

IT@Intel Technology Tips

Intel Information Technology
August 2011

Intel IT creates and publishes articles for Intel employees to educate them on a variety of information technology subjects. Our goal is to help them improve productivity, take advantage of new IT services and raise awareness on other IT topics of interest. We've modified these articles from their original version for sharing with external audiences.

Simple ways to boost your smartphone's battery life

Squeeze more minutes out of your phone's charge time

Face it: smartphones are your portable lifeline to the world. With everything that these handheld marvels allow you to do—check your e-mail, surf the Internet, send text messages, balance your bank account, play games and even call other people (go figure)—it's like having a calculator-sized power pack in your pocket or purse.

Of course, that feeling of ultimate power and knowledge only lasts about a day (if you're lucky). And then, suddenly, you're seemingly cut off from everything while your phone's battery recharges. Oh, the agony.....

But wait—while you can't prevent this cell phone down time, you can minimize its impact with a few changes to your user habits. Here are some simple ways to squeeze more minutes out of your smartphone's battery life.

Turn off push notifications

The function that allows e-mail and other notifications to immediately appear on your smartphone screen also causes major battery drain. If your phone is routinely almost dead at the end of the day, go to its internal settings to turn off this feature.

Turn off location services

Many apps tap the phone's GPS when they don't really need to. Head to your phone's settings function and disable this feature for those apps that can live without a location check (see Figure 1).

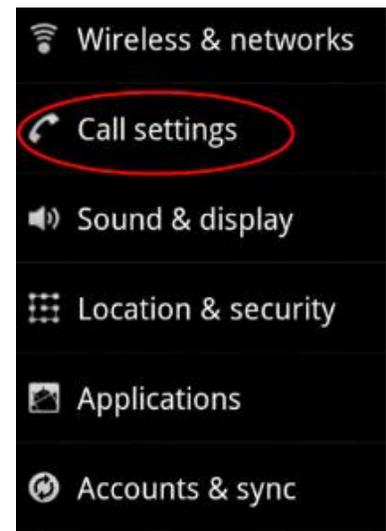


Figure 1: Your smartphone's call settings feature is the source of many battery-saving functions, including the GPS and Wi-Fi disablers.

Shut off Wi-Fi

Your phone's Wi-Fi radio is a serious battery drainer. If you don't need to download big files, and you aren't performing some crucial task online, turn off Wi-Fi and let the battery rest. Toggle it off when you go out the door, and turn it back on only when you plan to use data services within range of your Wi-Fi network.

Turn off your phone's Bluetooth*

No matter how much you love using Bluetooth in the car or with your hands-free headset, that extra radio is constantly listening for signals from the outside world. When you aren't in your car, or when you aren't expecting a call that you'll want to take via a headset, turn off the Bluetooth radio. You can add an hour or more to your phone's battery life.

Kill extraneous apps, update others

Multitasking—the ability to run more than one app at a time—is a powerful smartphone feature, but it also burns a lot of energy. Every app you run uses a share of your phone's processor cycles. By shutting off apps that you aren't actually using, you'll drastically reduce your CPU's workload and cut down its power consumption. (Note: There is some debate on how effective this really is, and the action goes against vendor recommendations. Proceed with caution, if at all.) On the flip side: If you choose to keep certain apps, make sure you're using the most up-to-date versions. Often, they're more energy efficient than earlier editions.

Lower screen brightness

Nothing sucks up energy like the screen. If your brightness setting is at maximum, knock it down to 50-75 percent. You won't like this at first, but after an hour or so you won't even notice the difference. You will, however, notice the longer battery life. Also, stay away from Auto Brightness, which will drain your battery as it tries to adjust your screen to match existing light conditions (see Figure 2).

Lock the screen

Locking the screen on your phone keeps strangers from snooping and keeps the phone from turning on—and using power—if it accidentally brushes up against a wall, a pocket or some other firm surface.

Keep your battery cool

Overheating can damage your smartphone's battery cell and make it die faster after a charge. Keep your phone out of the sun and other hot places, such as inside your pocket, where body heat reigns supreme. If you can, carry the phone in your purse or briefcase, or keep it clipped to your belt.



Figure 2: Reducing your screen brightness—and avoiding use of the Auto Brightness feature—can reduce strain on your battery.

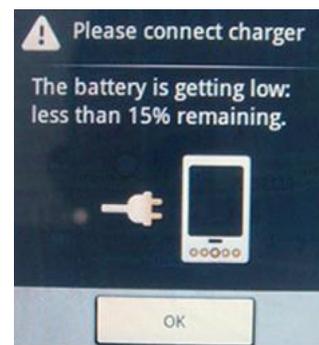


Figure 3: Smartphones last longer if you charge them up before their batteries go completely dead.

Don't wait too long to charge

Always recharging when the phone is almost dead will make the battery do more work and lower its life expectancy. Try to recharge when your phone is closer to 40 percent full, not 10 percent (see Figure 3).

Don't use vibrate unless absolutely necessary

A ringtone only has to make a tiny membrane in your phone's speaker vibrate enough to produce sound. In contrast, the vibration motor swings a small weight around to make your whole phone shake—a process that takes a lot more energy. If you don't want to be disturbed audibly, consider turning off all notifications and leave the phone in view so you can see when a new call is coming in. This approach is courteous to your battery and to your friends and neighbors as well.

Get accessories

Some people tote around chargers in case their phone dies. But an easier way to prepare is to outfit your phone with a "battery extender case" that packs a spare battery within its skin. When your phone's battery runs out, it will draw power from the case battery.

Get a new battery

After two years, there's a good chance your battery is on its last legs. At this point, it might be better to replace it in order to get the full battery life you once had. Or perhaps you should simply replace the entire phone.

Put the phone in "airplane mode"

Even when you're not up in the air, putting your phone in airplane mode will help keep the battery from dying, as it prevents the phone from receiving and sending signals. Of course, when it's in this mode you won't be able to call, text or go online, so this is often a last resort. Also, this can be a hard function to discover in your phone, but it's usually accessed through a Manage Connections function or similar (see Figure 4).

Shorten the screen timeout

Under your phone's display settings menu, you should find an option labeled "Screen Timeout" or something similar. This setting controls how long your phone's screen stays lit after receiving input. Set your timeout to the shortest available time. On most phones, the minimum is 15 seconds. If your screen timeout is currently set to 2 minutes, consider reducing that figure to 30 seconds or less.

Use Power Saver mode if available

Some of the newer phones include a Power Saver mode that helps you manage the phone's various power-sapping features. Power Saver automatically prevents your apps from updating in the background, dims your screen, reduces the screen timeout setting, disables on-screen animations, and turns off vibration. This mode usually turns on when your battery level drops to 20 percent, but you can set it to start at 30 percent. And the sooner the phone switches to Power Saver mode, the longer the battery will last.



Figure 4: Airplane mode saves energy by turning off a phone's ability to make calls or access the Web, but it's often considered a last resort.

This paper is for informational purposes only. THIS DOCUMENT IS PROVIDED "AS IS" WITH NO WARRANTIES WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE. Intel disclaims all liability, including liability for infringement of any proprietary rights, relating to use of information in this specification. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted herein.

Intel, the Intel logo, and other Intel products or trademarks are trademarks of Intel Corporation in the U.S. and other countries.

* Other names and brands may be claimed as the property of others.

Copyright © Intel Corporation. All rights reserved.

Printed in USA

Please Recycle

0811/JLG/PDF

