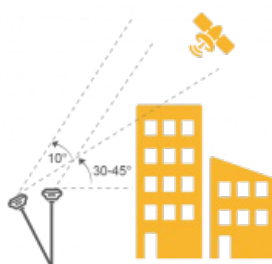


HI-TARGET HAS NOW DEVELOPED THE NEW 9-AXIS IMU RTK V200 TO MAKE AN EVEN STRONGER CONTRIBUTION TO LAND SURVEY.

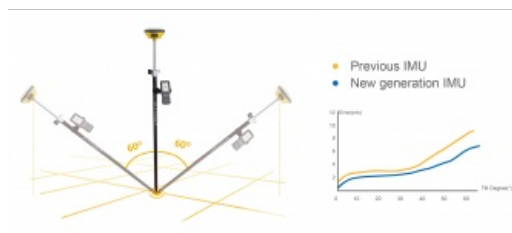
Hi-Target V200: A New Lightweight GNSS Receiver for Land Survey




In line with the rapid advances in electronics technology and manufacturing capabilities, GNSS receivers for land survey are evolving to be smaller and lighter, with new functionalities. Hi-Target, a leading company in the geospatial industry, is now introducing its latest GNSS receiver: the V200. It will create a new RTK experience for land survey users.



Unlike smartphones, which are getting bigger to display more content, GNSS receivers are clearly being made smaller. However, in terms of other physical features such as weight and battery, these two products are following the same trends. Factors such as a lighter weight and more durable battery are obviously important for users who carry them around a lot, and there is definitely a continued focus on optimizing product performance.



 Hi-Target's history of GNSS receiver development.

Throughout the history of GNSS receivers, some small-sized and compact RTK receivers have previously been developed. Unfortunately, however, the

application scenarios of these small GNSS receivers were finite due to the technology level at that time. Simultaneously, their performance was not comparable to large-sized, full-featured GNSS receivers.

Although the network RTK technology has matured, land surveyors working in changing scenarios still face the limitation of the complexity and instability of the communication environment. Therefore, a full-featured GNSS receiver is still their first choice. This equipment better ensures that the land survey work can run smoothly, which is more important than the size and weight of the device.

Minimizing the burden

Change has finally arrived. By innovating the technology, Hi-Target has designed a new-generation compact GNSS receiver: the V200. It can perfectly handle the situations encountered in all kinds of land surveys. This new, lighter and smaller product is aimed at providing a more convenient surveying experience. It also guarantees RTK performance while minimizing the burden of land survey jobs.



The new generation GNSS receiver V200.

The name V200 is very reminiscent of its predecessor, the V100. This was the first ultra-compact RTK GNSS receiver, released by Hi-Target in December 2015. This device caused some heated debate in the GNSS market at the time. The primary reason was that few RTK devices of this size in this class were successful. As mentioned above, due to the complexity of the working environment, land surveyors tend to prefer larger and heavier devices such as the brand's successful V30 series and V90 Plus.

Perhaps unsurprisingly, the V100's market performance has been moderate as the lack of UHF functionality remains an issue for most land survey users. Nevertheless, the advent of this ultra-compact GNSS receiver was welcomed by surveyors who suffered from carrying around heavy equipment and bulky cases all day long. In areas with good communication and good network RTK facilities, various users have found that the V100 reduces unnecessary physical burden. In fact, it is favoured by specific user groups, such as for machine control or GIS data collection.



Thee V100 GNSS RTK System.

Stronger contribution to land survey

Hi-Target has now developed the V200 to make an even stronger contribution to land survey. The self-developed multi-protocol UHF modem is integrated into the 5.2-inch enclosure, yet the weight is only 800g. This change of configuration allows it to receive correction data from all the popular UHF base stations. This eliminates the biggest shortcoming of ultra-compact RTK receivers. Besides that, thanks to good control of power consumption, the V200's built-in 6800mAh lithium battery can work continuously for more than 12 hours in rover mode, meeting the user's needs for a full day of land survey. Furthermore, in order to minimize physical exertion, the equipment case has also been redesigned to reduce the weight by more than 50%, making it easier to carry.



Ensuring stable signal reception.

Advanced RTK technology empowers the capability

Besides these basic changes, the innovation and application of technology has been a key factor in improving the operational efficiency. Hi-Target has incorporated a range of new features into the V200 to align it with more work scenarios and satisfy more user needs, including:

1. Full-constellation and signal tracking

When evaluating the excellence of a GNSS receiver, the ability to track and utilize more constellations and signals is an inevitable requirement. The V200 applies the new full-constellation and all satellite signal tracking technology to ensure stable signal reception. This enables the V200 to achieve stable and reliable high-precision positioning in various harsh environments.

2. Tilt compensation

The V200 GNSS receiver integrates Hi-Target's latest tilt compensation algorithm and built-in high-performance inertial measurement unit (IMU). The algorithm utilizes the attitude measurement data at high frequency provided by the IMU, combined with GNSS observations, to perform compensation calculations. As a result, the device can output reliable and high-precision RTK positioning results even when the GNSS receiver is not upright. This function solves the problem that many high-precision data acquisition situations require the equipment to be tilted.

3. Hi-Fix

In many land survey scenarios, it is inevitable that the RTK correction source will become unstable or even disconnected. The V200 is equipped with Hi-Target's Hi-Fix function which ensures that the GNSS receiver still maintains the output of high-precision RTK positioning results if the correction data is lost. This also ensures the fieldwork can continue to the maximum extent.



The V200 GNSS receiver integrates Hi-Target's latest tilt compensation algorithm and built-in high-performance inertial measurement unit (IMU).

New software features

To accompany the launch of the V200 device, new features have also been added to Hi-Target's well-known Hi-Survey Road software. Many of the improvements will provide users with a smoother, more flexible and more efficient interactive experience. For example, with the help of augmented reality (AR), the staking-out has become easier and more efficient. Meanwhile, the CAD function has been optimized to load large drawing files, improving both loading speed and smooth operation.

Conclusion

The Hi-Target V200 GNSS receiver is a product that represents a step forward in the development of GNSS receivers towards

miniaturization and lighter weight while offering full functionality. All the advanced RTK functions are integrated into this small device, which is perfectly aligned with the well-known saying: “To do a good job, an artisan needs the best tools”.



Testing the new Hi-Target V200 lightweight GNSS receiver.

<https://www.gim-international.com/case-study/hi-target-v200-a-new-lightweight-gnss-receiver-for-land-survey>
