

# VHF Radio Interference with GPS Receivers and T2 Terrain Compensation Technology

## Issue

VHF two-way radios that transmit with a frequency between 150 and 160 MHz may interfere with:

- any GPS receiver
- the T2™ terrain compensation technology of the EZ-Steer™ assisted steering system

VHF radio interference can affect all brands of GPS receivers, whether you are using no corrections, WAAS/EGNOS, OmniSTAR VBS/HP/XP, or RTK corrections.

## Symptoms

The following symptoms may occur when radio interference is present:

- A vehicle may drive significantly offline when you transmit on a VHF radio.
- Radio interference may cause errors in the T2 terrain compensation technology roll and yaw outputs and cause the vehicle to drive significantly offline.
- The GPS receiver may track fewer satellites. This reduces accuracy and may cause one of the following warnings to be displayed on the screen of the EZ-Guide® Plus lightbar guidance system:
  - Few Sats
  - High DOP
  - No Corrections

If one of these warnings appears on the EZ-Guide Plus lightbar screen while you are transmitting on a VHF radio:


- a. Stop transmitting from the radio.
- b. Select *GPS / Diagnostics*.
- c. Begin transmitting data with the VHF radio. Check the number of satellites and the WAAS/EGNOS SNR for changes while you are transmitting.

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## GPS interference confirmation

If the number of GPS satellites drops by 1 or more, or the WAAS/EGNOS SNR drops by 3dB or more when you transmit on the VHF radio, try the solutions below until the problem is solved.

## T2 technology interference confirmation

1. On the lightbar, select *Lightbar / Status Text*.
2. Press  until *Status Screen* appears.
3. Change three of the fields to display:
  - Roll [angle]
  - Roll Rate
  - Yaw Rate

**Tip:** For the next step, try to remain still so the vehicle does not rock.

4. While the vehicle is stationary with the engine turned off, press the transmit button on your radio and check if the *Roll*, *Roll Rate*, or *Yaw Rate* values change by more than 0.3 degrees.

If the T2 outputs do change by more than 0.3 degrees, try the following solutions until the changes reduce to 0.3 degrees or less when transmitting.

## Solutions

You can eliminate most radio interference problems by making the following simple changes:

- Move the two-way radio antenna at least 1.2 meters (4 feet) away from the GPS antenna and the T2 controller.
- Ensure that your two-way radio antenna cable is grounded to the chassis of the vehicle.
- Separate the two-way radio antenna cable from the GPS antenna cable and the EZ-Steer power and motor cables.
- Remove any loops from the GPS antenna cable and the EZ-Steer power and motor cables.

Cable loops that are approx 0.5 meters (1.5 feet) in diameter can act like a radio antenna and amplify radio interference. Straightening the GPS antenna cable and EZ-Steer controller cables can significantly reduce interference. If you have a lot of spare cable, route the cable around the driver's seat to eliminate any slack.

- If the T2 controller is mounted vertically, change to horizontal mounting. Remember to select *Terrain Comp. / Orientation* and then change the *Towards* option.
- Select *Terrain Comp. / Filter* and then select *Roll Only*. This can significantly reduce the effect of radio interference on T2 terrain compensation technology.

## Further assistance

If you make all the above changes to the two-way radio antenna and cables and you find that the vehicle still drifts offline or exhibits any of the symptoms described above when you transmit on a VHF radio, please contact your reseller.