

# Verizon's Satellite Access Solutions

White paper

**Designed to work even in extreme weather conditions.**

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## Antenna

Starting with the antenna, Verizon uses high quality, robust parabolic antennas from the leading antenna manufacturers that are designed to provide years of continuous, low trouble-free service exposed to the elements.

For areas of the country where snow and ice are normally not an issue, the antennas have a Super Hydrophobic Coating (SHC - similar to Teflon®) applied to their surface that is designed to help inhibit snow and water buildup on the antenna, and instead enable water to easily slide off of the antenna surface in the event of heavy rain or light snow.

For areas of the country that normally experience snow and ice, antennas with temperature-controlled heating elements are used.

Where rain, snow, and ice are seasonal or less severe, we use 'Half-Deice' antennas. These antennas have integrated heating elements in the lower half of the antenna that are temperature-controlled. Combined with an SHC coating, in the event of snow or ice, the temperature-controlled heating elements would warm the lower portion of the antenna, allowing the remaining snow and ice to slide off of the antenna surface.

These antennas are available with either 120V AC or 240V AC as required.

For more Northern latitudes, locations at higher elevations, or for areas with more extreme weather, 'Full-Deice' antennas are also available. Similar to the 'Half-Deice' antennas, 'Full Deice' antennas have integrated heating elements throughout the entire antenna, providing the ability for snow and ice to slide off the surface, even under extreme conditions. These antennas also support both 120V AC and 240V AC.

In addition to the heated antennas listed above, Snow Shield covers are available to help provide a higher level of protection from the elements. Snow Shields consist of specially coated material, which is virtually invisible to RF, stretched over the front of the satellite antenna in order to help block snow and ice buildup on the antenna surface. The following Snow Shield options are available:

- Passive (Non-heated)
- Heated (provides heat in the space between the Snow Shield and the antenna surface)

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## Block UP-Converter (BUC)

The BUC functions as the Transmitter on a customer's VSAT (Very Small Aperture Terminal) system (e.g. the customer's satellite system).

The BUC wattage chosen by Verizon for a particular customer installation is designed to provide a high level of performance under normal conditions.

Should the customer require even greater Network Service Availability (Verizon's standard Satellite SLA for Network Service Availability is 99.5%), a higher wattage BUC can be used to provide even greater transmit power from the customer's VSAT system to the satellite.

This higher power helps provide continuous service even under extremely heavy rain or snow conditions.



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### Dedicated equipment designed for high wind.

In addition to the above, Verizon also offers hardened antennas and antenna mounts designed to survive wind loads up to 150 MPH.

These antennas and mounts also use corrosion-resistant stainless steel hardware to insure serviceability even under extreme conditions.

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### Summary

Verizon satellite access solutions are designed to provide industry-leading SLAs for Network Service Availability, Network Transit Delay, and Network Packet Delivery.

Verizon's Satellite Access Real-World Performance data and SLA metrics can be found at:

<https://enterprise.verizon.com/terms/latency/>

The various antenna, BUC, and High Wind options described in this document can be used to help with levels of availability and performance.

