

PRODUCT CATALOG



AVAILABLE ON SOCIAL MEDIA



AUTHORIZED DISTRIBUTION PARTNER

23S107

Hi-Target International Group Limited

ADD: BLDG 13, Tian'An HQ Center, No.555 North Panyu RD. Donghuan Block, Panyu District, 511400 Guangzhou, China
www.hi-target.com.cn +86-20-28688296 sales@hi-target.com.cn

©2023 Hi-Target International Group Limited.



Established in 1999, Hi-Target is a pioneering high-precision surveying and mapping instrument brand that has achieved a successful listing in China. Hi-Target is committed to investing heavily in research and development and specializes in providing a comprehensive range of integrated commercial solutions for various industries.

Our offerings include surveying and engineering solutions, Mobile GIS, Hydrographic Survey Solutions, Monitoring Solutions, Machine Control Solutions, Precision Agriculture Solutions, and Correction Services.

With a global workforce of approximately 2,500 employees, Hi-Target boasts a well-established network of 20 subsidiaries, 26 branches, and over 200 partners in more than 100 countries/regions. This extensive network allows us to efficiently serve and support our valued customers.



Established in 1999



Guangzhou HQ



Stock code: 300177



Subsidiaries



Partners



Staff

CONTENTS

Survey and Engineering	02
Mobile GIS	17
Hydrographic Survey Solution	24
Smart Monitoring Solution	28
Machine Control Solution	33
Correction Service	37

Survey and Engineering

Land survey is one of the indispensable technical means in topographic survey, land monitoring and construction engineering. In order to provide more reliable and effective solutions, Hi-Target focuses on the innovations in GNSS RTK, total station and optical level technologies continuously. Advanced engines, high-precision algorithms and specific surveying technologies are the guarantees for users in the field work. Even in harsh environments, operators can obtain satisfactory measurement results with Hi-Target products. Integrated land survey solutions will greatly improve the quality of surveyors' daily work.

Visual Positioning Technology Empowers the New IMU GNSS RTK

- Equipped with dual cameras, vRTK is Hi-Target's first lightweight and innovative visual RTK receiver product, which not only enables non-contact image surveying, breaking through the objective constraints of previous work, but also improves the speed of stakeout with the function for Live View Stakeout. It greatly improves the work efficiency for engineering users.

KEY FEATURES



Upgraded IMU:
Tilt Survey with
Auto Installation



AR
Measurement



Live View
Stakeout



Image Survey



Full-Constellation
Tracking



Advanced
RTK Engine

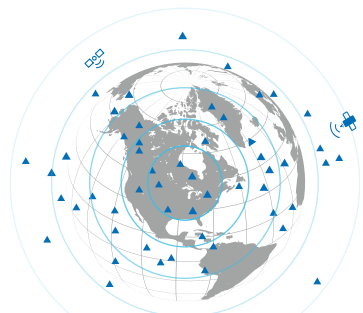
Image Positioning Technology

The new image survey function achieves non-contact measurement, which greatly enhances the available range of GNSS, realizing more efficient and safe operation. Based on Android's high-performance image processing technology, vRTK with camera for the rear view, can be used to obtain precise coordinates in real time, in the range of 2-15 meters, with an accuracy of 2-4 cm.



Brand-new Stakeout Experience

The camera beneath enables AR live-view stakeout with an accuracy of 2cm, saving time and effort in reaching the stakeout point.



Strong Signal and High-Quality Data

A new generation of GNSS engine supports the new frequency points B1C, B2a, and B2b RTK decoding of the Beidou-3 satellite. With the introduction of multi-frequency anti-jamming technology and multi-step adaptive filtering technology, it features strong signal, high-quality data, fast fixing, and high accuracy.

Abundant Industry Data Results

The different types of data results obtained from vRTK are compatible with third-party data processing software, meeting the needs of different industry applications. Moreover, vRTK is newly compatible with mainstream modeling software, making 3D modeling as simple as possible.



Project Background

The UAV Studio and the School of Architecture and Engineering of a school in Hunan Province, China, have carried out accurate 3D modeling work on Huang Xing's former residence and Xu Guangda's former residence. We hope that by using the research results obtained from the high-definition aerial photographs captured by unmanned aerial vehicles (UAVs) combined with data analysis from ground-based remote sensing technology, future generations will have a better understanding of their stories, while preserving their cultural heritage for future research.

