROW** key moves the cursor down one page.
- The **Fn+RIGHT ARROW** key moves the cursor to the home position.
- The **Fn+LEFT ARROW** key moves the cursor to the end of line position.



## Ctrl+Alt+Del Button

Use the **Ctrl+Alt+Del** button (7) to open the "Windows Task Manager" utility, which allows you to end monitor and terminate Applications and Processes that may be unstable. Refer to the MS Windows Help for more on the "Windows Task Manager."

## Delete Key

The Delete (Del) key (8) deletes selected words or items. Pressing **Fn**+Del inserts words or items.

## Touchpad

The built-in capacitive touchpad is a pointing device that senses movement on its surface. This means the cursor responds as you move your thumb over the touchpad. Your computer has a capacitive touchpad. The buttons located on the upper left of the keyboard have the same function as a two-buttoned mouse. Pressing these buttons makes selections, drags objects, or performs a variety of other functions depending on the software.




### ☰ To Use the Touchpad

1. Hold the GoBook MR-1 in both hands with your thumbs on the keyboard. The touchpad (1) is easily accessible by moving right thumb over the touchpad.
2. Gently move your thumb across the touchpad in the direction you want the cursor to move.
3. You can scroll using the touchpad by sliding your finger up and down on the right edge of the pad or left to right on the bottom edge of the pad.

Adjust the touchpad settings by selecting **Settings, Control Panel, Mouse, Buttons**. These settings allow you to change the orientation from right-handed to left-handed, and fine-tune the pointer movement and timing of clicks.

### ☰ To Select Objects

1. Use the touchpad to position the cursor over the object you want to select.

2. Tap the touchpad once or press the left mouse button .

### ☰ To Drag

1. Place the pointer over the desired object
2. Press and hold the left mouse button or tap the touchpad two times as if you were double-clicking but do not remove your finger after the second tap.
3. Move the pointer to the desired location.
4. Release the button or lift your finger to finish dragging.

## Touchpad Precautions

The touchpad is a sensitive device. If not properly cared for, it can be easily damaged. Please take note of the




following precautions:

- Avoid contact with dirt, liquids or grease
- Do not rest heavy objects on the touchpad or the touchpad buttons
- Keep your fingers dry and clean when using the touchpad and keep the touchpad dry and clean
- The touchpad is sensitive to finger movements. It responds best to light touches. Tapping too hard will not increase the touchpad's responsiveness

## Function Keys and Key Combinations

When using function keys, press and hold one of the **Fn** keys before pressing the other key in the key combination.

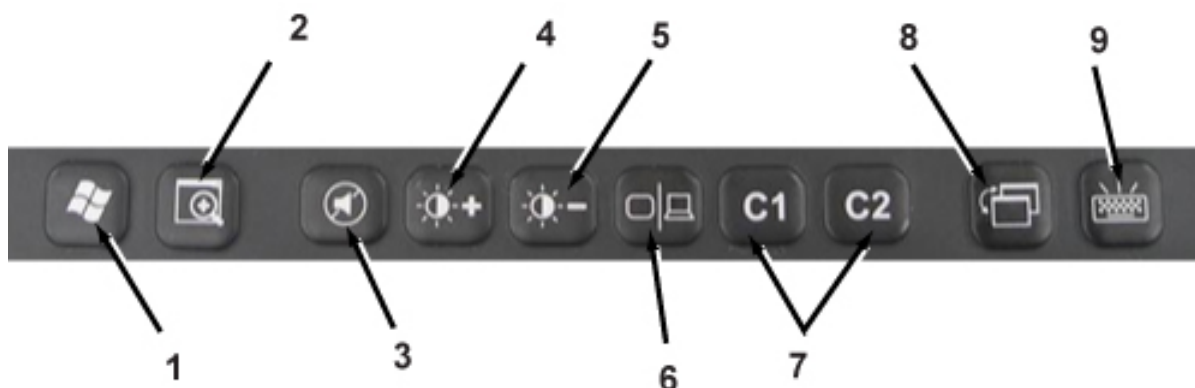











Function Key	Function	Description
<b>Fn+1</b>	Help	opens the Microsoft Help and Support Center
<b>Fn+2 to 9, -, =</b>	Function keys	Used to select functions within software applications
<b>Fn+Bksp</b>	Break	Use <b>Fn+Bksp</b> as you would use the Break key on any PC
<b>Fn+P</b>	Print Screen	Press <b>Fn+P</b> to print the current screen. Press <b>Fn+P+Alt</b> to print the current active window
<b>Fn+Esc</b>	Pause	Pause an application. Press <b>Fn+Esc</b> again to continue.
<b>Fn+</b> 	Audio Volume Up	Increases the audio volume
<b>Fn+</b> 	Audio Volume Down	Decreases the audio volume
<b>Fn+</b> 	Radio on/off	Turn all wireless functions on/off (option with any radios)
<b>Fn+Shift</b>	Caps Lock	Press <b>Fn+Shift</b> to lock keys A through Z in the UPPER CASE position. Press <b>Fn+Shift</b> again to return the letters to lower case. While in the upper case mode, pressing the Shift key results in lowercase characters when entered. You still have to use the Shift key to display characters located on the upper portion of the keyboard. For example, press Shift+8 to type an asterisk (*), even when the Caps Lock key is activated





		The Caps Lock LED  lights when the keyboard is in Caps Lock mode
<b>Fn+Del</b>	Insert	Inserts text in documents and applications.

## Special Keys

The keyboard has several keys that perform special functions, providing ease of use with the GoBook MR-1's compact keyboard.




#	Key	Icon	Description
1	Windows Logo Key		Start button. Combinations with this key perform special functions. Below are a few examples:   + <b>TAB</b> (Activates next Taskbar button)   + <b>E</b> (Opens My Computer in Windows Explorer)   + <b>M</b> (Minimizes all Windows)  <b>SHIFT</b> +  + <b>M</b> (Restores Minimized Windows)   + <b>R</b> (Displays Run dialog box)  Refer to Keyboard Shortcuts in Windows Help and Support for a complete list of Windows key combinations.
2	Zoom Key		See <a href="#">Zoom Key</a> section
3	Audio on/off		Turns the audio speaker off/on
4	Display Brightness Up		Increases of the brightness of the display screen
5	Display Brightness		Decreases of the brightness of the display screen



	Down		
6	Display/Monitor Switch		Switches between the GoBook MR-1 LCD display and an external monitor. (An external monitor may be added using the <a href="#">Office Dock</a> )
7	C1 & C2	<b>C1</b> <b>C2</b>	Automatically opens a pre-defined application. (see <a href="#">Application Launch Buttons</a> )
8	Window Focus		Moves foreground window back and places focus on next active window
9	Keyboard Backlight on/off		Turns the keyboard backlight off and on

## Radio ON/OFF Hot Key (option)

**CAUTION** FAA regulations require that all transmit/receive devices be turned off during flight. If you have radios (including GPS) in your computer, the Radio ON/OFF Hot Key, is used to turn your radios off during flight. If you have radios and you do not have a switch to turn the radios off, either leave your computer off during flight or contact your help desk for assistance.

The wireless Radio ON/OFF Hot Key  (the blue function icon above the **R** key) toggles the power on and off to all radio devices (including GPS, Bluetooth, WLAN, and WWAN radios).

 To Turn all Radios on or off

1. Press **Fn**+  to power off all radio devices (airplane mode).
2. Press **Fn**+  again to turn radio power on.

## Application Launch Buttons

Pressing either of them, once they are programmed starts the application of your choice. The application launch buttons are marked **C1** and **C2** on the keyboard.



 To program the Application Launch Buttons

1. Select **Start, All Programs, Mobile Computer Tools, Configure On-Screen Display, C1, and C2 Settings**
2. Select the **C1** or **C2** tab on the GD-Itronix OSD Configuration screen.
3. Use the drop-down menu to select an application to associate with the Launch Button

4. Click Test to test if the application will run.
5. Click OK to accept the application.

NOTE If the application you want to run is not in the drop-down menu: click the **Add** button next to the Current Selection field to display the "CustomExePrompt" screen.

- Click the **Browse** button to display the Open file screen.
- Find the application you wish to call with the Application Launch Button and select it.
- Click the **Open** button.
- Enter a name for the application you selected.
- Press OK

## What is Zoom?

Zoom is an application included on your GoBook MR-1 that enlarges items on the display for better viewing.

### How to Use Zoom

Zoom is toggled on and off using the "[Zoom key](#)" located on the row of Special Keys at the bottom of the keyboard.



## Display

The GoBook MR-1 features a 5.6" [WSVGA](#) display (1024 x 600).

**NOTE** An optional outdoor viewable [DynaVue™](#) (patent-pending) [integrated touchscreen](#) is also available. You can start programs and input data on the touchscreen using one of the approved pens (styluses) that come with the touchscreen.

## Adjusting Display Brightness


☰ To Manually Adjust Display Brightness

Special keys increase or decrease the display brightness.



- Press  to display increase brightness



- Press  to decrease display brightness

## Automatic Dim Feature

To save battery power, your computer automatically dims the display when the computer is not attached to external power.

**NOTE** You may still manually adjust display brightness.

See [Managing Power](#) for more information on power management features.

### [To Enable or Disable Automatic Dim](#)

1. Restart the computer by selecting **Start, Turn Off Computer, Restart**.
2. Press **Enter** during boot up to open the Setup Utility.
3. Select **Launch System Setup Menu**.
4. Use the right arrow key to select the **Advanced** screen.
5. Use the down arrow to select **Auto Brightness Control** and press **Enter**.
6. Use the down arrow to select **Auto DIMMING** and press **Enter**.
7. Choose **Enabled** or **Disabled** and press **Enter**.
8. Press **Esc** to save this setting and exit BIOS Setup.

## Adjusting Display Resolution


### To Adjust Display Resolution

1. Right click on the desktop.
2. Select **Properties** and then select the **Settings** tab. The dialog box indicates the monitor screen resolution.
3. Use the **Screen Resolution** slide bar to adjust the resolution. Normally, you should use the resolution suggested for the display or monitor.

**NOTE** Using a lower resolution than the screen was designed for will reduce the area of the display. Higher resolution modes may be used, as long as the monitor supports them.

## Simultaneous or Extended Display

The computer's display and multimedia capabilities are great for viewing movies or giving presentations. However, because of the small size of the GoBook MR-1 display you may prefer to connect an external monitor. The optional Office Dock or Expansion Unit, allows this computer to support simultaneous LCD and external display output via the external monitor port located on the Office Dock. You can also connect other output display devices such as LCD projection panels for large-audience presentations. See [Attaching an External Monitor or Video Device](#) for more information.


Once the external display device is attached (using the optional Office Dock or Expansion Unit), simply press the [Display/Monitor Switch](#)  on the keyboard.

**FEATURE:** When using an external monitor you can extend your desktop. This allows you to open and view one program on the external monitor while viewing a different program on your notebook's display. To set this up:

1. Right click on the desktop.
2. Select **Properties** to open the **Display Properties** Dialogue box.
3. Select the **Settings** tab.
4. Click on the "2" in the Monitors section.
5. Check "**Extend my Windows desktop onto this monitor**".
6. Select **Apply** and **OK** to save and exit.
7. Now you can drag the programs you want to view onto the external monitor.



## Lid Switch

Your computer has a lid switch that can automatically turn off the computer display when you close it and resume when you open the display.

 To Close the Display

To close the display lid, fold it down gently.

 To Change the power management settings for the lid switch

1. On the System Tray area of the Taskbar, right-click the **Power Saver** icon ( or ).
2. From the menu, select **Adjust Power Properties**.
3. Select the **Advanced** button.
4. Select what you want to happen when you close the display lid:
  - Do Nothing
  - Stand By (default)
  - Hibernate
5. Check the **Wakeup box** if you want the computer to resume when you open the display lid.


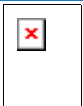


## LED Status Indicators

The activity indicators, located above the keyboard and in the display hinge, light up when a particular function of the computer is active. Each indicator is marked with an icon.



## Radio and Wireless Status LEDs




Display Hinge LEDs - visible at the bottom of the display indicate active installed radios: 802.11ABG, Bluetooth, GPS, Wireless WAN.

#	Icon	Function	LED	Description
1		802.11 ABG	Lit	One or more installed radios are ON
			LED off	All installed radios are OFF
2		Bluetooth	Lit	Bluetooth is ON
			LED off	Bluetooth is off
3		GPS	Lit	GPS ON
			LED off	GPS is off
4		Wireless WAN	Lit	WAN ON
			LED off	WAN Off

## Unit Status LEDs


LEDs below keyboard: Unit on, AC power present, Battery Charging, HDD activity



#	Icon	Function	LED	Description
1		Power	Lit	Power is ON
			Flashing	Suspend to RAM
2		External Power	Lit	External power is connected to the unit
3		Battery	Lit	Battery charging (when external power is connected)
			Flashing	Low Battery (below 7% charge)
			Quick Flash	Indicates a problem with the battery such as: over discharged, or EC is using pre-charge
			LED off	When battery is not charging (include battery full, battery discharge, and no battery etc)

4		Disk Status (HW)	Lit	The hard disk drive is being accessed
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## Caps Lock LED on Keyboard

	Icon	Function	LED	Description
1		Caps Lock	Lit	The keyboard is in Caps Lock mode

## Audio

Your computer includes a single speaker audio output and an integrated microphone. The speakers are located above the display. The microphone is on the front of the computer to the left.

You can also attach [external audio devices](#) via the audio headset jack on the right side of the computer.

### 1. Audio In/Out




#### A. 2.5mm microphone/stereo headphone port (1)

- Tip, pole 1 Microphone
- pole 2, headphone Right channel
- pole 3, headphone Left channel
- Sleeve, pole 4, headphone and Microphone Ground

#### B. Compatible with off-the-shelf MP3-style Cell-phone head set such as Sony, Jabra, and Body Glove.



### To Adjust the Volume

- To decrease volume, press **Fn+** 
- To increase volume, press **Fn+** 
- To mute the volume, press 

You can also adjust the volume with the Windows volume control applet located on the taskbar. However, the volume control function keys override the Windows volume control applet. If your volume is too low or too high after setting the volume in the applet, adjust the volume with the function keys.

## Computer Security

Your computer includes several different security features to help prevent theft and protect data. These include multiple levels of password protection, an optional fingerprint scanner, stealth mode and (Optional) [Trusted Platform Module \(TPM\)](#).

## BIOS Level Passwords

Passwords protect your computer from unauthorized access. When set, no one can access the computer without entering the correct password.

There are two types of passwords you can set:

- **Supervisor Password** secures your computer against unauthorized entry to critical parameters in the [BIOS Utility](#)
- **User Password** secures your computer against unauthorized use, and allows limited access to the BIOS Utility

**NOTE** Do not forget to set your password! If you forget your password, please get in touch with your dealer or an authorized service center.

## Fingerprint Scanner (Optional)

The optional swipe style fingerprint scanner can be used for all standard security uses. The optional fingerprint scanner provides a greater level of security and convenience for your GoBook MR-1 and your private data. Use the fingerprint scanner instead of passwords for the following:

- computer login
- login at secure websites
- opening password protected applications
- to provide encryption security for individual files



## Fingerprint Scanner Software

Before using the fingerprint scanner, you must first install compatible software. If the optional fingerprint scanner was present during initial user setup, you should have the "Install Finger Print Software" link on your desktop. Click this link and follow the instructions to install the software.

**CAUTION** Before installing any third party software, ensure it is approved for use with this computer.

When accessing some secure websites, you may need to specify you are using the fingerprint scanner instead of a password. Refer to the fingerprint scanner software documentation for setup information.

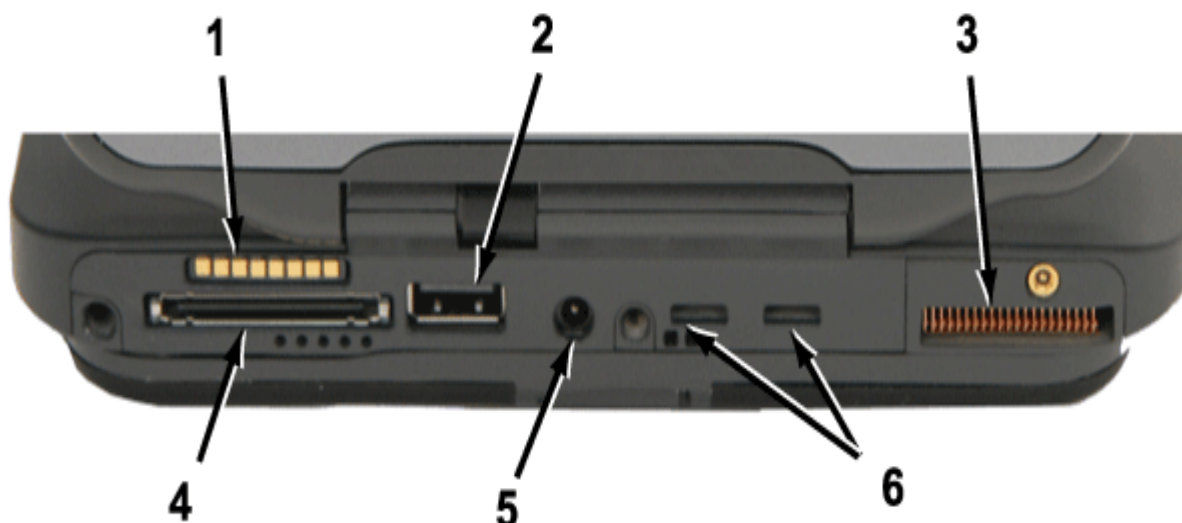
## Stealth Mode

Your computer has a stealth mode feature for users who may need to use it where light, sound or radio transmissions could be dangerous or disruptive, such as a military or public safety user. Enabling stealth mode allows you to disable sound, and lights (such as system beeps, the fan, and the display backlight) and wireless radio features. Refer to the [BIOS Setup Utility](#) section for information about how to configure the stealth mode feature.

## Trusted Platform Module (TPM)

TPM is only available if you have the optional Expansion Module installed. Enable or disable TPM in the [System BIOS](#). TPM provides a platform root of trust which uniquely identifies a particular platform and provides various crypto capabilities including hardware-protected storage.

## Ports and Connectors



#	Ports and Connectors	Connection	Location
1	Power Bus	For use with the <a href="#">office</a> or <a href="#">vehicle</a> dock	Back Side
2	<a href="#">USB 2.0 Port</a>	<a href="#">USB Peripherals</a> such as a mouse, printer or optical disk drive	Back Side
3	Cooling Fan Outlet	None	Back Side
4	Multi I/O Docking Connector	Compatible with the <a href="#">office</a> or <a href="#">vehicle</a> docks	Back Side
5	DC-in	AC Adapter ( <a href="#">power</a> )	Back Side
6	Dock Insert Tab Slots	Tab Slots help hold the <a href="#">office</a> dock in position.	Back Side
*	Audio In/out	<a href="#">2.5 mm Audio in/out</a>	Right Side

\* Audio Jack is on the [right side](#) of the unit.

## Making Connections

Your computer is equipped with a full array of ports, and connectors, offering advanced communications technology. This section describes how to connect peripherals and hardware options that help you maximize your computer's features. Before connecting peripherals, first read the manual included with the peripheral for connection and operation instructions. You can purchase most of these and other options directly from authorized dealers.

You may purchase an optional [Expansion Module](#) which adds a USB 2.0 port, 9-pin Serial port and an optional 80GB Hard-drive to replace the standard 40GB drive.


The GoBook MR-1 also has docking solutions such as [Vehicle Docks](#) and the [Office Dock](#). These docks provide drop-in convenience, port expansion, and automatic battery recharging, enabling you to leverage your computer's features without having to attach and reattach cables and connectors when you move your computer from office to vehicle.

## Attaching Power

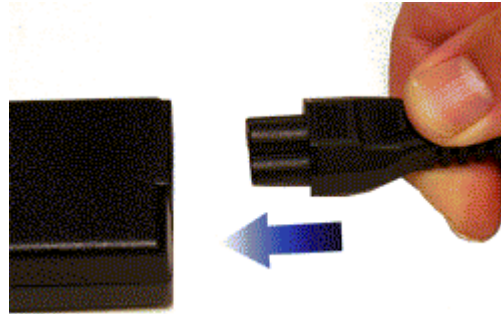
Your GoBook MR-1 can be powered by [battery](#), by attaching an AC Adapter or Vehicle Adapter to the DC power port, or by connecting the computer to a powered [Vehicle Dock](#), or [Office Dock](#) (using your existing AC Adapter). This page explains how to attach power to the DC power port.

