

Interferences on all GNSS Bands

If a GNSS receiver is failing to track satellites, this may be because RTK solutions are getting stuck in 'Float' or taking longer to converge to 'Fixed'. Interference may be occurring on one or more of your GNSS bands. In addition to harmonics of signals like local TV or radio stations, there are now also USD10 GNSS jammers on the market that interfere with these signals too! JAVAD's TRIUMPH-VS shows interference by analysing signals before RF and after digital sections and quantifies how much interference is present.

The GNSS spectrum analyzer feature of TRIUMPH-VS does much more than a generic USD30,000 spectrum analyzer.

TRIUMPH-VS not only scans the GNSS bands and shows the shape and frequencies of the interferences, but it also quantifies the magnitude of the interferences in two distinct and complementary ways: a) by analyzing the analog signal and determining the 'Interference Magnitude' and b) by analyzing the S/N (Signal-to-Noise ratio) of all satellites' signals after they are digitized and processed (after code and carrier correlations) and determining the 'Satellites S/N loss' due to interferences.

'Interference Magnitude' is determined by analyzing the amount of gain that we can apply to the GNSS signal before digitizing it. The more interference there is, the less we can amplify the signal to avoid saturation. We can determine the 'Interference Magnitude' by comparing the actual amplification magnitude with our nominal amplification magnitude (when no interference exists).

'Satellites S/N loss' is determined by comparing the actual measured S/N of each satellite (for each of its signals) with its nominal S/N at that elevation angle and then averaging all such deviations for all satellite signals.

TRIUMPH-VS not only analyses and shows interferences, it also has In-Band Interference Rejection option that removes in-band interferences.