



# GPS equipment near transmission lines

AltaLink understands that some stakeholders are concerned about potential interference from transmission facilities on the operation of Global Positioning System (GPS) equipment.

We encourage you to contact us with the specific details of any GPS concerns you may have. We will work with you to investigate and mitigate any potential GPS interference caused by our facilities.

## Standard GPS receivers

Studies examining the use of standard GPS receivers under or near transmission facilities have shown that interference with the reception of GPS signals is unlikely. The interference produced by transmission facilities is usually only significant at frequencies lower than 30 megahertz (MHz) and is not expected to cause issues with GPS receivers which operate at much higher frequencies (between 10 and 100 times higher). GPS receivers also use multiple satellites and decoding techniques which help to prevent loss of signal.

## Differential GPS receivers

Differential GPS (DGPS) receivers require additional correction signals. Real-time kinematic technology (RTK) is one example of a DGPS technology being used today. Research has shown that there is potential for a DGPS receiver to be affected if all the following conditions exist:

- the receiver is located close to an electrical facility
- the DGPS signals are being transmitted in the hundreds of kilohertz (kHz)
- interference produced by the transmission facility is in the same frequency range used by the DGPS receiver

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There are many other factors which can also affect a DGPS receiver, including receiver/antenna design, location, signal strength, weather conditions or interference from other sources including other DGPS systems in the area.

Possible mitigation for GPS receivers could include the following:

- replacing the GPS receiver
- ensuring all factory upgrades have been installed
- correcting GPS receiver installation deficiencies
- relocating the DGPS ground-based station

If necessary, we may have an external interference specialist come to your property or contact the manufacturer of the GPS equipment to help identify problems and propose solutions.

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