Welcome to the World of Starlink

We live in an ever-evolving world with technological innovations appearing on the scene with delightful regularity. Because we are on the road for eight months a year and both still working part-time, the prospect of improved communications makes our ears perk up! In our past travels, we've made many diversions to find the connections that would allow us to keep up with business and life. Now, imagine all the joys of being able to get lost in the mountains and deserts and still secure blazing fast Internet! Thank you, Elon Musk!

First time installation and set up coincided with a half moon overhead. Dishy's first view of outer space! The mount adapter was purchased from the Starlink store enabling an easy disconnect from the flagpole.

Concept - The Starlink network is gigantic in its concept of populating low earth orbit (LEO at 300 miles) with eventually 42,000 dedicated communication satellites. Currently with some 2,500 satellites in service, a reliable network has been established between 55° North and 55° South. As a side note, Dish-TV, Hughes and DirecTV operate using geo-stationary satellites parked in a 22,000 mile orbit.

A clear horizon without trees at our campsite near Montreal. Also shows our Weboost cellular booster mounted on the flagpole however there was very little cell phone signal in most of our Canadian locations and eventually we only used the VOIP option on our phones through Starlink.

Most of the SpaceX launches are from Kennedy Space Center in Florida, inserting satellite into a standard equatorial orbit, however launches from Vandenburg in California launch Starlink satellites into polar orbit which will cover the Arctic and Antarctic, especially Alaska and northern Canada by 2023.

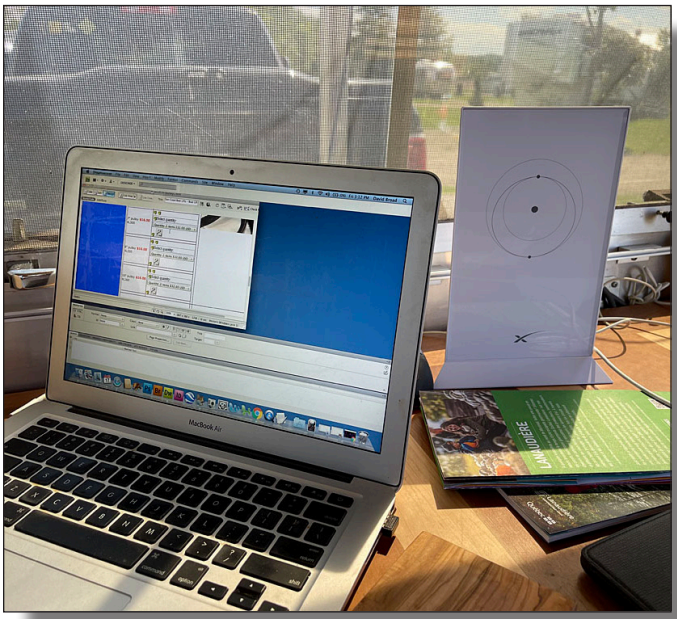
Starlink uses a flat 19" x 12" antenna, named Dishy by Elon, which uses phased array sensors. That means there is no physical movement of the dish as the satellite tracks from west to east. Antenna pointing is performed by solid state electronics. The antenna is connected by a proprietary cable to the router that beams wi-fi network in your immediate vicinity.

Ordering - SpaceX is well aware of the limitations and potential overload of their satellite coverage and only allows specific geographical areas (hexagon cells) to order Starlink up to an optimum load of residential

users. That restriction will undoubtedly be gradually eased as the number of satellites in orbit increases. I placed my order in February 2021, and fifteen months later I was still waiting! An RV Starlink user group revealed the solution! By relocating my "service address" just 5 miles up the road into an underused hexagon service cell, my order was being shipped within an hour! The next trick was to initialize my Starlink account using the ghost service address, so I visited a

Campground installation near Quebec City with the flagpole extended to some 15 feet, enough to get the Dishy well clear of the surrounding buildings. Shows the cable route through the Furrion port to the router inside. Some Airstream Starlink users keep the router in an outside storage compartment and connect by Wi-Fi.

