

Bonus Chapter 2

Ten Power Saving Tips

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A lot of people instantly think a tiny computer like the Eee PC means long battery life. It's so small; it can't be using very much power and should run all day. Right?

Not so fast, there's a catch. Smaller computers tend to have smaller batteries that don't have as much capacity as bigger batteries in bigger laptops. So considering this, the typical battery life on Eee PCs (with a Celeron processor and standard 4,400 and 5,200 mAH batteries) tends to run anywhere from two and a half to a little over three hours. (Models with larger capacity batteries and the Intel Atom processor do somewhat better, with around an hour or two tacked on to these numbers.)

Although bigger batteries and miserly CPUs help extend battery life, laptops are like cars and gas mileage. "Your mileage may vary" — mostly depending on your driving (or computing) habits.

In this chapter, I offer ten (actually eleven if you're counting) tips for eking out as much battery time as you possibly can from your Eee PC. (If these tips don't do the trick, be sure to read Chapter 17, where I give you the lowdown on spare batteries and alternate power sources.)



I'm a big fan of a nifty gadget called the Kill-A-Watt meter (www.p3international.com). You plug the meter into an electrical outlet, and then plug a computer, peripheral, or appliance into the Kill-A-Watt. The meter has a digital display that shows how much power the device or appliance is consuming. The Kill-A-Watt was designed for environmental and conservation-conscious consumers, but it's also a great geeky tool for seeing how much

electricity your computer requires during various activities. For example, I've found that while doing basic word processing my Eee PC 4G draws about 15 watts an hour. That's over one-half fewer watts than my full-size laptop for doing the same task. I'm happy to report that even though my Eee PC is black, it's still very green.

Turn the Eee PC Off

We've all become accustomed to leaving our PCs on when they're not in use — mostly out of convenience because of the painfully long process of starting up and booting. (Standby and hibernation modes are both attempts to speed-up restart time while saving power, and I'll talk about them next.)

However the Eee PC's speedy start-up changes these rules. With super-fast boot times, there's no reason to leave your computer turned on when you're temporarily not using it. Especially when you're running on batteries, and it may be awhile before a recharge.

Use Standby Mode

Although I recommend turning the Eee PC off to maximize battery life if you're not going to be using it for awhile, sometimes you want to use Standby mode.

In Standby mode, power is reduced to various Eee PC hardware components, some of the memory is stored to the hard drive, and the laptop goes to sleep. When you resume (by pressing the Power button), the Eee PC wakes up. After a few seconds, all the windows and programs you had opened before you went into standby are restored. This is convenient if you have a lot of browser tabs open or are working with several documents. You don't have to reopen them again as you would if you turned the laptop off.

Just keep in mind that power is still being consumed in Standby mode, although a smaller amount compared to when the Eee PC is turned on and running.

In Windows, in addition to Standby mode you also have an option called Hibernate mode. Hibernate mode saves memory to disk-like Standby mode, but then turns the computer completely off (instead of reducing power). When the PC is turned back on again, the boot process is skipped, and the stored memory contents are restored. You can enable hibernation and set other power-conserving preferences by clicking Power Options in the Windows Control Panel.



Keep in mind that with Windows Hibernate mode, the hiberfil.sys is the same size as physical memory. This can be an issue if you have an Eee PC with a small drive.

Use Low Power Settings

Starting with the 900 model, ASUS began offering users a chance to control the processor speed of their Eee PCs. The faster a processor runs, the more power it consumes. If the speed is reduced, performance is decreased, but battery life goes up. The processor speed can be set in the BIOS setup of the 900 models with Celeron processors, or if the mini-laptop has an Intel Atom processor, you can change power settings in a separate program.

Turn WiFi Off

If you don't need a WiFi connection to the Internet (say you're just doing some basic word processing), and your Eee PC's blue status light is on, the built in wireless card is sipping away at precious battery power. Even when you're not connected to an access point, the wireless card is still powered up and sending and receiving data.

If you don't need WiFi, turn it off by pressing Fn+F2.

The Eee PC briefly displays a dialog box that tells you wireless is no longer active. In addition, the blue status light below the keyboard to the lower right will shut off.

To turn the WiFi card back on, press Fn+F2 again.

A dialog box is displayed telling you WiFi is turned on, and the blue status light comes on. (If you were connected to a wireless access point before you turned WiFi off, you need to manually reconnect to it as I describe in Chapter 3.)



If your Eee PC supports Bluetooth and you're not using it, turn it off, too. Check your user manual for instructions.

Dim the Display

In addition to the wireless card, the Eee PC's LED monitor is another culprit in eating away at battery life. The brighter the screen display, the more power is required. You guessed it — you can maximize your battery time by reducing the screen's brightness.

To dim the display, press Fn+F3.

