



GD8200 User Guide



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Identification: GD8200 User Guide

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partner, General Dynamics Itronix has determined this computer meets ENERGY STAR® program requirements for computers.

Compliance Statements

The GD8200 fully-rugged notebook 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 or more 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.

The GD8200 fully-rugged notebook complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

The GD8200 fully-rugged notebook may be connected to the telephone network using the RJ-11 jack provided.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone

Notices, Compliance and Safety

company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact the equipment manufacturer for repair and/or warranty information. Do not attempt repairs of this equipment yourself without obtaining manufacturer authorized parts and documentation. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

Compliance Statement for Canada

NOTICE The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Ringer Equivalence Numbers (REN) are:

GD8200 non-radio: 0.5B

NOTICE The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

The GD8200 fully-rugged notebook may be connected to the telephone network using the RJ-11 jack provided.

Fax Branding

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual.

In order to program this information into your fax machine, you should complete the following:

This information is entered through the FAX application software you have installed. Consult your FAX software documentation for instructions about entering this information.

Warnings and Cautions

WARNING It is important that only authorized personnel service and attempt repairs on the equipment. Unauthorized service or repair may void the warranty and any maintenance contract in effect for the equipment. Unauthorized service personnel might be subject to shock hazard on some equipment if removal of protective covers is attempted.

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.

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 GD8200 fully-rugged notebook will be damaged if exposed to contaminants. When dust covers, the PC card door, or the bottom access panel are open on the computer, shield the unit from all contaminants such as liquids, rain, snow, and dust.

This device may contain a WLAN radio transmitter, a WPAN radio transmitter, and a WAN radio transmitter.

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 label is applicable.

Notices, Compliance and Safety

Only the antenna with which an intentional radiator is authorized may be used with the intentional radiator.

The WAN embedded antenna location is in the upper center edge of the display screen and is not to be modified.

The WPAN embedded antenna location is near the lower left edge of the Keyboard and is not to be modified.

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.

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 upper center edge of the display screen 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 transmitter, WLAN transmitter and WPAN transmitter should be turned off before carrying the laptop PC in order to comply with FCC RF exposure requirements.

The equipment has been approved to [Commission Decision "CTR21"] for pan-European single terminal connection to the Public Switched Telephone Network (PSTN). However, due to differences between individual PSTNs provided in different countries the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

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

Safety

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

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, CAUTIONS and instructions marked on the product and noted in this documentation.
- Before using your computer, read the Power Management section to familiarize yourself with basic battery information and ensure optimum performance.
- **CAUTION** To reduce the risk of fire, only use a No. 26 AWG or larger telecommunication line cord.
- **CAUTION** This notebook computer is designed to be used with the 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 operate the computer at temperatures above 140°F (60°C) or below -10°F (-23C).
- 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.
- 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, immediately power off the computer and wipe it down.
- 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 service this product yourself. Opening or removing covers may expose you to dangerous voltage points or other risks and may void your warranty. Damage caused by servicing that is not authorized may void your warranty. If your computer needs service, remove power and turn it off, then contact authorized service personnel.

Refer all 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 instructions in this manual.

- If the product exhibits a distinct change in performance, indicating a need for service.

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 an office dock or vehicle dock.
- Disconnect any attached peripherals.
- Disconnect any attached network, telephone or telecommunication line.
- Remove any PC Cards, EXPRESS Cards, Smart Cards, CDs, DVDs or any other 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 a manufacturer approved battery.
- **WARNING!** 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.
- Follow the safety instructions printed on the battery.
- Only use approved manufacturer approved battery packs with your computer.
- 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 and 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.

Standard Features

- XGA Color DynaVue® II **Display**
- Shock-Mounted, Ruggedized, Removable **Hard Disk Drive** with Heater
- Fully-Rugged Magnesium Case
- Full-Size, 87-Key Sealed Keyboard with Embedded Numeric Keypad and 12 Function Keys
- Multi-Touch **Touchpad**
- Internal 56K V.92 **Fax/Modem**
- **Lid Switch**: The lid switch can be configured to suspend your computer when the lid is closed and to resume when the lid is opened.
- **Application Launch Key** and User Programmable Buttons
- Internal Gigabit **Ethernet LAN**
- Two USB 2.0 Ports
- One USB 3.0 Port
- Type II **PC Card Slot**
- **Audio** Jacks for External and Internal Speakers and Microphone
- **Stealth Mode**: This feature allows you to use the computer in an environment where sound and light could be dangerous or disruptive
- Microsoft® Windows® 7 Operating System
- Three-year Limited Warranty

Optional Features

Below is a list of some of the optional features supported by your computer. Contact your authorized dealer if you decide to perform a key component upgrade.

- **XGA Transmissive HiBright DynaVue® II Touchscreen Display**
- **Fingerprint Scanner**
- **Radio ON/OFF Switch**
- **Smart Card Reader (FIPS 201) or EXPRESS Card/54 Slot**
- **CRMA Express** Radio Technology: Flexible, Upgradeable Radio Module for Significant Cost Savings
- Integrated **Wireless LAN** Communications: 802.11a/b/g/n Wireless LAN with Mini-PCI Wireless Card Support
- **Bluetooth®**
- **GPS**
- **Media Bay** Device: DVD Multi Drive or Media Bay Battery
- Backlit **Keyboard**
- Hazloc
- **Memory**

- Extra Media Bay Battery

Operating System Information

For information and help with Windows® 7, select **Start, Help and Support, How to get started with your computer**. You can also browse or search help topics to learn more about using the Windows® 7 Operating System.

Tips for New Owners

- Back up files often. Users who need to manage large amounts of data may wish to use backup devices.
- Create a set of recovery CDs or DVDs to recover your hard disk in case it becomes corrupted. To do this, use the Recovery CD Wizard by selecting **Start, Programs, Mobile Computer Tools**.
- Don't leave passwords anywhere on your notebook or carrying case.
- Install antivirus software and keep it updated.
- For added security, consider using a computer lock with the computer's **Security Slot**.
- Develop ergonomic work habits to help prevent related health issues. The science of ergonomics studies the relationship between health and a suitable work environment. For more information on ergonomics, contact your nearest computer bookstore, local library, reputable website.

Turning Off the Computer

To turn off your computer select **Start, Shut Down, Shut Down** and follow the instructions on the screen.

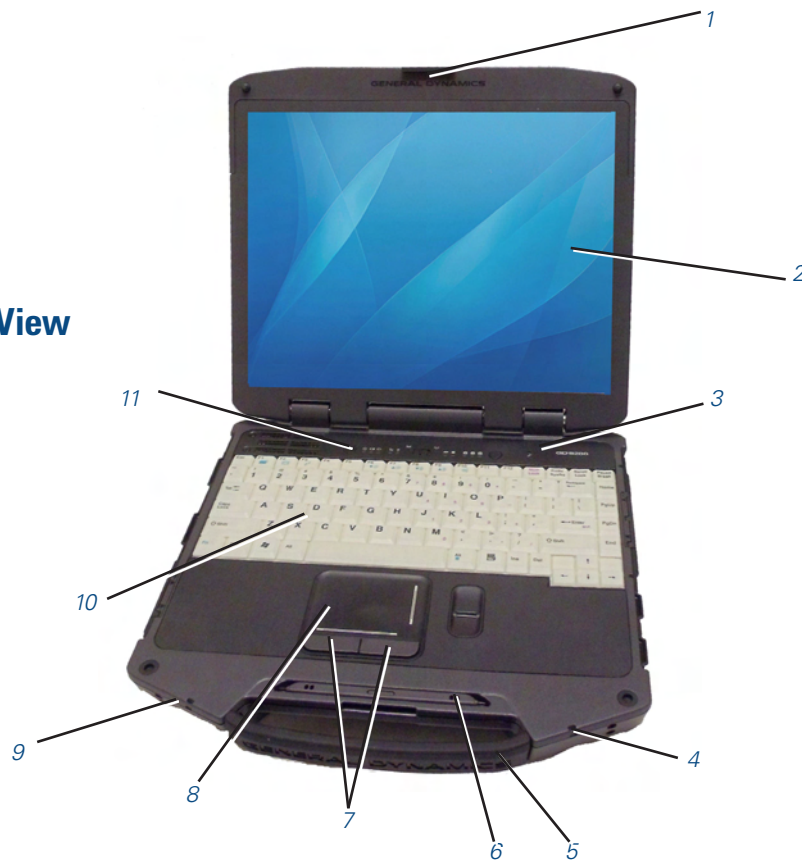
If you are going to be away from the computer for a short period, you can conserve power without shutting down the system. See **Managing Power** and **Battery Tips** for details.

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.

Getting Familiar With Your Computer

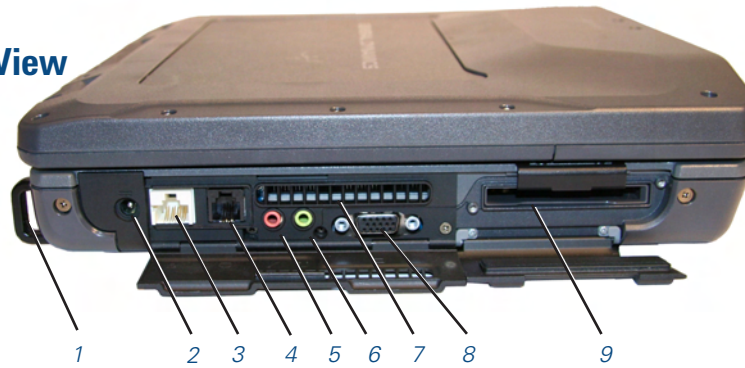
Front View









#	Feature	Description
1	Display Latch	The display latch holds the display when closed
2	Display	13.3-inch (4:3) XGA, sunlight-viewable, color display with an integrated DynaVue® II touchscreen
3	Internal Microphone	Integrated, weatherized microphone can be used with various software applications that require audio input
4	Right Tether Slot	A stylus tether can be attached at this location
5	Handle	Integrated handle for convenient carrying
6	Pen / Stylus Slot	Store the provided custom touchscreen pen (stylus) in this slot below the touchpad
7	Touchpad Buttons	Use like the buttons on a mouse
8	Touchpad	Use for navigation
9	Left Tether Slot	A stylus tether can be attached at this location
10	Keyboard	Standard keyboard with embedded numeric keypad
11	Button and LED strip	Area above the keyboard with the POWER BUTTON , Radio ON/OFF Switch , Application Launch Key and LED Status Indicators

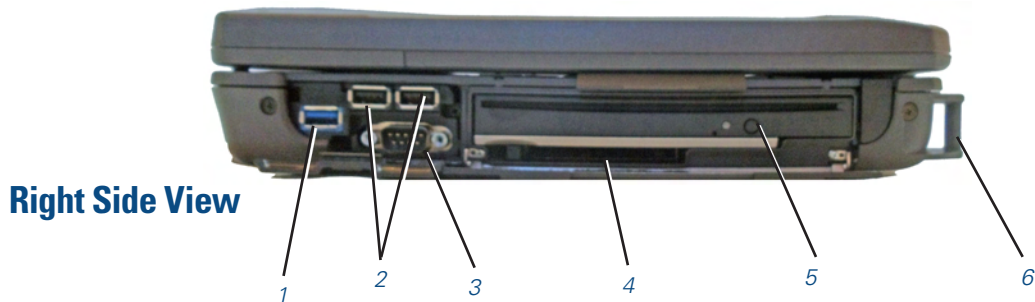
Getting Familiar With Your Computer




Left Side View



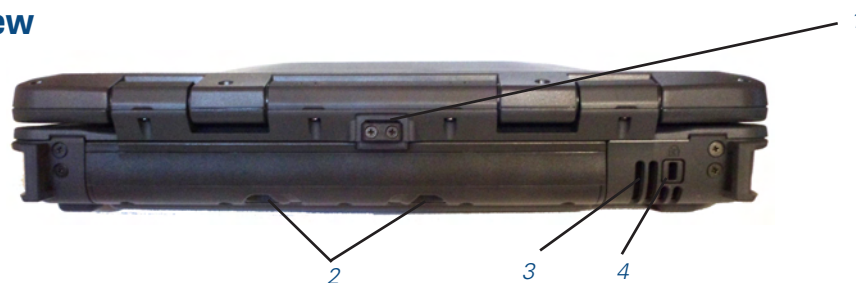
#	Icon	Feature	Description
1		Back Handle Mount	The back handle mount, located on both sides of the computer is used with an optional back handle.
2		DC-in Jack	Connects to an AC power adapter
3		Network Jack (RJ45/LAN)	Connects to an Ethernet-based network; connection speed is 10/100/1000 Mbps.
4		Modem Jack (RJ11)	Connects a phone line to the internal fax/data modem. It can transmit data using the 56 Kbps V.90 or V.92 protocol, and send and receive faxes at 14.4 Kbps. NOTE In some countries, local regulations may not permit the use of the fax/modem designed for this system. In this case, you may use a PCMCIA modem.
5		Microphone Jack	Connect a microphone to this jack to record audio
6		Audio Out Jack	Connect external speakers or a stereo headset to this jack to listen to multimedia
7		Cooling Fan Exhaust	Cooling Fan exhaust area. Do Not Block. This area may become hot as air vents from the computer.
8		External Monitor Port	Connects to a display monitor (up to 2048x1536 resolution)
9		Smart Card Reader or Express Card Slot Option	Depending on your configuration, use with a Smart Card or EXPRESS Card.


Getting Familiar With Your Computer



#	Icon	Feature	Description
1		One USB 3.0 Port	Connects to USB devices (e.g., USB digital camera)
2		Two USB 2.0 Ports	Connects to USB devices (e.g., USB digital camera)
3		Serial Port	Connects your computer to serial devices such a fax/modem or a serial mouse. This port is identified as COM1
4		PC Card Slot	Use this slot for Type II PC Card devices
5		Media Bay Combo	DVD-ROM/CD-RW, DVD Multi-Drive (DVD-RAM/DVD-ROM/DVD-RW/CD-R/CD-ROM/CD-RW), or second battery module
6		Back Handle Mount	The back handle mount located on both sides of the computer is used with an optional back handle.

