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# Precision Agriculture & Mechanical Control

## PRODUCT BROCHURE



- GNSS Receiver Manufacturer
- Professional OEM&ODM
- Over 15-years experience in R&D and manufacturing



# ABOUT US

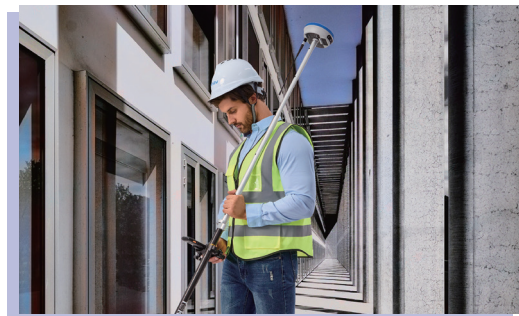
## Company Introduction

Guangzhou Toksurvey Information Technology Co., Ltd. was founded in 2019 by a team of R&D engineers. The company team has nearly 15 years of R&D background. At present, the company has nearly 2,500 square meters of office and factory, complete set of research equipment, and strong technical background.



Our company is committed to the R&D, production and sales of high-precision satellite positioning terminal products. More than 60% of the employees are engineers. Driven by technological innovation, the company maintains a steady growth rate of 60% every year.

At present, the company has successfully launched high-precision GNSS RTK (T5 series, T10 series, T20 series, T30 series and T40 series), portable RTK receiver (P8 series), high-precision CORS station (NET660 series), data controller, GNSS antenna, precision agriculture, mechanical control, and marking robot to the market. We not only provide positioning products, but also provide a series of application solutions.



## Our Targets



Make positioning more precise and easier.

**Mission**



Working together to improve global surveying quality.

**Vision**



To become a leader in the global surveying and mapping service.

**Value**



Your reliable supplier in positioning!

**Slogan**

## Fields of Application

TOKNAV products can be widely used in precision surveying & mapping, mining operations, deformation monitoring, autonomous driving and other fields. We currently have a number of mature GNSS application solutions, such as deformation monitoring, CORS network, marking robots, precision agriculture, mechanical control etc. TOKNAV products have passed CE, FCC, KC, NGS, IGS and other certifications, and are exported to more than 70 countries and regions around the world. Our products are well received in the global market, and now we have become a system integration supplier in the global market.



**Construction**



**Monitoring**



**Mapping & GIS**



**Surveying**



**Agriculture**



**Marine**

## Certifications

Antenna Calibrations									
National Geodetic Survey									
Browse Antenna Information by Company Brand and Model - Access Calibrations for All Antennas - Help Links -									
Toknav									
Individual calibrations for Antennas									
NOTE: Expand an ARP or NRP abbreviation									
Antenna Code									
TNVT10PRO									
TNVT20									
TNVT20PRO									
TNVT5									
TNVTSLITE	NONE	Top Drawing Label Side	ANTENNA ANTINFO	Toknav TSLite integrated antenna				04-JAN-24	BAM



## Electric Steering Wheel Autonomous Driving System

TAG66 is an electric steering wheel autonomous driving system. It obtains centimeter-level vehicle positioning through BeiDou high-precision positioning and adjusts the vehicle's direction through an advanced DC servo motor solution. This autonomous steering system uses an integrated controller that combines a 4G module, IMU sensor, UHF radio, and BeiDou positioning module to achieve high-precision autonomous driving. It is suitable for agricultural activities such as sowing, harvesting, spraying, mulching, plowing, and ridge making. It can effectively improve work efficiency and yield while saving fuel, seed, and labor costs.

## CHARACTERISTIC

### Integrated Controller Design

This autonomous steering system uses an integrated controller that combines a 4G, IMU sensor, UHF radio, and BeiDou positioning modules, making it easy to install and transfer between vehicles. There is no need to install additional wheel angle sensors, making installation even easier.

### High Precision

The system provides industry-standard RTK precision, combining BeiDou positioning with INS terrain compensation to ensure a pass precision of 2.5cm even in difficult agricultural terrains. This level of precision and accuracy is valuable for various agricultural activities such as plowing, sowing, and harvesting. By eliminating overlaps and skips, it can increase yield while saving fuel, seeds, and time.

### Excellent Performance

The system easily maintains a precision of  $\pm 2.5\text{cm}$  within a speed range of 0.15 to 25 kilometers per hour. With high-precision algorithms, it is very suitable for sowing, planting, spraying, plowing, and other ground operations.