**NOTE** When external power is properly applied, the External Power LED  lights.

**CAUTION** This notebook computer is designed to be used with the provided dedicated AC Adapter or Vehicle Adapter only

 To Attach AC Power:

1. If the computer has a dust cover over the back edge connections, pull it back and rotate it to the side.
2. Connect the AC adapter power cord to the AC adapter.



2. Connect the AC adapter to the DC power port on the back of your computer.

**NOTE** Push the DC jack firmly into the computer until it “clicks.”



2. Connect the AC adapter power cord to a properly grounded AC outlet.

**NOTE** It is recommended you use a quality [surge protector](#).

Using the (optional) Office Dock

1. Insert the Office Dock into the back of the computer.
2. Insert the power supply cord into the DC-in jack on the right side of the dock.
3. The power LED illuminates to indicate that current is reaching the computer. When you connect the Office Dock it automatically begins charging the computer’s battery. At ambient temperature, (room temperature of about 70°F), the battery should charge from empty to 90% in less than three hours if the unit is suspended or off. It should take less than four hours if the unit is in use.



 Using the (optional) Vehicle Adapter

1. Insert the vehicle adapter’s power cord into the DC-in jack on the left side of the computer.
2. Insert the 12V (cigarette lighter) adapter into the vehicle’s 12V socket, turning it slightly to make a good connection.

**CAUTION** The vehicle adapter is not intended to be used continuously. It is intended to provide a convenient, temporary power source for powering and charging this computer while in transit in a vehicle. For permanent installations, it is recommended that the (fused) vehicle charger adapter be wired directly to the vehicle power supply. For additional information regarding permanent installation, contact your sales representative.

- The power LED illuminates to indicate that current is reaching the vehicle adapter. When you connect the vehicle adapter, it automatically begins charging the computer's battery. At moderate temperatures, around 20°C (68°F), the battery should charge from empty to 90% in less than three hours if the unit is suspended or off. It should take less than four hours if the unit is in use.

**NOTE** As the battery temperature approaches the ends of its temperature range (-20°C/ 14°F to 60°C/140°F), it may take longer to charge the battery.

**CAUTION** Avoid exposing batteries to extremely hot or cold temperatures for long periods. To prevent possible damage to the battery, the GoBook MR-1 notebook does not allow the battery to charge if the internal temperature of the battery gets too low (< 5°C or < 41°F) or too high (> 50°C or > 122°F).

## Attaching USB Devices

Your computer comes with a Universal Serial Bus (USB) 2.0 port on the back side of the computer. This enables you to attach various devices such as a keyboard, mouse, scanner, or printer. USB devices can be chained together on a single cable.



#	Feature	Description
1	USB 2.0 Port	Connect additional devices to your GoBook MR-1, including flash memory drives, external hard drives, external optical drives, additional input devices (such as an external keyboard or mouse), digital cameras, digital music players, or any other USB device.

**NOTE** : The [office dock](#) provides two USB 2.0 ports.

## Attaching Audio Devices

Audio devices are easy to connect with the audio port accessible from the right side of the computer. You can plug an external microphone (or an audio line-in device) into the line-in jack.





#	Feature	Description
1	2.5mm Audio In/Out Jack	Connect a stereo headset or microphone to this jack to listen to multimedia


**NOTE** Separate Audio Input and Output jacks are available with the [Office Dock](#).

## Wireless Communications

Your GoBook MR-1 supports up to three integrated radios and a GPS for superior wireless communication (One radio per category listed below).

- Wireless Local Area Network (WLAN)
- Wireless Wide Area Network (WWAN) with CRMA Express
- Wireless Personal Area Network (WPAN) Bluetooth®
- Global Positioning System (GPS)

Since each customer's radio configuration is unique, please read the radio help installed on your desktop and refer to the manufacturer documentation to setup and use your radio(s).

If you have the radio ON/OFF option, press **Fn+**  to power off all radio devices (airplane mode).

**CAUTION** FAA regulations require that all transmit/receive devices be turned off during flight. If you have radios in your computer (including GPS) and your computer is equipped with a Radio ON/OFF switch, please use it to turn your radios off during flight. If you have radios and you do not have a switch to turn the radios off, either leave your computer off during flight or contact your help desk for assistance.

## WLAN radio option

Your computer may include an integrated Wireless Local Area Network (WLAN) capability. See the radio help file on your desktop for more information.

## CRMA Express WWAN (option)



If you ordered the CRMA Express module option with your computer, your computer may support one or more of these Wireless Wide Area Network (WWAN) radios:

- 1xEV-DO/1xRTT
- HSDPA/UMTS/EDGE

CRMA Express is upgradeable, and when WWAN radio technology changes, you can change with it. These radios are ideal for the mobile worker. The fast speeds from EV-DO/1xRTT/ and HSDPA/UMTS/EDGE facilitate greater productivity with fast email retrieval and fast and

secure access to your information and applications. Refer to the installation instructions included with your CRMA Express module(s). After installation, refer to radio help, found on your desktop, for information about setting up and using your radio(s).

## **About 1xEV-DO/1xRTT Network**

### ***1xEV-DO***

Evolution Data Only or Evolution Data Optimized (EV-DO) is a 3G wireless technology with average user download speeds ranging from 400 to 700 Kbps with peak rates up to 2.0 Mbps in release 0. Release A's peak rates may reach up to 3.1 Mbps.

### ***1xRTT - Single Carrier (1x) Radio Transmission Technology***

1xRTT is a pre-3G wireless technology based on the CDMA platform. It has the capability to provide ISDN like speeds of up to 144 Kbps with typical speeds in the 50-70 Kbps. 1xRTT is also referred to as CDMA2000.

## **About HSDPA/UMTS/EDGE Network**

### ***HSDPA/UMTS***

High-Speed Downlink Packet Access (HSDPA) / Universal Mobile Telecommunications Systems (UMTS) are 3G wireless technologies. HSDPA averages 400-700 Kbps with peak rates up to 10 Mbps in future releases. UMTS has an average user download speed of 384 Kbps with peak rates up to 2.0 Mbps.

### ***EDGE***

Enhanced Data Rates for Global Evolution (EDGE) is a pre-3G wireless technology based on the GSM platform. It has the capability to provide ISDN-like speeds of up to 144 Kbps with typical speeds in the 50-70 Kbps.

## **Bluetooth<sup>®</sup> (option)**

### **About Bluetooth**

Bluetooth is a short range, wireless technology. Bluetooth systems create a Wireless personal-area network (WPAN). When Bluetooth-capable devices come within range of one another, an electronic conversation automatically takes place to determine whether they have data to share or whether one needs to control the other. Then, the devices hop frequencies in unison so they stay in touch with one another and avoid interference with other devices.

Bluetooth devices send out weak signals of 1 milliwatt. Your GoBook MR-1 is a Class II Bluetooth device with a range of about ten meters. Even with the low power, the walls in your house won't stop a Bluetooth signal. This makes the standard useful for controlling several devices in different rooms. However, obstructions such as walls do degrade the signal and reduce its range.

## **GPS (option)**

### **About GPS**

The Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of satellites and their ground stations. GPS uses these satellites as reference points to calculate positions accurate within five meters. If your unit is equipped with GPS, there will be an extension on the display lid like the one below.



## Improving Radio Coverage

Wireless connectivity between your computer and wireless network access points is essential. Maintaining this wireless connectivity over a wide area is fundamental to the usefulness of the network. This makes the scope and reliability of radio coverage a primary concern. Therefore, one of the most important features of the wireless network is the degree of radio coverage provided. Coverage can be influenced by terrain, buildings or even a crowded room. Here are some tips to help you improve radio coverage, depending on your location.

### In any Location

1. Performance can vary significantly at different times of the day.
2. Weather can affect performance.

### On the Street

1. Try all sides of a building to see which side provides the strongest radio signal.
2. Move from under trees. Pine needles absorb radio signals more than leaves.
3. Move away from overhead electrical wires.
4. Radio signals reflect off other buildings. Even in the signal shadow, the signal could be reflected back by another building.
5. Try not to hold the unit. If possible, place it in vehicle, on a cabinet or desk.
6. If holding the unit, turn the unit in 90-degree increments to avoid shielding it with your body.
7. The signal is 1-2 feet across; therefore, moving several feet in any direction may give different results.

### **Inside a Building**

1. Move toward windows.
2. Signals do not penetrate ground; therefore, there will probably be no signal in basements.
3. Reflective coatings on windows reflect radio signals. Try the side of the building that is least likely to have coated windows.
4. Closed metal blinds can reflect radio signals.
5. Dropped ceilings sometimes hide an accumulation of electrical cable.

### **Electromagnetic Interference (EMI)**

1. Electromagnetic Interference (EMI) is generated by switching circuitry closets or Un-interruptable Power Source (UPS) systems found near computer rooms and can block the radio signal.
2. Look for significant sources of electromagnetic radiation. Problems may emanate from a source between your location and the radio base station.

### **Antennas**

The GoBook MR-1 has several embedded antenna options to support wireless communications. They require no user action.

**CAUTION** Use only the supplied or an approved antenna(s). Use of unauthorized antennas, modifications, or attachments may void your warranty and could impair call quality, damage the radio, or result in violation of FCC regulations.

The GoBook MR-1 may contain the radio transmitters listed below. The following statements are relevant when using these radios:

Each internal radio may or may not have an individual FCC Identifier label. That FCC Identifier label is not applicable to this configuration. Only the external FCC ID is applicable. Only the antenna with which an intentional radiator is authorized may be used with the intentional radiator.

The WLAN embedded dual antennas are located internally in the upper right and left edges of the display screen and are not to be modified. This device contains a WLAN radio transmitter and a WAN radio transmitter. To comply

with FCC RF exposure requirements when using the WAN radio transmitter, a minimum separation distance of 20 cm must be maintained between the external dipole antenna and all users/bystanders. When using the WLAN transmitter, a minimum separation distance of 20 cm must be maintained between the upper right and left edges of the display screen and all users/bystanders. The WAN radio and WLAN transmitter should be turned off before carrying the notebook PC in order to comply with FCC RF exposure requirements.

Since each customer's radio configuration is unique, please read the radio help installed on your desktop and refer to the manufacturer documentation to setup and use your radio(s).

## Operating with Battery Power

The computer operates on AC or battery power. This section contains the information you need to know to operate the computer on battery power. It also includes information on how your computer manages and saves power. Effective use of power management options can greatly conserve and extend your battery life. Your computer employs a power management scheme that supports ACPI (Advanced Configuration and Power Interface), allowing for maximum power conservation and maximum performance at the same time.

Be sure to read the [Battery Safety and Precautions](#) section.

### Frequently Asked Battery Questions

[Does it harm the Li-Polymer or Li-Ion battery pack to frequently “top off” the batteries?](#)

[What constitutes a charge cycle?](#)

[Where can general battery charge state information be obtained?](#)

[What effect will temperature have on battery life and performance?](#)

## The Battery

The battery has the following characteristics:

- Employs current battery technology standards

The computer uses "smart" Li-Polymer (standard -- 29Whr) or Li-Ion (extended -- 50Whr) batteries to consistently provide the long battery life best suited for mobile users

- A temperature sensor and memory device that stores information about the battery, such as how much charge is left and how many times it has been recharged
- Battery-low warning

When the battery charge level becomes low, the battery alarm beeps or displays a warning on your screen. This tells you that the battery power is critically low (and you should save your work). You can correct this situation by recharging the battery.

Whenever possible, use the AC adapter. The battery will come in handy when you travel or do not have access to AC power. It is advisable to have an extra fully-charged battery available as backup.

### Using a battery for the first time

Before using a battery for the first time:

1. Connect the AC adapter to the computer, then to a power source.
2. [Calibrate the battery](#) to set the gas gauge to accurately reflect battery capacity.  
You only need to do this once with a new battery or with a battery that's been stored without being used for a long time. If the computer is to be stored for more than two weeks, we recommend you remove the battery.


## Battery and Temperature

The battery is most efficient at room temperature. It operates in a wide temperature range but the battery capacity is affected by higher or lower temperatures.

Temperature	Approximate Available Capacity
0°C (32°F)	80%
20°C (68°F)	100%
45°C (113°F)	100%

**NOTE** While the battery may not provide 100% capacity at temperature extremes, its capacity is restored when the battery temperature is normalized to around 20°C (68°F).

## Battery Charging

When you use the AC adapter to connect your GoBook MR-1 to a power outlet, the internal battery begins to recharge automatically. While the battery is charging, the Battery Power Indicator  is lit. When the battery is fully charged, it turns off.

If your computer is turned off or suspended to RAM, a fully discharged battery takes about 4 hours to recharge. If your computer is turned on and is not in suspend mode, it may take four to six (4-6) hours to recharge the battery. Refer to the following table:

	Charging	Discharging
System On	4-6 hours	4-5 hours
System Off (suspend to RAM)	2.5 hours	—

**NOTE** A fully charged Li-Polymer battery can power the GoBook MR-1 for approximately four to five (4-5) hours, depending on usage patterns.

## Power Saving Modes

Adjust the default power management settings in the [Power Saver](#) utility.

## Suspend Mode

There are several possible settings for suspend mode. You may Suspend to RAM (stand-by), Suspend to Disk (Hibernate), or disable suspend altogether, which is not recommended.

### Suspend to RAM (Stand-By)

In a suspend to RAM, the contents of your computer's memory are held intact, while most of the components in



your computer either turn off completely, or reduce power consumption to a minimum. In a Suspend to RAM, your computer remains active but with the minimum possible power consumption. Return the computer to full power by pressing any key. A fully-charged battery can maintain a Suspend to RAM for many hours.

## Suspend to Disk (Hibernate)

Suspend to Disk (Hibernate) is similar to turning off the computer, except that the current state of the computer is copied to the hard disk as a special file. When the computer returns from suspend mode, the desktop appears with the same files and programs open as when the computer was suspended. Suspend to Disk (Hibernate) is very useful when you do not want to take the time to shut down all open programs one by one to shut off the computer, only to have to open the same programs and files the next time you use the computer. This mode is also called hibernation mode.

## Initiating Suspend Mode

There are three ways to initiate suspend mode. The settings can be adjusted in the Power Saver utility:

- The computer may automatically enter suspend mode when not used for a set period of time
- Selecting the Standby button in the Shut Down Windows dialog box
- Pressing the power button will cause the computer to hibernate by default

## Power Button Settings

The function of the **Power Button** can be set to Shut down, Stand by or Hibernate in the Power Saver utility. However, holding the **Power Button** down for more than four seconds will force a power off while operating under any situation, resulting in the loss of any unsaved information.

## When to Replace the Battery

Over time, the battery's capacity gradually decreases. We recommend that you replace your battery if it no longer provides 70% of its original rated capacity.



**WARNING** There is danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

## Heat Considerations

The computer's processor has been specially designed to consume as little power as possible. However, working in a hot environment, or working for long periods may raise the temperature. Your computer takes the following steps to lower temperature:

1. The cooling fan turns on. You may hear the fan and feel air coming from a vent on the left side of the computer when this happens.
2. If the temperature continues to rise, Processor activity is reduced. You may notice a slight loss of performance when this happens.
3. To prevent damage, if the computer gets too hot, the processor stops and the computer shuts down.

## Monitoring Battery Power

To see how much power the battery has left, move the cursor to the **Power Saver** icon ( or ) in the System Tray area of the Taskbar. The status will show as a pop-up when you mouse-over the icon.

### Low Battery Alarms

How your computer responds to a low battery condition can be set by going to **Start, Settings, Control Panel, Power Options, Alarms**.

Two different power alarms can be enabled or disabled: the **Low Battery Alarm**, and the **Critical Battery Alarm**.

Use the slide bar to set the power level at which the alarms are activated. Select the **Action** button to choose whether the alarm sounds, displays a message, or both.

**CAUTION** When battery power is low, the alarm beeps or displays a warning on your screen. Take immediate action, such as saving files or connecting to the AC adapter, or data may be lost.

When the computer alerts you that the battery is low, immediately do one of the following:

- Connect the AC power adapter
- Save your work and then select **Shut Down** from the **Start menu**
- Turn off the computer and replace the discharged battery with a charged battery (See [Battery Charging](#)).

**NOTE** Do not restart the computer until you have connected to an AC adapter or replaced the discharged battery with a charged battery.

## Battery Calibration

Over time, as the battery is repeatedly drained and recharged, battery runtime may decrease. Occasionally, the battery should be recalibrated for maximum performance. The calibration process empties and charges the battery. This allows the Windows battery gauge to accurately monitor battery status. Battery Calibration will take up to 17 hours, depending on how much power the battery already contains.

GoBook MR-1 batteries contain an intelligent gas gauge. This gas gauge is calculated by using the amount of power going into or coming out of the battery and the capacity or size of the battery. As with all rechargeable batteries the capacity of the battery decreases over time and with usage. Without routine calibration, this declining capacity will create errors in the gas gauge. Calibration sets the battery capacity to the actual physical capacity of the battery. This ensures the gas gauge is as accurate as possible. An accurate gas gauge will allow the GoBook MR-1 to warn the user of a low battery before data is lost during a low battery critical shutdown. Calibrating also allows for the detection of batteries that have reached the end of their useful life. Battery calibration should be performed once every 3 to 4 months.

It is recommended you calibrate your battery:

- the first time you use it
- after it has been in storage
- if the gas gauge has become inaccurate.

## Windows Battery Calibration

To run the Battery Calibration program

- a. Plug in the AC adapter.
- b. Start the computer and boot to Windows.
- c. **Go to Start, All Programs, Mobile Computer Tools.**
- d. Select the **Primary** battery and click **Start** to begin the Calibration process.
- e. The GoBook MR-1 may be used for any tasks but must remain connected to external (AC) power until the calibration cycle has completed.
- f. Full calibration may take up to 17 hours.

After starting calibration, the Battery Calibration application requires no further input from the user. The calibration consists of four steps:

1. Partial Discharge - the battery is drained to a level below 85%.
2. Charge - the battery is fully charged to 100%.
3. Discharge and calibrate:  
First, the battery is discharged all the way down to zero. Now the battery is 'calibrated' but not charged. You may stop the process after this point and let the battery charge outside of the Battery Calibration application.
4. Charge - if the Battery Calibration continues running, the battery will fully charged to 100%.

**NOTE** The unit will not go into suspend mode while Battery Calibration is running.

**CAUTION** Do not disconnect AC power while Battery Calibration is running.

**CAUTION** Do not remove the battery while Battery Calibration is running. Doing so will cause the application to terminate immediately.

## Power Saver

Your computer includes a utility, **Power Saver**, to build upon the operating system's power management capabilities. It is recommended that you use Power Saver rather than the Power Management utility located under the Control Panel. Power Saver provides additional ways of saving battery power.

When on external power, Power Saver provides two profiles: **Docked** and **Normal**. When on battery, it provides another two profiles: **Max Life** and **Normal**. You can easily toggle between the Max Life and Normal battery profiles by pressing **Ctrl+Space**.

There is also an option to keep the computer awake, while at the same time, saving battery power.

 To Set the Power Saver Mode

1. On the System Tray area of the Taskbar, right-click the **Power Saver** icon (see

Power Saver Icons			
Icon	Description	Icon	Description

table).







2. Select the desired power profile.

#### ☰ To Configure Power Saver Settings

1. On the System Tray area of the Taskbar, right-click the **Power Saver** icon.
2. From the menu, select **Configure Power Settings**.
3. Change settings as desired.

#### ☰ To Turn Devices On or Off to Save Power

1. On the System Tray area of the taskbar, right click the Power Saver icon.
2. Check the devices you want to enable (power on). Uncheck the devices you want to disable (power off).