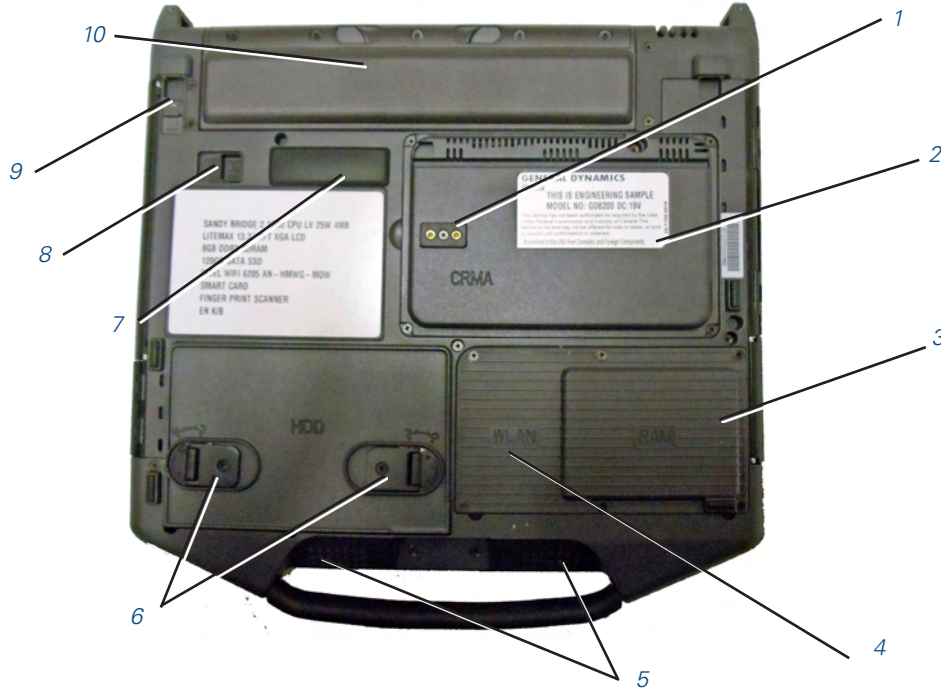
Back Edge View



#	Icon	Feature	Description
1		Battery Release Lock	Press this in (toward the display) to unlock the battery
2		Battery Release Latches	Slide these toward the center of the unit to release the battery
3		Cooling Fan Intake	Air intake for fan. Do NOT block this area
4		Security Slot	The security slot can be used with a standard laptop-locking device, such as a Kensington lock. You can connect the computer to a large object with the lock to prevent theft. See the documentation that comes with your lock for more information.

Getting Familiar With Your Computer

Bottom View




#	Feature	Description
1	Dual External Antenna Connector (DEAC)	The DEAC gives you the ability to switch the internal WLAN and WWAN to an external antenna to gain better performance when you are in a vehicle.
2	CRMA Express Module	Upgradeable WWAN radio module (optional)
3	Memory compartment	User expandable memory slot
4	WLAN compartment	Integrated wireless LAN radio
5	Speakers	Integrated stereo speakers for audio output
6	Hard Disk Drive Locks	Open and turn these to lock or unlock the removable hard disk drive
7	Docking Connector	84-pin cradle connector that mates with the Vehicle Dock, or Office Dock
8	Media Bay Release	After unlocking the media drive, slide this to release the media drive.
9	Media Bay Lock Slide	Slide to unlock the media drive before releasing it
10	Battery Pack	Smart Lithium-Ion battery

Keyboard Basics

The GD8200 features:

- Full Size, Glow-in-the-Dark (GID) Keys on a 85-Key Keyboard
- Twelve Function Keys
- Embedded Numeric Keypad
- **Application Launch Key** (Programmable Button)
- **Radio ON/OFF Switch**
- Ergonomically Designed Wide Palm Rest

Primary Keys

Key	Description
ALT	The ALT (alternate) key is used with other keys to perform special tasks. On some operating systems pressing CTRL+ALT+DEL twice soft reboots the computer.
BACKSPACE	The BACKSPACE 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.
CAPS LOCK	Pressing the CAPS LOCK key one time locks keys A through Z in the UPPER CASE position. Pressing the CAPS LOCK key again returns 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.
CTRL	The CTRL (control) key works with other keys to perform a variety of functions.
ENTER	The ENTER 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.
ESC	The ESC (escape) key allows you to exit a pop-up window or message box.
PRTSC	In Windows®, pressing the PRTSC (print screen) key or ALT+PRTSC key copies the current screen or window to the clipboard so you can paste it into documents.
SHIFT	The SHIFT key changes the keys A through Z to the UPPER CASE position. When you press an alphabetic key, the character appears as a capital letter. When you press SHIFT with other keys, the characters on the upper part of the keys appear. For example, pressing SHIFT+7 displays an ampersand (&).
FN	Some special FN (function) keys have been established to perform important tasks when pressed in combination with the FN key. These keys are described later in this document. The FN key legend is color keyed to other special keys on the keyboard.
SPACEBAR	Use the SPACEBAR to enter a space and move the cursor one character to the right.
TAB	The TAB key moves the cursor to the next tab stop or field. Tab stops are defined by your operating system or application program. Press the TAB key to move from one field or text box to another.

Getting Familiar With Your Computer

Arrow Keys

The arrow keys are defined by the software application.

UP ARROW: Usually moves the cursor up one line. In some cases, you can use the up arrow to make selections from menus and scrollable list boxes.

DOWN ARROW: Usually moves the cursor down one line. In Windows®, you can use the down arrow to make selections from menus and scrollable list boxes.

RIGHT ARROW: Usually moves the cursor one character position to the right.

LEFT ARROW: Usually moves the cursor one character position to the left.



Arrow Keys

Function Keys and Key Combinations

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

Function Key	Icon	Function	Description
FN+F1		Screen blank	Turns off the display screen backlight. Press it again to turn the light back on.
FN+F2		Display toggle	Switches the display output between the display screen, external monitor (if connected) and both the display screen and external monitor NOTE When a DVD or VCD is playing display toggle is disabled.
FN+F3		Standby	Puts the computer in standby mode.
FN+F4		Keyboard Backlight Brightness Down	Decreases the keyboard backlight brightness if you have the optional EL keyboard.
FN+F5		Keyboard Backlight Brightness Up	Increases the keyboard backlight brightness if you have the optional EL keyboard.
FN+F6		Display Brightness Down	Decreases the screen brightness
FN+F7		Display Brightness Up	Increases the screen brightness
FN+F8		Audio Volume Down	Decreases the audio volume
FN+F9		Audio Volume Up	Increases the audio volume
FN+F10		Speaker on/off	Turns the speakers on and off; mutes the sound
FN+F12		Stealth mode	Provides the ability to disable sound and light features such as system beeps, fan, and display backlight
FN+RIGHT ALT		Touchpad on/off	Toggles the Touchpad on and off
FN+ LEFT SHIFT		Keyboard backlight	Toggles the keyboard backlight (option) on and off

Getting Familiar With Your Computer

Numeric Keypad

Standard Key	Key with Numlock On
7	7
8	8
9	9
0	*
U	4
I	5
O	6
P	-
J	1
K	2
L	3
;	+
M	0
.	.
/	/
ENTER	Carriage Return




The embedded numeric keypad consists of sixteen keys that make number intensive input more convenient. It is indicated by small characters located on the lower right corner of the key. Press **NUMLK** to enable or disable the numeric keypad.



Numeric Keypad

Lock Keys








The keyboard has three lock keys you can toggle on and off.

Lock Key	Description
CAPS LOCK	<p>Pressing the CAPS LOCK key one time locks keys A through Z in the UPPER CASE position. Pressing the CAPS LOCK key again returns 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.</p> <p>The CAPS LOCK LED  lights when the keyboard is in Caps Lock mode.</p>
NUM LOCK	<p>When NUM LOCK is on, the embedded keypad is in numeric mode. The keys function as a calculator (with the arithmetic operators +, -, *, and /). Use this mode when you need to do a lot of numeric data entry.</p> <p>Alternately, connect an external keypad. See External keyboard.</p> <p>The NUM LOCK LED  lights when the keyboard is in Num Lock mode.</p>
SCROLL LOCK	<p>Enters Scroll Lock mode. Scroll Lock varies between applications. It does not work with some applications.</p> <p>The SCROLL LOCK LED  lights when the keyboard is in Scroll Lock mode.</p>

Getting Familiar With Your Computer

Windows® Keys

The keyboard has two keys that perform Windows®-specific functions.

Key	Icon	Description
Windows® Logo Key		<p>START BUTTON Combinations with this key perform special functions. Below are a few examples:</p> <ul style="list-style-type: none">  + TAB (Activates next Taskbar button)  + E (Opens My Computer in Windows® Explorer)  + M (Minimizes all Windows) SHIFT +  + M (Restores Minimized Windows)  + R (Displays Run dialog box) <p>Refer to Keyboard Shortcuts in Windows® Help and Support for a complete list of Windows® key combinations.</p>
Application Key		Opens the application's context menu (same as right-click)

Radio ON/OFF Switch (option)

The keyboard has two keys that perform Windows®-specific functions.

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.

The wireless Radio ON/OFF Switch is the middle button above the keyboard. This switch toggles the power on and off to all radio devices. Radio devices include GPS, Bluetooth®, WLAN, and WWAN radios.

Turn all Radios On or Off

1. Slide the radio switch to the left to power off all radio devices (airplane mode).
2. Slide the radio switch to the right to turn radio power on.



Application Launch Key

The application launch key is the right button above the keyboard. Press this key to open a specific application you have set following the instructions below:

Program the Application Launch Key in Windows® 7

1. Select **Mobile Computer Tools, OnScreenControl**.
2. Select **Launch Key Settings, Set, and** then select **Run**. Click on **Configure**. Select **Browse** and choose an application based on its path. To complete the settings, select **OK** three times.

Getting Familiar With Your Computer

Display

The GD8200 features a 13.3-inch, XGA, sunlight-viewable, color display with an integrated touchscreen. You can start programs and input data on the touchscreen using an approved pen (stylus) that comes with the computer. The Colorvue™ Transmissive display technology uses a built-in backlight for easy reading in most ambient light conditions. DynaVue® II display technology provides improved outdoor visibility and even works well in sunlight.

CAUTION To avoid damaging the display, do not slam it when you close it. Also, do not place any object on top of the computer when the display is closed.

Install the Stylus Tether

1. Insert one tether loop through one of the holes on the end of the stylus, then pull it back through the adjacent hole.



NOTE The holes in the stylus are notched on one side and smooth on the other. Feed the tether through the smooth side first, so that it lies inside the notch when finished.

2. Insert the free end of the tether through the loop and pull the slack back through the loop to secure the stylus.
3. Repeat these steps with the other end of the tether to attach it to one of the tether slots on the front on your computer.

Calibrate the Touchscreen

1. Press down on one side of the stylus to remove it from its slot below the Touchpad.
2. From the **Start** menu select **All Programs, HIDEGalaxTouch**.
3. Select **9 Points Linearization** from the HIDEGalaxTouch dialogue box.
4. Use an approved stylus and follow the instructions provided to complete touchscreen calibration.
5. Click **OK** to save the new settings and click **OK** again to begin using your computer.

Adjusting Display Brightness

- Press **FN + F6**  to decrease display brightness
- Press **FN + F7**  to increase display brightness

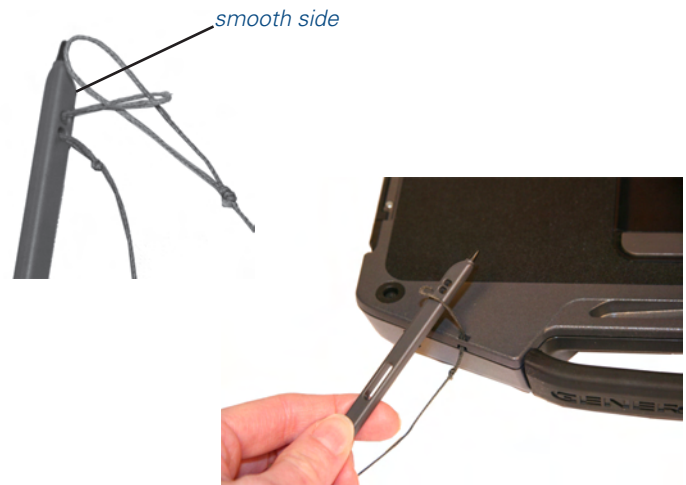
Adjusting Display Resolution

Windows® 7:

1. Click on the **Start** button and then on **Control Panel**.
2. Under **Appearance and Personalization**, click on **Adjust Screen Resolution**.
3. Use the slide bar to adjust the resolution.

NOTE Using a lower resolution than the screen designation will reduce the area of the display.

General Dynamics Itronix 72-0146-001



Getting Familiar With Your Computer

Auto Dim Feature

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

NOTE You may still use the display brightness function keys (**FN+F6** and **FN+F7**) to adjust display brightness.

See **Managing Power** for more information on power management features.

Simultaneous or Extended Display

This computer supports simultaneous LCD and external display output via the external monitor port located on the back edge of the computer. 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.

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 laptop's display.

Windows® 7:

1. Select **Start, Control Panel, Appearance and Personalization**.
2. Under **Display** select **Connect to an external display**.
3. Select the drop-down menu next to **Multiple Displays** and click **Extend these displays**. Then click **OK**.

LCD Heater

The GD8200 has a CCFL heater to improve display brightness in a cold environment. The heater includes a film and heater strip that is bonded over the CCFL area of the display. It is designed to turn on when the temperature is cold enough to impact display brightness and does not require user intervention.

Cursor Visibility

To improve the visibility of the mouse cursor, you should:

- Enable the "**Pointer Trails**" feature to add trailing cursors
- Use a slow or medium speed/sensitivity level

You can combine a higher level of acceleration with a slow or medium speed/sensitivity level. This allows you to move the mouse cursor quickly by increasing your finger pressure, while still providing a finer degree of control when you apply minimum pressure.


NOTE To change the speed of the mouse, do the following:

Windows® 7: Select **Start, Control Panel, Hardware and Sound**, and then choose **Mouse**. On the **Mouse Properties** window, select the **Pointer Options** tab to make cursor visibility adjustments.

Lid Switch

Your computer has a lid switch that can automatically suspend and resume your computer when you close and open the display. To change the power management settings for the lid switch, perform the following:

Windows® 7:

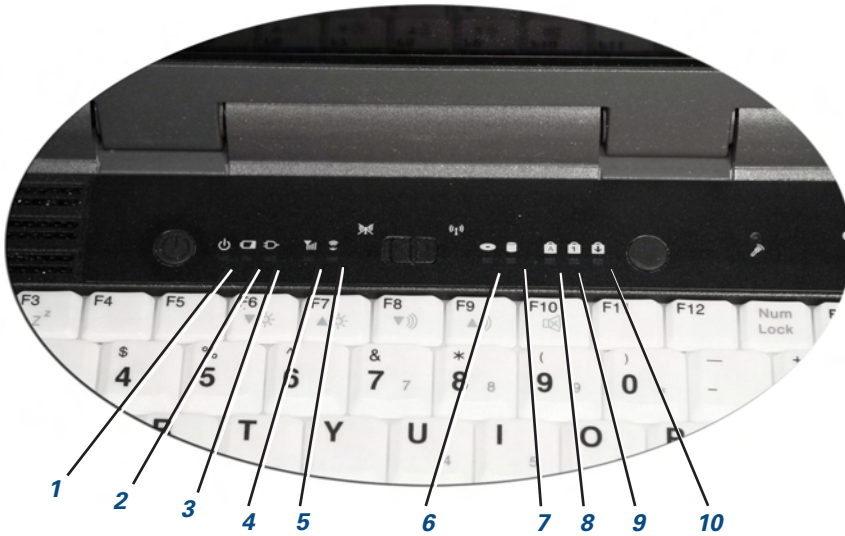
1. On the System Tray area of the Taskbar, right-click the **DynaPower** icon .
2. At the top of the grid, select the appropriate **Power** plan.
3. Select the desired action settings for both battery or AC power.
4. In the **Power buttons and lid** section, select the **Lid Open Action** and **Lid Close Action**.
5. Select **Save Changes** and repeat steps 2 through 4 until all power plan settings you wish to modify.