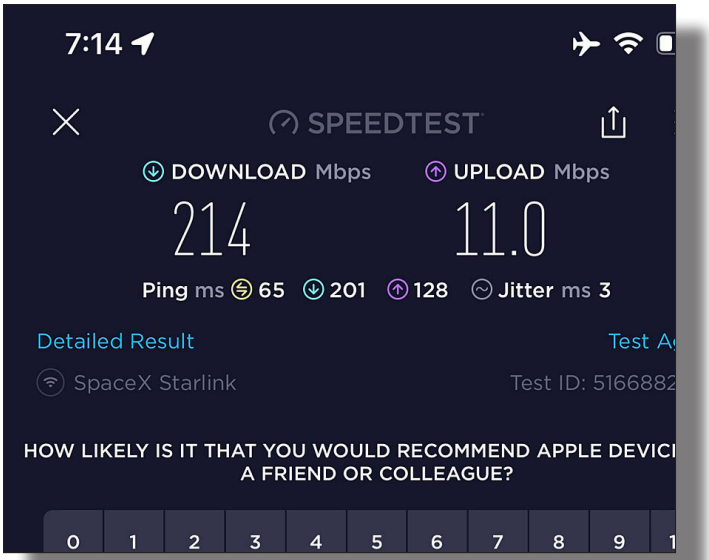
friend's house up river and squatted on his riverfront lawn to successfully initiate my account and within a few minutes I was in business. Once the initialization was accomplished, I switched on the portability option and have since been Starlink roaming using this superbly fast system throughout the North-East states and Quebec province in Canada.



Our MacBook Air sits alongside the Starlink router. The design on the front of the router is Elon Musk's vision of the trajectory of his space exploration mission from Earth to Mars.

Operation - In order to use Starlink, there must be no trees or other sky view obstructions within the immediate vicinity of the antenna, especially looking north. Imagine a clear view skywards at 45 degrees elevation angle all round your location. We use a telescopic flag hole with a pipe adapter available from the Starlink shop to convert the top of a flagpole to the quick-connect Starlink antenna mount. A cable is routed through Furrion ports mounted on both sides of the double skin of the Airstream. This port was previously installed for Wi-Fi and cell booster antenna cables. Startup is simple. Rotate Dishy so that the flat panel Starlink antenna faces north, plug in the antenna to the Starlink router and plug the router into power. Open the settings app on your phone and locate the Wi-Fi signal from the router. The first time you do this, you can rename it and provide your own password. You should have connectivity within ten minutes. At that point you can connect any number of devices to your hot spot. We also ordered an Internet cable adapter option that allows computers to be hard wired by Ethernet cable for higher speed, secure and reliable connection.

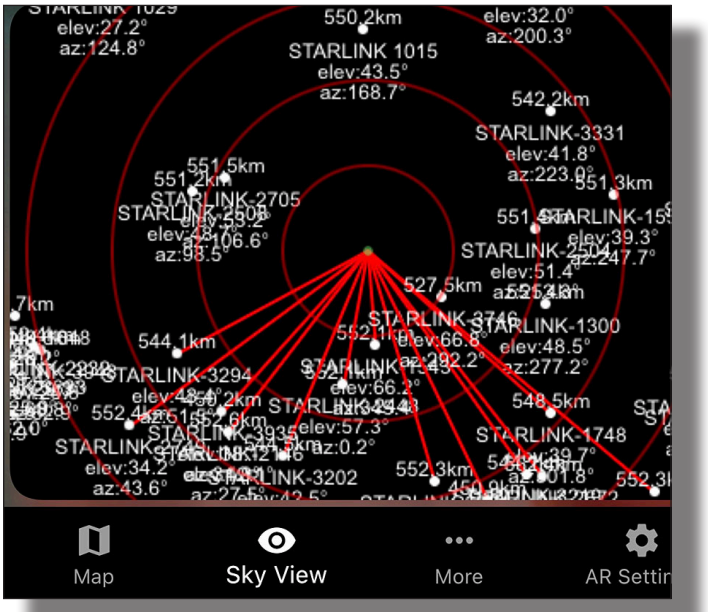
Positives - What is there not to love about high-speed internet running between 50 to 200 Mbps? This is a system that can run 24/7 with low power consumption. If you are boondocking and relying on solar, you