	The computer is on battery power and set to use the Max Life battery profile.		The computer is on external power and set to use the Docked plugged in profile.
	The computer is on battery power and set to use the Normal battery profile.		The computer is on external power and set to use the Normal plugged in profile.
	The computer is on battery power and set to Stay Awake. This setting overrides any settings that cause the computer to inactivity suspend, hibernate or turn off the display. It may shorten your battery life and should only be used temporarily.		The computer is on external power and set to Stay Awake. This setting overrides settings that cause the computer to inactivity suspend, hibernate or turn off the display.

## Low-Power States

Your computer can enter three different low-power states to conserve power: **Standby**, **Hibernate** and **Power Off**. These states can be entered manually, or after a period of inactivity. You can configure the **Power Saver** utility to define how and when each of these occur.

### Standby

Most devices in the system are powered off, but the contents of system memory are retained. Standby is sometimes referred to as Suspend to RAM. When the computer returns from standby mode, the desktop appears with the same files and programs open as when the computer was suspended. Resume time is very quick.

### Hibernate

Hibernate, or Suspend to Disk, is similar to Standby, except that the current state of the computer is copied to the hard disk in a special file. After this occurs, all devices in the computer are turned off. When the computer returns from hibernation, the desktop appears with the same files and programs open as when the computer was suspended. Hibernation saves more power than Standby, but takes slightly longer to resume.

### Power Off

All applications are closed and the system is shutdown.

#### ☰ To Enter Low-Power States

There are various ways to initiate these low-power states.

- From the **Power Saver** utility, you can configure the Power Button, and Lid Switch to initiate any of the above low-power states.
- From the **Start Menu**, select **Shut Down** to display a dialog that allows you to manually enter any of these low-power states.


- The **Power Saver** utility allows you to specify a period of inactivity before the computer enters standby or hibernate mode.

## Battery Tips


### Tip 1. Avoid excessive heat and cold

- Your battery will last longer during the day if it is used, charged and stored between 50°F and 86°F (10°C and 30°C)
- Charge the battery nightly where the temperature will remain around 68°F (20°C). Your battery may not last as long through the day if you charge it at higher or lower temperatures
- Allow unrestricted airflow while the computer is connected to external power. Make sure that the fan inlet and outlet are unobstructed
- Avoid exposure to extreme temperatures for long periods, which can shorten battery charge life and potentially damage the battery.



#### How your battery behaves in warm conditions

- To prevent possible damage to the battery, the system may not allow a charge if the battery temperature is above 122°F (50°C), such as in a closed, unattended vehicle during the summer. In this case, the Battery Power Indicator  may indicate that the computer has stopped charging your battery; however, your battery may not be fully charged.
- If possible, turn off or suspend your computer while the battery is charging in a warm environment to avoid over-heating
- In warmer temperatures, your battery may take much longer to fully charge.

#### How your battery behaves in cold conditions

- When using a battery in cold conditions, the battery capacity may drain significantly faster
- To prevent possible damage to the battery, the system will not allow a charge if the battery temperature is below 41°F (5°C), such as in a closed, unattended vehicle during the winter. In this case, the Battery Power Indicator  may indicate that the computer has stopped charging your battery; however, your battery may not be fully charged
- In cooler temperatures, your battery can take much longer to fully charge.

### Tip 2. Prevent wasted power

- Manually turn off or suspend your computer whenever you are not using it
- Reduce the screen brightness. Decrease brightness by pushing . Increase it by pushing 
- Enable the display's [automatic dimming feature](#)
- Use the AC adapter or vehicle adapter whenever possible
- Connect to a charging source and fully charge at the end of day. This ensures the gas gauge is accurate and

provides a charged battery for the next day

- Avoid allowing the Li-Polymer or Li-Ion battery pack to completely discharge
- Use the [Power Saver](#) utility to help save power
- When running on battery power, make sure your system suspends automatically after a few minutes of inactivity. Radios, custom applications, or modified system settings may affect this
- Unplug peripherals when you are not using them. They may draw power from the system even when not in use
- Avoid operating audio and video applications when using battery power. Operating video, or audio equipment increases the computer's power requirements
- Don't use screen savers as they draw excessive current, especially "3D" screen savers
- Avoid or minimize using applications that keep the CPU busy a large percentage of the time. The following will help you determine if your system is running such applications:

#### Identifying power wasting programs

To determine if applications or processes are keeping the CPU busy

1. Start the Task Manager utility. To open Windows Task Manager, right-click an empty space on the taskbar, and then click Task Manager.
2. Select the Performance tab to view running applications, and the Process tab to view running processes.
3. Watch the CPU Usage. It is okay if the processor usage is occasionally 100 percent, but if it is 100 percent most of the time, this may indicate a problem.

What to do if applications are keeping the CPU busy

- If possible, close applications that keep the CPU busy when you are not using them
- Turn off or suspend your computer whenever you are not using it. This will help to conserve power
- Inform your organization's help desk. They may have an updated version of the application.

### Tip 3. Calibrate your battery

- Over time, the accuracy of the Windows battery gas gauge may be affected by repeated charging and discharging of the battery. Calibrating the battery every 3 or 4 months helps to keep the gas gauge accurate. For information on calibrating the battery, refer to [Battery Calibration](#).

### Tip 4. Get a good charge

- Your computer will charge more quickly if it is turned off or suspended
- In warmer or cooler temperatures, your battery can take much longer to fully charge
- If your battery is charged in a cold (less than 41°F/5°C) or very warm (greater than 122°F/50°C) environment, it is possible that the Battery Charge LED will indicate that the charge has stopped; however, this does not

necessarily mean that your battery is fully charged.

## Tip 5. Prevent data loss

Follow these guidelines to prevent data loss when removing your battery or storing your computer:

- You will lose data if you remove the battery while the computer is operating or suspended. To prevent this, shutdown your computer or put it into hibernate (suspend-to-disk) mode before removing your battery
- If you plan to store your computer for more than a few days, shutdown your computer or put it into hibernate mode. Remove the battery before storing the computer.

## Tip 6. Clean terminals

- Dirty terminals can be a cause of charging problems. Clean battery terminals with a cotton swab dipped in isopropyl alcohol. Make sure that the alcohol has evaporated before reinstalling the battery.

## Tip 7. Storing batteries

Stored Li-Polymer or Li-Ion battery packs gradually deteriorate, particularly if they are not stored in ideal conditions, and their life expectancy decreases. When storing Li-Ion battery packs for extended periods, consider these recommendations:

- When storing batteries for extended periods, it is recommended that you store them between 3°C to 7°C (38°F to 45°F) to retard self-discharge and battery aging. If you store batteries at normal ambient temperatures, use the following charging policy to maintain battery pack condition:
- Charge installed batteries every 21 days to maintain their charge capacity
- Charge uninstalled batteries every 6 months.
- Unused or stored batteries can lose power over time. When you install a battery that has not been used recently, connect external power to the computer and fully charge your battery
- Fully charged Li-Polymer or Li-Ion batteries deteriorate faster than partly discharged ones. For ideal storage, charge the battery to 100% and then discharge them to 50% charge before storing.
- Do not allow stored Li-Polymer or Li-Ion batteries to discharge completely, as this may permanently damage them. Stored batteries should be recharged to 50% capacity every six months

## Installing and removing the battery pack

**CAUTION!** Before removing the battery pack, make sure that you have an AC adapter connected to the computer; otherwise, turn off the computer.

☰ To Install the Battery:

1. Plug in AC power, or turn off the computer to avoid losing data. Turn over the computer so you are looking at the bottom.
2. Align the four openings on the back of the battery with the four hooks underside of the GoBook MR-1 unit and place the battery against the back of the unit



- Slide the battery down until it clicks in place.

**NOTE** When using a battery pack for the first time, it is recommended that you [calibrate the battery](#) so the gas gauge accurately displays battery capacity.

### **To Remove the Battery:**

- Hold the computer in both hands and turn it over so you are looking at the bottom with the battery latch at the back of the unit in your right hand.
- Place your thumbs on the battery latches on the either edge of the battery and press in. Remove by pushing in the direction of the arrows.
- Lift the battery away from the unit.



## Customizing Your BIOS Settings

This section explains how to use the BIOS Setup Utility to modify the BIOS settings. The Setup Utility displays and allows modification of the computer's components and allows you to configure devices that are connected to it. This information is used to test and initialize components during boot up and to make sure everything runs properly when the system is operating.

Your computer is already properly configured and optimized with a set of default values so you do not need to run this utility. In certain circumstances, the system may generate an error message that asks you to make changes to the BIOS settings using the Setup Utility. This happens if the system finds an error during the POST (Power On Self Test) that it carries out at start-up. Please first refer to [Troubleshooting](#) if a problem arises.

**If you are not sure how to configure the BIOS settings** we suggest that you select "Load Setup Defaults" on the [Exit Menu](#) screen, then exit saving changes. This loads optimized default settings for normal use.

The most commonly used Setup functions are:

- [Setting the date and time](#)
- [Setting a password](#)
- [Boot order setup](#)
- [Stealth mode setup](#)

## Using the Setup Utility

The Setup Utility allows you to configure your computer's basic settings. When you turn your computer on, the system reads this information to initialize the hardware so that it can operate correctly. You can use the Setup Utility



to change your computer's start-up configuration. For example, you can change your system's security settings.

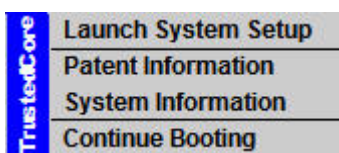
## Starting the Setup Utility

You can only start the Setup Utility after the computer has been turned on or rebooted. To execute a controlled reboot, select **Start, Turn Off Computer, Restart**. Shortly after the computer restarts, you will see the following text at the bottom of the screen: "Press **Fn+2** for Setup Menu, **Fn+0** for Boot Menu."

Pressing **Fn+2** will take you directly to the Main BIOS Menu (see below).

Pressing **Fn+0** will take you to a Boot Menu, displaying the current boot device (usually the internal hard drive) and provide options to "< Enter Setup >" and "<< RECOVERY Partition >>." "< Enter Setup >" will take you to the Main BIOS menu. "<< RECOVERY Partition >>" will take you to the "HDD Backup/Recovery Partition" utility (see your field representative for more on this utility).

Pressing **Enter** displays the following menu:



Place the mouse cursor over the menu item you want and click the **left mouse button**.

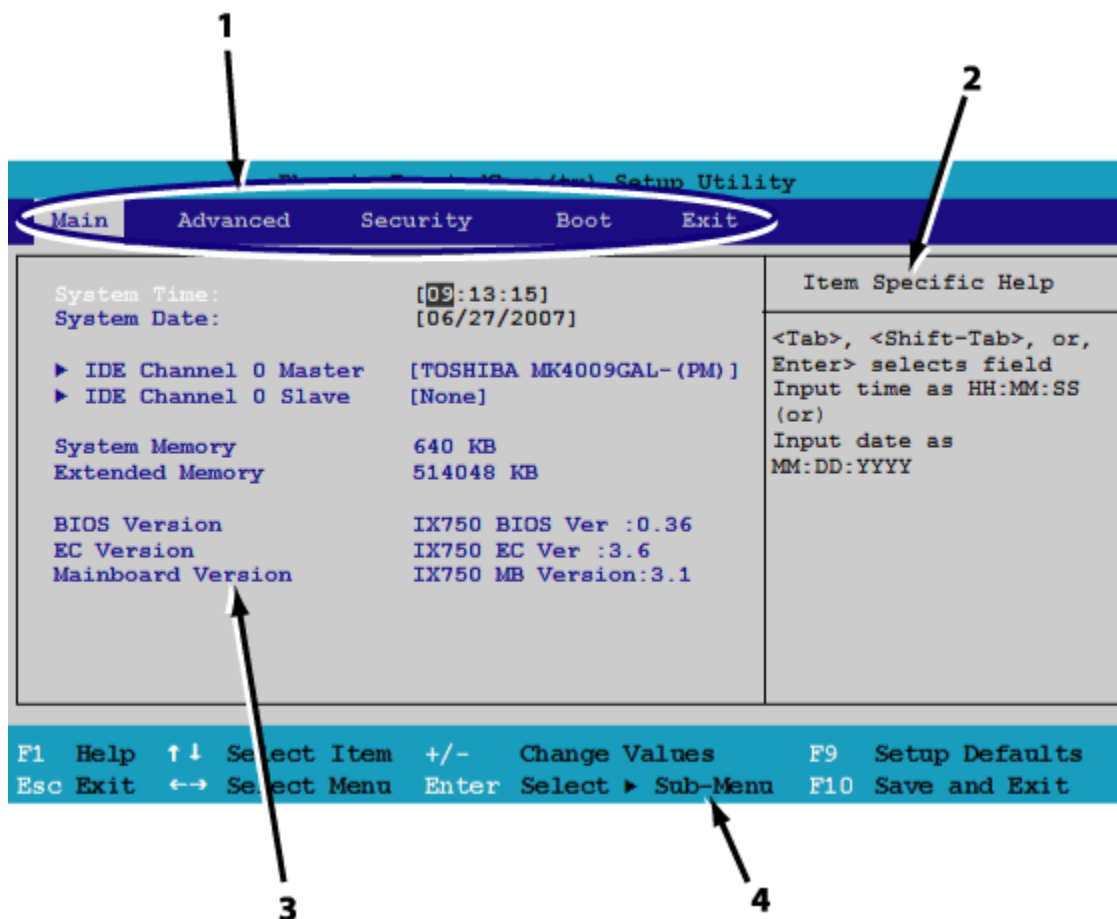
Menu	Description
Launch System Setup	Select this option to start the BIOS Setup Utility
Patent Information	Select this option to display product patent information.
System Information	Select this option to display BIOS, System, Processor, Memory, Cache, ATA/atapi Device, diskette, and Port Information.
Continue Booting	Exits the Setup menu and allows the system to continue booting.

**NOTE** The BIOS password settings affect this option. If a user or supervisor password has been previously entered, you will be asked for a password.

## Navigation

If you choose the "Launch System Setup," item, the following screen displays:

*On this screen shot, you can hover the mouse over each numbered call-out and each menu bar item picture to see a description. Clicking on the call-outs and menu items below will take you to a full description of that item.*



#	Function	Description
1	The Menu Bar	The Setup Utility has six menu options in the Menu Bar at the top of the window. Press the left or right arrow keys to cycle through these menu screens.
	<a href="#">Main</a>	Contains basic settings about your computer such as date, time, and other general options
	<a href="#">Advanced</a>	Allows you to view and configure your drives, and I/O (input/ output) ports, and stealth mode settings
	TPM State (Not Shown)	Allows you to set Trusted Platform Module (TPM) states for enhanced security with additional hardware.  <b>NOTE</b> This menu item only displays if hardware (such as the Expansion Module) with TPM is attached to the unit.
	<a href="#">Security</a>	Lets you set passwords for protecting your computer
	<a href="#">Boot</a>	Allows you to set the order in which the system boots up
	<a href="#">Exit</a>	Includes options to save or discard your changes, and to exit the BIOS Utility
2	The Item Specific Help Window	The Field Help Window is on the right side of each menu. It displays the help text for the currently selected field. This text updates as you move the cursor from field to field.
3	Settings and Information fields	This area is used to display current system and BIOS information, and allows changes to some field settings. <a href="#">See Viewing or Changing Field Settings</a> below
4	Navigation Help instructions	Displays the keys used to move through and change the Settings and Information fields on the left side of the menu.

### Viewing or Changing Field Settings

The Navigation Help instructions (4) at the bottom of each menu displays the keys used to move through and change the Settings and Information fields (3) on the left side of the menu.

- Press the right and left arrow keys on the direction pad to move to each menu item.
- Press the up and down arrow keys on the direction pad to cycle through fields in each menu
- Press **Esc** to exit any sub-menu
- Press **Enter** to make a selection or enter a sub-menu

**NOTE** You can change the value of a field if it is enclosed in [brackets]. Navigation keys for a menu are shown at the bottom of the screen. Please refer to the help information that displays in the Field Help Window as you select a field.

**CAUTION** Certain fields are highly technical. Do not make changes to a field if you do not understand its function. For optimum settings, press **F9** to load setup defaults; then press **F10** to save the changes and exit the Setup Utility.

**NOTE** Don't forget your password. If you forget your password, you may have to return your notebook computer to your dealer to reset it.

## BIOS Default Settings

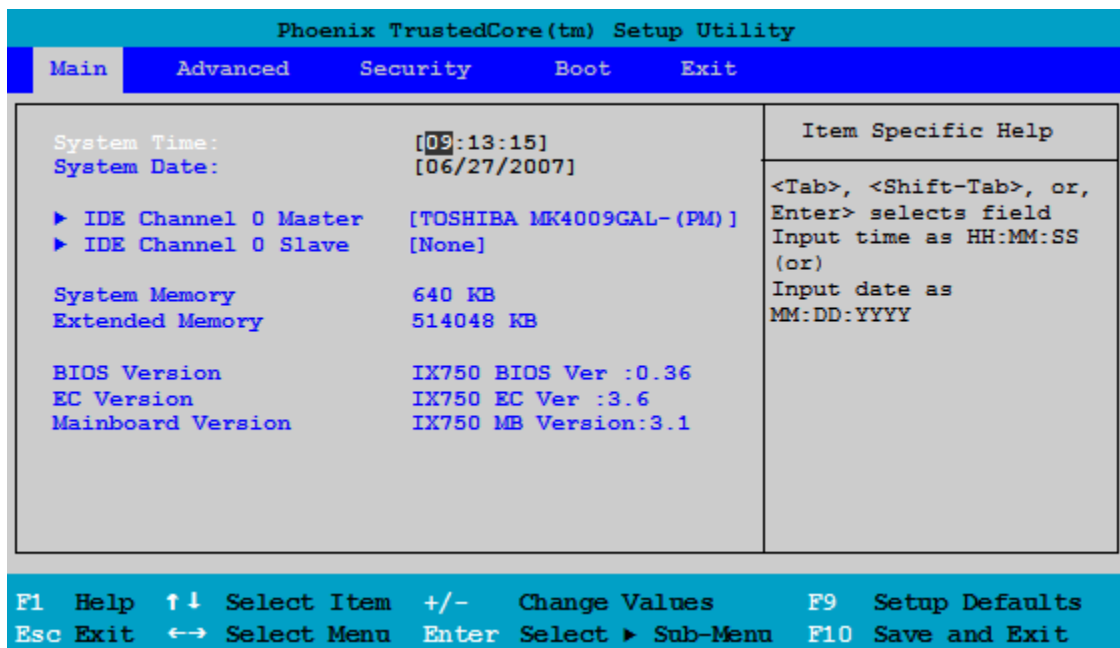
The BIOS configuration on your GoBook MR-1 comes pre-configured at the factory for the best settings. You may change these settings at any time, but be aware of what these changes do.

To restore the BIOS default settings:

1. Start the GoBook MR-1 and press **Enter** or the left mouse button on the computer while the opening screen is displayed
2. Select "**Launch System Setup**" from the displayed menu
3. When the BIOS Main screen appears, use the Direction Pad to move to the **Exit** menu
4. Use the direction pad to move down to "**Load Setup Defaults**" and press enter
5. Then move to "**Exit Saving Changes**" to accept the default settings.

## The Main Menu

This page displays the system time and date, IDE channel sub-menus and information about your computer from what kind of CPU and how much memory the computer has, to Version numbers:



Field	Setting	Function
System Time	HH:MM:SS	Sets the system time in 24 hour format. The value takes effect immediately
System Date	MM/DD/YYYY	Sets the system date. The date can be set from January 1, 2000 to December 31, 2099. The value takes effect immediately
IDE Channel 0 Master	sub-menu	The master hard drive's manufacturer, drive type, and model are displayed. Pressing [Enter] displays additional drive and setting information.
IDE Channel 0 Slave	sub-menu	If a slave hard drive is installed, its manufacturer, drive type, and model are displayed. Pressing [Enter] displays additional drive and setting information.
System Memory	(none)	Displays the current system memory
Extended Memory	(none)	Displays the current extended memory.
BIOS Version	(none)	Displays the current system BIOS version
EC Version	(none)	Displays the EC version
Mainboard Version	(none)	Displays the Mainboard Version

### IDE Channel 0 Master Menu

When Enter is pressed while on the IDE Channel 0 Master or Slave menu, a screen similar to the following is displayed. This screen provides information on the drive format and allows the user to enable or disable various features.

