

Understanding Fixed Wireless Internet

How does fixed wireless work?

Fixed wireless internet service is a radio frequency technology that operates with true line of sight from the transmitter on the tower to the receiver at your home. This transmitter is a point-to-multipoint technology which creates beams for a fiber-like connectivity.

This service uses a narrow and steerable beam which is electronically steered towards each subscriber without affecting latency. Having a narrow beam antenna eliminates mutual interference between adjacent sectors and neighboring cells, resulting in better reception at the subscriber side and higher network spectrum efficiency.



Because your home location is stationary, fixed wireless connections can be focused. Think of how a magnifying glass channels light, making the “beam” much stronger.

Like any wireless technology, fixed wireless is deployed over airwaves. Because of that, it does have to share those airwaves with every other wireless technology. Between radio, Wi-Fi, military communications, mobile data, talk & text, satellite broadcasts, baby monitors, microwaves, ham radios, and hundreds of other devices, spectrum is crowded.

Fixed wireless technology can broadcast data across most of the radio and microwave spectrums, so the frequency of a connection varies from implementation to implementation based on what is available.

Common Misconceptions About Fixed Wireless



Fixed wireless is just like satellite internet.

Fixed wireless is a very different delivery method than satellite. Fixed wireless transmits signal from a tower on Earth at a (you guessed it) fixed location. Meanwhile satellite is transmitted from a satellite broadcasting from Earth's orbit. Satellite can cover a wider area, but fixed wireless wins with less latency. However, both are great options when a traditional cable connection isn't available.



Fixed wireless is like a mobile connection.

This is very far from the truth. To be plain, “fixed” and “mobile” mean two very different things. A mobile connection works off of many different towers. Your device can switch connections as you move around. A fixed wireless connection is, well, fixed. You connect to that signal and stay on it.



Fixed wireless is just like Wi-Fi.

Fixed wireless provides a direct point-to-point connection and unlike Wi-Fi, it cannot move through or around minor barriers.

Who has the potential to receive a fixed wireless connection?

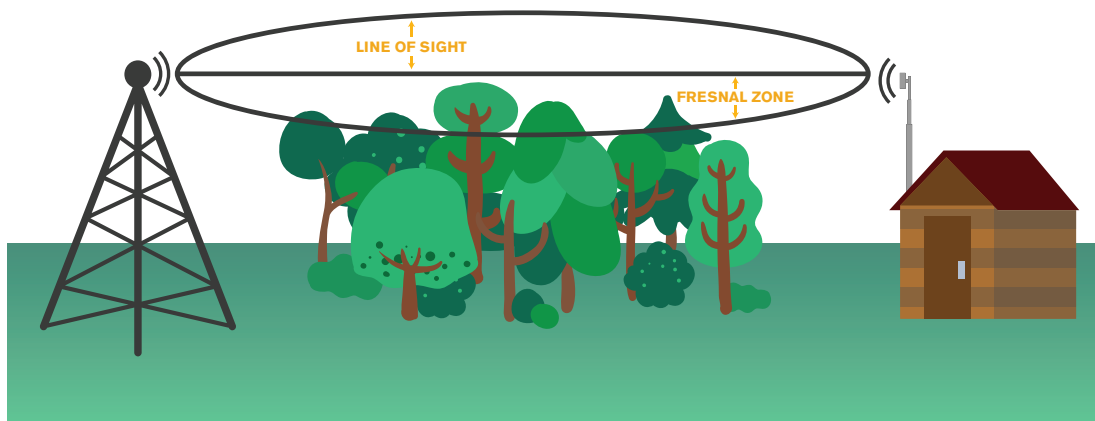
Can you see the tower?

If you can see the top of half of the tower, you're probably in pretty good shape. If it's less than half, we'll need to send a technician to evaluate if the signal can get to your house.

If I can see the tower why can't I get the connection?

This all really depends upon what's between the tower and your location. Is it fields, hills, forest, a barn, buildings? To get the best and most reliable connection, there is a wider area that the beam requires beyond a direct line of sight.

The radio waves coming from the transmitter on the tower aim straight to the receiver, but they start to spread out at an angle. Therefore, if they hit a solid surface, they can get deflected resulting in a weakened signal going to your receiver. The clearance that is needed beyond direct line of sight is called the Fresnel zone, and it too needs to be relatively clear.



Why choose fixed wireless?

The best part about fixed wireless is that you don't have to rely on Dial-up service anymore. This technology can rival even DSL and cable by broadcasting over higher-frequency microwave and EHF (extremely high frequency) bands, boosting the signal strength even more, achieving speeds comparable to fiber when properly implemented.

This wireless technology offers you speeds with low and constant latency and no data caps. This makes online gaming and video conferencing programs such as Skype feasible.

Fixed wireless is not affected by weather in the same ways as satellite internet or TV. The only time you may experience service changes is if ice has built up on the receiver.

We're all well acquainted with the, sometimes long, winters in the Midwest, especially our more northern Astrea communities. Because in the winter there is less foliage, there's less interference, which means better service!