NOTE The **Lid Close Action** default is **Sleep** for Windows®7. The default **Lid Open Action** is **Do Nothing**.

Getting Familiar With Your Computer

LED Status Indicators

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






#	Icon	Function	LED	Description
1		Power	Lit	Power is ON
			Flashing	Suspend to RAM
2		Battery	Lit	Battery charging
			Flashing	Low Battery
			LED off	No battery / battery fully charged (will always be OFF without external power connected to the unit)
3		External Power	Lit	External power is connected to the unit
4		WWAN Communication	Lit	WWAN radio is on
5		WLAN Communication	Lit	Wireless LAN, Bluetooth®, and/or GPS radio(s) are on
6		Media Bay	Lit	The computer is equipped with a DVD/CDRW Combo, CD-ROM, or DVD-ROM
7		Disk Status (HW)	Lit	The hard disk drive is being accessed
8		Caps Lock	Lit	The keyboard is in Caps Lock mode
9		Number Lock	Lit	The keyboard is in Num Lock mode
10		Scroll Lock	Lit	The keyboard is in Scroll Lock mode

Getting Familiar With Your Computer

Audio

Your computer includes 24-bit high-fidelity stereo audio output and an integrated microphone. You can also attach external audio devices via the audio in and out jacks on the left side of the computer.

Adjust the Volume

- To decrease volume, press **FN+F8** 
- To increase volume, press **FN+F9** 
- To mute the volume, press **FN+F10** 

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.



The PC Card Slot

Use the PC card slot, located on the right side of the computer under the media bay, as an interface between your computer and a variety of communications devices, such as network adapters, SCSI adapters, and fax/modems, or to provide additional data storage capacity. Your computer's PC Card slot supports single Type I or II PC Cards, 32-bit CardBus cards, and Zoomed Video cards.

CAUTION Do not remove or change any hardware while your computer is hibernating or in a Sleep/Standby state.



Inserting the Card

1. The top side of a PC Card is usually identified with a label. Insert the card into the slot with the top up and the edge with pinhole contacts or arrow, going in first. You will feel some resistance as the card slides into the back of the slot.
2. PC Cards require drivers, or a program that allows the operating system to use a specific device. Many drivers are included with Windows® so the PC Card will be automatically recognized; but if not, you will be prompted to install the driver included with your card.
3. The PC Card becomes a removable disk drive and is assigned a letter drive.

NOTE Please read the instructions included with individual PC Cards. Some cards may be inserted with power on, while others require that the computer be turned off.



Ejecting a Card

1. First, exit the application using the card.
2. On the taskbar, left-click on the **Safely Remove Hardware** icon  or  .
3. Press the slot eject button once to pop it out; then press it again to eject the PC Card.



Getting Familiar With Your Computer

Touchpad

The integrated Touchpad is a pointing device that senses movement on its surface so the cursor responds as you move your finger over of the Touchpad. The buttons located directly below the Touchpad have the same function as a two-button mouse. Press these buttons to make selections, drag objects, or perform a variety of other functions depending on the software.

Selecting Objects

1. Move the pointer over the object to be selected
2. Double-tap the Touchpad or double-click the left Touchpad button. The Touchpad will respond like a mouse.

Dragging Objects

1. Place the cursor over the desired object.
2. Press and hold the left 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 cursor to the desired location and release the button or lift your finger to finish dragging.

Scrolling

Two-Finger Scrolling and Reverse Scrolling

The two-finger scrolling feature allows you to scroll vertically or horizontally and initiate scrolling from anywhere on the Touchpad surface.

4. Place two fingers down on the Touchpad surface. The fingers should be slightly separated.
5. Using a straight continuous motion, slide both fingers in the desired direction.
6. Lift both fingers up off the Touchpad surface to stop scrolling.

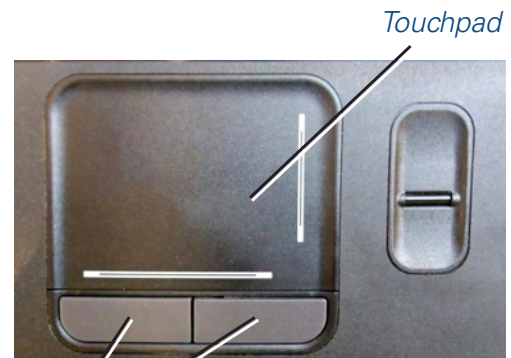
The Reverse Scrolling Direction feature allows you to change standard scrolling behavior. Standard scrolling moves the scroll bar in the direction of finger motion. Reverse Direction Scrolling moves the document or object in the direction of finger motion.

To enable this feature, select the **Enable reverse scrolling direction** check box.

Zooming

Pinch Zoom

The Pinch Zoom gesture delivers smooth zooming functionality in many applications, including Microsoft® Office 2003 and 2007, MS IE 6,7, and 8, as well as Adobe Acrobat/Reader and PhotoShop CS3 and CS4, MS Windows® Media Player 11, WinDVD 9, and iTunes. This feature is enhanced with PointZoom(TM) for intelligent and contextual zoom control.



Touchpad Buttons

Users surfing the Web can pinch over a site's text enlarging the font, pinch over a map and zoom the map - all in the same browser window.

The Pinch Zoom gesture can be used to perform the same function as a scroll wheel on a standard Windows® applications that support CTRL-SCROLL WHEEL zoom functionality.

To use the Pinch Zoom gesture:

1. Place two fingers down on the Touchpad surface.
2. Slide the fingers further apart to zoom in or slide the fingers closer together to zoom out. For the best zooming experience, use the tips of your fingers.

Rotating Objects

Pivot Rotate

The Pivot Rotate gesture allows objects such as a photo, PDF file, or other selected object, to be rotated in 90 degree increments.

1. Place one finger down on the left "target" zone (adjustable scroll zone) of the touchpad surface and keep it stationary.
2. Place another finger down near the middle of the Touchpad.
3. Slide the second finger in a circular motion around the first finger. Ensure that the space between the two fingers remains the same while making the circular motion. Slide clockwise or counterclockwise to rotate the selected object in the desired direction.

Application Gestures

Three Finger Flick

The Three-Finger Flick gesture enhances navigation for a variety of applications. It can be used to browse the Internet

Getting Familiar with Your Computer

or scroll through photos in a photo viewer window. It can also be used to enter or exit slideshow mode and to play or pause certain multimedia applications.

To enable this feature, select the **Enable Three-Finger Flick** check box.

1. Place three fingers, slightly separated, down on the Touchpad surface.
2. Flick your fingers in a straight, continuous motion in the desired direction, moving from one side of the Touchpad to the opposite side.
3. Slide your fingers to the right or left to page forward or backward in a photo viewer or an Internet browser window, and then lift the fingers..

To use the Three-Finger Flick gesture for slideshow mode, slide your fingers vertically.

- Slide fingers upward to launch slideshow mode.
- Slide fingers downward to exit slideshow mode.

Three-Finger Press

The Three-Finger Press gesture provides a shortcut for launching one or more user-selectable applications and documents.

To use the Three-Finger-Press gesture:


1. Place three fingers down on the Touchpad surface. Ensure that there is a small gap between the fingers.
2. Hold fingers still until the application or applications begin to launch.
3. Lift fingers upward off the Touchpad surface.

Adjusting the Touchpad Settings

These settings allow you to change the orientation from right-handed to left-handed, and fine-tune the pointer movement and timing of clicks.

Windows® 7:

1. Select **Start, Control Panel, Hardware and Sound**.
2. Under **Devices and Printers** select **Mouse**. This will bring you to the **Mouse Properties** window.
3. On the **Buttons** tab use the **Devices** drop-down menu to select **Synaptics Touchpad V7.2 on PS/2 Port 1**. Now you can choose Touchpad settings for the way you work.

The Synaptics Touchpad can also be accessed via the  icon in system tray.

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:

- Make sure the touchpad does not come into contact with dirt, liquids or grease.
- Keep the touchpad area dry and clean.
- Do not touch the touchpad if your fingers are dirty.
- Do not rest heavy objects on the touchpad or touchpad buttons.
- Keep your fingers dry and clean when using the touchpad.
- Avoid tapping too hard. The touchpad is sensitive to finger movements and responds best to light touches.

Getting Familiar With Your Computer

Smart Card or EXPRESS Card Slot (option)

Your computer comes with a Smart Card Reader or ExpressCard slot (option) that supports ExpressCard/34 and ExpressCard/54. This slot is located on the left side of the computer.

Insert a Card

Insert the compatible card with the label side up into the slot until it clicks into place. The card will appear as a removable storage device that you can use for copying files.

Remove a Card

1. Make sure no operation is using the card (such as file copying or deletion).
2. Press the card further into the slot to release the card. You will hear a click.
3. Remove the card.

CAUTION Do not remove or change any hardware while your computer is hibernating or in a Sleep/Standby state.



The Hard Disk Drive (HDD)

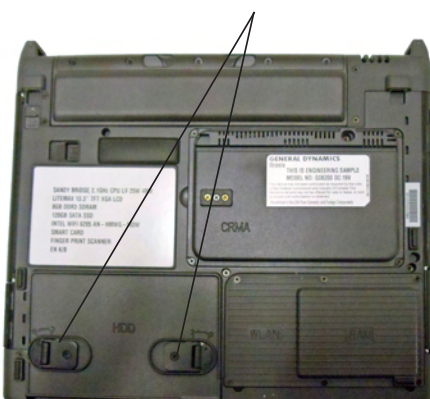
Your computer features a removable, shock-mounted hard disk to provide high-capacity storage and fast access. The operating system and most programs are stored here. Your computer identifies the hard disk drive as drive C. You can do a one-time configuration of your hard disk space through the **HDD Space Setup Wizard**. The Wizard can run when it is convenient for you; however, should be run after first start-up.

See the **BIOS Setup Utility** to password protect your removable hard disk drive.

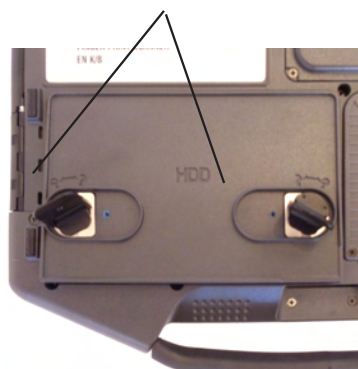
Replacing the hard disk drive

1. You should print these instructions before continuing. They will not be available after you shut down the computer in step two.
2. Shut down the computer and remove power.
3. Remove the battery (see **Battery Removal**)
4. Turn the computer over so you are looking at the bottom.
5. If installed, use a Phillips screwdriver to remove the two optional screws in the hard disk drive cover.
6. Flip open the HDD locks and turn both of them toward the center of the computer.
7. Lift the HDD cover off of the computer.
8. Using the ribbon, remove the HDD from the computer.
9. Line up the connectors and insert the HDD in the computer.
10. Replace the door and turn the HDD locks toward the outside of the computer to lock it.
11. If desired, install the optional HDD screws.

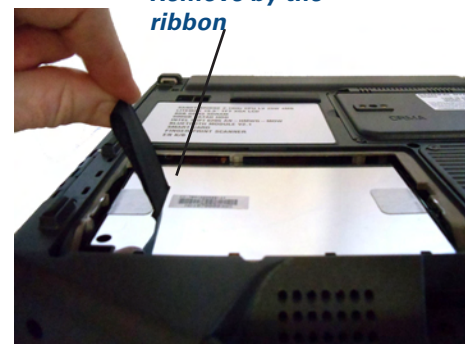
Remove screws



Turn toward inside



Remove by the ribbon



Getting Familiar With Your Computer

Hard Disk Drive Heater

The hard disk drive heater warms the HDD before spinning up in temperatures below 5°C, the minimum safe operating temperature for the HDD. The heater is integrated and operates as needed when the computer is on. If the temperature is below 5°C when booting or resuming you will see the message **"Warming internal hard drive. Please wait..."**. The unit will continue booting when it detects the HDD is warm enough to operate safely.

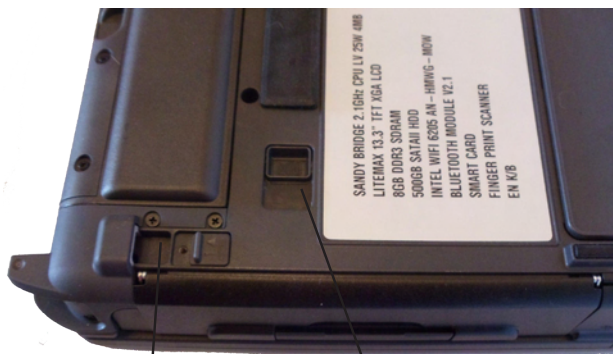
NOTE If you are using the computer in a cold temperature environment and the battery level is too low for the heater to operate, you will see the error message **"Battery too low to warm the hard drive. Shutting down..."** and the computer will shut down. Apply external power and reboot.

The Media Bay

Depending on your configuration, your computer may have an optional DVD multi-drive (DVD-RAM/DVD-ROM/DVD-RW/CD-R/CD-ROM/CD-RW) or media bay battery. The multi-drive allows you to read data from DVDs and CDs, including audio or video CDs, and enables you to burn your data onto a CD or DVD recordable disc. Please refer to the recording software online help for more information.

If you have the media bay battery, it extends your unplugged runtime.



Your notebook identifies the drive with the letter following the hard drive and/or recovery partition letter. If your hard drive is C, then the media bay will be E if you have a recovery partition. It will be D if you do not have a recovery partition.



Media Bay
Screw and Lock

Media Bay
Release

Change Swappable Media Bay Device

1. Make sure the computer is not accessing the media bay drive.
2. Open the media bay door cover.
3. Left-click on the **Safely Remove Hardware** icon  or  on the Windows® tray taskbar.
4. Select the **Media Bay** device, then select **Stop**.
5. Wait for the **"safe to remove hardware"** message, then click **OK**.
6. Turn your computer over so you are looking at the bottom.
7. If installed, remove the screw in the media bay lock.
8. Slide the media bay lock toward the back of the computer and hold.
9. While holding the media lock in the unlocked position, slide the media bay release toward the outside of the computer. The media bay should come part way out of the computer.
10. Grasp the media bay device by the edges and pull straight out until it is clear from the slot.
11. Re-insert the next media bay device by firmly pushing it back into the slot until it clicks into place.