Phoenix TrustedCore (tm) Setup Utility

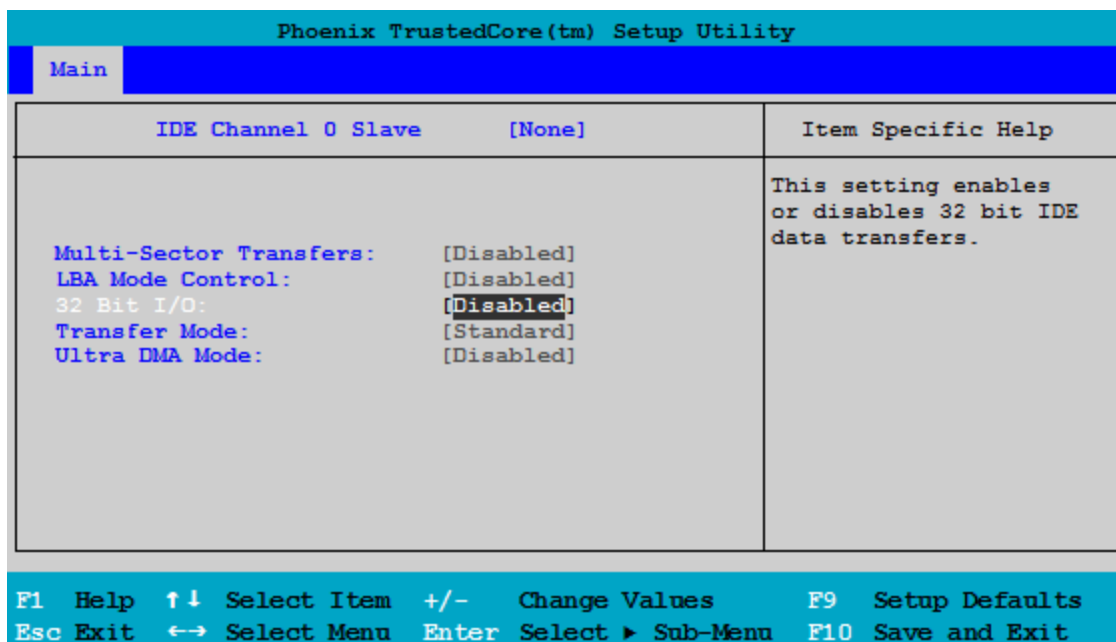
Main

IDE Channel 0 Master [TOSHIBA MK8009GAH-(PM)]	Item Specific Help
<p style="text-align: center;">LBA Format</p> <p>Total Sectors: 78126048 Maximum Capacity: 40001MB</p> <p>Multi-Sector Transfers: [16 Sectors] LBA Mode Control: [Enabled] 32 Bit I/O: [Disabled] Transfer Mode: [FPIO 4 / DMA 2] Ultra DMA Mode: [Mode 5]</p>	This setting enables or disables 32 bit IDE data transfers.

F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults  
Esc Exit ↔ Select Menu Enter Select ► Sub-Menu F10 Save and Exit

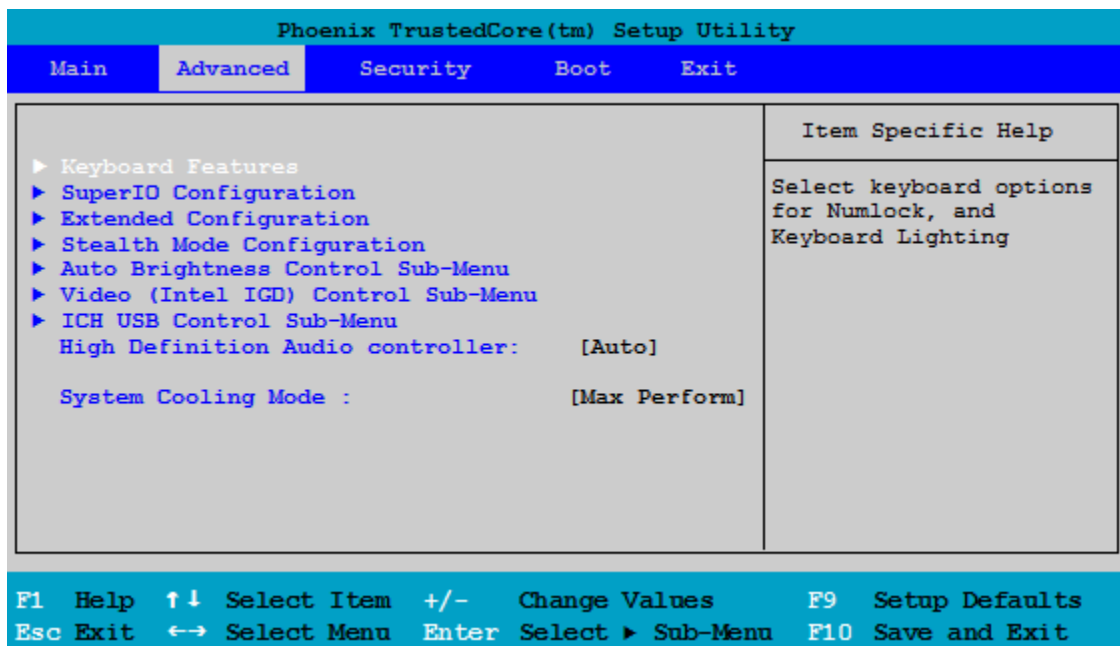
Field	Setting	Function
Total Sectors:	display only	Shows the total number of sectors on the hard drive.
Maximum Capacity:	display only	Shows the drive capacity in Megabytes.
Multi-Sector Transfers:	display only	<i>Setting is currently disabled</i>
LBA Mode Control:	display only	<i>Setting is currently disabled</i>
32 Bit I/O:	<b>Disabled</b> Enabled	This setting enables or disables 32 bit IDE data transfers.
Transfer Mode:	display only	<i>Setting is currently disabled</i>
Ultra DMA Mode:	display only	<i>Setting is currently disabled</i>

### IDE Channel 0 Slave sub-menu.



Field	Setting	Function
Multi-Sector Transfers:	display only	<i>Setting is currently disabled</i>
LBA Mode Control:	display only	<i>Setting is currently disabled</i>
32 Bit I/O:	<b>Disabled</b> Enabled	This setting enables or disables 32 bit IDE data transfers.
Transfer Mode:	display only	<i>Setting is currently disabled</i>
Ultra DMA Mode:	display only	<i>Setting is currently disabled</i>

## The Advanced Menu

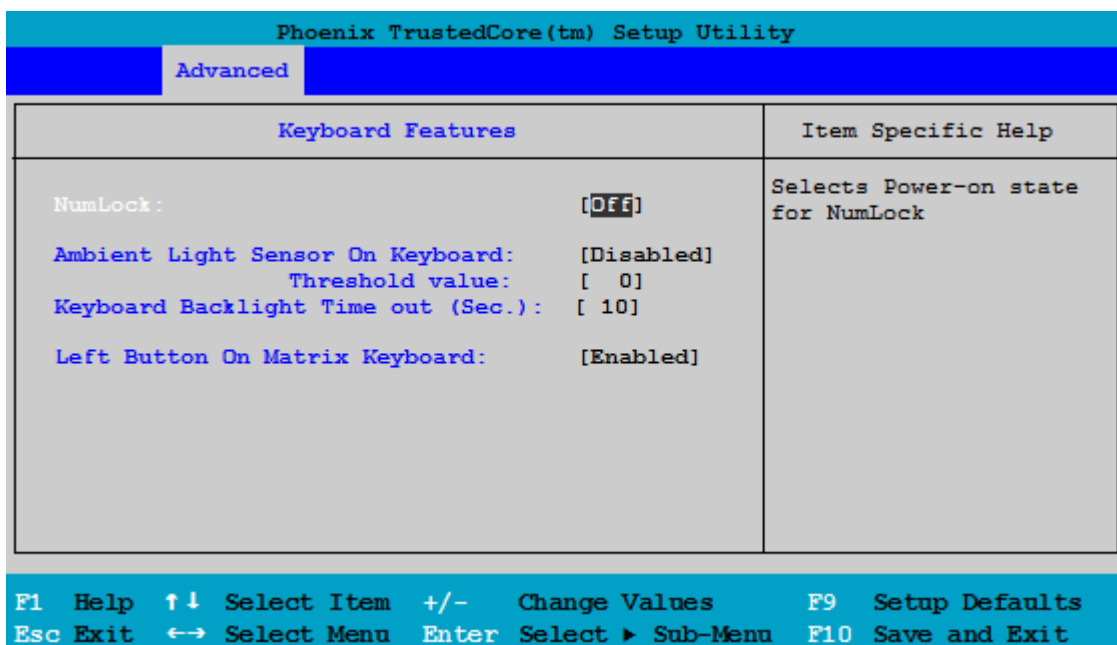


Field	Setting	Function
<a href="#">Keyboard Features</a>	sub-menu	Selects keyboard options such as NumLock power on state, Light Sensor, Backlight, and left button.
<a href="#">Super IO Configuration</a>	sub-menu	Configure I/O Devices (serial ports) on the vehicle and office dock, and for the GPS radio.
2nd Super IO Configuration  (not shown on above screen)	sub-menu	Configure I/O Devices (serial ports) on the Expansion Module  <i>(Only displayed if Expansion Module is installed)</i>
<a href="#">Extended Configuration</a>	sub-menu	Configure Wake, Suspend and Power Options
<a href="#">Stealth Mode Configuration</a>	sub-menu	Configuring the stealth mode feature enables you to turn off sound and light such as the fan, beeps, and the backlight. This allows you to use the computer in an environment where sound and light could be dangerous or disruptive
<a href="#">Auto Brightness Control</a>	sub-menu	Sets auto brightness
<a href="#">Video (Intel IGD Control)</a>	sub-menu	Setup for configuration of the Internal Graphics Display Device.
<a href="#">ICH USB Control</a>	sub-menu	Controls various ICH USB Devices.
High Definition Audio controller	<b>Auto</b>  Disabled	Controls detection of the High Definition Audio Controller (HDA) device.  <ul style="list-style-type: none"> <li>• Auto - HDA will be enabled if present</li> </ul>

		<ul style="list-style-type: none"> <li>• Disabled - HDA will be unconditionally disabled</li> </ul>
System Cooling Mode	Cool  <b>Normal</b>  Max Performance	Set cooling mode:  [Cool] – CPU is slowed down to reduce heating.  [Normal] – CPU runs normally  [Max Performance] – CPU runs as fast as necessary  <b>NOTE</b> Max Performance will not allow the unit to over-heat. However, over-heating will limit performance and the fan will run.

## Keyboard Features

This screen sets start up configurations for the keyboard.



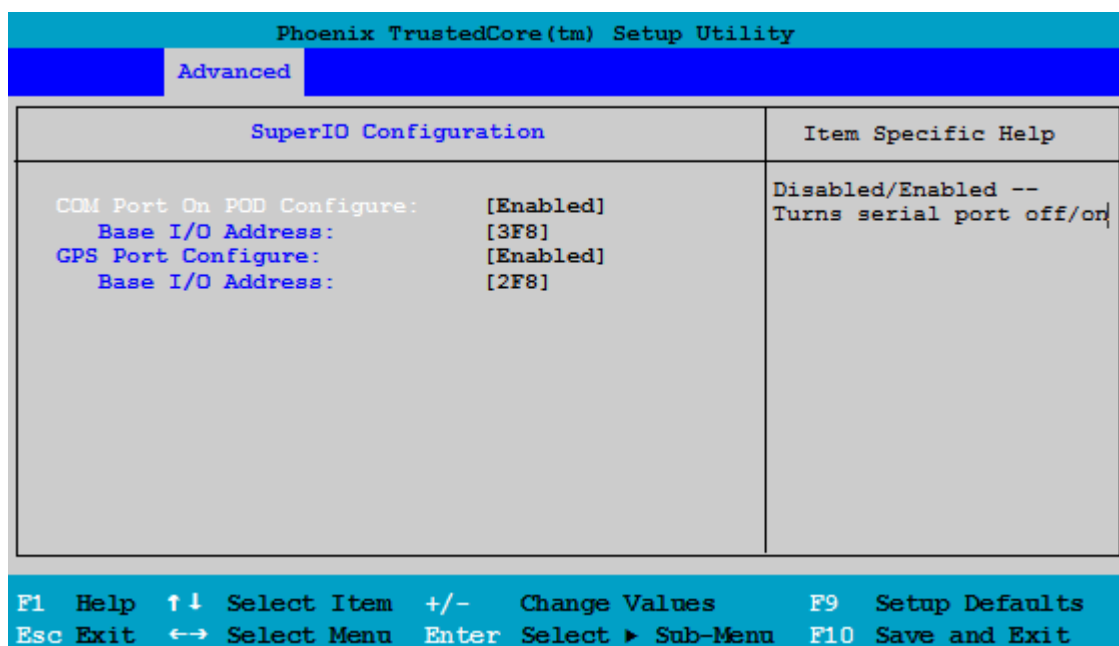
Field	Setting	Function
NumLock:	Auto  On  <b>Off</b>	Sets NumLock on/off/auto state at startups
Ambient Light Sensor On Keyboard	Enabled  <b>Disabled</b>	Enables/Disables the Ambient Light Sensor which activates the keyboard backlight in low lighting conditions.



Threshold value:	0-2047	Sets the threshold (in Lux.) at which the keyboard backlight activates.
Keyboard Backlight Time out	0-255	Sets the time in seconds until the keyboard backlight turns off due to inactivity.
Left Button On Matrix Keyboard	<b>Enable</b> Disable	Enables/Disables the left mouse button on the GoBook MR-1 keyboard.

## Super IO Device Configuration

This configuration option allows you to assign Serial Port settings for an Office or Vehicle doc (if you are using one) and to assign GPS port settings (if your unit has GPS capability)

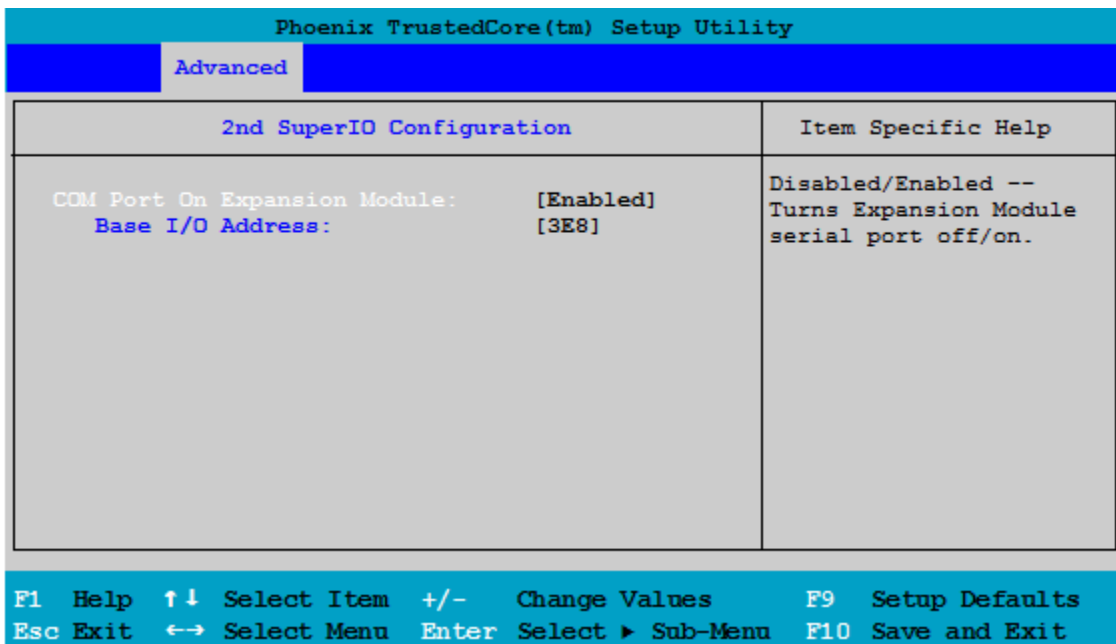


Field	Setting	Function
COM Port On POD Configure:	<b>Enabled</b> Disabled	Turns the Office or Vehicle dock serial port on/off
Base I/O address:	<b>3F8</b> 2F8 3E8 2E8	Sets the base I/O address for the Office or Vehicle dock serial port.
GPS Port Configure:	<b>Enabled</b> Disabled	Turns GPS serial port on/off
Base I/O address:	<b>3F8</b> 2F8 3E8 2E8	Sets the base I/O address for GPS port

## 2nd Super IO Configuration

This configuration option is only displayed if you have an Expansion Module on your unit. It allows you to activate

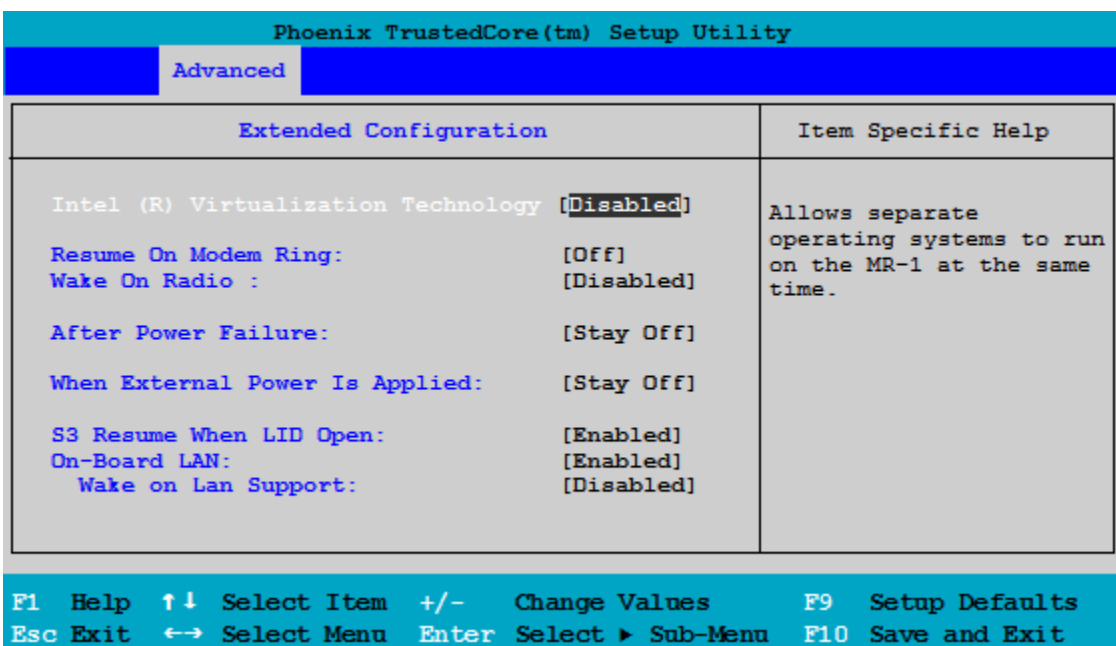
and assign Serial port settings on the Expansion Module.



Field	Setting	Function
COM Port On Expansion Module:	<b>Enabled</b> Disabled	Turns Expansion Module serial port on/off
Base I/O address:	3F8 2F8 <b>3E8</b> 2E8	Sets the base I/O address for the Expansion Module serial port.

## Extended Configuration

This configuration option allows you to wake the system at certain times, or in response to incoming data.

