



Understanding Wireless Telephone Coverage

Wireless telephones communicate via radio waves. Calls are connected using a system of base stations – also known as cell sites – that relay calls between telecommunications networks, which wireless service providers use to establish their network coverage areas.

Factors Affecting Network Connectivity

Wireless network connectivity is influenced by many factors, including proximity to a cell site, physical obstacles and signal interference caused by circuit components or natural disturbances that can distort communications.

For example, like other radio transmissions, wireless phone calls can be affected by severe weather, topographical features, or large structures or other objects between your phone and the nearest cell site. The locations where you cannot make or receive calls due to these limitations are sometimes referred to as “dead zones.”

Network capacity and architecture can also affect access for users. For example, you may hear a busy signal when a cell site has reached its maximum capacity.

Dropped calls can occur when either too few or no cell sites are available in the area where you are traveling. A weakened signal from a cell site or a network failure to transfer the call to a new cell site can also lead to your call being dropped.

Coverage Maps

Most wireless service providers offer network area coverage maps on their websites and in stores, though these maps usually carry disclaimers that they are for general information purposes and “actual coverage may vary.” You should be aware that service breaks can occur even in areas that appear to be covered. You can check independent consumer websites, which may help fill gaps in coverage information.

Understanding Network Roaming

Roaming occurs when you access the network of a different wireless service provider. If your phone signal or the nearest cell site’s signal is too weak, roaming can occur automatically, even within your calling plan’s area. A phone can also roam if there is a high volume of calls in the area. Instead of having a call blocked or dropped, your phone could use another provider’s cell site, which may result in an additional cost to you. Your phone may or may not display an indicator when you’re roaming.

Check with your provider about roaming fees. Many providers have nationwide pricing plans that eliminate roaming fees, but define “nationwide” in different ways.

Emergency Situations

During widespread emergencies, the call volume in an area can increase significantly, causing calls to not complete or to drop. If you must contact 911, *always* try to call. If you cannot complete a call, you may be able to reach a 911 operator via text message. See our Text-to-911 guide (fcc.gov/consumers/guides/what-you-need-know-about-text-911) for more information.

Filing a Complaint

If you have questions or complaints about phone plans, the handling of calls, roaming fees or other service issues, first contact your service provider. If you are unable to resolve the matter directly, you can file a complaint with the FCC. You have multiple options for filing a complaint with the FCC:

- File a complaint online at consumercomplaints.fcc.gov
- By phone: 1-888-CALL-FCC (1-888-225-5322); TTY: 1-888-TELL-FCC (1-888-835-5322); ASL: 1-844-432-2275
- By mail (please include your name, address, contact information and as much detail about your complaint as possible):

Federal Communications Commission
Consumer and Governmental Affairs Bureau
Consumer Inquiries and Complaints Division
45 L Street NE
Washington, DC 20554

Consumer Help Center

For more information on consumer issues, visit the FCC's Consumer Help Center at www.fcc.gov/consumers.

Alternate Formats

To request this article in an alternate format - braille, large print, Word or text document or audio - write or call us at the address or phone number at the bottom of the page, or send an email to fcc504@fcc.gov.

Last reviewed: 12/31/19