CAUTION Do not remove or change any hardware while your computer is hibernating or in a Sleep/Standby state.

Insert a Disk

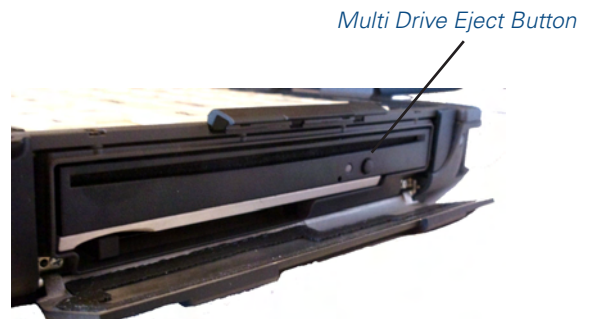
1. Open the media bay door cover.
2. Insert the disk into the media bay slot.



Remove a DVD or CD

1. Make sure the computer is not accessing the DVD drive.
2. Press the eject button. The disk will automatically eject.
3. Pick up the disk by the edges and remove it from the slot.

CAUTION When the computer is reading from a DVD or CD, the Optical Disk Drive LED will flash on. Do not attempt to remove a disk while this light is active.



Multi Drive Eject Button

Getting Familiar With Your Computer

Precautions for Handling DVDs and CDs

Keep these precautions in mind when handling DVDs and CDs:

- Always hold the disk by the edges; avoid touching the surface of the disk.
- Use a clean, dry, cloth to remove dust, smudges, or fingerprints. Wipe from the center outward.
- Do not write on the surface of the disk.
- Extremes in temperature may damage disks. Store disks in a cool dry place.
- Do not use benzene, thinners, or cleaners with detergent. Only use cleaning kits designed for DVDs or CDs.
- Do not bend or drop the disks.
- Do not place objects on top of disks.

Computer Security

Your computer includes several security features to help prevent theft and protect data. These include a security slot, multiple levels of password protection, an optional fingerprint scanner, an optional Smart Card slot, stealth mode and Trusted Platform Module (TPM).

Security Slot

The security slot located on the back edge of the computer lets you connect a Kensington compatible computer security lock so you can connect the computer to an immovable object to prevent theft. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available. See the documentation that comes with your lock for more information.

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.

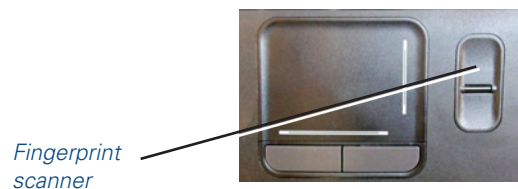
Smart Card Reader (Option)

If your computer has the Smart Card Reader option, you can use smart card technology for added security.

Fingerprint Scanner (Option)

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 GD8200 and your private data. Use the fingerprint scanner instead of passwords for the following:

- During computer login
- During login at secure websites
- When 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. A wizard may guide you through the process.

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











The stealth mode feature enables you to use the computer where light or sound could be dangerous or disruptive, such as a military or public safety environment. Enabling stealth mode allows you to disable sound and light features such as system beeps, the fan, and the display backlight. Refer to the **BIOS Setup Utility** section for information about how to configure stealth mode.

NOTE The Stealth mode hotkey is Fn+F12.

Trusted Platform Module (TPM)

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.

Getting Familiar With Your Computer

Ports and Connectors	Icon	Connection	Location
RJ-11		Phone line/modem (internet and fax)	Left Side
RJ-45		Ethernet	Left Side
DC-in		AC Adapter (power)	Left Side
2 USB Universal Serial Bus 2.0		USB Peripherals such as a mouse, printer or optical disk drive	Right Side
1 USB Universal Serial Bus 3.0		USB Peripherals such as a mouse, printer or optical disk drive	Right Side
External Monitor		External Monitor	Left Side
Audio In		Microphone	Left Side
Audio Out		Speakers or headphones	Left Side
PC Card Slot		Type II PC Cards	Right Side
Smart Card Reader or EXPRESS Card Slot		Smart Cards or EXPRESS Cards	Left Side
Security Slot		Computer lock such as a Kensington lock	Back Edge
Multi I/O Docking Connector		Compatible office dock or vehicle dock	Bottom
Serial Port		Connects your computer to serial devices such as a fax/modem or a serial mouse. This port is identified as COM1	Right Edge

ENERGY STAR®

General Dynamics Itronix is committed to designing mobile computers with the environment in mind. Not only do we design computers that withstand the environment – with rugged features that enable you to use them in extreme operating conditions, we design computers that use less energy, reducing environmental pollution.

That's why our ENERGY STAR® compliant mobile computers meet or exceed the stringent ENERGY STAR® standards set by the Environmental Protection Agency (EPA). According to the EPA, ENERGY STAR® qualified products use as much as 60% less energy than standard equipment. By lowering energy consumption, our computers help customers save money while reducing greenhouse gas emissions.

For more information about ENERGY STAR® (in English), go to www.energystar.gov.

To help you conserve energy on both AC and battery power, by default this computer:

- turns off the display after 15 minutes of inactivity
- enters standby, a low power mode, after 15 minutes of inactivity, compared to 30 minutes required for ENERGY STAR® compliance

Press any key to wake the computer or turn the display back on after a period of inactivity.

This computer was also designed with other power saving features that go beyond ENERGY STAR® requirements. See the **Managing Power** section to make the most efficient use of those features.




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.

If you are a mobile worker, you may want to purchase an approved docking solution such as the Vehicle Dock or 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 computer 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.

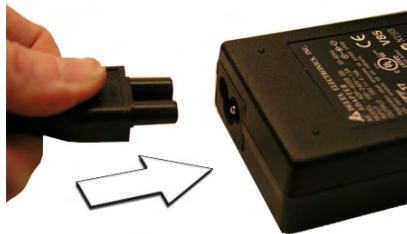
NOTE When external power is properly applied, the External Power LED  lights.

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

To Attach AC Power

1. Connect the AC adapter power cord to the AC adapter.
2. Connect the AC adapter to the DC power port on the left side of your computer.
3. Connect the AC adapter power cord to a properly grounded AC outlet.

NOTE It is recommended you use a quality surge protector.



To Use the Vehicle Adapter (optional)

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.

3. 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 (5°C/ 41°F to 50°C/122°F), it may take longer to charge the battery.

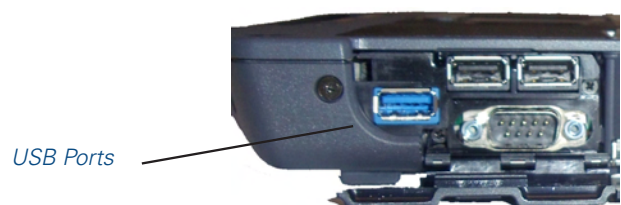
CAUTION Avoid exposing batteries to extremely hot or cold temperatures for long periods. To prevent possible damage to the battery, the GD8200 laptop does not allow the battery to charge if the internal temperature of the battery gets too low (< 5°C or < 41°F) or too high (> 50°C or > 122°F).

USB Devices

Your computer comes with two universal serial bus (USB) 2.0 ports and one USB 3.0 port on the right 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.

External Keyboard or Pointing Device

This computer has a keyboard with full-sized keys and an embedded numeric keypad. If you feel more comfortable using a desktop keyboard, you can connect a USB external keyboard to one of the USB ports. You can also connect a USB mouse or other pointing device to one of the USB ports.



Ethernet (LAN)

With the built-in Ethernet LAN, you can make LAN connections with 10/100/1000 Mbps connection speed. To use the network feature, connect an Ethernet cable from the network jack on the left side of the computer to a network jack or hub on your network.



Ethernet Port (RJ45) Modem Port (RJ11)

Fax/Data Modem

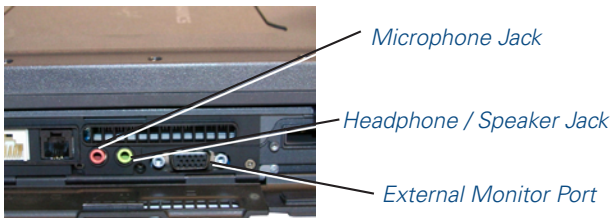
You can use the fax/modem to connect to the Internet to send and receive data using the 56 Kbps V.92 protocol. When used with fax software, it can be used as a fax at 14.4 Kbps. In some countries, local regulations may not permit the use of the fax/modem designed for this system. In this case, you may use a PC Card modem. To use the fax/data modem port, connect a phone cable from the modem port on the left side of the computer to a telephone jack.

CAUTION Plug your modem into an analog telephone jack only. Most homes use analog lines. Do not use digital lines, such as the PBX and ISDN systems found in many offices. Digital lines may damage your modem.

To reduce the risk of fire, only use a No. 26 AWG or larger telecommunication line cord.

Audio Devices

Audio devices are easy to connect with the audio ports accessible from the left side of the computer. You can plug an external microphone (or an audio line-in device) into the line-in jack. Amplified speakers or headphones connect to the line-out jack.



Microphone Jack

Headphone / Speaker Jack


External Monitor Port

External Monitor or Video Device

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, do the following:

4. Connect the video signal cable from the external monitor (or the VGA adapter) to the external monitor port on the left side of your computer.
5. Connect the power cable from the external monitor to a power outlet and turn on the monitor.
6. 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 **FN+F2** . It will output to your computer's display, the attached external display, or both displays simultaneously. Keep pressing **FN+F2** 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 laptop's display.

Windows® 7:

1. Select **Start, Control Panel, Appearance and Personalization**.
2. Under **Display** select **Connect to an external display**.
3. Select the drop-down menu next to **Multiple Displays** and click **Extend these displays**. Then click **OK**.

Your GD8200 supports up to 4 integrated radios for superior wireless communication (One radio per category listed below).

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

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, slide the **Radio ON/OFF Switch** to the left 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.

About WLAN

WLAN provides all the features and benefits of traditional LAN technologies, such as Ethernet, without the limitations of wires or cables. It enables mobility and flexibility without compromising connectivity for today's mobile user.

CRMA Express WWAN (option)

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

LTE

LTE (Long Term Evolution) is part of the GSM evolutionary path beyond 3G technology, following EDGE, UMTS, HSPA (HSDPA and HSUPA combined) and HSPA Evolution (HSPA+). The overall objective for LTE is to provide an extremely high performance radio-access technology that offers full vehicular speed mobility and that can readily coexist with HSPA and earlier networks.

The main advantages with LTE are high throughput, low latency, plug and play, FDD and TDD in the same platform. LTE will also support seamless passing to cell towers with older network technology. LTE downlink peak data rates up to 50Mbps with 10MHz (category 3, MIMO).

HSPA+

High-Speed Packet Access Plus (HSPA+) is also known as HSPA Evolution and Evolved HSPA. HSPA+ was standardized in recent releases. HSPA+ will apply some of the techniques developed for Long Term Evolution (LTE) and allow operators to extend the life of their HSPA networks. HSDPA+ deployments/cards/modules can support up to 42 Mbps downlink and up to 5.76 Mbps in the uplink mode.

HSPA

High-Speed Packet Access (HSPA) combines High-Speed Download Packet Access (HSDPA) and High-Speed Upload Packet Access (HSUPA). It is a 3G GSM Mobile protocol in the HSPA family, which provides a roadmap for UMTS-based networks to increase their data transfer speeds and capacity. HSPA deployments/cards/modules can support 1.8 Mbps, 3.6 Mbps, 7.2 Mbps and 14.4 Mbps in downlink mode and 2.0 Mbps and 5.7 Mbps in the uplink mode.

EDGE/GPRS/GSM Network

The Enhanced Data Rates for Global Evolution (EDGE) network allows users to transfer data with download speeds up to 237 Kbps (70-130 Kbps typical). It is more than three times the speed of GPRS. The EDGE network can help you perform at higher levels of productivity by providing real-time wireless access to critical business systems and applications.

UMTS/GPRS/GSM Network

Universal Mobile Telecommunications System (UMTS) - also referred to as wideband code division multiple access (W-CDMA), is one of the most significant advances in the evolution of telecommunications into 3G networks.

UMTS is a worldwide standard for wide-area wireless data communication based on Global Systems for Mobile communications (GSM™). UMTS provides broadband mobile access to business systems and applications that can help improve mobile users' productivity.

UMTS provides broadband speeds with download speeds up to 2Mbps (220-320 Kbps typical). It delivers four-to-six times the speed of dial-up Internet access and eight times the speed of GPRS wireless data service. UMTS allows mobile users to respond to urgent email and access the Internet.

EV-DO Rev. A/EV-DO Rev. 0/1xRTT/CDMA

CRMA Express is upgradeable and when WWAN radio technology changes, you can change with it. You can upgrade your radio to the various supported CRMA Express modules through General Dynamics Itronix service centers, giving you greater wireless access when you need it. After initialization the first time the unit is booted, refer to the radio help found on your desktop for information about setting up and using your radio.

NOTE All WWAN radios are capable of backward compatibility to support slower technologies when necessary to provide the greatest possible coverage to the user.

EVDO Rev. A

EVDO Revision A (1x Evolution-Data Optimized) is a wireless radio broadband data standard that offers download speeds up to 3.1 Mbps (500 to 800 Kbps typical). Revision A integrates faster data technology and improves latency. These enhancements allow features such as VoIP and video calling.

EV-DO Rev. 0

Evolution Data Only or Evolution Data Optimized (EV-DO) Rev 0 is a 3G wireless technology with average user download speeds up to 2.4 Mbps (400-700 kbps typical). When you spend a lot of time away from your desk, the faster speeds from EV-DO can lead to greater productivity. It's more than just fast email retrieval. Get fast and secure access to your information and applications with EV-DO. EV-DO Rev 0 was upgraded to EV-DO Rev A.

1XRTT - Single Carrier (1x) Radio Transmission Technology

1xRTT is a pre-2G wireless technology based on the CDMA platform. It has the capability to provide ISDN like speeds that offer up to 144 Kbps (50-70 Kbps typical). 1xRTT is also referred to as CDMA2000. 1xRTT was upgraded to EV-DO.

GPS (option)

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.

Bluetooth® (option)

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. Class II Bluetooth® devices have a range of about ten meters while Class I devices have a range up to 100 meters. The GD8200 Bluetooth® option is a Class I device with the greater range. 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.

Antennas

The GD8200 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 GD8200 may contain the radio transmitters listed below. The following statements are relevant when using these radios:

This device may contain a WLAN radio transmitter, a WPAN radio transmitter, and a WAN radio transmitter.

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 label is applicable.

Only the antenna with which an intentional radiator is authorized may be used with the intentional radiator.

The WAN embedded antenna location is in the upper center edge of the display screen and is not to be modified.

The WPAN embedded antenna location is near the lower left edge of the Keyboard and is not to be modified.

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.

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 upper center edge of the display screen 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 transmitter, WLAN transmitter and WPAN transmitter should be turned off before carrying the Laptop 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).