Each time you press this key combination, the brightness decreases. Bring the display to the most dim, yet usable level, to optimally increase battery life.

To increase the display's brightness (when an electrical socket is available), press Fn+F4.

Treat Your Battery Right

We tend to take electronic device batteries for granted. When they get long in the tooth and no longer hold a full charge, the battery (or sometimes the device) gets replaced. I won't get up on a soapbox about our disposable society.

Batteries are pretty complicated chemical power storage devices, and how you treat them directly impacts their longevity. As a battery ages, its storage capacity diminishes, so it makes economic and environmental sense to keep it healthy. Here are a few tips to maximize long term battery life:

- ✓ **Keep cool** — Lithium ion batteries exposed to high temperatures have shorter lives. Keep batteries out of the sun and very warm locations. If your Eee PC feels as if it's starting to get overly hot, consider removing the battery (you'll obviously need a nearby wall socket to run on AC power).
- ✓ **Don't run dry** — Completely discharging a battery decreases its life. As you do with your car, fill up before you're all the way empty — with a little still in the tank.
- ✓ **Recharge often** — Don't be shy about plugging into a wall socket and recharging your battery, even when it's only partially discharged. Laptop batteries like to be treated this way.
- ✓ **Keep the contacts clean** — If you swap your batteries a lot, dirt and grime on the contacts don't allow electrons to flow freely. Every few months use a cotton swab and alcohol to clean dirty battery contacts.
- ✓ **Use it or lose it** — Don't leave a charged battery sitting around unused for long periods of time. After it's charged, use the battery at least once every two to three weeks.



If you really want to get geeky about the technical aspects of batteries (trust me, it's fascinating), pay a visit to Battery University at: www.batteryuniversity.com.

Disconnect USB Devices

The USB ports on your Eee PC (or any computer for that matter) are powered. Each port provides devices with up to five volts; so anytime you have a USB device connected to your Eee PC, it is drawing electricity. When you're not plugged into a wall socket, that power is coming from the battery. How much depends on the device. A USB thumb drive may only draw a small amount of power, whereas an external DVD player without its own power source consumes much more.

As a general rule of thumb, if you have a SD card or a USB thumb drive plugged in the entire time while using a battery, you lose from 5 to 15 minutes of power. An external USB hard drive consumes about 20 to 35 minutes of battery time. Your mileage will vary, but the more time a drive is accessed for read and write operations, the more power it needs.

The bottom line is if you're not using the USB device, unplug it. The same holds true for the card reader — remove the SD card if you're not using it. Even with low consumption devices like thumb drives and memory cards, every electron counts.



Some USB hard drives and DVD players require two USB ports to run. They come with a splitter cable that plugs into two of the computer's USB ports and then into the device. With these devices, this means the power from a single port doesn't provide enough juice to run the device. This isn't a big deal with a desktop PC, but it is with a battery-powered laptop. If you have a choice, external USB devices that only require a single port are much more battery-thrifty.

Don't Use Animated Screensavers

Using my trusty Kill-A-Watt meter I discovered something really interesting. Animated screensavers (on all kinds of computers) consume about twice as much power as just a blank screen. It makes sense, since the processor has to work harder drawing all those intricate geometric shapes and flying icons of various types. A harder working CPU needs more electricity, so if you use a screensaver, stick to the plain and simple ones.

Use a Wired Ethernet Connection

If you have a choice of connecting to the Internet either wirelessly or wired, pick the cable. The Eee PC's built-in Ethernet card requires less power than the internal WiFi card. (Also, don't forget to turn the wireless card off to be really battery frugal.)

Know What Activities Drain Batteries

Your Eee PC doesn't use the same amount of power for everything it does. Some activities require more electricity than others (this is where a Kill-A-Watt meter is handy). For example, the following activities require more power than browsing Web pages, reading an e-book, or writing an e-mail:

- ✓ Watching videos
- ✓ Listening to music (the louder the speaker volume, the larger the battery drain)
- ✓ Connecting to external devices (such as hard drives and DVD player/writers)
- ✓ Playing games with lots of graphics

If you're trying to be a battery cheapskate because it will be hours before you can get to a wall socket for a recharge, keep the juice-sucking activities to a minimum.

Single Task

Whether we like it or not, computers have taught us to become masters of multitasking. But guess what. Multitasking decreases battery life. The more programs and windows you have open at once, the more the processor needs to work. And the harder the processor works, the more power it requires. In addition, when you place a lot of demand on a processor, it generates extra heat. Heat degrades battery life (so does cold, by the way). Heat also causes the fan to come on, which uses even more juice. It's quite the vicious cycle actually.

So if you're away from a wall socket and are trying to save every possible electron, just do one thing at a time on your Eee PC. You may find the simplicity is actually refreshing.