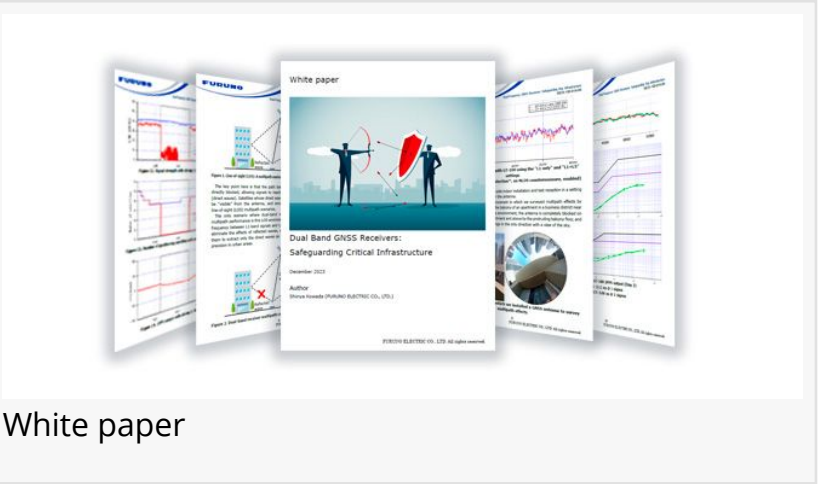
(White Paper) Furuno Dual Band GNSS Receivers: Safeguarding Critical Infrastructure

NISHINOMIYA, HYOGO, JAPAN, May 9, 2024 /EINPresswire.com/ -- FURUNO ELECTRIC CO., LTD., (“FURUNO”) has launched the GT-100, a dual band GNSS receiver for time synchronization that can simultaneously receive L1 band (1575.42 MHz) and L5 band (1176.45 MHz) GNSS satellite signals.



White paper

Multipath Mitigation and anti-jamming measures must be considered to minimize degradation of time accuracy, even when antennas are installed in urban areas or near windows.

When there are buildings nearby, the signals from GNSS satellites can be expected to be reflected off them at various angles. This situation is known as a “multipath” scenario. If there are obstacles in the line of sight, the signals will be diffracted and/or reflected by these obstacles. This can cause large errors to creep into position and time calculations performed using these signals due to the uncertainty in noise components that vary depending on factors such as how the obstacle affected the signal, and how much of a detour the signals had to make.

Also, for the GNSS receiver to calculate the position, time, etc., it is necessary to receive the GNSS signal using a dedicated GNSS antenna. However, since the GNSS signal broadcast from the satellite is very weak originally, if there is other unintentional noise source or signal source around the antenna, it prevails as a jamming signal, and the GNSS signal may have problem with normal reception.

There are mobile phone base stations that are prone to interfere with 1575.42 MHz signals, and when using GNSS receivers in urban areas, there’s also the risk of unanticipated jamming wave sources such as passersby and vehicles.

Our previous single band receiver, praised for delivering time synchronization stability of less than 4.5 ns (1 sigma) and its Dynamic Satellite Selection™ multipath countermeasures technology for reducing accuracy degradation in urban environments and near windows, has

been enhanced by adding dual band support.

More than simply doubling the number of signals that can be received, dual band capability significantly improves robustness regarding jamming and other potential disruptions by allowing the use of two different frequency bands.
Such enhanced features give users a high level of confidence in fields that require high reliability, such as 5G mobile base stations, financial transactions, and power grids.

“GT-100” which is one of these GNSS receivers, is full-featured highly robust model, supporting dual-frequency band reception (L1 and L5).

The above are some extracts from the white paper. Our engineer specializing in time synchronization explains the importance of robustness by using dual band GNSS receivers in over 20 pages.

You can download the white paper once you fill out the form from the below URL.
https://pages.furuno.com/en-gt100-dualband-robustness-downloadform.html

FURUNO ELECTRIC CO., LTD.
System Products Division
+81 798-33-9588
email us here