Improving Radio Coverage

Radio connectivity between your computer and your wireless network may vary at different times of the day and in different types of weather. It may also be influenced by terrain, buildings or even a crowded room. Follow these tips to improve radio coverage between your computer and your wireless network, depending on your location.

On the Street

- Try all sides of a building to see which side provides the strongest radio signal.
- Move from under trees. Pine needles absorb radio signals more than leaves.
- Move away from overhead electrical wires.
- Move away from buildings. Radio signals reflect off other buildings.
- Try not to hold the unit. If possible, place it in vehicle, on a cabinet or desk.
- If holding the unit, turn the unit in 90-degree increments to avoid shielding it with your body.
- Move several feet in any direction if needed for a stronger signal since the signal is 1-2 feet across.

Inside a Building

- Move toward windows.
- Move above ground. Signals do not penetrate the ground so there will probably be no signal in basements.
- Try the side of the building that is least likely to have coated windows. Reflective coatings on windows reflect radio signals.
- Open blinds. Closed metal blinds can reflect radio signals.
- Try different rooms. Dropped ceilings sometimes hide an accumulation of electrical cable.
- Avoid sources of Electromagnetic Interference (EMI).
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.

When to use Landline Communication

If these tips do not improve radio signal strength, switch to landline communication. Switching to landline communication is faster than searching for and trying to improve the radio signal.

The computer operates on AC or battery power. This section contains the information you need to know to operate the computer on battery power and describes how your computer manages and saves power. Effective use of power management options can greatly conserve and extend your battery life.

Be sure to read the **Battery Safety and Precautions** section.

Frequently Asked Battery Questions

Does it harm the Lithium-Ion battery pack to frequently “top off” the batteries?

No. Connect the computer to an approved charging source whenever available.

What constitutes a charge cycle?

A full recharge of the battery to 100%.

Where can general battery charge state information be obtained?

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

What effect will temperature have on battery life and performance?

Using the computer at very low temperatures will reduce the battery performance and may decrease how long the battery lasts compared to operation at moderate temperatures. The battery performance will recover when the computer returns to a normal range, around 20°C (68°F). However, storing Lithium-Ion batteries at low temperatures reduces Lithium-Ion aging effects.

The Battery

- Employs current battery technology standards. The computer uses a “smart” Lithium-Ion battery to consistently provide the long battery life best suited for mobile users.
- Uses a temperature sensor and memory device to gather and store information about the battery, such as how much charge is left and how many times it has been recharged.
- Warns when the battery charge level is low by sounding an alarm beep or displaying a warning on the screen. If you receive a battery low warning you should save your work and recharge the battery as soon as possible.
- Use the AC adapter whenever possible and consider carrying an extra fully-charged battery as backup.

Using a battery for the first time

The first time you use the battery, you should:

- Connect the AC adapter to the computer and a power source.
- **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 will be stored for more than two weeks, it is recommended 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.

WARNING Do not expose the battery to temperatures below 0°C (32°F) or above 46°C (115°F). This may adversely affect the battery pack.

NOTE While the battery may not provide 100% capacity at temperature extremes, its capacity is restored when the battery temperature return to a normal range, around 20°C

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

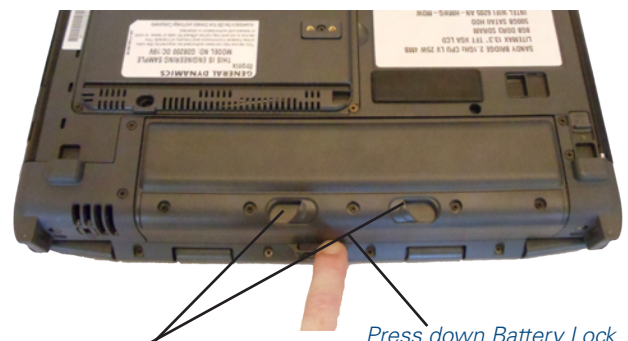
(68°F).

Replacing the Battery

CAUTION Before removing the battery pack, make sure that you have an AC adapter connected to the computer or a media bay battery installed; otherwise, first turn off the computer.

To Remove the Battery:

1. Plug in AC power or turn off the computer.
2. Turn over the computer so you are looking at the bottom.
3. Press and hold down the battery lock in the hinge to unlock the battery.
4. Slide the battery release latches toward the inside of the computer to release the battery.
5. Gently slide the battery out of the computer.



Battery Release Latches

Press down Battery Lock

Operating with Battery Power

To Install the Battery:

1. Turn the computer over so you are looking at the bottom.
2. Line up the battery connector.




3. Press gently on the battery until it clicks into 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.

Battery Charging

To charge the battery, install the battery pack and plug the AC adapter into the computer and an electrical outlet. You can use your computer while charging the battery. However, this will increase the charging time.

While the battery is charging, the **Battery power Indicator**  will be active after 6-12 seconds and stay lit until the battery is fully charged. When the battery is fully charged, the LED turns off.

If your computer is off or suspended, a fully discharged battery takes about 4 hours to recharge. If your computer is turned on it may take four to six (4- 6) hours to recharge the battery.

	Charging	Discharging
System On	3-6 hours depending on temperature and processes running	3.5 hours
System Off	3 hours	-
Suspend to RAM		72 hours
Suspend to Disk		7 days

NOTE A fully charged battery can power the computer for approximately eight (8) hours, depending on usage patterns. If your computer also has the optional Media Bay battery, it will power the computer for an additional four (4) hours.

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 Only use approved batteries when replacing the battery.

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:

- 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.
- If the temperature continues to rise, processor activity is reduced. You may notice a slight loss of performance if this happens.
- To prevent damage, if the computer gets too hot, the processor stops and the computer shuts down.

Battery Calibration

Over time, as the battery is repeatedly drained and recharged, battery runtime may decrease. Calibrate the battery the first time you use it and then periodically 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 from 6 to 12 hours, depending on how much power the battery already contains. The unit will not suspend while calibration is running. It is okay to use your computer during battery calibration.

CAUTIONS

- Do not disconnect AC power while battery calibration is running.
- Do not remove the battery while battery calibration is running.

When to calibrate the battery:

- The first time you use it
- After it has been in storage
- If the gas gauge has become inaccurate
- Every three months for optimum performance

Windows® 7 Battery Calibration

1. To run the **Battery Calibration** program select **Start, All Programs**, and **Mobile Computer Tools**.
2. Next, select **DynaPower Battery Calibration**. If you get a pop-up window asking if you want to allow the program to make changes to the computer, select **Yes**.
3. Select **Start** to begin calibrating or **Cancel** to exit.

NOTE The battery calibration process may take up to 8 hours to complete.

Operating with Battery Power

About Battery Calibration

Battery calibration may take up to 12 hours to complete. After starting calibration, the application requires no further input from the user. During calibration it goes through three steps:

1. Charge: The battery is fully charged to 100%.
2. Discharge and Calibrate: The battery is discharged to zero, then calibrated but not charged. You may stop the process after this point and let the battery charge outside of the battery calibration application.
3. Charge: If battery calibration continues running, the battery will fully charge to 100%.

BIOS Level Battery Calibration

You can also calibrate the battery from within the **BIOS Setup Utility** by following these steps:

1. Plug in the AC adapter.
2. Restart the computer. When the startup screen appears, just prior to the Windows® logo screen, press the **DEL** key to enter the **BIOS Setup Utility**.
3. At the “**Choose the setup function**” screen, use your arrow keys to select **Battery Calibration** and press **ENTER**.

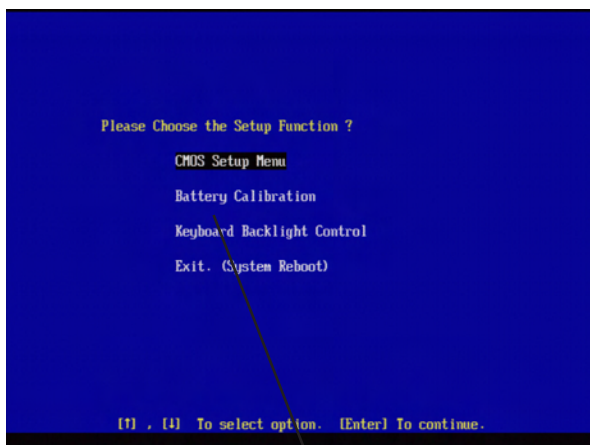
NOTE Make sure the AC adapter and battery are present.

4. Choose Primary or Secondary battery and press **ENTER**.

Monitoring Battery Power

Low Battery Alarms

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.



Select Battery Calibration

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 **Start, Shut Down**.
- 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.

Refer to **Battery Tips** for more information about how you can conserve battery power. Refer to **Managing Power** for information about how you can setup your computer to effectively manage power for your unique use patterns.

Managing Power

Your computer has power management capability so you can reduce the amount of energy used, especially during periods of inactivity. Effective use of power management options can greatly conserve and extend your battery life. The power management unit monitors system activity, such as hard drive, keyboard, mouse, or any devices attached to a port. If it does not detect activity for a period of time, the computer stops some or all of these devices to conserve energy.

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. Windows® handles all power-saving chores for your computer.

For more information search for **Power Options** in Microsoft® **Help and Support**.

Low-Power States

Your computer can enter three different low-power states to conserve power: **Standby/Sleep**, Hibernate and Power Off. These states can be entered manually or after a period of inactivity. From the **Power Saver** or **DynaPower** utilities, you can configure the **POWER BUTTON**, **SLEEP BUTTON (FN+F3)** and **LID SWITCH** to initiate any of the low-power states.

Standby/Sleep

Most system devices are powered off, but the contents of system memory are retained. **Standby/Sleep** 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.

Windows® 7: Select **Start** and click on the arrow next to the Shut down menu. Then select **Sleep** to enter **Standby/Sleep** mode.

Operating with Battery Power

Hibernate

Hibernate, or **Suspend to Disk**, is similar to **Standby** except the current state of the computer is copied to the hard disk in a special file. Then, 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.

Windows® 7: On the System tray area of the Taskbar, right click the **DynaPower** icon, then select **DynaPower Grid** and make your desired changes.

Power Off


All applications are closed and the system shuts down. To power off the computer select **Start, Shut Down, Shut down**. Then click **OK**.

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 as this can shorten battery charge life or damage the battery.

How your battery behaves in warm conditions

- To prevent possible battery damage, 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 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 than normal.
- To prevent possible battery damage, 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 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 **FN + F6**. Increase it by pushing **FN + F7**.
- Enable the display's **automatic dimming feature**.
- Use the AC adapter or vehicle adapter whenever possible.
- To help save power, use the DynaPower utility.
- When running on battery power, make sure your system suspends automatically after a few minutes of inactivity. PC Cards, radios, custom applications, or modified system settings may affect battery power.
- Remove PC Cards and unplug peripherals when you are not using them. They may draw power from the system even when not in use.
- Avoid operating the fax/modem, or audio and video applications when using battery power. Operating a fax/modem, video, or audio equipment increases the computer's power requirements.
- Don't use screen savers as they draw excessive current, especially "3D" screen savers.
- Turn off the Wireless LAN when not using it. Turning on the Wireless LAN increases the computer's power requirements.
- Avoid or minimize using applications that keep the CPU busy a large percentage of the time. The following items 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.

Operating with Battery Power

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. Refer to **Battery Calibration** for more information.

Tip 4. Get a good charge

- Your computer will charge more quickly if it is turned off or suspended.
- In warmer or cooler temperatures the 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 Power Indicator**  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 and AC power is disconnected. 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 Lithium-Ion battery packs gradually deteriorate, particularly if they are not stored in ideal conditions, and their life expectancy decreases. When storing Lithium-Ion battery packs for extended periods, consider these recommendations:

- When storing batteries for extended periods store them between 3°C to 7°C (38°F to 45°F) to slow 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 Lithium-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 Lithium-Ion batteries to discharge completely, as this may permanently damage them. Stored batteries should be recharged to 50% capacity every six months.

When you turn your computer on, the system reads the BIOS Settings to test and initialize components and make sure everything runs properly when the system is operating. You can use the Setup Utility to change your computer's startup configuration. For example, you can change your system's security routine.

The GD8200 is configured with a set of default values. The default values may not be appropriate for your work environment. For example, you can set a boot password to protect your system when booting.

CAUTION It is recommended that you use the default settings. If you set incorrect system option settings, the system may not run properly.

In this section the default field values are shown in bold.

Starting the Setup Utility

You can only start the **Setup Utility** shortly after the computer has been turned on or rebooted. To execute a controlled reboot, select **Start, Shut Down, Restart**. Shortly after the computer restarts, the following prompt appears at the bottom of the screen:

"Press F10 for HDD Recovery. Press F11 to display Boot Menu. Press DEL to enter Setup. Press TAB to show POST information"

Press the **DEL** key when you see this prompt. The system will start the Setup Utility. Select **"CMOS Setup Menu"** and press **ENTER**.

Navigation and Help

The **Setup Utility** has five 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:

MAIN: Displays basic system information and allows you to set the date and time

ADVANCED: Use to set the advanced features

CHIPSET: Use to set System Agent and PCH-IO Configurations

BOOT: Use to select the sequence of boot devices that are searched to load an operating system

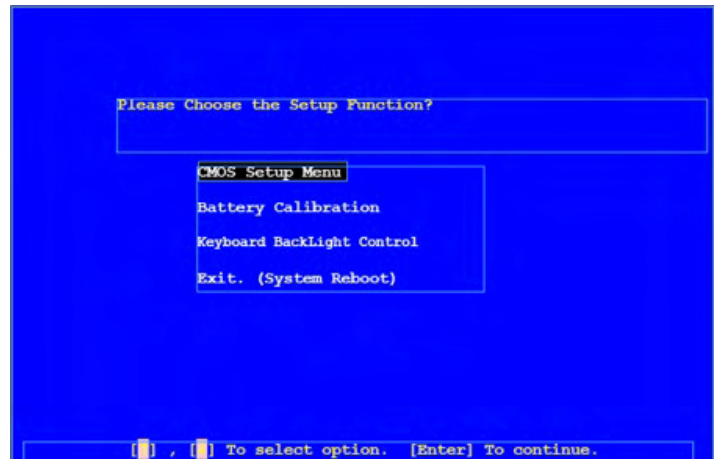
SECURITY: Use to set user and supervisor passwords

EXIT: Use to exit the current Setup session

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.