### All-in-One Features

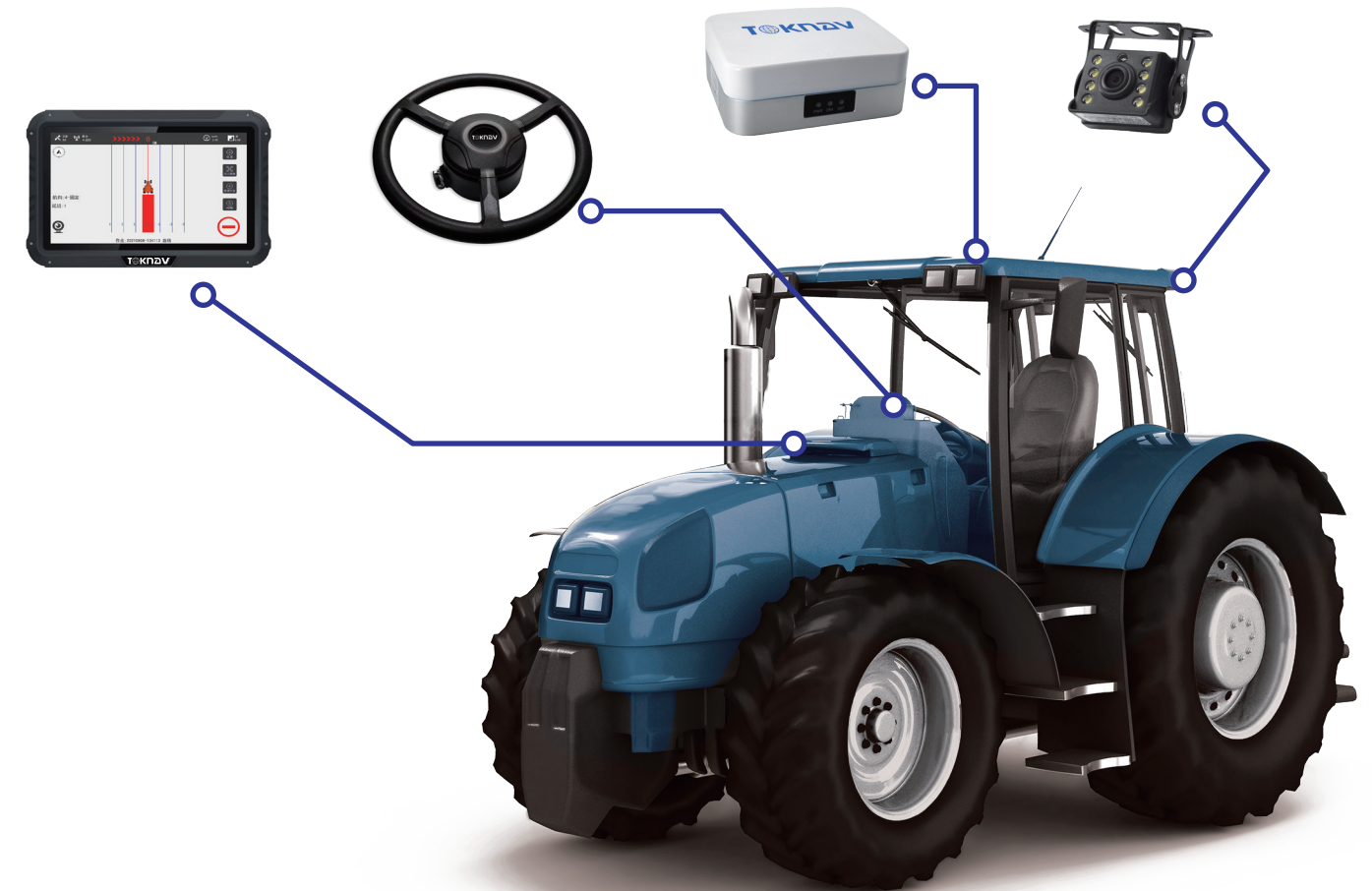
Compatible with various operating modes, including AB line, A+ line, custom curves, and angle harrowing. It supports work area statistics, work trajectory recording, data upload and download, and shared operation modes among multiple vehicles.

### Easy to Use

With the convenient installation, users can activate common functions in just a few steps, allowing them to get started quickly and learn on the go.

## TAG66

## Electric Steering Wheel Autonomous Driving System



## System composition



Intelligent Display Screen



Electric steering wheel

Supports receiving external RTK corrections via UHF radio.

Supports wheel angle sensor mode required for specific farm operations.

Supports secondary development for tighter integration of components.

## Automated GNSS Land Leveling System

TAG88 Automated GNSS Land Leveling System is a satellite positioning-based, fully automated control system for high-precision land leveling with agricultural machinery. It features 24-hour operation, a 30-kilometer coverage radius, and eliminates the need for frequent base station relocation. The system supports simultaneous operation of multiple units. Through real-time display of fill and cut volumes and automatic adjustment of the land leveler's position and attitude, it enables construction without prior staking, ensuring rapid and accurate task completion even in complex terrains, thereby enhancing efficiency, reducing rework, and increasing economic benefits.

### CHARACTERISTIC

#### Full Network Signal Coverage

The system integrates Beidou satellite, compatible with GPS, BDS, GALILEO, and GLONASS signals. The base station covers a maximum radius of 30 km, reducing the hassle of base station relocation and enabling simultaneous operation of multiple devices.