A good day on Starlink with download at 214 Mbps and upload at 11 Mbps - exceptionally good – this screen shot is from the Starlink app that runs on our phone. Any number of Wi-Fi connections are supported, phones, computers, Netflix, Kindle and Apple-TV devices.

might want to switch it off when it's not in use. Now you're ready to watch your favorite streaming services without interruption and certainly no data caps. The fixed fee of $110 Residential or $135 RV Mobile covers unlimited data.

In areas with little or no cellular phone coverage, Starlink is a godsend. We switched our phones to Airplane



Screen capture from the iPhone app Starlink Watch shows the current location of all the Starlink satellites in your immediate locality - at this particular moment 12 Starlink satellites are visible to our antenna.

Mode and switched on wi-fi calling for perfect incoming and outgoing phone, Zoom or FaceTime calls using Starlink.

Negatives - Probably the biggest issue was getting our order fulfilled. Most areas of the US east of the Mississippi are at capacity. This will undoubtedly ease up as more satellites are launched.

Apart from trees, which are Starlink's Kryptonite, our experience with the service at the northernmost coverage has been stellar. Folks operating outside their service area and those using the portability option potentially may have a downgraded service.

Starlink product support is only by email – there are no phone numbers! This has caused a lot of frustration in both prospective and current subscribers. We have used the email support a couple of times and received appropriate answers within 48 hours.

Coverage north of 55° is currently very poor, however satellite launches in polar orbit will improve coverage in the far north.

Screen capture from the iPhone app Starlink Watch shows the current location of all the Starlink satellites anywhere in the world - at this particular moment Starlink #3967 satellite is over Virginia. The red signal icons show the location of ground stations. With an altitude of 500 km the land coverage of Starlink's signal can reach a footprint of some 300 miles diameter.

Costs - The initial order deposit was $99. On delivery the $535 balance of the order was paid. I initially started as Residential status then added roaming capability when we started our Airstream travel. Basic service runs $110 a month and roaming an additional $25. At home, we are surrounded by trees, so we continue to use our cable broadband. We then decided to switch our Starlink over to Mobile RV service. This is a one-way decision…. no going back! The advantage of mobile RV service is that we can put the service on pause at no charge until the next time we head off in the camper.

I'm sure the purist camper will think of this as yet another intrusion into camping life. We spent many weeks off the grid this spring and one of the biggest frustrations was lack of communications. The ideal and simple life is no longer part of the modern world

Cables to the Dishy antenna run through a modified Furrion shorepower port that we installed adjacent to the main door. We installed the cable port some years ago to be used for cables from the cellular booster and for the Wi-Fi booster antenna.

This is how we installed the extendable flag pole to our Airstream jack using pairs of clamps connected by stainless steel rods. This is very efficient way to mount the antenna and can be installed or repacked within three minutes.

and our lives continues at many levels and depend on reasonable communications. Our recent trip to Canada was a perfect example of the harmony of both worlds with much less stress as we enjoyed the wilderness and still maintained access to our lives beyond the Airstream. The future is here!

Margaret & David Broad (WBAC #2381) from Tappahannock, Virginia, traveling 8 months of the year since 2016 (but not 2020/21!) in their 2015 Flying Cloud 25 RB Nuage Volant. Our home unit is the Virginia Airstream Club #109 and we are affiliated with the Canadian Quebec Airstream Club, European Airstream Club, NORCAL & CCCAC on the West Coast and 4-Corners in Arizona. You can email questions or comments to airstream@db26.net David also publishes an Airstream improvement page at www.facebook.com/airstreamtweaks and for fun created a Gourmet Camping group at https://www.facebook.com/groups/gourmetcamping