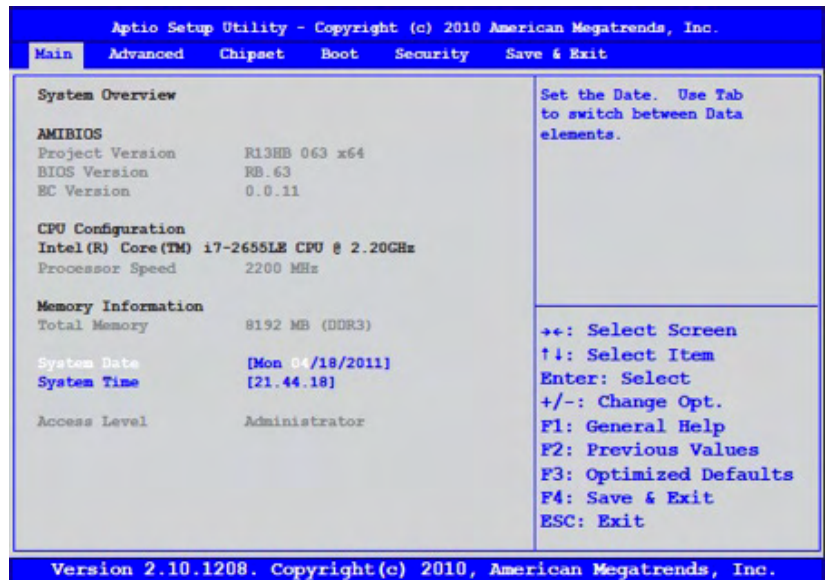
The **General Help Window** describes the legend keys. You can display it by pressing **F1** on any menu.

CAUTION Incorrect settings can cause your system to malfunction. To correct mistakes, restore the Optimized Defaults by pressing **F3**.



The Main Menu

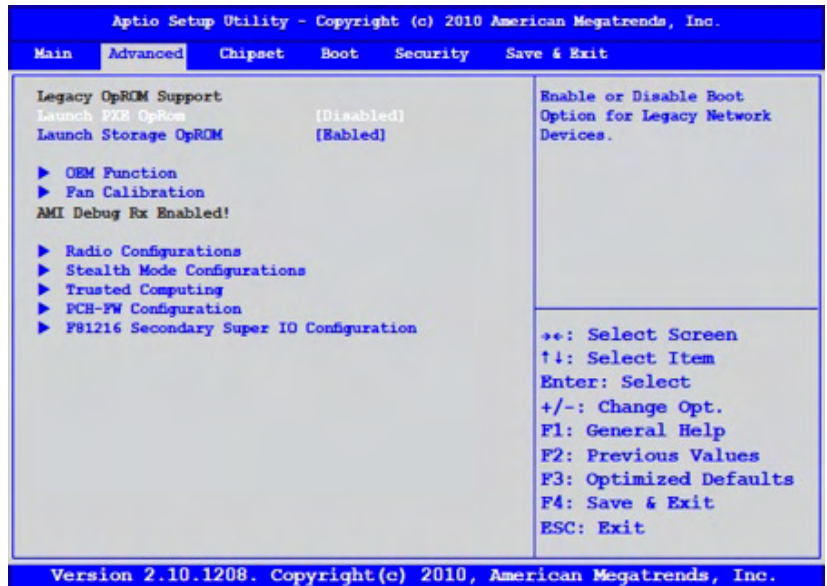
The Main Menu displays detailed information about the computer, including the system time and date.



Field	Setting	Description
AMIBIOS Version	N/A	Displays the AMIBIOS version detected during boot up.
CPU Configuration	NA	Displays the motherboard version detected during boot up.
Memory Information	N/A	Displays amount of memory detected during the boot process.
System Date	MM/DD/YYYY	Use this field to set the date. The date can be set from January 1, 1980 to December 31, 2099. The value set takes effect immediately. NOTE Once a change is made, press ENTER to continue.
System Time	HH:MM:SS	Use this field to set the time. The time is displayed in 24 hour format. The value set takes effect immediately. NOTE Once a change is made, press ENTER to continue.
Access Level	N/A	

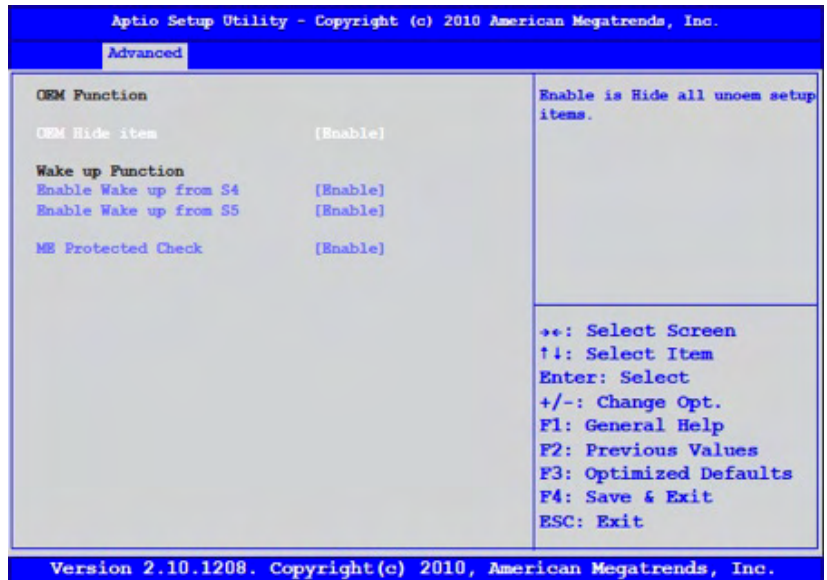
The Advanced Menu

The Advanced Menu provides the user with the ability to configure specific system settings.



Field	Setting	Description
Legacy OpROM Support		Enable or disable Legacy Network or Mass Storage Devices
OEM Function	sub-menu	Test OEM Function
Fan Learning Function	sub-menu	Fan calibration (learning) will take about two (2) minutes to finish.
Radio Configurations	sub-menu	Configuration of WLAN, Bluetooth® and CRMA Functions
Stealth Mode Configuration	sub-menu	Configuring the stealth mode feature enables you to turn off sound and light in environments where sound and light could be dangerous or disruptive
Trusted Computing	sub-menu	TPM Settings
PCH-FW Configuration	sub-menu	Configure management engine technology parameters
F81216 Secondary Super IO Configuration	sub-ment	Configure the system's Super IO chip parameters

OEM Function



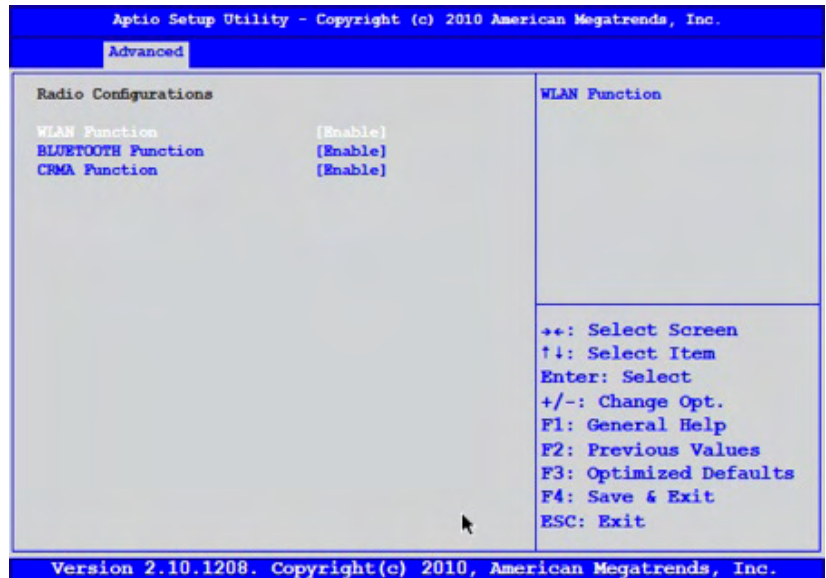
Field	Setting	Description
OEM Hide Item	ENABLE Disable	If Enabled, all unOEM setup items will be hidden.
Wake up Function		Enables or Disables the S4 or S5 Wake up function.
Enable Wake up from S4	ENABLE Disable	The unit wakes from sleep when the S4 key is pressed if enabled.
Enable Wake up from S5	ENABLE Disable	The unit wakes from sleep when the S5 key is pressed if enabled.

Fan Learning Function

Field	Setting	Description
Start Fan Learning	OK Cancel	If FAN PWM shows DFLT the fan learning process has not been previously performed. To begin the learning process press ENTER . It will take about 120 seconds to finish. The keyboard will not work during fan learning. NOTE Fan learning is not required for fan function. It is a calibration process to optimize fan speed control.
Elapsed Time in Seconds	N/A	Displays the amount of time fan learning has been running in seconds.
Current Learning Stage	N/A	Displays the current fan learning stage.
View Fan Learning Result	See Screen	Lists information details for each step of fan learning. Use the up and down arrow keys to scroll through the fan learning result.

Radio Configurations

The Radio Configurations menu is used to enable or disable the WLAN, Bluetooth®, and CRMA functions.

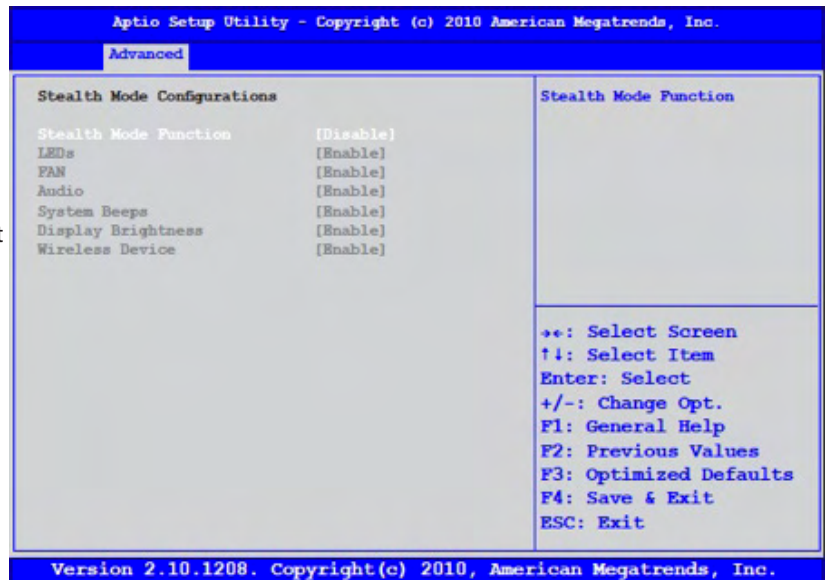


Field	Setting	Description
WLAN Function	ENABLE Disable	Enables or disables the WLAN function.
Bluetooth® Function	ENABLE Disable	Enables or disables the Bluetooth® function.
CRMA Function	ENABLE Disable	Enables or disables the CRMA function.

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.

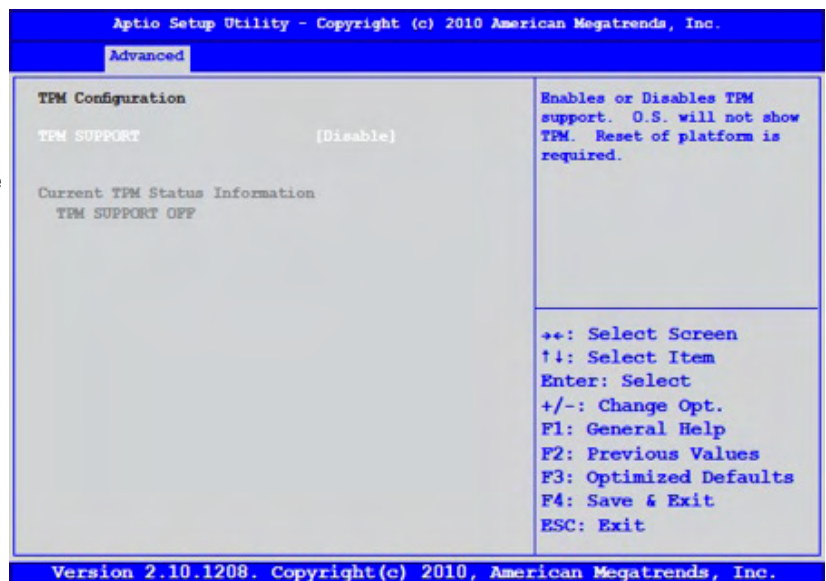


Field	Setting	Description
Stealth Mode	Enable DISABLE	Enabled: All LEDs and sound devices will be turned off Disabled: The computer functions normally and the options listed below are not accessible
LEDs	ENABLE Disable	Enable: LEDs function normally Disable: LEDs are disabled
Fan	ENABLE Disable	The fan functions normally Disable: The fan is disabled. Heat management is then controlled solely through throttling.
Audio	ENABLE Disable	Enable: Audio is preserved across suspend/resume and boot. The default volume level is set to mid-range. Disable: Volume is set to 0 across suspend/resume and boot. Use the existing audio function keys to adjust volume.
System Beeps	ENABLE Disable	Enable: Beeps are heard during POST Disable: Beeps are disabled during the boot up or resume process
Display Brightness	ENABLE Disable	Enable: Display brightness is preserved across suspend/resume and boot. It is restored to default when the brightness level is set at 0. The default level is mid-range. Disable: Brightness is set to 0 across suspend, resume and boot. FN+F7 increases display brightness gradually. FN+F6 decreases brightness gradually.
Radio	ENABLE Disable	Enable: The radio on/off switch functions normally and radio device power states are held though suspend/resume and boot. Disable: All wireless devices are disabled during a suspend/resume or boot. The Radio ON/OFF Switch can be used to manually turn the radios on or off.

Trusted Computing

Trusted Platform Module (TPM) is a secure micro-controller with added cryptographic functions.

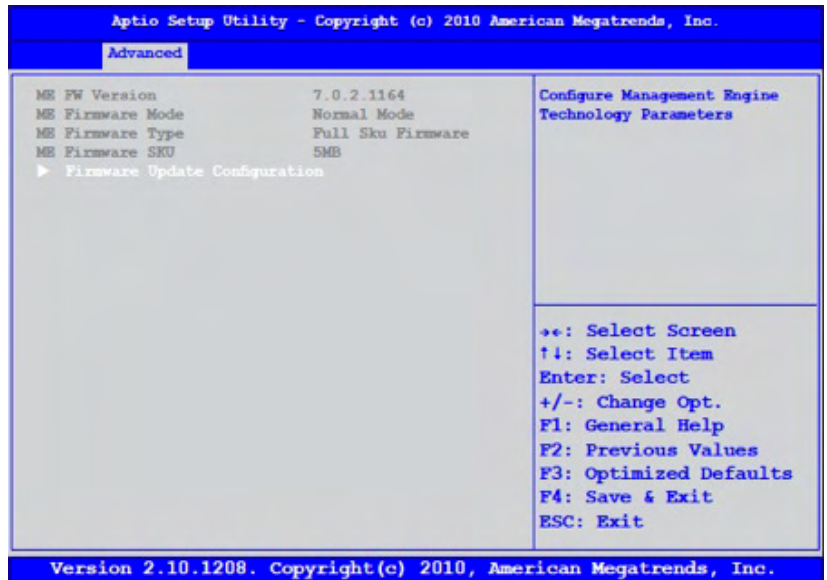
After the TPM Support option on the Security menu is enabled, the TPM State menu appears. When you have finished making changes to the TPM State, go to the Exit menu and select Exit Saving Changes. The system will shutdown and reboot.



