FCC Consumer Facts

Understanding Cell Phone Coverage Areas

Antennas/Networks

Mobile or "cell" phones work through a system of radio waves and towers or antennas to transmit calls. Since cell phones rely on radio waves, and radio waves travel though the air, completing calls can, at times, be unreliable. Like other radio transmissions, cell phone calls can be interrupted by severe weather, large buildings, or other objects between you and the nearest cell tower.

A number of factors can interrupt or prevent the completion of a call. Even when a carrier offers coverage in a certain geographic area, you may not be able to complete a call due to limitations in ***network architecture*** (where antennas are located), ***capacity*** (how many callers are using the airwaves/antenna at a given time), and ***topography*** (your surroundings).
When a carrier fails to hand off a call in progress as a consumer travels from one part of the carrier's network to another, it is called a "**dropped call**." A dropped call usually occurs when you are on the move and there are too few (or no) antennas in the area where you are traveling; the ***network architecture*** is limited. If there are no available antennas for you to use, your call has nowhere to go, so it gets dropped by the system.

When many consumers use a carrier's network at the same time and its ***capacity*** is strained, other customers trying to connect will hear a "**busy signal**" instead of being able to complete their calls. The landscape and architecture of your surroundings – ***topography*** – can affect cell phone coverage, causing "**dead spots**." A dead spot is a local area where service is not available because the signal between the handset and the cell tower is blocked, usually by hilly terrain, excessive foliage or tall buildings.

Carriers are always working to improve and upgrade their networks in order to minimize dropped calls, busy signals, and dead spots.

Reading the Fine Print – Coverage Maps

Before choosing a carrier or plan, it is wise to research carriers to determine the extent of their coverage areas. You can research a carrier's coverage area in a number or ways:

- Carriers provide coverage maps on their Web sites and in stores where their products are sold. Often these maps show very general coverage for entire regions. These maps usually carry the disclaimer that they are provided for informational purposes only and that actual coverage may vary. There may be holes where the carrier has not located antennas or where the topography causes dead spots.

There is no guarantee that your phone will work in an area just because it is included on a carrier's coverage map. Regions where towers are few and far between may technically be included in your home area, but the quality of your calls may be so poor that you can't use your phone. Although carriers attempt to design their networks to eliminate dropped calls, busy signals, and dead spots, no network is perfect, so coverage breaks within the general coverage areas are still possible. Specific and/or updated information may not be available in maps provided by carriers, since coverage is frequently changing.

- One way to find out about a certain carrier's coverage is to ask neighbors and friends. You can also look at Web sites (such as **www.deadzones.com**), which list specific dead spots submitted by individuals, by carrier and location for specific cities.

- Test the carrier's plan and coverage on a trial basis. Many carriers offer trial periods during which you can test a phone before you are locked into a service contract and have to pay a significant fee for terminating that service contract. During this trial period, you may want to test the phone in the areas where you plan to use it most frequently to determine if the coverage suits your needs.

Roaming

"Roaming" is the term that describes a cell phone's ability to make and receive calls outside the home calling area. Roaming occurs when a subscriber of one wireless service provider uses the facilities of another wireless service provider. This second provider has no direct pre-existing financial or service agreement with this subscriber to place or receive a call. When your phone is roaming, an indicator light on your phone may display the word "roam."

If your carrier's signal is too weak, roaming can occur even if you are using your cell phone in your own home calling area. A phone can also go into roaming mode if there is a high volume of callers in the area. Imagine that you are surrounded by cell towers, but your carrier's towers are at their capacity or out of range. Instead of having a call blocked or dropped, your phone might use another provider's tower (roam), sometimes at a higher price.

Roaming fees are traditionally charged on a per-minute basis and they are typically determined by your service provider's pricing plan. Several carriers have eliminated these fees in their nationwide pricing plans. All of the major carriers now offer pricing plans that allow consumers to purchase a "bucket" of monthly minutes to use nationwide without incurring roaming charges. Consumers should be aware however, that carriers define "nationwide" in different ways. For example, some carriers define "nationwide" as anywhere in the country, whereas others define it as anywhere within the carrier's network. Check with your carrier for information on plans without roaming charges or about other roaming options.

Emergency Situations

Some consumers purchase their cell phones for emergency use only. These consumers are

FCC Consumer Facts

relying on their cell phones as a vital means of getting help during personal and national emergencies. Remember, during widespread emergencies the calling volume in particular geographic areas can increase significantly and it is possible that a cell phone call may not go through. Although cell phone carriers' networks can handle normal cellular traffic on most days, it is important to remember that their coverage and capacity isn't unlimited. When call volume is high and capacity is limited, users of cell phones capable of text messaging may be able to send a text message even if they cannot complete a voice call because text messages require much less capacity.

Researching the Best Coverage for You

- Determine how you will be using your cell phone (long distance, emergencies, daily, week-ends) to find a plan to best fit your needs.
- Investigate carriers' coverage areas to determine if they provide service where you intend to use the phone most frequently.
- Ask neighbors, work colleagues and friends who have similar calling patterns about their experiences with different service providers and plans.
- Browse the Internet for Web sites that report dead spots.
- Since coverage is also affected by the type of handset, consider whether a single-mode, dual-mode or tri-mode phone best suits your calling needs. "Single-mode" phones can connect to either a digital or an analog network but not both. "Dual-mode" handsets can be used on both analog and digital networks. "Tri-mode" handsets can be used on analog and two types of digital networks.
- Compare plans and prices of several dealers and service providers before deciding on the phone and plan that best suits your needs.
- Take advantage of the trial periods offered by most carriers. This is a short period of time when you can use the phone without having to pay a significant fee to terminate your service contract.
- Consider trying a prepaid plan; that way, you can switch providers if the service isn't to your liking. If you sign a longer term contract and aren't happy, you may have to pay a significant termination fee to get out of the contract.
- When a problem arises, call your cellular company. If the problem is with the telephone itself, go to one of the cell phone company's stores, not an independent agent. The staff at a company store is better equipped to provide a remedy.
- Remember that most coverage maps carry the disclaimer that they are provided for general informational purposes only and actual coverage may vary.
- In the event of an emergency, always keep your cell phone battery charged.

FCC Consumer Facts

Complaints

If you have a complaint about service from your cell phone provider, you can file a complaint at the FCC by e-mail (**fccinfo@fcc.gov**), Internet (**www.fcc.gov/cgb/complaints.html**), telephone 1-888-CALL-FCC (1-888-225-5322) voice, 1-888-TELL-FCC (1-888-835-5322) TTY, or mail:

Federal Communications Commission
Consumer & Governmental Affairs Bureau
Consumer Inquiries and Complaints Division
445 12th Street, SW
Washington, DC 20554

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