

## *Satellite Internet for Remote Locations*

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Much of our love, enjoyment and attraction for Alaska comes from living in remote regions and rural villages where we can be away from the teeming masses and enjoy the pristine outdoors.

At the same time in today's modern world, even in the wilderness, we need and want our modern amenities, especially the Internet. While in the past the Internet might have been considered mostly educational or perhaps entertainment, today it is essential, with countless services shifted online and in many cases accessible only by Internet. Among many other things, we use the Internet to shop for the best mail-order prices, find mates, check weather, do our banking, read the news, and of course, we communicate with friends and relatives using e-mail, instant messenger programs, voice and video. Even radio, music, movies and television are assessable via the Internet.

Trouble is, the infrastructure needed to provide Internet connectivity to remote locations, especially in Alaska, hasn't kept up with the demand. Sometimes it is available, but too slow and painful to be of practical value for many Internet services, and often the connectivity doesn't exist at all. This is where Satellite Internet comes in.

Not very many years ago, small satellite Internet systems, sometimes called "V-Sat" terminals, were unheard of. When they first became available they were expensive and not always dependable. They gave us a taste of what was possible, but also a bad taste. Often the antennas or dishes were large and expensive to buy and ship, and the installation costs were prohibitive for all but companies, government agencies, and upper income families.

Due to improved signal strengths available from satellites now and ever advancing technology, today's satellite Internet systems are much smaller, keeping shipping and installation costs down, and they are not as affected by the wind. They are especially dependable today as compared to earlier products, and weather issues are almost nonexistent. This dependability has led to satellite Internet being used as emergency back-up communications systems.

The satellites used for Internet today are geosynchronous, meaning that they rotate around the earth over the equator in the same direction and at the same rate as the earth turns. This makes them stay exactly the same place in the sky all the time, allowing us to precisely point our satellite Internet and TV dishes to the satellites, and be assured that unless the dish moves at the remote site, the systems will reliably keep their connections for long periods of time.

Receiving satellite signals is getting to be old technology that is fairly simple and well understood. The challenge faced by satellite Internet, as compared to satellite TV, is that an uplink to the satellite is required for Internet. This is done with a small transmitter that uploads Internet requests, acknowledgements and files from the ground to the satellite, to

be relayed down to a large earth station and Network Operations Center that connects to the Internet somewhere in the lower 48 States.

For installing satellite Internet, with transmitters sending signals up to the satellite, FCC requires certified installers who are trained on the company's systems and equipment. This is for several reasons, safety being one, but particularly so that one user doesn't mess up many other users due to a single malfunctioning or poorly aimed transmitter. Of course, satellite Internet providers want their customers to have a good Internet experience, and we know that the better these are assembled, installed, pointed, commissioned and tested, the better they work.

If you are somewhere that has little to no Internet service, and you need it, consider satellite Internet. It is a technological miracle that in a remote location we can install a one-watt radio transmitter, mounted on a small dish about the same size as a garbage can lid, and provide a reliable and fast connection to the world.