Field	Setting	Description
TPM Support	Enable DISABLED	Enables Trusted Platform Module (TPM) support. Operating system will not show TPM. Reset of platform is required.
TPM State	Enable DISABLED	Enables or Disables the TPM module. NOTE: Computer will reboot during restart in order to change the State of TPM.
Pending TPM Operation	None	Displays any pending TPM operation.
TPM Enabled Status	None	Displays the TPM Enabled Status.
TPM Active Status	None	Displays the TPM Active Status.
TPM Owner Status	None	Displays the TPM Owner Status.

PCH-FW Configuration

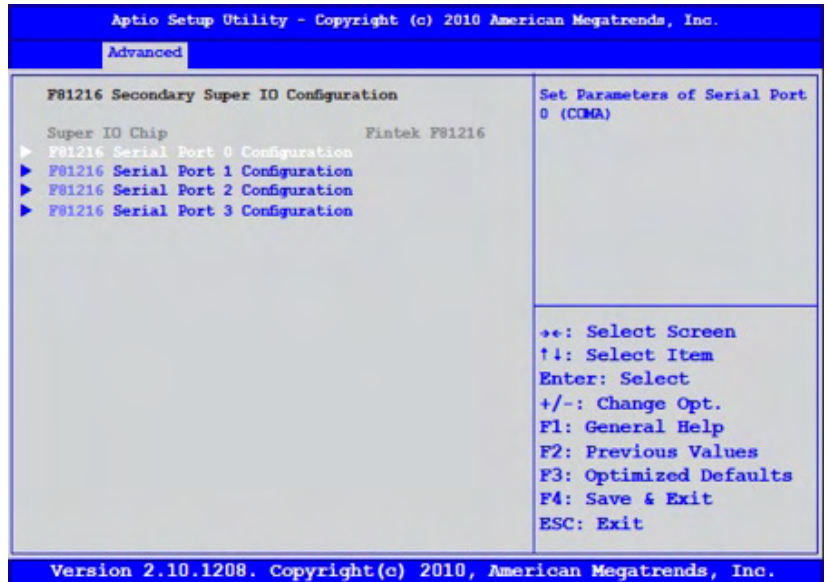
The PCH-FW Configuration is used to configure Management Engine technology parameters.



Field	Setting	Description
ME FW Version	None	Displays the Firmware Version
ME Firmware Mode	None	Disables the Firmware Mode
ME Firmware Type	None	Displays the Firmware Type
ME Firmware SKU	None	Displays the Firmware SKU
Firmware Update Configuration	Sub-menu	Provides the user with the ability to update the firmware configuration.

F81216 Secondary Super I/O Configuration

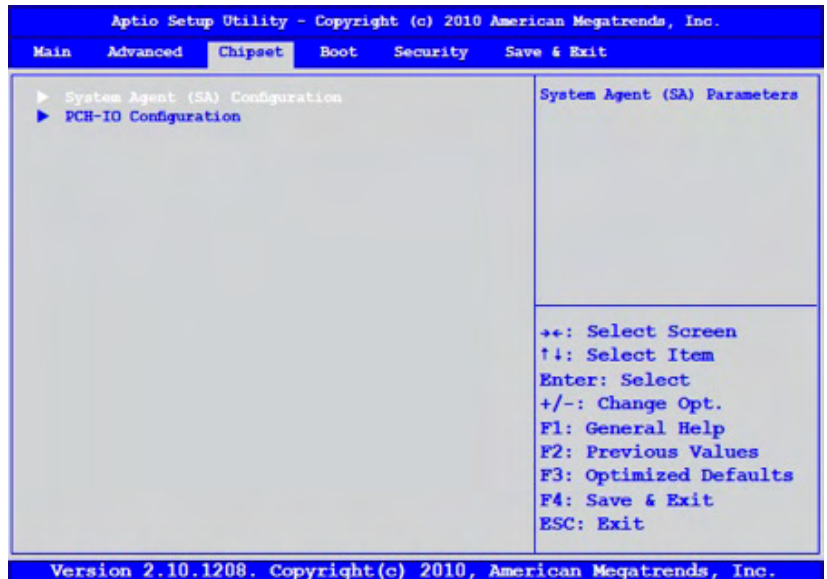
This configuration option allows you to assign serial port settings.



Field	Setting	Description
Serial Port 0 Configuration	Sub-menu	Allows the BIOS to select Serial Port 0 Base Addresses.
Serial Port 1 Configuration	Sub-menu	Allows the BIOS to select Serial Port 1 Base Addresses.
Serial Port 2 Configuration	Sub-menu	Allows the BIOS to select Serial Port 2 Base Addresses.
Serial Port 3 Configuration	Sub-menu	Allows the BIOS to select Serial Port 3 Base Addresses.

The Chipset Menu

The Chipset Menu provides the user with the ability to configure specific system settings.

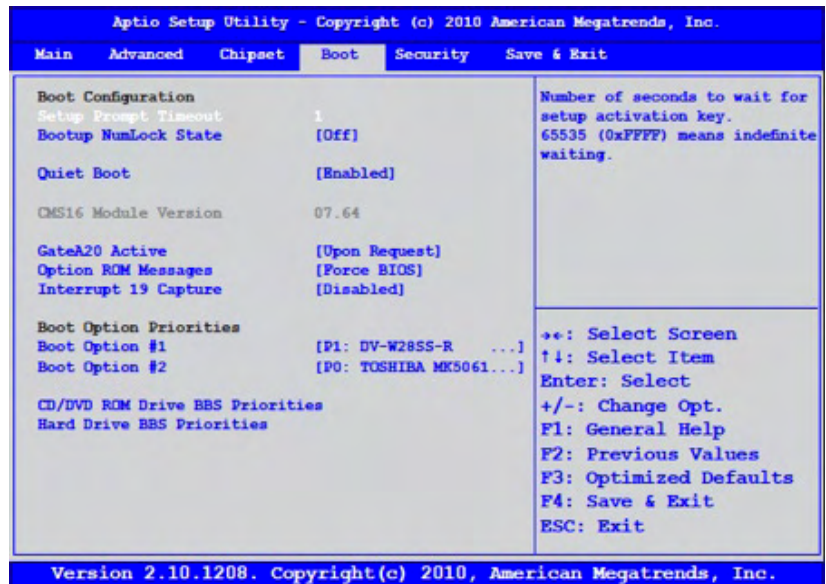


Field	Setting	Description
System Agent (SA) Configuration	Sub-menu	
PCH-IO Configuration	Sub-menu	

The Boot Menu

Use these fields to set the devices from which the system should boot, in order of priority, depending on your configuration. The boot device fields are dynamic and change depending on the devices installed on your GD8200 during that boot sequence. For example, if you have a DVD/CDRW Combo drive or a USB floppy drive installed, they appear as options in the boot device fields. If you only have a hard disk drive, it will be the only option that displays.

When you select a device, it is disabled in the other boot device fields.

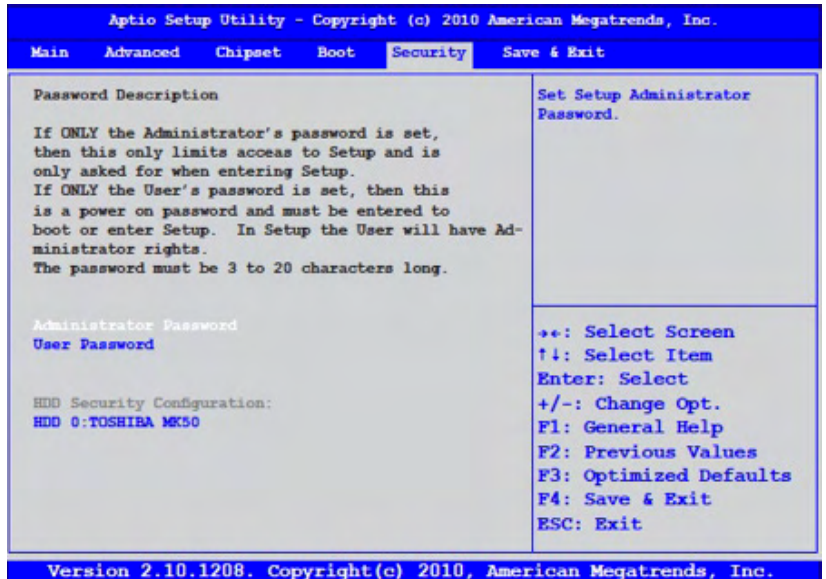


Field	Setting	Description
Setup Prompt Timeout	ENTER TIMEOUT IN SECONDS	Number of seconds to wait for the setup activation key.
Bootup NumLock State	On OFF	Select the keyboard NumLock state.
Quiet Boot	ENABLED Disabled	Enables or disables Quiet Boot option.
GateA20 Active	UPON REQUEST Always	UPON Request - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when an RT code is executed above 1MB.
Option ROM Messages	FORCE BIOS Keep Current	Set display mode for Option ROM.
Interrupt 19 Capture	Enabled DISABLED	Enabled: Allows Option ROMs to trap Int 19.
Boot Option #1	P1: DV-W28SS-R PO: TOSHIBA MK5061G-SYN Disabled	Sets the system boot order.
Boot Option #2	P1: DV-W28SS-R PO:TOSHIBA MK5061GSYN Disabled	Sets the system boot order.

Field	Setting	Description
CD/DVD ROM Drive BBS Priorities	DISABLED Enabled	If enabled, booting from the network is possible.
Hard Drive BBS Priorities	Disabled ENABLED	Enabled: displays OEM logo instead of POST messages Disabled: displays normal POST messages

The Security Menu

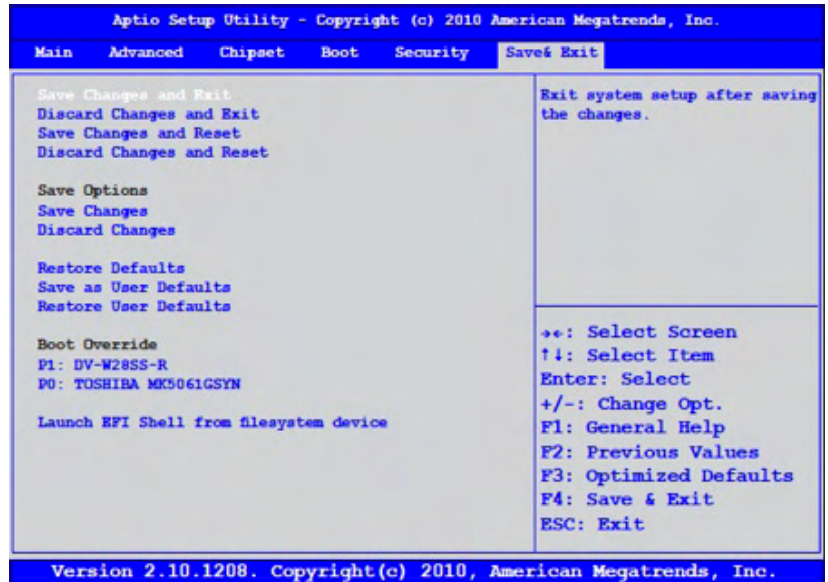
The Security Menu is used to configure security options for the system.



Field	Setting	Description
Administrator Password	Create New Password	Create the Supervisor password. This field must be set before a user level password can be set.
User Password	Create User Password	Create the User password.
HDD Security Configuration: HDD 0:TOSHIBA MK50		Set HDD Password.

The Save & Exit Menu

The Save & Exit menu is used to exit the *BIOS Setup Utility*.



Field	Setting	Description
Save Changes and Exit	YES No	Exit system setup after saving the changes.
Discard Changes and Exit	YES No	Exit system setup without saving any changes.
Save Changes and Reset	YES No	Reset the system after saving the changes.
Discharge Changes and Reset	YES No	Reset the system setup without saving any changes.
SAVE OPTIONS		
Save Changes	YES No	Save changes done so far to any of the setup options.
Discard Changes	YES No	Discard changes done so far to any of the setup options.
Restore Defaults	YES No	Restore/Load default values for all the setup options.
Save as User Defaults	YES No	Save the changes done so far as User defaults.
Boot Override		Restore the User defaults to all the setup options.
Launch EFI Shell from Filesystem Device	YES No	Attempts to Launch EFI Shell spplication (SHELLx64.efi) from one of the available filesystem devices.

The GD8200 fully-rugged notebook has several equipment and accessory options to further enhance your mobile computing experience from an optional shoulder strap to docking solutions. [Click here for a current list of optional peripherals and accessories.](#)

CAUTION Only purchase 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 regulations. For non-proprietary accessories such as PC Cards or printers, ensure that the accessory functions properly with your computer before making the purchase. Your system vendor may be able to recommend reliable brands and models.

Surge Protection

A large number 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 issue that may cause glitches, hang-ups, crashes, performance slow downs, and computer down time. It is recommended that you use a quality surge protector with your computer and any attached peripherals.

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.

CAUTION The vehicle adapter is only designed for temporary use. Use the optional vehicle dock to power and secure the GD8200 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

Connect the Vehicle Adapter

1. Insert the vehicle adapter power cord into the power port on the computer.
2. Insert the cigarette lighter adapter into the vehicle's cigarette lighter socket (12V), turning it slightly to make a good connection.

The Power LED on the adapter lights to indicate current is reaching it. 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 GD8200 laptop 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).

Vehicle Dock

The vehicle dock is designed to safely secure the computer in a vehicle. It includes a key lock for security. You can use the vehicle dock to:

- Charge batteries with voltage from the vehicle battery
- Communicate with other devices
- Automatically connect to an external antenna

CAUTIONS

- Do not open the vehicle dock case. It has no user-replaceable parts. 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.

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.

CAUTIONS

- Refer to **Battery Tips** for recommended charging temperature ranges and other recommendations

Optional Equipment and Accessories

- If you charge the battery daily rely on the gas gauge reading to determine battery capacity. The gas gauge may show that the battery is full while still charging. 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%. **Recalibrate the battery** to correct this issue.

Communicating with Other Devices

Connect external devices to the ports on the back of the dock, and then place the GD8200 onto the vehicle dock. You can install or remove the computer from the vehicle dock without connecting or disconnecting the cables.

External Antennas

The vehicle dock integrates GPS and WWAN antennas with switching capability. You can also connect an external RF antenna to the dock using the SMA RF connector on the back of the vehicle dock. FCC regulations require that users of vehicle-mounted antennas must use only antennas authorized for use with the GD8200 in order to meet FCC RF exposure limits. Please contact your organizations's help desk for a list of approved vehicle-mounted antennas. Before mounting an external antenna, refer to the installation instructions provided with the antenna.

