ComNav Introduces Venus Laser RTK for Rodless Surveys

ComNav Technology has launched a laser GNSS receiver which enables rodless surveys – the Venus Laser RTK – as part of its new Universe series of GNSS receivers.

Surveyors in the field are often required to stake out and measure out-of-reach points. But this can be challenging and even potentially dangerous in certain conditions, such as when in a trench, on top of buildings/earthworks or close to fences, walls, water. Surveying with a traditional range pole can be labour-intensive and time-consuming, not to mention posing safety risks. ComNav Technology's Venus Laser RTK GNSS receive now makes it possible to eliminate the bulky range pole.

Laser Scanning and IMU

GNSS receivers with inertial measurement units (IMUs) offer obvious advantages: no on-site calibration is required, and productivity increases thanks to the pole not needing to be held vertically. IMUs have become mainstream among well-known brands. Venus's third-generation IMU continues to deliver high performance.

On that basis, ComNav has integrated a millimetre-level laser distance meter onto Venus, which can be used in laser mode to replace the range pole. This enables GNSS surveying beyond the usual limitations. Moreover, its IMU can be in play in both modes. In the traditional mode with range pole, Venus supports up to 60° tilt compensation with 2.5cm accuracy. In the laser mode without range pole, Venus can achieve an accuracy of 5.5 cm within a 60° tilt angle when held in the hand.

Even with small operational deviations, such as slight shaking, it can complete tasks requiring high measurement accuracy. Compared with traditional GNSS receivers, this non-contact survey tool can significantly expand the working area, improve efficiency and ensure safety.

Robust Solution for Challenging Circumstances

The GNSS module forms the foundation of the GNSS receiver. Powered by the SinoGNSS K8 high-precision module and with 1,590 channels, Venus is capable of tracking all existing and planned constellations, including GPS, BDS-2, BDS-3, GLONASS, Galileo, QZSS and SBAS. The superior satellite tracking technology ensures it work smoothly, even in harsh environments. Moreover, based on ComNav's own Quantum III algorithm, Venus outperforms in anti-interference and positioning accuracy.

An unconventional design has been chosen for Venus. This handheld device is even smaller than an average coffee cup, and the streamlined design offers users the highest levels of comfort and the best grip. Additionally, Venus is a unibody device to optimally narrow the body gap and therefore improve the shielding effectiveness. ComNav has used carefully selected macromolecule nanomaterial for its outstanding electromagnetic interference (EMI) shielding performance. Thanks to its Quantum III algorithm, the structure of the enclosure and the choice of material, Venus largely eliminates concerns about interference. Additionally, the specially selected material significantly reduces the total weight to only 380g, which helps to minimize user fatigue and increase stability when used as a handheld device.

Thanks to IP67 water/dust protection, Venus is suitable for field work in all weather conditions. In terms of shock resistance, Venus can survive a 2m drop onto concrete. Meanwhile, the high-capacity battery delivers 20-plus hours of use in the field. This allows full-day projects to be completed without worrying about a power outage. Fully recharging the battery takes just four hours.

The ComNav Universe series is intended to fuse the most advanced technologies into the GNSS industry to drive the surveying business forward. As an RTK characterized by convenience and safety, Venus supports high reliability and high returns.

Compare this GNSS receiver on Geo-matching

If you are looking for technical specifications and downloads for brochures and fact sheets related to GNSS receivers, you may want to visit the GNSS overview on Geo-matching: https://geo-matching.com/gnss-receivers/. This overview also provides information about the Venus Laser RTK GNSS receiver, including technical specifications, product video's brochures, and fact sheets. You can use this information to learn more about the features and capabilities of the Venus Laser RTK, compare it with similar GNSS receivers, and make informed decisions about whether the product is fit-for-purpose. Please note that this link is provided for informational purposes only and does not constitute an endorsement of the product.