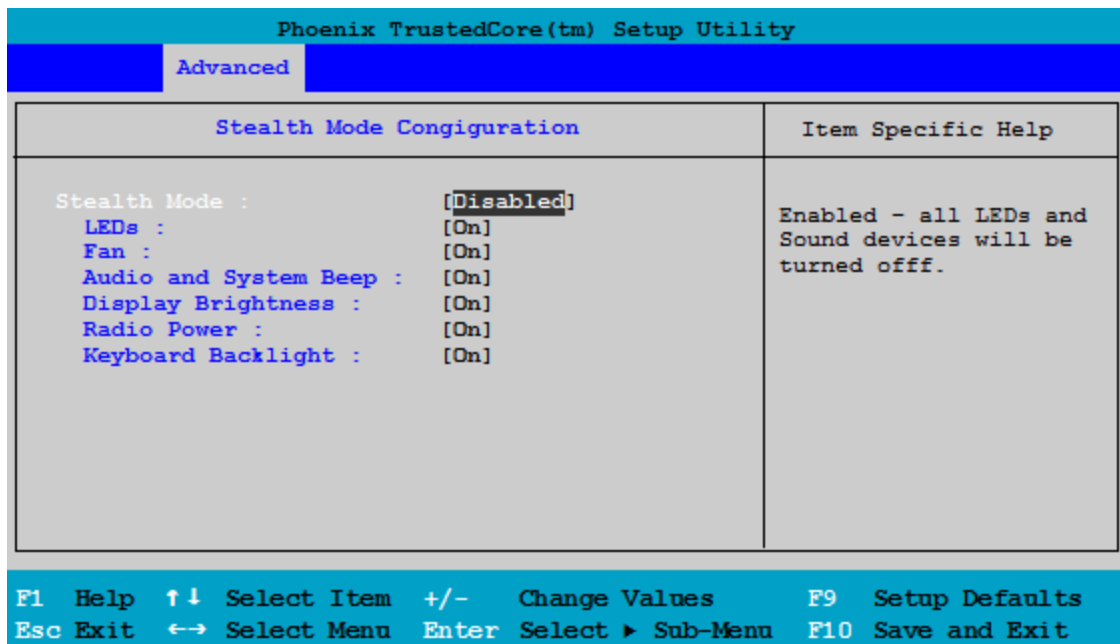


Field	Setting	Function
Intel (R) Virtualization Technology	<b>Disabled</b> <b>Enabled</b>	Intel(r) Virtualization Technology allows a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple "virtual" systems.
Resume On Modem Ring	<b>Off</b> <b>On</b>	When enabled, the system wakes up when an incoming call is detected by the modem.
Wake On Radio	<b>Disabled</b> <b>Enabled</b>	When enabled, the system wakes up for network traffic.
After Power Failure	<b>Stay Off</b>  Last State  Power On	Set the mode of operation if an AC/Power Loss occurs. The three modes are: <ul style="list-style-type: none"> <li>• <u>Stay off</u> keeps the power off until the power button is pressed. This setting turns off Resume on Modem Ring</li> <li>• <u>Last state</u> restores the previous power state before the power loss occurred.</li> <li>• <u>Power On</u> restores power, but reboots the system to the normal starting state.</li> </ul>
When External Power is Applied	<b>Stay Off</b>  Power On	Selects if the power will stay off or turn on when the computer is plugged into an external power supply.
S3 Resume When LID Open	Disabled <b>Enabled</b>	When enabled, the system wakes up when the Display is opened. When disabled, the system will not wake when the lid is opened.  <i>S3 is a sleep state where the RAM is kept powered up and the contents of the RAM are preserved. Allows for a fairly rapid resumption from sleep.</i>
On-board LAN	Disabled <b>Enabled</b>	Disables/Enables the on-board LAN/Internal device
Wake on Lan support	<b>Disabled</b> <b>Enabled</b>	Enable -- System wakes from S3 state for in-bound LAN traffic.

## Stealth Mode Configuration

Stealth mode is a feature that allows the computer to be used in an environment where sound and light could be dangerous or disruptive. If stealth mode is disabled, the LEDs, fan, system beeps, audio, and display brightness operate normally.

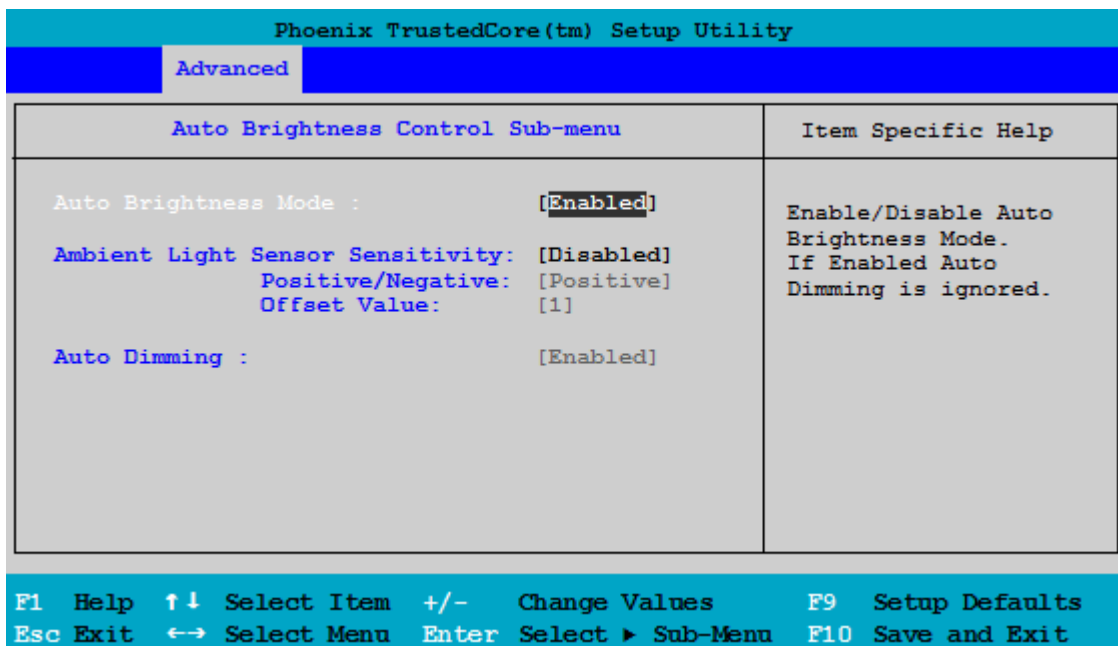
**NOTE** An off setting indicates stealth mode is in effect for that option. For example, if stealth mode is enabled and the LED option is set to "off", the LEDs will NOT illuminate to indicate activity.



Field	Setting	Function
Stealth Mode	<b>Disabled</b>	<ul style="list-style-type: none"> <li>Enabled -- all LEDs and sound devices will be turned off.</li> <li>Disabled -- the computer functions normally and the options listed below are not accessible.</li> </ul>
	Enabled	
LED	Off	LEDs are disabled
	<b>On</b>	LEDs function normally
Fan	Off	The fan is disabled. Heat management is controlled solely through throttling.
	<b>On</b>	The fan functions normally
Audio & System Beep	Off	Audio and System beeps are muted
	<b>On</b>	Audio and System beeps function as normal
Display Brightness	Off	Display brightness is set to 0.
	<b>On</b>	Display brightness functions normally.
Radio Power	Off	All wireless devices are set to off.
	<b>On</b>	The radio on/off button functions normally.
Keyboard Backlight	Off	The keyboard backlight set to off.
	<b>On</b>	The keyboard backlight set to normal operation.

## Auto Brightness Control Sub-Menu

Auto brightness mode enables or disables the photocell brightness control.



Field	Setting	Function
Auto Brightness Mode	<b>Enabled</b> Disabled	If Enabled, automatic dimming of the display will be ignored.
Ambient Light Sensor Sensitivity	Enabled <b>Disabled</b>	If Enabled, adjusts how the display brightness changes in response to ambient light changes detected by the photocell.
Positive/Negative	<b>Positive</b> Negative	Sets the offset value to Positive (+) or Negative (-).
Offset Value	<b>1</b> to 16	Sets the numeric portion of the offset value (-16 to -1 or +1 to +16).
Auto Dimming	<b>Enabled</b> Disabled	If enabled, the screen will dim when external power is removed and Auto Brightness Mode is disabled.

## Video (Intel IGD) Control Sub-Menu

Phoenix TrustedCore (tm) Setup Utility

Advanced

Video (Intel IGD) Control Sub-Menu	Item Specific Help
Pre-Allocated Memory Size:      [8MB] Total Graphics Memory:        [64MB]	Select the amount of Pre-Allocated Graphics Memory for use by the Internal Graphics Device.

F1 Help   ↑↓ Select Item   +/- Change Values   F9 Setup Defaults  
 Esc Exit   ←→ Select Menu   Enter Select ▶ Sub-Menu   F10 Save and Exit

Field	Setting	Description
Pre-Allocated Memory Size	1MB	Select the amount of pre-allocated graphics memory for use by the Internal Graphics Device.
	<b>8MB</b>	
Total Graphics Memory	<b>64MB</b>	Select the amount of Total Graphics Memory = Pre-Allocated + Fixed + DVMT for use by the Internal Graphics Device.
	128MB	
	MaxDVMT	

## ICH USB Control Sub-menu

Phoenix TrustedCore (tm) Setup Utility

Advanced

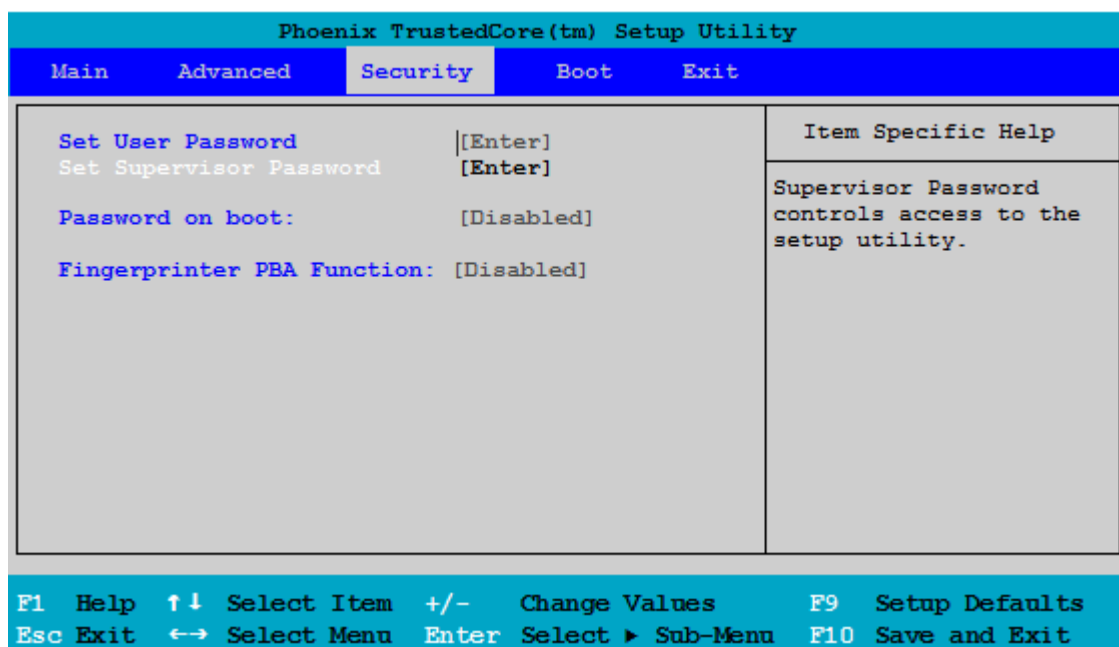
ICH USB Control Sub-Menu	Item Specific Help
All USB Controllers:            [Enabled] USB Devices for Expansion Module: [Enabled]  USB 2.0 Controller:            [Enabled] Legacy USB Support:            [Enabled]	Enable/Disable all USB Controller functions

F1 Help   ↑↓ Select Item   +/- Change Values   F9 Setup Defaults  
 Esc Exit   ←→ Select Menu   Enter Select ▶ Sub-Menu   F10 Save and Exit

Field	Setting	Description
All USB Controllers	<b>Enabled</b>	Enables/Disables all USB Controller Functions.
	Disabled	
USB Devices for Expansion Module	<b>Enabled</b>	Enables/Disables all USB Controller Functions for the Expansion Module.
	Disabled	
USB 2.0 Controller	<b>Enabled</b>	Enable/Disable USB 2.0 support.
	Disabled	
Legacy USB Support	<b>Enabled</b>	Enables/Disables support for the Expansion Module
	Disabled	

## The Security Menu

You can set, change or remove passwords in the Security menu.



Field	Setting	Function
Set User Password	Enter New	The User Password controls access to the system at boot. The Password can be removed or changed by pressing enter on this field and entering the current password, then pressing enter to move through the fields entering a new password, or leaving it blank to remove the password. This password can only be entered if the Supervisor has entered a password first.
	Password	
	Confirm New Password.	
Set Supervisor Password	Enter New	The Supervisor Password controls access to the Setup Utility. The password must be entered and confirmed. The Password can be removed or changed by pressing enter on this field and entering the current password, then pressing enter
	Password	
	Confirm	

	New Password.	to move though the fields entering a new password, or leaving it blank to remove the password.
Password on Boot	<b>Disabled</b> Enabled	Enables user password entry on boot.
<a href="#">Fingerprinter PBA Function</a>	<b>Disabled</b> Enabled	Enabled - Fingerprint scan to replaces boot password.  Disabled - Fingerprint scan not required for boot.  <b>Note:</b> This field will be "greyed out" (unavailable) if a supervisor password is not entered, and <u>will not</u> be displayed if a fingerprint scanner is not installed on the unit.

NOTE If you have a Expansion Module installed and it has TPM, the screen may have an additional TPM support item listed. Please read the [Trusted Platform Module \(TPM\)](#) section of this manual before activating this feature.

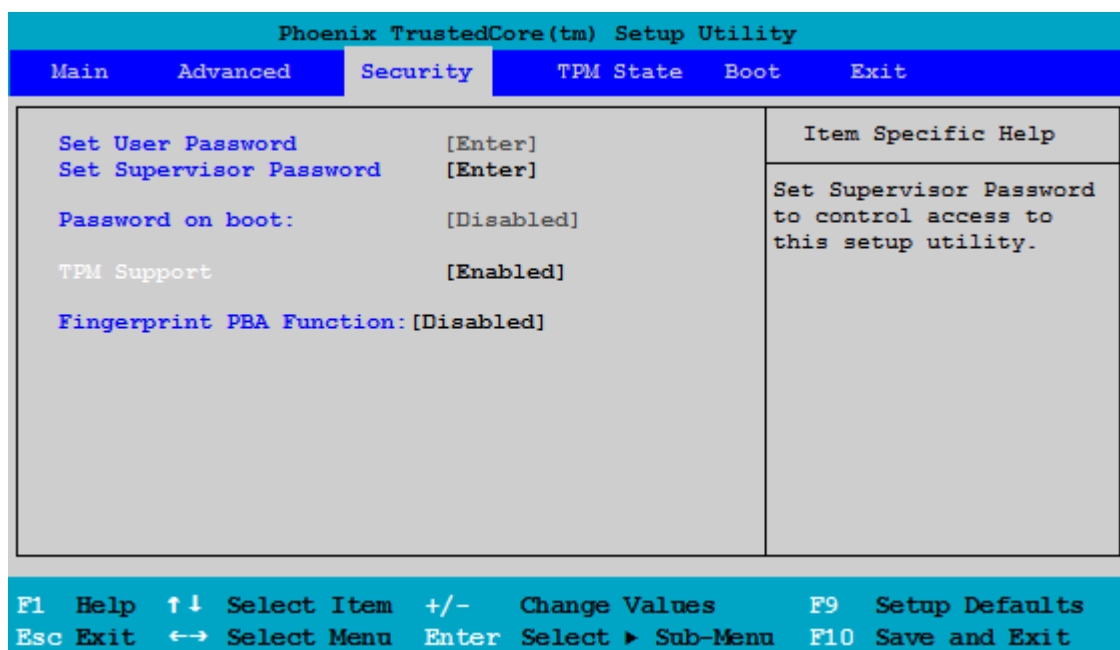
## Trusted Platform Module (TPM) Menu

### Security Menu with TPM Support

Adding a Expansion Module with a TPM device, adds the TPM Support option to the BIOS Security menu.

WARNING: Read all the instructions below and back up your data, before attempting to activate this security feature. If you have any questions or concerns contact the [Customer Care Center](#) for support.

Enable TPM Support to display the TPM State menu item in the menu banner at the top of the screen.



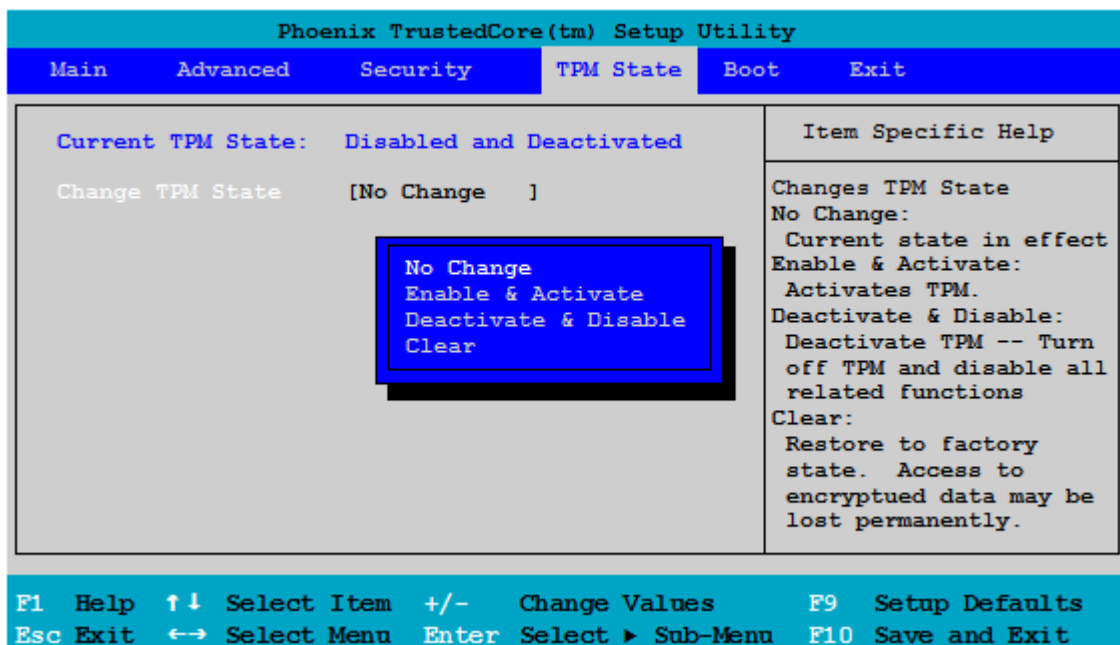
Field	Setting	Function



Set User Password	Enter New Password Confirm New Password.	The User Password controls access to the system at boot. The Password can be removed or changed by pressing enter on this field and entering the current password, then pressing enter to move though the fields entering a new password, or leaving it blank to remove the password. This password can only be entered if the Supervisor has entered a password first.
Set Supervisor Password	Enter New Password Confirm New Password.	The Supervisor Password controls access to the Setup Utility. The password must be entered and confirmed. The Password can be removed or changed by pressing enter on this field and entering the current password, then pressing enter to move though the fields entering a new password, or leaving it blank to remove the password.
Password on Boot	<b>Disabled</b> Enabled	Enables user password entry on boot.
TPM Support	<b>Disabled</b> Enabled	Enables Trusted Platform Module (TPM) support. When this item is enabled, a new "TPM State" item appears on the BIOS menu.
Fingerprint PBA Function	<b>Disabled</b> Enabled	Enabled - Fingerprint scan to replaces boot password. Disabled - Fingerprint scan not required for boot.  <b>Note:</b> This field will be "greyed out" (unavailable) if a supervisor password is not entered.