Vehicle-mounted Antenna Placement

WARNING Improper installation and/or operating configurations of permanent and magnetic vehicle-mounted antennas may cause FCC RF exposure limits to be exceeded. Vehicle-mounted antennas must be placed at least 20 cm from operators and bystanders and at least 92cm (36 inches) from any existing roof mounted antennas.

1. Measure and identify an area 20 cm (8 inches) in from the edges of the vehicle roof.
2. Place the antenna within that area.

To maximize RF performance, position the antenna in the center of the vehicle roof.

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.

Memory Upgrade

Adding memory allows the computer to operate faster, handle more tasks simultaneously, and work more smoothly with large files. Users who increase memory demands - by adding additional programs, for example - may notice a slowdown in

operating speed, and wish to increase memory. The GD8200 comes with a user accessible memory sockets for memory upgrades. Please consult your dealer if you need to add more memory.

CAUTIONS

- First read and follow the guidelines in the **Safety** section.
- Only use memory cards approved for use in your computer. Failure to do so may void your warranty.

The GD8200 is rugged and weather resistant and you can use it under a wide range of environmental conditions. However, to ensure long use and continued high performance, follow these tips and precautions:

Taking Care of Your Computer

- Follow all warnings and instructions noted in this documentation and in the operating system documentation.
- Read the **Safety** and **Battery Tips** sections.
- 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.
- Do not block or cover slots and openings in the unit case. These are for ventilation purposes and covering them could cause the system to 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 insert 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 operate the computer to temperatures below -23°C (-10°F) or above 60°C (140°F). Operate the computer within the recommended temperature ranges of -23°C to +60°C (-10°F to +140°F).
- 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 Your Computer

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

1. Save and backup files and data before storing the computer.
2. Remove any PC Cards, Smart Cards, or EXPRESS Cards from the card slots.
3. Remove any media from the **media bay**.
4. Exit all applications.
5. Shut down and turn off the computer.

Windows® 7:

Select **Start, Shut down**.

6. **Remove the battery** from the unit and store it in a dry place.
7. Store the computer within the recommended temperature ranges of -55°C to +75°C (-67°F to +167°F).
8. If you use PC cards, refer to the manufacturer's instructions you received with the card for storage and care information.

Taking Care of Your Batteries

- 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 the batteries.
- Keep batteries away from children.

Maintenance and Storage

- 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.
- Avoid exposing batteries to extremely hot or cold temperatures for long periods. To prevent possible damage to the battery, the GD8200 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).
- **Recalibrate your battery** when your battery performance degrades.

Taking Care of Your Hard Drive

The GD8200 hard drive is a removable, shock-mounted drive. You can reduce the risk of damage to the hard drive and increase the reliability of the hard drive and data integrity by following the recommendations below.

For 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 **FN+F3** 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.

For External PC Cards

Each PC Card manufacturer provides specific guidelines for the care and handling of the product. In addition, follow these recommendations:

- When the PC Card is not inserted in a PC Card socket, store the PC Card in a protective carrying case. This will help protect it from inadvertent shocks.
- Always use care when handling PC Cards. Do not drop, bend, flex, or crush them.
- Avoid exposing PC Cards to extreme moisture, heat, or sunlight.
- Keep all debris out of the connector to ensure good electrical connections.
- There are no user repairable parts in the PC Card slot. Do not attempt to disassemble any part of the device. The warranty

will be voided if drive seals are broken or screws have been removed.

- Periodically backup or archive important files and data.
- If you have problems with your PC Card, contact the manufacturer for more information and troubleshooting information.

Cleaning Your Computer

Cleaning the 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.

Cleaning the 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.

Cleaning the 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.

Cleaning the RJ-11/ RJ-45 / USB Connectors

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

Data Backup

Regularly backup your data to ensure the greatest data integrity, provide the fastest recovery options, and minimize downtime.

After you have installed all 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 **Backup Utility** frequently to backup data. It is recommended you set the backup utility to run automatically.

Saving Important System Information

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 in the Wizard.

Backing Up Files in Windows® 7:

Select **Start, Control Panel**. Under **System and Security** select **Back up your computer**. From here you can set up backup, create a system image or create a system repair disc.

Backing Up 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 if it becomes 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. Start with the least destructive and fastest recovery options, listed below in the order in which you should restore data.

1. Restore system information.
2. Restore a backup using the **Windows® Backup Utility**.
3. Restore the entire contents of drive C:

Option 1: Restoring System Information

Windows® 7:

Select **Start, Control Panel, System and Maintenance, Backup and Restore Center**. On the **Tasks** menu on the left-hand side of the screen select **Repair Windows® using System Restore**.

Option 2 : Restoring a Backup

Windows® 7:

Select **Start, Control Panel, System and Security**. Under **Backup and Restore** select **Restore files from backup**. From here you can select a backup file to restore.

Option 3: Restoring Drive C:

If you used the **Hard Disk Backup and Recovery Utility** to create a backup disk image you can use it to restore drive C:.

CAUTION 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.

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.

Windows® 7:

Select **Start, All Programs, Mobile Computer Tools, Hard Disk Backup and Recovery** and follow the prompts.

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 General Dynamics Itronix Client Care Center provides world class service with a single entry point of access to meet all your needs including:

- Troubleshooting and RMA origination
- Dispatch of field support staff
- Wireless carrier service activation
- Hardware performance information
- RMA status checks on service unit and warranty/service parts orders
- New and refurbished platform, accessory, and add-on orders
- Trial unit orders and status updates
- Proof of delivery status updates for service and new unit orders
- International new unit and accessory, peripheral and service parts orders
- Centralized access for all invoicing and finance related issues

Most of these services are available through the icareServeNet web based system.

Go to the **Support** section of our website and select ServeNet Login for more information.

Services Expertise

The Technical Services and Client Services Account Management staff provide support with expertise that spans hardware platforms, industry applications and third party solutions. They regularly visit customers to garner feedback and input and provide training and post-installation support. For more information on our comprehensive service programs or current support phone numbers and email addresses, [click here](#).

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. Go to the **Support** section of our website and select product downloads.

NOTE Downloads are listed by model and/or product number (GD8200).

This section is designed to help you determine and fix issues you might encounter while operating the GD8200 fully-rugged notebook. 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 are having a problem with the operating system, refer to its **Help and Support**, found on the **Start** Menu.
- If you still cannot resolve your problem, contact the help desk at your organization.

Application Troubleshooting


- If an application locks, a general protection fault (GPF) error is received, or a blue screen displays, restart the computer.

Using Windows® 7:

Select **Start** and click on the arrow next to the **Shut down** menu. Then select **Restart**.

Battery Troubleshooting

Battery does not charge

- To prevent possible damage to the battery, the computer 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). If possible, charge the battery in a location with a moderate temperature of around 20°C (68°F).
- If possible, turn off the computer while the battery is charging.
- If the battery is new or has been stored for a week or more, follow this procedure:
 1. Make sure the computer is turned off.
 2. **Remove the battery.**
 3. Connect the AC adapter to the computer and an AC wall outlet, and then turn on the computer by pressing the **POWER BUTTON**.
 4. Let the computer complete the boot process. Then reinstall the battery.
- Allow the system to remain idle for one hour with the AC adapter connected to the computer.
- The **Battery power Indicator**  lights when the battery starts charging.
- If the battery still fails to start charging after an hour, remove the battery, wait several seconds, and then install it again.
- If the battery does not begin charging within several minutes, return the unit for service.

Batteries take more than 7 hours to charge

- Under moderate temperatures, about 20°C (68°F), the computer's battery takes approximately 4 to 5 hours to completely charge. **NOTE** As the battery temperature approaches the ends of its temperature range (5°C/ 41°F to 50°C/122°F), it may take longer to charge the battery.

Batteries don't last very long

- **Calibrate the battery.** If your battery is new or has not been used for several weeks, calibrating the battery accurately sets the gas gauge.
- As your battery ages, its maximum capacity naturally decreases, and even the best maintained batteries eventually need to be retired. Consider replacing the battery if you are not getting the usage you need from it.
- To meet ENERGY STAR® requirements, Wake-on-LAN is enabled by default. If running on battery power this may decrease battery run-time. To change Wake-on-LAN settings, open the Device Manager, Network Adapters and select the LAN device. Open the device Properties and select Power Management. Disable the Wake-on-LAN setting by unchecking Allow this device to wake the computer.

Gas gauge isn't full after charging the battery

This may indicate that the charging process terminated prematurely.

Gas gauge reads "full" but the charging LED displays

If you charge your battery daily, rely on the gas gauge reading to determine battery capacity. The charging process may continue even if the gas gauge reads full. External power can be removed because the battery is virtually full.

Battery seems to have less and less capacity

- If your battery is new, or if you are using it for the first time, you will need to **calibrate it** prior to using it.
- As your battery ages, the maximum capacity that it can hold naturally decreases, and even the best maintained batteries eventually need to be retired. Consider replacing the battery if you are not getting the usage you need from it.

Display / Touchscreen

Display performance is slow

The temperature may be too cold. Move the computer to a warmer operating environment.

Unreadable display

- Adjust the brightness level using **FN+F6** and **FN+F7**.
- The automatic power-saving mode may have shut off (suspended) the computer. Press any key to resume.

- If the display brightness is unreadable after a resume or reboot but is easily adjusted with **FN+F6** and **FN+F7**, you may have set **Stealth mode** in the **BIOS Setup Utility**. If you disable Stealth mode, the display and backlight will operate normally.

Characters are difficult to read on the screen

For Windows® 7:

Right click on the Windows® Desktop, select **Personalize**, **Window Color and Appearance** to change the color and style of your windows.

Cursor doesn't display in the DOS editor

Press **FN+INS** to change from insert mode to overwrite mode and enable a block cursor. When it defaults to insert mode, the DOS editor uses an underline cursor which is less visible than the block cursor for overwrite mode.

Updates to display resolution don't apply

For Windows® 7:

Select **Start** and click on the arrow next to the **Shut down** menu. Then select **Restart**.

Stylus on my touchscreen doesn't work

If you cannot select objects accurately with the stylus, you may need to **calibrate the touchscreen**.

Touchscreen doesn't respond after a suspend

The touchscreen needs a few seconds to work after a suspend. Wait a moment and try again.

Hard Disk

Hard disk will not start so the computer can't boot up

This occurs if the unit is exposed to extreme low temperatures. This is not a hardware failure associated with the hard disk. The integrated hard disk drive heater will warm the drive to a safe operating temperature.

Computer does not startup properly

- Make sure you remove any USB drives from the unit before you start it.
- 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.

Keyboard and Mouse Troubleshooting

Something unexpected happens when I press a key

You may have pressed a key combination that performs a Windows® function. Make sure you are pressing the correct keys for the application you are running.

Incorrect characters appear on the screen

You may be in Num Lock mode. Press **NUM LOCK** to toggle Num Lock mode off. **NUM LOCK** is on the top row of buttons on your keyboard next to the **F12** key.

Difficulty double-clicking the mouse fast enough

For Windows® 7:

1. Select **Start, Control Panel, Hardware and Sound**.
2. Under **Devices and Printers** select **Mouse**. This will bring you to the **Mouse Properties** window.
3. On the **Buttons** tab use the **Devices** drop-down menu to select your mouse. Then you can set double-click speed.

Modem Troubleshooting

Modem doesn't work

- When you first try to use HyperTerminal or similar application, the system responds with a message asking if you want to install the modem. Answer "Yes" to this question and follow the instructions on the screen to install it.
- Make sure the communication settings are correct in your application. Refer to the online help for your application.

NOTE HyperTerminal is not available with Windows® 7.

Modem doesn't dial a number

- If you are using an external modem, make sure the cables are attached correctly.
- Make sure your communications parameters are correct in your application. Refer to the online help for your application.

Modem does not establish a connection

- You may have incorrect parameters selected for your application to talk with the remote modem. Refer to the online help for your application.
- You may need to adjust your modem's baud rate or protocol selection.

PC Cards



I can't remove the PC card

- Press the ejector button located inside the PC card door on the side of the computer. The button will pop out. Press the ejector button again to eject the PC card. Slide the card out.
- If the ejector button malfunctions when you press it, release the button and then press it again.

Read Error

If a memory card that is not properly formatted is installed in the PC Card slot, it will cause this error.

Computer locks when the PC card is removed

Before you remove the card, select the PC card icon ( or ) on the taskbar (in the tray area near the clock in the lower right corner) and choose "**Stop [card name] card.**"

Miscellaneous Troubleshooting

Computer shuts off unexpectedly

- The computer has entered suspend mode. Press any key to resume from the standby state. Press the **POWER BUTTON** to resume from the hibernate state.
- The battery capacity may be low. Connect external power to charge the battery, or replace the battery with a fully charged one.

Speaker volume is too high or too low

Refer to the **audio section** for instructions on adjusting volume.

Computer won't turn on

- Make sure a fully charged battery is properly installed.
- Connect external power to charge the battery if it is not charged.
- If you are using the AC adapter check the electrical outlet you are using to make sure it is working properly.
- If the computer does not turn on, reset the computer by holding down the **POWER BUTTON** for at least ten seconds, release it, then press the **POWER BUTTON** again.

Computer won't turn off

For Windows® 7:

1. Select **Start** and click on the arrow next to the **Shut down** menu. Then select **Restart** to reboot the computer.
2. If that does not work, press **CTRL+ALT+DEL** and then select **Task Manager**.
3. If any programs are open, use your arrow keys to highlight each one and select **End Task**. Repeat this until all programs are closed.
4. If that still does not work, press and hold the **Power Button** for approximately ten seconds and then release it.

Computer enters suspend mode too quickly

For Windows® 7:

Select **Start, Control Panel, System and Security**. Under **Power Options** select **Change when the computer sleeps**. Modify the **Put the computer to sleep** option.

Computer doesn't automatically suspend

- Exit any application that uses COM ports.
- Make sure external power is not connected. Depending on power settings, some systems will not suspend automatically when they are connected to external power.

System date and time are incorrect

Windows® 7

Select **Start, Control Panel**. Then select **Clock, Language and Region**. Under **Date and Time**, make the appropriate changes.

"Out of memory" error message

- Restart the computer.
- Too many applications may be running at the same time. Close applications you don't need.
- Make sure you have enough space on your hard disk (at least 15% free).

Holding down the Power button to reset the computer doesn't always work

- Try resetting the computer again. If this doesn't work, remove all power, including the battery pack, and allow the unit to remain idle for ten minutes. After ten minutes, connect external power and retry.
- The LEDs, backlight, and/or keyboard backlight don't illuminate.
- You may have enabled **Stealth mode** in the **Bios Setup Utility**. Disable Stealth mode.

Computer doesn't make any sounds

You may have enabled **Stealth mode** in the **Bios Setup Utility**.
Disable Stealth mode.

Fan stopped running

You may have enabled **Stealth mode** in the **Bios Setup Utility**.
Disable Stealth mode.

Improve the program startup speed by cleaning up and moving files on the hard drive

Using the Windows® utilities to defragment your drive may
improve the startup speed of programs.