Tech Note: Using SpaceX Starlink With Codecs
by the Codec Answer Guy

Q: Hey CAG, what's this Starlink thing anyway?

A: Starlink is a new way to deliver the Internet to users via a constellation of low-orbit satellites. The service has an accessible price and offers fairly high speed and low ping times for satellite-based services.

Q: So I need to install a dish?

A: Yes, a 23-inch diameter "dishy" needs to be installed with as unobstructed a view as possible to the sky.

Q: Do I need to point the dish?

A: No, the dish auto-aligns to a maximal direction.

Q: What's your opinion on Starlink for general purpose web usage?

A: Here at Comrex, we installed Starlink as a backup to our cable-based Internet service. For general usage, we find it satisfactory, with ping times in the 50-60 mS range, and upload speeds ranging from 1-10 Mbps. Download speeds are higher, 10-80 Mbps.

"Dishy" installed at the Comrex Lab

Q: Can I bring "dishy" on the road?

A: Not at this time. Starlink service is tied to within several miles of the service address, and will stop working if you move too far away.
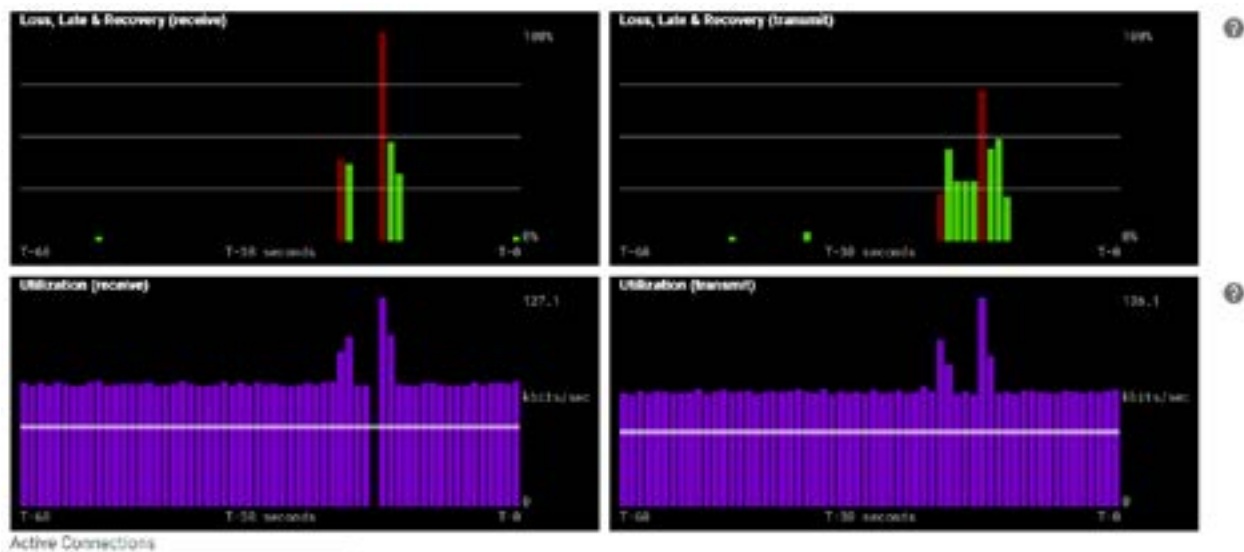
CrossLock stats showing recovered and lost packets during a Starlink feed

Q: How's audio performance on Starlink?

A: Mixed. Starlink experiences several different kinds of issues:

1. Occasional packet drops over a short time (1-2 seconds) of 1-25% of the data expected. To a large extent, the use of Crosslock on Comrex codecs can mitigate these drops.

2. Several seconds of 100% packet loss. This occurs on average every 3-10 minutes. It causes a momentary "soft" fade and return of audio.

3. Short intermittent increase in jitter. These usually cause the codec buffer manager to expand upwards of one second. They can be mitigated by reducing the maximum buffer within the codec settings, but may result in an increase of issues 1&2.

For audio codecs, we think Starlink may be acceptable as a backup, or for a main channel that has no alternatives and can tolerate short, occasional fades. It is not suitable for nailed up connections like STLs.

Jitter chart showing increases in jitter on Starlink (Bars= one second, light blue = jitter)

Q: How about your LiveShot video codec?

A: Because video interruption is more dramatic than audio, and because a video link can take more time to recover from packet loss, we don't feel Starlink is suitable for Liveshot use at this time.

Have questions or need support?

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User event log showing 20 minutes of Starlink codec streaming.

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