## TPM State Menu

After the TPM Support option on the Security Menu is enabled, the TPM State menu appears. Select it to display the screen below:



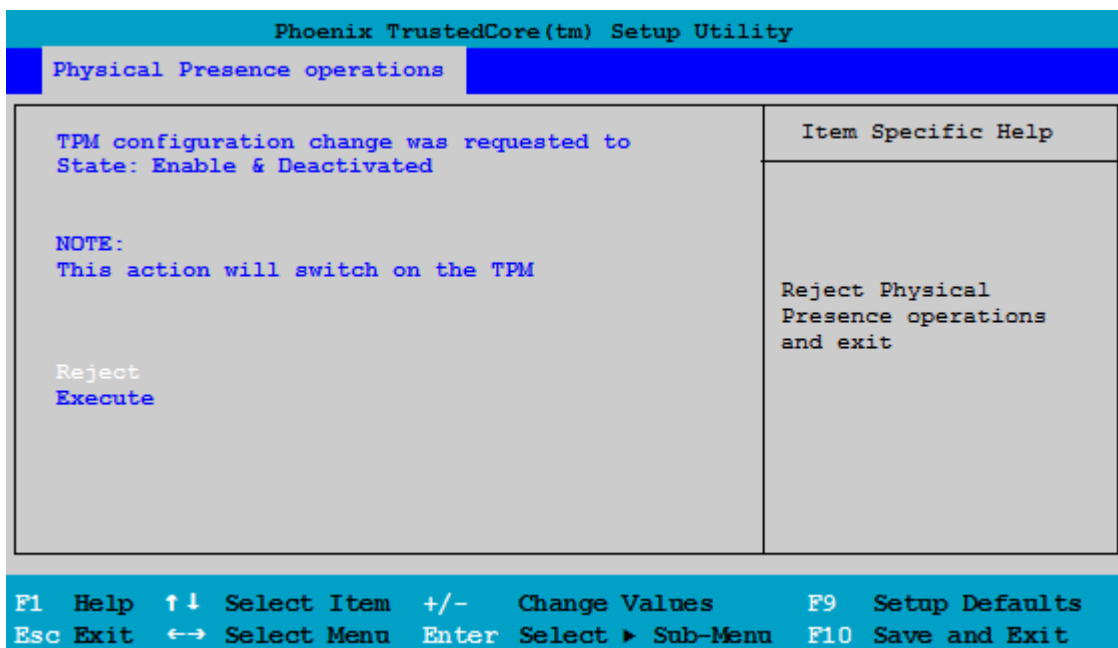
Field	Setting	Function

Current TPM State	none	This is display-only field shows the current state of the TPM device.
Change TPM State	<p><b>No Change</b></p> <p>Enable &amp; Activate</p> <p>Deactivate &amp; Disable</p> <p>Clear</p>	<p>Changes the TPM state.</p> <ul style="list-style-type: none"> <li>• No Change -- TPM remains in its previous state</li> <li>• Enable &amp; Activate -- TPM will be active</li> <li>• Deactivate &amp; Disable -- TPM will be switched off. This may prevent security applications that rely on the TPM from functioning as expected (possibly including windows login).</li> <li>• Clear -- Clearing removes all information stored on the TPM. <b>WARNING:</b> <i>You will lose all created keys and access to data encrypted by these keys.</i></li> </ul>

When you have finished making changes to the TPM state, go to the Exit menu and select Exit Saving Changes. The system will shutdown and reboot.

## Physical Presence operations menu

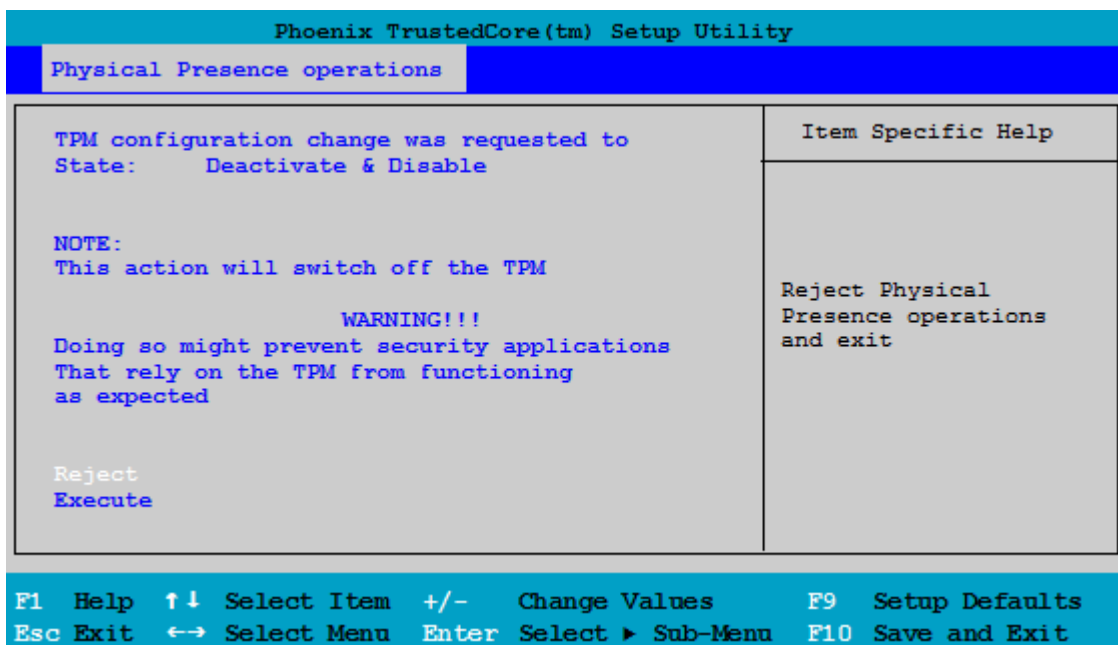
Upon rebooting, select the Launch System Setup option once again. The following screen will display ( if TPM has been enabled):



Field	Setting	Function
TPM State configuration change was requested to State:	none	This is a display-only field, showing the requested state of the TPM.
	<b>Reject</b>	Reject or Execute TPM operations and exit

Execute

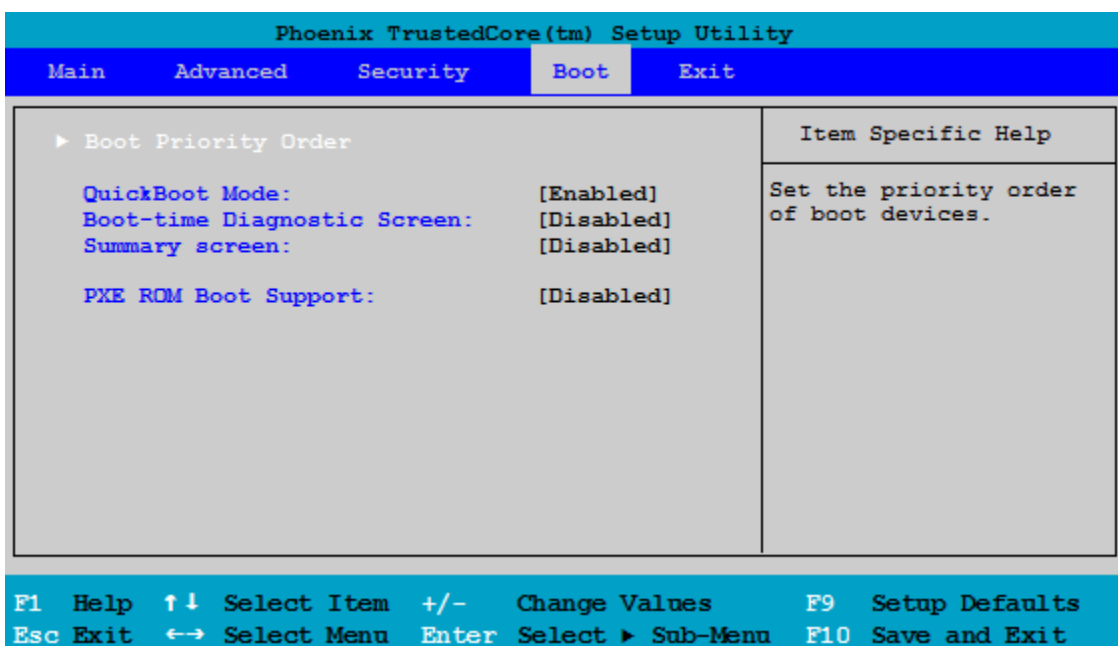
If you choose a TPM state such as **Deactivate & Disable** or **Clear** additional warning messages such as the one below will display on reboot:



After choosing to Execute or Reject the TPM state, the system will reboot once more. You may press the left mouse button again on the Setup screen to display the normal BIOS menu with the TPM State menu item activated.

## The Boot Menu

Use this menu to set the order of priority for devices from which the system will boot. Your computer automatically detects the available devices.



Field	Settings	Function
Boot Priority Order	Sub-Menu	Displays boot drive order. First listed drive is the primary boot drive. Use up and down arrow keys to highlight a drive device. User +/- keys to move the device up or down the list.
QuickBoot Mode	Disabled <b>Enabled</b>	Allows the system to skip certain tests while booting, decreasing the time needed to boot the system.
Boot-time Diagnostic Screen	<b>Disabled</b> Enabled	Displays the diagnostic screen during boot.
Summary Screen	<b>Disabled</b> Enabled	Displays system configuration on boot.
PXE ROM Boot Support	<b>Disabled</b> Enabled	Enable PXE Option ROM.

## Boot Priority Menu

To change the priority order, use the up and down arrow keys to highlight a device. Then press + or - to move the device higher or lower on the priority list.

The screenshot shows the Phoenix TrustedCore (tm) Setup Utility with the Boot menu selected. The Boot Priority Order is as follows:

```

Boot priority order:
1: USB FDC:
2: USB Key
3: USB CDROM
4: PXE ROM
5: USB ZIP:
6: USB LS120:
7: IDE HDD: TOSHIBA MK4009GAL-(PM)
8:
Excluded from boot order:
: USB HDD:
: 1394 CDROM:

```

The Item Specific Help text reads:

```

Keys used to view or
configure devices:
Up an Down arrows
select a device.
<+> and <-> moves the
device up or down.
<f> and <r> specifies
the device fixed or
removable.
<x> exclude or include
the device to boot.
<Shift + 1> enables or
disables a device.
<1 - 4> Loads defaultlt
boot sequence.

```

At the bottom, the keyboard shortcuts are listed:

```

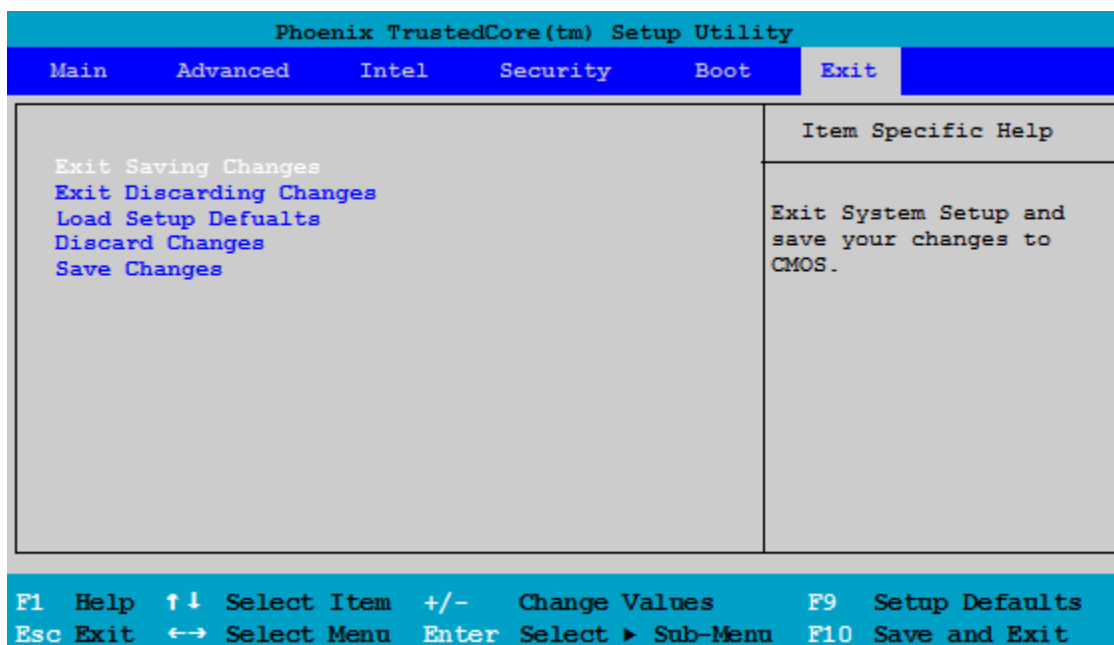
F1 Help  ↑↓ Select Item  +/- Change Values  F9 Setup Defaults
Esc Exit  ↔ Select Menu  Enter Select ▶ Sub-Menu  F10 Save and Exit

```

Field	Selection	Function
Boot priority order:	1: USB FDC: 2: USB KEY 3: USB CDROM 4: PXE ROM 5: USB ZIP 6: USB LS120	Keys used to view or configure devices:  Up and Down arrows select a device.  <+> and <-> moves the device up or down the list.  <f> and <r> specifies the device as fixed or removable.  <x> exclude or include the device from the boot sequence.

	7: IDE HDD: TOSHIBA MK4009GAL-(PM)  8:	<Shift + 1> enables or disables a device.  <1 - 4> Loads a default boot sequence.
Excluded from boot order:	: USB HDD:  : 1394 CDROM	Devices disabled from boot sequence with <x> command .

## The Exit Menu



Field	Function
Exit Saving Changes	Exit the Setup Utility and save the changes to CMOS
Exit Discarding Changes	Exit the Setup Utility without saving Setup data to CMOS
Load Setup Defaults	Load factory default values for all Setup options
Discard Changes	Load the previously set values from CMOS for all Setup options
Save Changes	Save Setup data to CMOS but do not exit the Setup Utility

## Optional Equipment and Accessories

The GoBook MR-1 computer has several equipment and accessory options to further enhance your mobile computing experience from an expansion module to docking solutions. [Click here](#) for a current list of optional peripherals and accessories.

**CAUTION** When purchasing any additional accessories, purchase only those accessories that are approved for use with your computer. Some accessories are proprietary items and can be obtained through your system vendor. If you use items that are not approved for use with this computer, you may cause your computer to malfunction, or to emit or receive electromagnetic radiation in excess of local regulations. For non-proprietary accessories such as printers,

ensure that the accessory functions properly in your computer before making the purchase. Your system vendor may be able to recommend reliable brands and models.

## Expansion Module (Option)

The Expansion Modules add functionality to the GoBook MR-1. Initially available will be an expansion module that adds a USB 2.0 port, 9-pin Serial port and TPM 1.2 (and it can include an additional 80GB Hard-drive to replace the standard 40GB internal drive).

**NOTE** The Expansion Modules cannot be installed by the customer. Please contact your GoBook MR-1 Distributor for units and installation.

## Hard Drive Installation and Removal

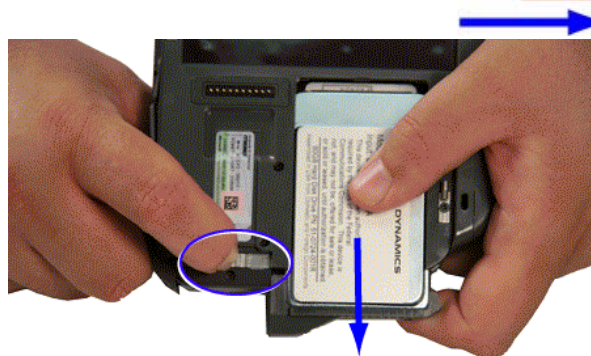
If you have a Expansion Module installed on your GoBook MR-1, the hard drive is accessible from the back of the unit.

To remove the hard drive:

1. Hold the computer in both hands and turn over so you are looking at the bottom with the battery latch at the back of the unit in your right hand.
2. Place your thumbs on the battery latches on the either edge of the battery and press in. Remove by pushing in the direction of the arrows
3. Lift the battery away from the unit.



1. Hold the GoBook MR-1 as shown and press in with the finger of your right hand on the latch next to the hard drive (see circle in illustration) until you hear it click.
2. Use the thumb on your left hand to slide out the hard drive.
3. Once the drive is projecting from the GoBook MR-1, grasp it gently and pull it straight out of the unit.

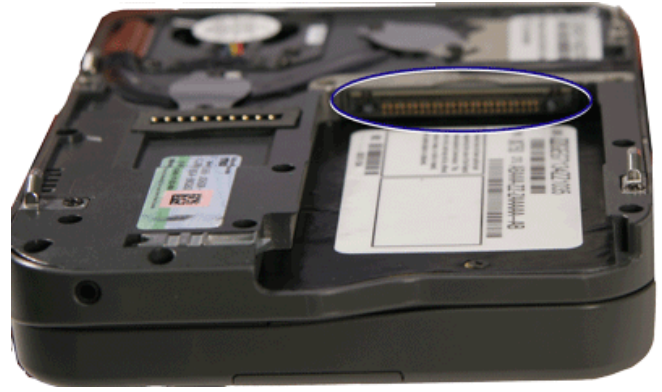


To insert a hard drive:

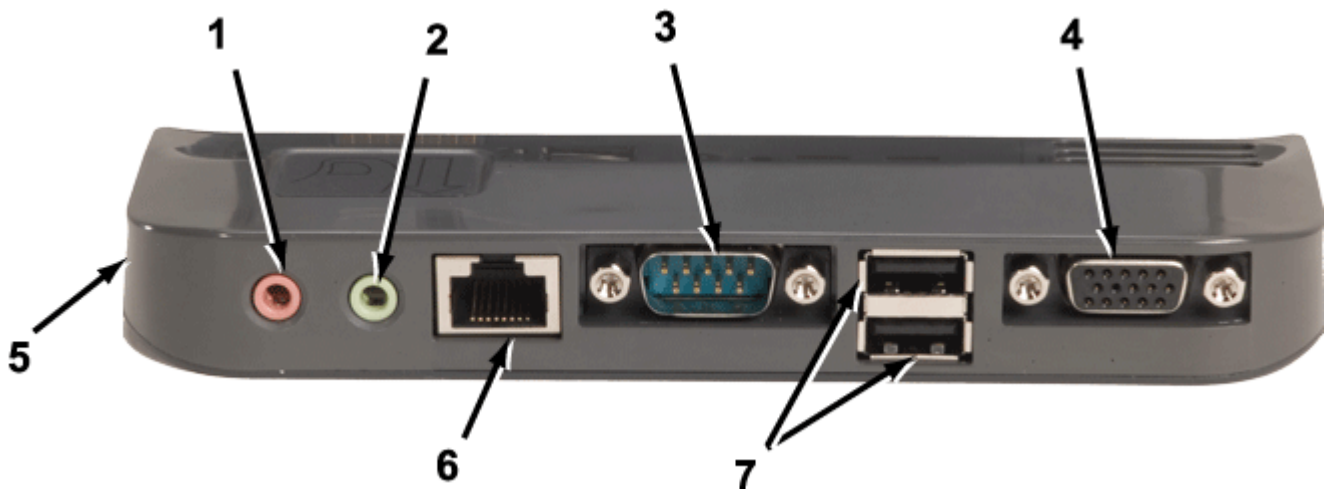
1. Place the hard drive in the slot on the GoBook MR-1 and slide it in straight and slow.

**NOTE** The hard drive pins in the Expansion Module are recessed and not so easily damaged as those on the basic unit. However, you should always handle the hard drive with care.

2. Slowly slide in the drive until the latch clicks into place.



## Office Dock



#	Feature	Description
1	Audio In Port	Connect a microphone, or any other sound input (pink port)
2	Audio Out Port	Connect headphones, external speakers, or any other output device (green port)
3	9-Pin Serial Port	Connect any 9-pin serial device.
4	External VGA Video Out Connector	Connect an external monitor or projector to your GoBook MR-1. External devices require a VGA connector.
5	DC-In port	Connect the included AC power cord here and to a 120 volt wall socket to provide power to the device. The battery automatically recharges whenever the AC power cord is plugged into this port and into a live wall socket.
6	RJ-45 Ethernet 10/100 Base-T port	Connect to a 10 or 100 Base-T Ethernet network, or connect (using a crossover Ethernet cable) to another computer's Ethernet port.
7	Two USB 2.0 ports	Connect additional devices to your GoBook MR-1, including flash memory drives, external hard drives, external optical drives, additional input devices (such as an external keyboard or mouse), digital cameras, digital music players, or any other USB device

## Vehicle Adapter


The Vehicle Adapter is an optional device that supplies power from the vehicle battery to operate the computer and charge the battery installed in the unit. It typically connects to the vehicle battery using the cigarette lighter socket.

**The GoBook MR-1 vehicle power adapter** is intended to provide a convenient, temporary power source for powering and charging the GoBook MR-1 computer in a vehicle. This vehicle power adapter is not designed for continuous operation due to the nature of the electrical connection. For additional information on permanent installation of the vehicle power adapter please contact your Support Representative.

