



# **Chapter 5**

## **Power Management**



## Power Management

### **Battery Calibration**

The first time you use a battery, you should calibrate it. The calibration process empties and charges the battery one time. This allows the Windows battery gauge to accurately monitor battery status. To calibrate a battery, follow these steps:

1. Plug in the AC adapter.
2. Restart the computer and when the startup screen appears, press **Del** key to enter the BIOS Setup Utility.
3. In the BIOS Setup Utility, select Power Management Setup , choose Battery Auto Calibration, then press <PgDn>.

Please make sure that AC adapter & Battery are present?

Would you to do battery auto-learning?

**Yes.**

**No. (System Reboot)**

4. Select **Yes.** at the above Battery Auto Calibration dialog to begin the battery calibration. Please press [Space Bar] to select option, and [Enter] to continue.

Battery Calibration will take from 10 to 16 hours, depending on how much power the battery may already contain.

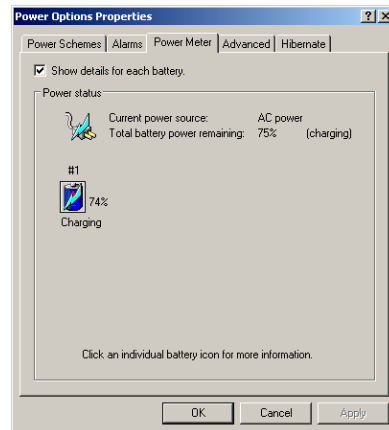


**Note:** For optimum performance, we recommend calibrating the battery again every three months. Each time you charge and discharge a battery, it loses a tiny part of its storage capacity, so that, over time, it will store less than its potential charge. Similarly, if you do not use the battery for a few days, it will slowly self-discharge, and when it is recharged, it will hold less than 100% of the potential charge.

### ***Monitoring Battery Power***

There are two ways to monitor how much power the battery has left.

1. Click **Start / Settings / Control Panel / Power Options** ; then click **Power Meter**.
2. Moving the cursor to the battery icon on the taskbar is the simplest way to check on battery power status.



If you do not see the battery icon, enable it in **Start / Settings / Control Panel / Power Options**. Choose the Advanced tab and click “Always show icon on the taskbar.”

### ***Low Battery Alarms***

How your computer responds to a low battery condition is set under **Start / Settings / Control Panel / Power Options / Alarms**.

Two different power alarms can be enabled or disabled: the Low Battery Alarm, and the Critical Battery Alarm. Use the slide bar to set the power level at which the alarms are activated. Click on the Alarm Action button to choose whether the alarm sounds, displays a message, or both.



**Warning:** When battery power is low, the battery indicator will flash red, and the alarm will beep or display a warning on your screen. Take immediate action, such as saving files or connecting to the AC adapter, or data may be lost.

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

- Connect the AC power adapter
- Save your work, and suspend to disk <Fn> + <F4>
- Save your work, then select Shut Down from the Start menu

- Turn off or suspend the computer and replace the discharged battery with a charged battery (See **Battery Charging** below).

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

### **Battery Charging**

When you use the AC adapter to connect your Notebook to a power outlet, the internal battery will automatically begin to recharge. While the battery is charging, the Battery Charge icon on the Indicator panel will be active after 6~12 seconds. When the battery is fully charged, the Battery Charge icon will turn off.

If your computer is turned off, a fully discharged battery will take about 3 hours to recharge. If your computer is turned on and is not in suspend mode, it will take about 6~13 hours to recharge the battery. Refer to the following table:

	Charging	Discharging
<b>System On</b>	6~13 hours	2.5 hours
<b>System Off (suspend to RAM)</b>	3 hours	—



**Note:** A fully charged Li-Ion battery can run the Notebook for approximately 2.5 hours. (According to Battery Mark benchmark tests)

## **Power Saving Modes**

Adjust the default power management settings in the Power Options/Advanced dialog box in the Control panel. The Power Options Properties dialog box allows you to set different actions to take when the computer is left idle for a certain amount of time.

### **Suspend Mode**

There are several possible settings for suspend mode, which can be selected in the Power Management dialog box: You may have the notebook standby, hibernate, or you can power off the computer altogether.

- Standby** All devices are powered up and in suspend mode .
- Hibernate** Suspend to Disk is similar to turning off the computer, except that the current state of the computer is copied to the hard disk as a special file. When the computer returns from suspend mode, the desktop appears with the same files and programs open as when the computer was suspended. Suspend to Disk is very useful when you don't want to take the time to shut down all open programs one by one to shut off the computer, only to have to open the same programs and files the next time you use the computer. This mode is also called hibernation mode.
- Suspend-to-disk Partition/Suspend-to-disk File**  
Suspend to Disk file will be saved by Windows to the hard disk. The size of the file will correspond to the amount of system memory. Please make sure there is enough space on the hard disk.
- Power Off** System is shutdown.

### ***Initiating Suspend Mode***

There are four ways to initiate suspend mode. The settings can be adjusted in the Power Management dialog box:

- The computer will automatically enter suspend mode when not used for a set period of time.
- Selecting the Stand by button in the Shut Down Windows dialog box.
- Closing the screen cover (assuming no external monitor has been connected).
- Pressing the power button (if enabled in power settings).
- Pressing the suspend function key <Fn> + <F4>.

### ***Using the BIOS Utility for Power Management***

With Windows running in ACPI mode, power can be controlled through the Power Management dialog box only. With operating

systems that use ACPI power management, BIOS power settings have no effect.

### ***Power Button Settings***

The function of the power button can be set to Shutdown or Standby in the Power Management Properties dialog box in the Windows Control Panel. However, holding the power button down for more than four seconds will force a power off while operating under any situation, resulting in the loss of any unsaved information.

### **Power Saving Tips**

- Avoid operating the fax/modem, or audio and video applications when using battery power. Operating a fax modem, video, or audio equipment or turning on the Wireless LAN power button increases the computer's power requirements.
- Decreasing monitor brightness can also save power. Decrease brightness by pushing <Fn> + <F6>. Increase it by pushing <Fn> + <F7>.

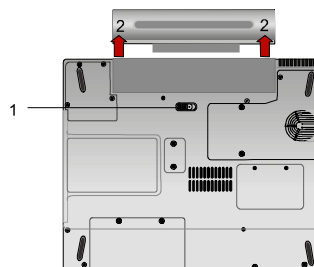
### **When to Replace the Battery**

Over time, the battery's capacity gradually decreases. We recommend that you replace your battery when you notice that it begins to store significantly less charge.

#### **Changing the Battery**

Change the main battery pack as follows:

1. Turn off the computer.
2. Close the screen cover and turn the computer over.
3. Slide the side battery latch (1) away from the battery. Continue to hold it until the battery is removed.
4. Push in the latch on the battery (2) while lifting the battery out of the compartment. Remove the battery.



5. Make sure the replacement battery is properly orientated. Slide back the side battery latch (1) then insert the battery into the battery compartment. Check that the latch locks back into position.

## Heat Considerations

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

1. The cooling fan will automatically turn on. You may feel air coming from a vent at the left side when this happens.
2. If the temperature continues to rise, processor activity will be reduced. You may notice a slight loss of performance when this happens.



**Warning:** If the operating temperature exceeds 35 °C, the system will shut down to prevent the heat from damaging the computer's infrastructure. When the computer cools to a normal temperature you can restart the system. The higher the temperature of the environment, the longer the period the computer will need to cool down.

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