#### Intelligent Display Screen

10.1-inch high-definition display with instant multi-touch response. Protection against contamination and dust, as well as resistance to shock, magnetism, and electromagnetic interference, ensuring stable performance.

#### Multitasking: Adaptable to Various Grading Tools

The system includes tractor navigation, compatible with telescopic, ripper, paddy leveling blades, scrapers, and graders for tasks like ridging, slope scraping, and farmland leveling.

#### 24-Hour Continuous Operation

The system supports 24-hour continuous operation, capable of working in various adverse weather conditions, including daytime, nighttime, strong winds, sandstorms, and smog.

#### Real-time Map Visualization

Users can monitor operation trajectories and terrain elevations via the software, design operation routes, and achieve an intuitive understanding of the work process.

#### Automatic Terrain Recognition and Adjustment

The system automatically identifies terrain variations and adjusts the plot datum, achieving an operation accuracy of  $\pm 2.5$  cm. It can level both flat and sloped surfaces, increasing operation efficiency by 20%.

## TAG88

### Automated GNSS Land Leveling System



### System composition



Intelligent Display Screen



Electronic Control Unit

The system automatically identifies terrain variations and adjusts the plot datum. Achieving an operation accuracy of  $\pm 2.5$  cm. 24-Hour Continuous Operation.



## Dozer 3D Guidance System

TMC10 Dozer 3D Guidance System pairs high-precision BeiDou GNSS technology with construction machinery. It precisely tracks the blade's position and orientation, aligning with 3D digital plans to guide users via digital readouts or indicators. Utilizing global navigation and embedded technology, the system offers real-time control over dozing tasks, boosting accuracy, efficiency, and safety. It's ideal for road and rail grading, dam construction, riverbed leveling, and land preparation in large-scale projects and agriculture.

## CHARACTERISTIC

### High Precision

The system leverages GNSS positioning and sensor fusion, integrated with modeling algorithms and electro-hydraulic controls, for centimeter-accurate control, enhancing performance.

### 24-Hour Continuous Operation

The system supports 24-hour continuous operation and allows reliable operation at night.

### Real-time Monitoring and Control

The system uses cutting-edge sensors to track the blade's status and the worksite environment continuously. This data feeds into the control system for precise blade management, keeping operations at peak efficiency.

### Stakeless Operation with Increased Efficiency

The system integrates algorithms with 3D plans for digital guidance, removing the need for professional surveyors. It enables quick bulldozer leveling, saving labor costs and boosting efficiency by over 50%.

### Easy Installation and Operation

Featuring straightforward installation and intuitive operation, it's easy for users can quickly become proficient.

## TMC10 Dozer 3D Guidance System



## System composition



Intelligent Display Screen



Gyroscope

Manages blade lift with solenoid valves guided by navigation data.  
Achieves 2 cm accuracy in positioning.  
Facilitates the conversion and import of design specifications.



## Excavator Guidance System

TMC20 is an efficient excavator guidance system. It utilizes BeiDou satellite positioning to provide construction workers with intuitive real-time graphical and numerical information, enabling more precise and efficient construction. This system is suitable for various engineering scenarios, such as underwater riverbed excavation, riverbed dredging, riverbank slope trimming, and high-speed track construction at test sites. It can significantly reduce the number of on-site auxiliary personnel, achieve one-person-one-machine construction, and lower labor costs. It is a powerful tool for improving construction quality and efficiency.

## CHARACTERISTIC

### High-Precision Intelligent Display Screen

This industrial-grade vehicle-mounted computer is designed for rugged durability. It features an integrated high-precision GNSS module for accurate positioning and orientation. With an IP66 protection rating and superior shock resistance, it's built to withstand tough conditions. The device supports multiple communication methods, including dual-SIM full-network connectivity. Its high-resolution, high-brightness screen ensures clear visibility, making it ideal for a range of demanding work environments.

### Dynamic IMU Sensor

This dynamic IMU sensor offers high precision and consistency in motion sensing, along with an ultra-wide temperature range. It's designed to meet the stringent environmental demands of engineering applications.

### High Precision

TMC20 has a planar accuracy of up to 2cm, and a high accuracy of 3cm for fill and dig volumes. The high-precision guidance system reduces the risk of rework due to under-digging or over-digging. It meets various construction requirements (such as underwater riverbed excavation, riverbed dredging, riverbank slope trimming, high-speed track construction at test sites, etc.), and the construction quality is further enhanced.

### Multi-Scenario Application

Through inertial navigation and tilt sensing technology, combined with centimeter-level high-precision positioning, it obtains the three-dimensional coordinates of the boom, arm, and bucket to achieve precise construction guidance in all-weather and all-scenario conditions, such as ditch digging, slope trimming, riverbed excavation, night, rain, snow, and heavy fog.

## TMC20

## Excavator Guidance System



## System composition



Intelligent Display Screen



Dynamic IMU Sensor

Reduce rework costs due to over-digging and under-digging, save fuel, and reduce costs.  
Construction is possible 24 hours a day, day and night.  
Automatically calculates the area, making the working area clear at a glance.