**CAUTION** The Vehicle Adapter is only designed for temporary use. Use the optional [Vehicle Dock](#) to power and secure the GoBook MR-1 for frequent or long term vehicle installations.

To prevent possible damage to the battery, the system will not allow the battery to charge at extreme temperatures. Be aware of the following charging characteristics, especially if the computer is left unattended in a closed vehicle.

Temperature	Charging Activity
<5°C (<41°F)	Battery will not charge
>50°C (>122°F)	Battery will not charge

 To connect the vehicle adapter

1. Insert the vehicle adapter's power cord into the power port on the back of the computer.
2. Insert the cigarette lighter adapter into the vehicle's cigarette lighter socket, turning it slightly to make a good connection.

The power light illuminates to indicate that current is reaching the vehicle adapter. When you connect the



vehicle adapter, it automatically begins charging the computer's battery. At moderate temperatures, around 20°C (68°F), the battery will be fully charged in approximately four to five hours. However, as the battery temperature approaches the ends of its temperature range (5°C/41°F to 50°C/122°F), it will take longer to charge the battery.

**CAUTION** Avoid exposing batteries to extremely hot or cold temperatures for long periods. To prevent possible damage to the battery, the GoBook MR-1 notebook does not allow the battery to charge if the internal temperature of the battery gets too low (< 5°C or < 41°F) or too high (> 50°C or > 122°F).

## Additional Recommendations

Below are some recommendations for use of the vehicle power adapter with your GoBook MR-1 computer:

- a. Connect the GoBook MR-1 to the vehicle power adapter as needed, disconnect when charge is complete or the unit is not in use.
- b. Allow the GoBook MR-1 to power on and run from the internal battery periodically during the day.
- c. Regularly inspect the vehicle power adapter for loose or missing parts and replace or correct as necessary.
- d. When not using the vehicle power adapter, disconnect it from the vehicle power port (12V source) receptacle and the GoBook MR-1.
- e. If the fuse in the vehicle power adapter repeatedly fails (opens) there may be a problem with the vehicle power supply or the adapter itself. Please contact your Support Representative for further information and assistance.
- f. When replacing the vehicle power adapter fuse, use a replacement fuse of the same type and rating.

## Vehicle Dock

There are two types of vehicle docks designed to safely secure the computer in a vehicle. The pedestal dock (shown) and a in-dash mount. Both can include an optional key lock for security. You can use either vehicle dock to:

- Charge batteries
- Communicate with other devices (see below)
- Automatically connect to an external antenna (see below)

## PRECAUTIONS

- There are no user-replaceable parts within the vehicle dock, so do not open the dock case. The vehicle dock is internally protected; it resets automatically if there is a power fault.
- Do not use the vehicle dock to charge the computer battery overnight. Turn off the vehicle dock at the end of each work day to prevent draining the voltage in your vehicle's battery below starting levels.

## Charging Batteries

The vehicle dock is designed to charge the computer's battery with voltage from the vehicle battery while you are traveling. Follow the procedure below to charge a battery.

To charge a battery installed in the computer

1. Place the computer onto the vehicle dock, making sure it is securely latched.
2. If charging is required it begins automatically. The Battery Power Indicator  lights.
3. When the battery is fully charged, the Battery Power Indicator turns off.

---

### Important

- Refer to [Battery Tips](#) for charging temperature and other recommendations
  - If you charge your battery daily, rely on the gas gauge reading to determine battery capacity. The gas gauge may show that the battery is full, but charging continues. This happens because the charging process is trying to put a little more capacity into the battery. External power can be removed at this time since the battery is virtually full.
  - If your battery is new or has not been used for several weeks, rely on the indicator light to determine when the battery is fully charged. The gas gauge is unreliable in these cases; it may read 100%, when the actual capacity is only 10%.
- 


### Communicating with Other Devices

Connect external devices to the ports on the optional remote unit and place the GoBook MR-1 onto the vehicle dock. You can install or remove the computer from the vehicle dock without connecting or disconnecting the cables.

**CAUTION** Do not place any metal objects on top of the dock that might make contact with the metal pins of the contact connector. Doing so may cause an electrical short and subsequent damage to the dock.

### Touchscreen

An optional integrated touchscreen with outdoor viewable [DynaVue™](#) (patent-pending) is also available. You can start programs and input data on the touchscreen using one of the approved pens (styluses) that come with the touchscreen.

 To Calibrate the touchscreen

1. Use the pen (stylus) provided with the touchscreen display.
2. Select **Start, All Programs, Touchkit, Configure Utility**.
3. Select the Tools tab.
4. Select the **4 pts Calibration** button for basic touchscreen calibration. Select the **Linearization** button for better touchscreen linearity.
5. Touch and hold the tip of the pen to the center of each blinking symbol as they appear on the screen until calibration is complete.
6. Select **OK** to save and exit.

## Surge Protection

A large amount of computer and high technology equipment damage is directly related to AC power and telephone line problems. These problems can include surges, spikes, noise, interference, and weather-related problems, which in turn can cause glitches, hang-ups, crashes, performance slow downs, and down time with computer equipment. The market is flooded with hundreds of AC power line surge suppressors advertising high performance surge protection; only a few of them actually provide adequate protection.

This section provides guidelines for selecting a quality surge suppressor to be used with your GoBook MR-1, and it helps identify a few sources for products with acceptable performance.

### Selecting the Right Surge Protection

Consider the level of quality you need when selecting a surge suppressor. This depends on factors such as surge environment, the type of equipment to be protected, and the quality of the electrical wiring and service.

#### Surge Environment

Surge environment refers to the damage potential from electrical surges in a particular geographical area. A high quality suppressor should be used if there is frequent lightning activity in the area and the location service is fed by overhead utility poles.

#### Quality of Electrical Wiring and Service

Wiring should be up to current NEC standards and have verified good AC grounds. It is important that your computer system be plugged into a grounded AC outlet when charging and that all peripherals connected to your system reference the same AC ground.

### Selecting the Right Equipment

There are a number of companies that sell quality surge suppressors such as Sutton Designs, APC, and Panamax. When you are looking for a surge suppressor, consider these things.

- Expect to pay at least \$50 for a good quality surge suppressor
- The surge suppressor should be a UL 1449, 497, and 1283 listed for surge suppression, modem surge protection, and RFI/EMI noise filtering respectively
- The surge suppressor should have diagnostic LEDs that verify good AC ground, proper wiring, and proper surge operation. On/off switches that light are not recommended since they can produce electrical noise
- The Joule ratings should be a minimum of 480 Joules for the AC surge circuit
- Quality surge suppressor manufacturers generally offer a lifetime warranty
- Consider obtaining a protected equipment coverage policy which insures the equipment in the event of surge damage
- The devices that will be attached to the computer also need to be surge protected.

## External keyboard or pointing device

This computer has a keyboard with thumb operated keys. If you feel more comfortable using a desktop keyboard, you can connect a USB external keyboard to the USB port. You can also connect a USB mouse or other pointing device to the USB port.

**NOTE** The Unit only has a single USB port so you cannot install both a keyboard and mouse (unless you have a dock or expansion module).

## Attaching an External Monitor or Video Device

The GoBook MR-1 has a VGA monitor port (Video Out) on the Office Dock so you can connect an external monitor. You may use an external monitor simultaneously with your notebook's display, instead of your notebook's display, or as an extension of your notebook's display. To attach an external monitor, perform the following:



1. Locate the external monitor port (1) on the back side of your Office Dock.
2. Connect the video signal cable from the external monitor (or the VGA adapter) to this port.
3. Connect the power cable from the external monitor to a power outlet and turn on the monitor.



Read the monitor manual for additional instructions.

### Using Simultaneous Display

Your computer takes advantage of Windows dual-display capability, allowing you to use your computer for presentation purposes. To use simultaneous display, connect an external display device to the external monitor port.

You can then toggle the display output location by pressing . It will output to your computer's display, the attached external display, or both displays simultaneously. Keep pressing  until you have the output option you want.

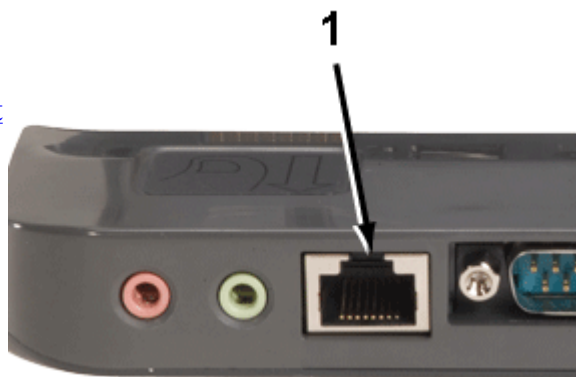
### Using Extended Display

When using an external monitor you can extend your desktop. This allows you to open and view one program on the external monitor while viewing a different program on your notebook's display.

1. Right click on the desktop.
2. Select **Properties** to open the **Display Properties** Dialogue box.
3. Select the **Settings** tab.
4. Click on the "2" in the Monitors section.
5. Check "**Extend my Windows desktop onto this monitor**".
6. Select **Apply** and **OK** to save and exit.
7. Now you can drag the programs you want to view onto the external monitor.

## Ethernet (LAN)

With the built-in [Ethernet LAN](#) on the Office Dock you can make LAN connections with 10/100 Mbps connection speed. To use the network feature, connect an Ethernet cable from the network outlet on the back side of the Office dock to a network jack or hub on your network.



## Maintenance and Storage

The GoBook MR-1 is ruggedized and weather resistant. Handle it with the normal care required by any sophisticated electronic equipment and the computer will provide reliable service even under harsh field conditions.

Follow the guidelines in this section to care for your computer.

## Computer Maintenance and Storage

You can use your computer under a wide range of environmental conditions. However, to ensure long use and continued high performance, consider the following factors when using your computer:

### Taking Care of Your Computer

Follow all warnings and instructions noted in this documentation and in the Windows Help program

- Read [Computer Safety Precautions](#) and [Battery Tips](#)
- Unplug the computer from the power outlet before cleaning. Use a damp cloth for cleaning. Aerosols, solvents, or strong detergents are not recommended cleaning solutions and may void your warranty. For system decontamination recommendations please contact your support representative
- Slots and openings in the unit's case are for ventilation purposes. Do not block or cover these openings or the system could overheat. Do not use or store the computer near a source of heat or dust
- If you use the computer with an extension cord, ensure that the total ampere ratings of all the devices sharing the extension do not exceed the rating of the extension cord or the rating of the wall outlet
- Never push foreign objects into the computer through any of the slots or openings. Dangerous voltages are present, which could cause electric shock or fire, or damage sensitive components
- For best results, use a power strip with a built-in surge protector. Do not use inferior extension cords as this may result in damage to your computer
- Set the computer on a flat, stable surface. To prevent damage to the computer's hard disk drive, avoid using the computer where it will be exposed to extreme vibration
- Do not place it near sources of heat, such as a radiator

- Do not subject the computer to magnetic fields
- Do not intentionally spill liquid on the computer
- Do not subject the computer to extreme shock and vibration
- Do not place objects on top of the computer
- Do not place the computer on uneven surfaces
- Periodically inspect the computer and accessories for wear, damage, loose or missing parts. Identifying and correcting potential problems early can help reduce the need to return the unit for service
- Periodically inspect the ports and connectors for damage and contamination.
- Turn off the computer when you are not using it
- Charge the batteries daily or whenever their capacity is low

### **Taking care of your AC adapter**

- Do not connect the adapter to any other device
- Do not step on the power cord or place anything on top of it. Carefully route the power cord and any cables away from all potential traffic
- When unplugging the power cord, do not pull on the cord itself but pull on the plug
- The total ampere ratings of the equipment plugged in should not exceed the ampere rating of the cord if you are using an extension cord. Also, the total current rating of all equipment plugged into a single wall outlet should not exceed the fuse rating.

### **Servicing**


Contact your dealer or see your service technician if any of the following occurs:

- The computer has been dropped and the body has been damaged
- Liquid has been spilled into the product
- The computer does not operate normally

See the [Service and Support](#) section for more information.

### **Storing Your Computer**

If you plan to store the computer, follow these storage guidelines.

 To store the computer

1. Save files and data before storing the computer. Contact your organization's help desk about the procedure for backing up files or data.
2. Remove any media from the media bay.

3. Exit all applications.
4. Select **Start, Shut down, OK** to turn off the computer.
5. Remove the battery from the unit and store it in a dry place.
6. Store the computer within the recommended temperature ranges of -55°C to +75°C (-67°F to +167°F).

## Battery Maintenance

### Taking care of your battery pack

- Read and follow all battery precautions in the [Safety section](#)
- Use only batteries of the same kind as replacements. Turn the power off before removing or [replacing batteries](#)
- Do not tamper with batteries. Keep them away from children
- Before storing your battery, read and follow the recommendations in the [Battery Tips](#) section
- Dispose of used batteries according to local regulations. Recycle if at all possible

### Maintaining Batteries


Follow these guidelines to maintain performance of Lithium-Ion (Li-on) batteries.

- Avoid exposing batteries to extremely hot or cold temperatures for long periods. To prevent possible damage to the battery, the GoBook MR-1 does not allow the battery to charge if the internal temperature of the battery gets too low (< 5°C or < 41°F) or too high (> 50°C or > 122°F)
- Charge the battery nightly where the temperature will remain around 20°C (68°F)
- [Re-calibrate your battery](#) when your battery performance degrades.

## Hard Drive Care and Handling

The 40GB hard drive in the GoBook MR-1 is a removable shock-mounted 2.5-inch hard drive. An optional 80GB drive is available with the Expansion Module as an alternative. You can reduce the risk of damage to the hard drives and increase their reliability and data integrity by following the recommendations below.

### Internal Hard Drives

- Do not intentionally drop the computer. The unit is designed to withstand the day to day rigors of the mobile environment and provide years of reliable service. The useful life of the product can be enhanced by not intentionally abusing it
- Whenever possible, suspend the unit by pressing the power button  and selecting **Standby**, and closing the display lid before moving it from one location to another. This unloads the read/write heads and spins down the disk, reducing exposure to high operating shocks

- Maintain the environmental seal of the computer by keeping all external access doors closed and latched
- Avoid exposing the unit to extreme temperatures or moisture when the doors are open
- Periodically [backup](#) or archive important files and data.

## Hard Drive Installation and Removal

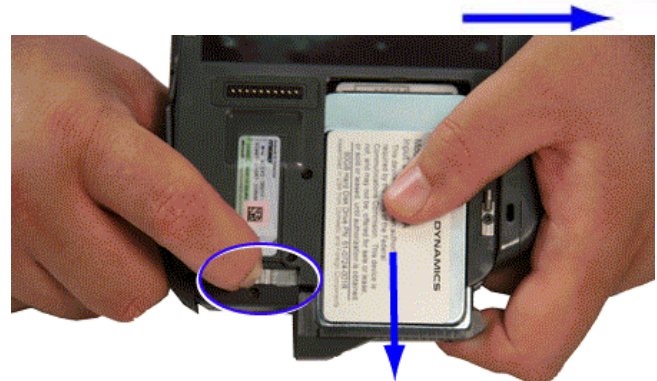
The GoBook MR-1's internal hard drive is accessible from the back of the unit.

To remove the hard drive:

1. Save and backup any work, and shut down the computer
2. Hold the computer in both hands and turn over so you are looking at the bottom with the battery latch at the back of the unit in your right hand.
3. Place your thumbs on the battery latches on the either edge of the battery and press in.
3. Lift the battery away from the unit.



1. Hold the GoBook MR-1 as shown and press in with the finger of your right hand on the latch next to the hard drive (see circle in illustration) until you hear it click.
2. Use the thumb on your left hand to slide out the hard drive.
3. Once the drive is projecting from the GoBook MR-1, grasp it gently and pull it straight out of the unit.



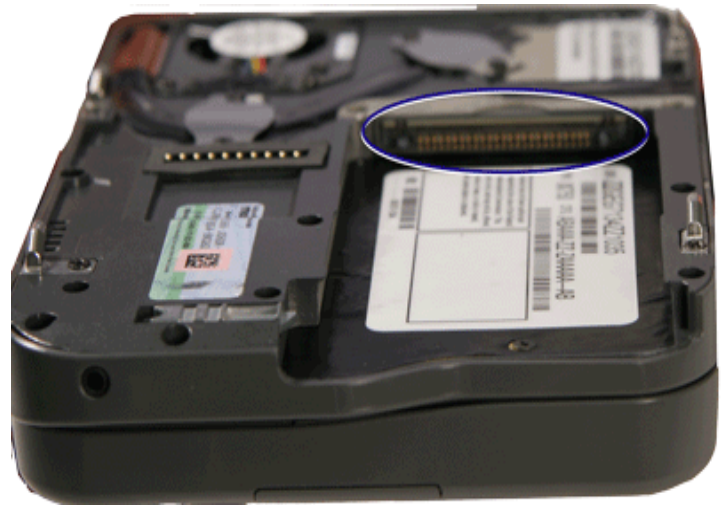
To insert a hard drive:

1. Place the hard drive in the slot on the GoBook MR-1 and slide it in straight and slow.

**NOTE** Make sure you keep the drive straight and press gently so as not to damage the exposed hard drive connector pins.

2. Slowly slide in the drive until the latch clicks into place.





**NOTE** If a [Expansion Module](#) is included, its hard drive is also accessible (See Optional Equipment and Accessories for further instructions).

## **Avoid Unexpected Repair Costs by Understanding Hard Disk Management for Mobile Computers**

This section provides important information for software developers and IT professionals involved in mobile computer deployments. It describes how your software design and setup can affect the service life of a mobile computer's hard disk drive (HDD). Rugged computers are designed for extended field service life, often staying in deployment many years longer than commercial notebooks. It is important to understand how to best design and configure your software to maximize the system's trouble-free operation for years to come.

Several Itronix customers have deployed software that causes excessive hard disk wear, resulting in reduced HDD service life. While this has been rare, it is likely to increase as more complex applications include Standard Query Language (SQL), Global Positioning Software (GPS), Automated Vehicle Locator (AVL) and other components that may be coded to frequently access the HDD. This excessive HDD wear can be a costly issue to correct – especially since it may only become apparent 18 to 24 months after your computers have been deployed. Are your users complaining of slow disk access, slow system performance, lockups, reboots, inaccessible boot device warnings, or even premature drive failure?

*Checking your software now for conditions such as “constant disk spinning” can save your company significant future costs in hard disk repair and user downtime.*

In helping our customers to address these issues, we've often seen that the root cause is an unintentional software configuration error or setting in Windows power management. In other cases, software programmers may lack familiarity with the differences between mobile computer HDDs vs. desktops or servers – and can unintentionally design programs with disk access patterns that reduce HDD service life.

### **Background on Hard Disk Designs for Mobile Computing**

Hard disk manufacturers supply a wide variety of designs optimized for specific computer markets – ranging from small “micro drives” used in media players to large RAID arrays used in critical server applications

Itronix integrates “notebook” class hard disks, as these products are specifically optimized for the blend of performance characteristics required in *mobile* computer applications – including size/weight, power management, extended temperature range, vibration/shock tolerance, cost and service life. We use best-in-class disk technology from industry leading suppliers such as Hitachi Global Storage Technologies and Toshiba Storage Device Division. We extensively test and validate these products to meet the specifications of our GoBook® rugged notebooks and tablets.

Primary characteristics of notebook-class HDDs:

- 2.5” or 1.8” form factor depending on host computer
- Power management for extended battery runtime
- Parallel ATA (PATA) or Serial ATA (SATA) interface depending on host computer
- Shock tolerance (> 300G/2ms operating, 1000G/1ms non-operating)
- Enhanced vibration resistance (random and swept sine wave)
- Extended temperature range for mobile environments
- Storage capacity and access speed required for application

Other types of hard disk products fall short in a mobile environment. Take for example HDDs designed for use in desktop/server applications. They provide higher storage capacity and faster access speeds than notebook computer HDDs. But many of these “office environment” designs can only tolerate temperature ranges up to 40°C (104°F), which can be readily exceeded inside a vehicle on a hot day. They are also typically more sensitive to shock (drop) events than notebook HDDs. Desktop/server HDDs would quickly fail if deployed in a vehicle or mobile application.

Itronix GoBook® rugged computers offer additional hardware enhancements that protect your HDD under harsh conditions. These include shock/vibration damping, advanced system thermal management, and optional hard disk heaters to quickly bring your HDD to a safe boot temperature in very cold environments. We also pre-configure our standard Windows software load with optimized power management settings to ensure good system performance while maintaining product service life.

### **Expected Service Life**

Today’s leading notebook HDD manufacturers utilize similar disk usage profiles to calculate expected service life. For example, the specification for the Hitachi Travelstar 5K100 notebook-class drive states:

Service life of the drive is approximately 5 years or 20,000 power on hours, whichever comes first, under the following assumptions:

- **Less than 333 power on hours per month.**
- **Seeking/Writing/Reading operation is less than 20% of power on hours.**

[Hitachi Travelstar 5K100 Revision 1.1, December 2004, Hitachi Global Storage Technologies]

*Notebook HDDs from other top-tier suppliers have similar specifications.*

What does this mean?

Based on standard Windows power management and typical notebook usage patterns, HDD manufacturers calculate that *on average* a user will keep their hard disk powered on and available no more than 11 hours per day, and actively read/write/seek from the HDD no more than 20% of that time. When not actively being used, the rotating HDD will “spin down” to a low power state and park. Under these normal usage patterns the HDD will provide reliable service for 5 years.

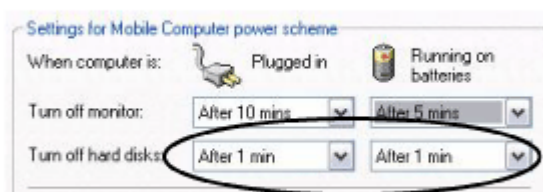
Obviously, users may periodically exceed these averages. For example, installing a large software suite (Microsoft Office, Streets & Trips, etc.) will keep the disk active for an extended time. You can think of the HDD rotating

media as being like an automotive tire – driving conditions vary day-to-day, but under average normal usage the product will last 5 years. If you drive aggressively every day, you will accelerate the wear and significantly shorten the service life.

With today's advances in power management and mobile-optimized software applications, Itronix customers have excellent service life and reliability experience with notebook-class HDDs. Only on rare occasions do customers face unexpected repairs due to software causing excessive HDD wear. But with complex applications on the rise, as well as the deployment of components such as GPS and AVL, an understanding of proper HDD management is critical.

### Constant or Excessive Spinning

Windows power management settings allow your HDD to “spin down” after inactivity. This conserves battery power, and allows the disk heads to park for greater protection against drop and vibration events. This power management capability is also important in preserving the service life of the HDD.



Some Itronix customers have deployed software loads that make the power management settings ineffective – causing the HDD to spin constantly, wearing out the drive faster than the expected 5-year service life.

“Constant spinning” will degrade the service life of the HDD and cause premature drive failure.

Examples of software that can cause “constant spinning” are:

- Windows power management settings configured to *never* turn off the hard disk – or *never* allow the computer to enter standby/hibernate modes.
- Routing or mapping applications that constantly log GPS coordinates to the HDD
- SQL database service drivers that periodically write to the HDD
- Anti-virus programs that constantly scan files in the background
- Programs with bugs or unintended side effects causing excessive disk access (some versions of Microsoft's Excel Viewer utility are known to have this issue)
- Legacy applications that may not be designed for a power-managed operating system (example: MS-DOS programs)
- Users who play media files, music, video for extended periods

In many cases, the constant spinning can be resolved by simple configuration changes in your power management settings or application timer settings. In other cases, disk access patterns may be hard coded into an application – and a design modification needs to be considered.

Example: You have designed a GPS program that periodically logs the location of the mobile computer to

collect route history information. Assuming your disk inactivity timeout is set to 1 minute, logging your GPS coordinates every five minutes will allow the HDD to spin down periodically. This ratio allows the system to not exceed the recommended 20% duty cycle between HDD power-on hours and read/write/seek operations.

In Itronix standard factory software load, we pre-configure the Windows “Turn off hard disks” power setting to “After 1 min”. We recommend you keep this setting to ensure maximum HDD service life.

## **24x7 Operations**

Some customers have deployed GoBook® computers in a “24x7” operation environment, taking advantage of the product’s ruggedness and ability to withstand harsh environments. In these applications, users are often trained to leave the computer running at all times – never going into standby or shutting down.

Remember that the 20,000 hour / 5-year service life estimate of the HDD is based on the average usage pattern of a notebook with power management (power-on hours < 333/month, “spin time” < 20%). Operating a notebook HDD in a “24x7” operation without power management will greatly accelerate wear, and may require repair or replacement of the HDD in as little as 2 years.

## **Future Hard Disk Technologies**

Most Itronix customers experience excellent reliability using today’s notebook HDD technology – as they do using the same technology in their standard non-rugged notebooks. Problems like “constant spinning” are serious but rare. The good news is that several future technologies promise to improve the reliability, power management, and service life characteristics of notebook HDDs.

### *Solid State Disks (SSDs)*

Solid state hard disks have been available for several years. SSDs typically use NAND Flash memory to store information instead of rotating media. They offer extreme resistance to shock, vibration, and temperature – with no rotating media to wear out.

The downsides of deploying SSDs in notebooks are their limited storage capacity (typically 32 GB or less) and much higher costs – by several orders of magnitude. This has narrowed the use of SSDs to niche critical applications where ultimate reliability is required “whatever it costs”.

New higher capacity NAND Flash manufacturing processes are bringing the cost of SSDs down each year. While not yet approaching the capacity/cost advantage of rotating media, the new generation of solid state devices will allow them to be used in more applications.

### *Hybrid Hard Disks (HHDs)*

Hybrid hard disks combine rotating media with a solid state flash buffer. The rotating media provides the large storage capacity of conventional hard disks, while the flash buffer is used to cache frequent accesses and reduce the amount of time the rotating media is needed to spin. A minimal amount of flash buffer is required, so HHDs are expected to be priced at a modest premium above conventional disks.

Microsoft’s forthcoming Windows Vista™ operating system features ReadyDrive technology, which provides native support for HHD usage transparent to application software. Hardware vendors such as Intel and Samsung have announced plans to integrate flash buffer technology on motherboard designs – in effect creating a HHD in combination with standard conventional hard disks.

Hybrid hard disk technology advantages include:

- Access to the rotating media is reduced, making “constant spinning” problems much less likely to occur

- Battery runtime is improved due to lower power consumption of flash vs. rotating media
- Reducing the spin time of the rotating media means less time the hard disk is exposed to damage during shock and vibration events
- Boot and resume-from-hibernate times are faster
- Less heat
- Longer service life

### Our Future Roadmap

Itronix continuously monitors developments in storage technology and offers best-in-class products that we test and validate to meet our rugged product specifications. As SSD and HDD technologies become available at competitive prices, Itronix will be a leader in bringing these capabilities to the mobile computing market.

### Call to Action

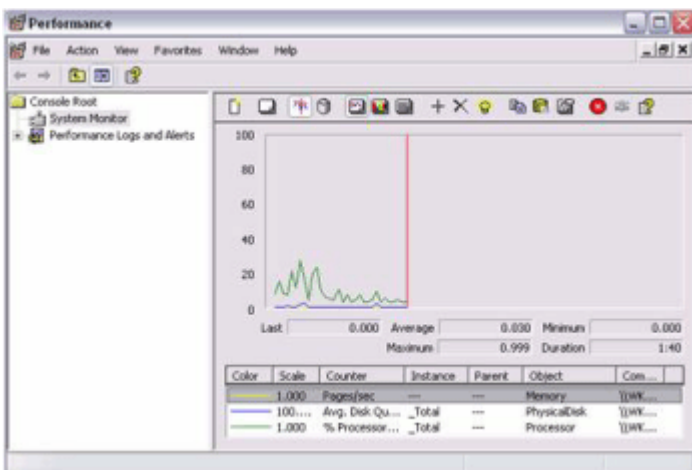
Some software designs and configuration parameters can cause excessive hard disk drive (HDD) access, leading to unexpected wear and reduced service life. These are rare occurrences, but can lead to costly repairs and downtime.

Before deploying a new software load on your mobile computer:

1. Check your Power Management settings and ensure that “Turn off hard disk” inactivity is set to allow the disk to spin down when inactive. Itronix recommends using the minimum setting (“After 1 min”).
2. Perform a simple visual inspection of the HDD disk activity indicator LED as you put your application through its paces. Is the LED constantly blinking?



3. Run Microsoft Windows XP Performance monitor or Windows 2000 System Monitor to check the disk access pattern of your software. How frequently is the HDD being accessed?



*Tip → To avoid System Monitor itself from accessing the internal HDD and creating “false hits” in your activity log, you can write the logging data to an external USB “thumb drive”*

4. Ensure your training materials instruct users to place the computer in standby, shutdown, or hibernate when not in use. Enable automatic standby in the Windows power management settings.



5. Contact your Itronix Technical Assistance Center 1-800-638-9270 or your Client Service Account Manager for additional assistance.

Itronix GoBook® rugged computers are equipped with HDDs optimized for the performance requirements of a mobile environment – resistance to shock and vibration, extended temperature range, power management, size/weight, capacity and cost. When used with mobile-optimized software solutions, these HDDs provide excellent service life.

## Cleaning Your Computer

☰ To Clean Your Computer

### Outside Case

1. Disconnect external power and turn off the computer.
2. [Remove the battery.](#)
3. Add a small amount of water to a soft cloth and clean the computer case. Do not use paper products because they can scratch the surface.
4. Wipe off any excess liquid with a soft cloth.
5. [Reinstall the battery.](#)

**CAUTION** Aerosols, solvents, or strong detergents are not recommended cleaning solutions and may void your warranty. For system decontamination recommendations please contact your support representative.

### Display

Use a soft, dry cloth. In some cases, you can use a small amount of water to remove streaks or smears. For difficult display cleaning tasks, use a 50/50 mixture of Isopropyl Alcohol and Water. Do not use paper products because they can scratch the screen.

### External Power Connector

The external power connector may sometimes be exposed to moisture and/or contamination causing an unreliable connection to the external power source. Clean the connector with a cotton swab dipped in electronics grade isopropyl alcohol.

### RJ-45 / USB Connectors

If the connector pins get dirty, clean the connector with a cotton swab dipped in electronics grade isopropyl alcohol.

## Backup and Recovery

## Data Backup

There are several methods to backup your data. It is best to regularly use all the methods below to ensure the greatest data integrity, provide the fastest recovery options, and minimize downtime.

After you have installed all your applications and have your computer configured as desired, create a backup of drive C: using the Hard Disk Backup and Recovery Utility. Then, use the Windows Backup Utility on a frequent basis to backup your daily data. It is recommended that you schedule the Windows Backup Utility to run automatically.

### ► Save Important System Information (WinXP only)

By default, your computer is set up to automatically save certain critical information, such as the registry, on a regular basis. This information is saved as a Restore Point. You can also create Restore Points manually by using the System Restore utility. Select **Start, All Programs, Accessories, System Tools, System Restore**. Then, follow the instructions on the Wizard.

### ► Backup your Files

You can backup files in case they are accidentally erased or corrupted. To do this, use the Windows Backup Utility. From the Start Menu, select All Programs, Accessories, System Tools, Backup. You can schedule backups to run automatically on a regular basis. To set this up, talk to your help desk or IT department.

### ► Backup Drive C:

You can make an exact copy of drive C: and save the backup image on the Recovery Partition of your hard disk (usually drive D:). In the future, you can restore drive C: to its previous state should it become corrupted. To make a backup copy of drive C:, use the Hard Disk Backup and Recovery Utility. Select **Start, All Programs, Mobile Computer Tools, Hard Disk Backup and Recovery**. You will be prompted for additional information.

**NOTE** The Hard Disk Backup and Recovery Utility is only available on computers configured with a Recovery Partition.

## Data Recovery

There are several methods to restore your data. It is best to start with the least destructive and fastest recovery options.

### ► Try this first: Restore System Information (WinXP only)

If you are having problems with your system, restore system information to an earlier state, or Restore Point. To restore to an earlier state, select **Start, All Programs, Accessories, System Tools, System Restore**. Then, follow the instructions on the Wizard.

### ► Try this next: Restore a Backup

You can restore files and folders that you have backed-up with the Windows Backup Utility. To do this, use the Windows Backup utility. Select **Start, All Programs, Accessories, System Tools, Backup**.

### ► Try this last: Restore Entire Contents of Drive C:

If none of the above steps restore your disk image to a stable state, you may need to restore your disk to its original factory image or an image you saved using the Hard Disk Backup and Recovery Utility. Restoring a previously saved disk image overwrites the entire contents of drive C:. Before running this process, save your data to another location, such as a USB flash drive. Select **Start, All Programs, Mobile Computer Tools, Hard Disk Backup and**

**Recovery.** You will be prompted for additional information.

**NOTE** The Hard Disk Backup and Recovery Utility is only available on computers configured with a Recovery Partition. If it is not available, you will either need to contact your company's help desk about obtaining a Recovery CD or return your unit for service.

## Troubleshooting

This section is designed to help you determine and fix problems you might encounter while operating the GoBook MR-1 computer. Try the following things in order:

- First look through the categories in this section for a solution
- If you are having a problem with a computer application, use the Help that comes with the application to find a solution
- If you still cannot resolve your problem, contact the help desk at your organization.

### For More Help

- Windows Help is installed on your system. To access this information, select **Windows Help and Support** from the Start Menu
- Third-party Windows manuals are available from your local bookstore.

## Applications

[My application locks up, acts strangely, or produces a General Protection Fault \(GPF\) error or blue screen](#)

## Battery Troubleshooting

[The battery does not charge](#)

[The batteries take much longer than seven hours to charge](#)

[The batteries don't last very long](#)

[The gas gauge isn't full after charging the battery](#)

[The gas gauge reads "full," but the charging indicator light is still on](#)

[My battery seems to have less and less capacity](#)

## Display / Touchscreen

[The display performance is slow](#)

[I can't read the display](#)

[The underlined, inverse, and hypertext characters are difficult to read on the screen](#)

[I can't see the cursor while using the DOS editor](#)



[The display appears to have random pixels darkened after scrolling](#)

[I changed my display resolution, but I see no difference on the screen](#)

[When I try to use the stylus on my touch screen, nothing happens](#)

[The touchscreen doesn't respond after a suspend](#)

## **Hard Disk**

[The hard disk will not spin up so the computer can't boot up](#)

## **Keyboard and Mouse Troubleshooting**

[Something unexpected happens when I press a key](#)

[Incorrect characters appear on the screen when I press certain keys](#)

[I have difficulty double-clicking the mouse fast enough](#)

## **Miscellaneous Troubleshooting**

[The computer shuts off unexpectedly](#)

[The speaker volume is too high or too low](#)

[The computer won't turn on](#)

[The computer won't turn off](#)

[The computer enters suspend mode too quickly](#)

[The computer doesn't automatically suspend](#)

[The system date and time are incorrect](#)

[I receive an "out of memory" error message](#)

[Holding down the Power button to reset the computer doesn't always work](#)

[The LED's, backlight, and/or keyboard backlight don't illuminate](#)

[The computer doesn't make any sounds, even during boot-up](#)

[The fan stopped running](#)

## **FAQ**

[I've heard that cleaning up and rearranging files on the hard drive will improve the startup speed of my programs. How do I do this?](#)

[How do I adjust the volume?](#)

[How do I change the battery?](#)

[How long will the battery last?](#)

[How do I change the display brightness?](#)

[How do I clean the display?](#)

[How do I calibrate the optional touchscreen?](#)

## Service and Support

We are committed to providing you world class support services that ensure the lowest total cost of ownership for your hardware investment. The [icareServices](#) program will help you maximize end user productivity and decrease overall system operating cost.

### Client Care Center (CCC)

The convenient GD-Itronix Client Care Center (CCC) number *800-638-9270, Opt 2* provides a one-call solution for technical service support 5am to 5pm Pacific, Monday through Friday (excluding holidays) for the following:

- Troubleshooting hardware and RMA creation
- Placing unit, part or accessory orders
- Status updates on orders or service repair
- Shipping information or prepaid labels
- Delivery confirmation

Alternatively, you may e-mail us at [ccc@gd-itronix.com](mailto:ccc@gd-itronix.com) or enter your service request at [https://ebusiness.itronix.com/servenet\\_us/](https://ebusiness.itronix.com/servenet_us/). icareServeNet, GD-Itronix' web portal, provides 24x7 access to create RMA's, check the status of Service Requests, or to search the knowledgebase. This service does require registration for user-id and password, which the CCC can set up upon request.

NOTE: For support and inquires outside of North America - in Europe, the Middle East and Africa, please contact <http://www.itronix.com/ccc/uk/> or call +44 (0)24 7671 4800.

### Shipping -- N.America

Use EZ-Return shipping label and contact DHL for pick up or drop off at DHL location if available.

To ship product or hardware in for service, ship to:

GD-Itronix RMA # ( \_\_\_\_\_ )  
 12825 E. Mirabeau Parkway  
 Spokane Valley, WA 99216

For EZ-Return shipping labels or for assistance in scheduling a DHL pickup, contact GD-Itronix

1-800-638-9270, Opt 2

### For More Information Or To Place An Order

**For more in-depth information on Client Services**

<http://www.gd-itronix.com/index.cfm?page=Support:Support>

**For details on any of our icareService Programs visit**

<http://www.gd-computing.com/index.cfm?page=Services:Overview>

*To review & purchase accessories please use the link below:*

<http://www.gd-itronix.com/index.cfm?page=Products:accessories>

Keep this document handy to assist in maximizing the service life and daily use of your GD-Itronix equipment.

## **Product Support - Downloads**

It is easy to get the software updates you need to keep your configuration current and get the most from your product. [Click here](#) to get current downloads.

**NOTE** Downloads are listed by model (GoBook MR-1) and product number (IX750).

## **Documentation Feedback**

We strive to create accurate, convenient and highly useful product documentation for all our products. With this in mind, we'd like to hear from you and encourage your feedback. If you have comments or suggestions about our online Help or other product documentation, [click here](#).

Please include the following information when submitting feedback:

- Product name
- Place and date of purchase
- Name of online Help or other document
- Topic title (for online Help) or page number
- Localized document language (such as English, French, German, Spanish)
- Type of feedback (for example, need for clarification, grammatical errors, incorrect information)
- Your suggestion for how to improve the document

## Identification

*GoBook® MR-1 (IX750)*

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## Compliance Statements

## ***Federal Communication Commission Interference Statement***

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## ***FCC CAUTION***

To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

## **IMPORTANT NOTE**

### ***FCC Radiation Exposure Statement***

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with maximum distance between the radiator and your body.

### ***Local Restriction of 802.11a/b/g Radio Usage***

**CAUTION** Due to the fact that the frequencies used by 802.11a/b/g wireless LAN devices may not yet be harmonized in all countries, 802.11a/b/g products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. Any deviation from permissible settings and restrictions in the country of use could be an infringement of national law and may be punished as such.

### ***FCC Radio Frequency Interference Requirements***

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and /or damage this device.

## **Warnings and Cautions**

**WARNING** It is important that only authorized GD-Itronix personnel attempt repairs on GD-Itronix equipment as this might void any maintenance contract with your company. Unauthorized service personnel might be subject to shock hazard on some GD-Itronix equipment if removal of protective covers is attempted.

The product you have purchased is powered by a rechargeable battery. The battery is recyclable and, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Do not crush the battery or place it in a fire. Check with your local solid-waste officials for details on recycling options or proper disposal.

**CAUTION** Internal components of the GoBook MR-1 (IX750) computer will be damaged if exposed to contaminants. When dust covers, or the bottom access panel are open on the computer, shield the unit from all contaminants such as liquids, rain, snow, and dust.

*In the event of problems, you should contact your equipment supplier in the first instance.*

This product is intended to be supplied by a Listed Power Unit and output rated 12V DC input voltage, 3.0A.

### **Safety Information**

Enclosed with each GoBook MR-1 Notebook computer is the radio specific safety information. Do not proceed without reviewing the information provided in that document.

Do not proceed beyond a **WARNING** or **CAUTION** until the indicated conditions are fully understood and met.