Pain Point Analysis

1. Traditional 3D modeling relies on UAV tilt photography data, but has limitations:

- 1) It cannot capture detailed facade textures due to angle and distance issues.
- 2) It is difficult to capture the building texture under the eaves.
- 3) Trees can hinder the building facade texture capture.

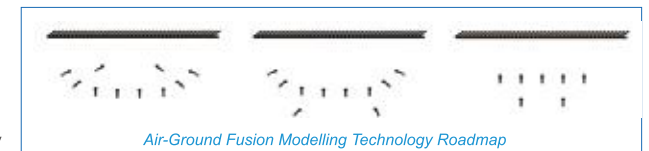
2. The two commonly used methods of supplemental photography of building facades and details still do not meet the needs of the project:

- 1) Manually controlling the drone to take supplementary shots: this is only applicable to tall buildings with sufficient headroom around them.
- 2) Manual hand-held ordinary camera shooting on the ground: the post-processing is very cumbersome, and there is a big difference between an ordinary camera and an aerial camera.

WorkFlow

1. Physical Application

- 1) UAV tilt photography
- 2) vRTK ground-based close-range photography



2.Data processing



Hi-Target vRTK Separate aerotriangulation Results
(Huang Xing's Residence)

Combined map of the aerotriangulation results
(former residence of Xu Guangda)

Result

The generated 3D model reveals that the additional images captured by vRTK greatly improve the texture of the building facade, complementing the missing eave elements and tree-shaded building facade modeling from the UAV tilt photography.



Overall effect of the 3D model of
Huang Xing's former residence

Overall effect of the 3D model of
Xu Guangda's former residence

Compared with the 3D model generated only by the UAV tilt photography, the 3D model generated in this case is able to clearly show the detailed structure of the building.



Comparison of the model of the part of Huang Xing's former residence behind the house obscured by trees
(The left is the result of the 3D model after fusing drone and Hi-Target vRTK data The right is the result of the 3D model from UAV tilt photography)



Comparison of the model of the former residence of Xu Guangda to let the title monument
(The left is the result of the 3D model after fusing drone and Hi-Target vRTK data The right is the result of the 3D model from UAV tilt photography)

Compact GNSS RTK with Long Endurance for Accurate Stakeout

- Equipped with an upgraded high-definition starlight camera, V500 brings out an excellent visual stakeout experience in low-light conditions. The compact and lightweight design makes V500 a feasible and portable choice for engineering personnel in collecting data and improving positional accuracy.

KEY FEATURES



Upgraded IMU



AR Measurement



Live View Stakeout



Advanced RTK Engine



Portable and compact



24 Hours Ultra-Long
battery life



Built-in High-precision Tilt Survey

Based on the new generation of IMU, initialization occurs automatically at the startup without obtaining a fixed solution.



Full Constellation and Full Frequency

Advanced GNSS SoC chip features 1408 channels, supporting new frequency points B1C, B2a, and B2b RTK decoding for Beidou-3 Satellites.



Better AR Stakeout Experience

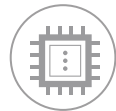
Visual positioning technology to find points with ease. The combination of virtual and reality by overlaying the design files with the real scene improves stakeout efficiency.



9-axis IMU GNSS RTK

- V200 GNSS RTK Receiver brings superior performance and high efficiency to support your fieldwork with reliable solutions. Its deployment of the advanced RTK engine and new-generation IMU guarantees a 25% performance improvement even in the most demanding environments. Thus you can count on Hi-Target V200 for better productivity.

KEY FEATURES



Advanced RTK
Engine



Full-Constellation
Tracking



Web UI



Built-in Radio



NFC



Compatibility with
third-party software



More Portability

Equipped with an ultra-light EPP material instrument case of a high anti-strong impact, shock and impact resistance and a centering rod that can be contracted to 1.25 m, making it durable and portable in the fieldwork.



Greater Flexibility

It can bring accurate and reliable results and boost efficient fieldwork with self-developed built-in IMU and core algorithm.



Higher Accuracy and Precision

Equipped with the High-Performance Patch Antenna, enhances the low elevation angle tracking capabilities and keeps it maintaining a high gain for higher elevation satellites while tracking low-elevation satellites.



More Stability

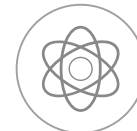
Hi-Target Hi-Fix enables continuous connectivity and quality results even if you lose the signal while using the RTK base station or VRS network under extreme circumstances.



High Quality Scalable GNSS RTK with HD Touchable OLED Screen

- Benefiting from the next-generation GNSS engine, unlimited communication technology and innovative design, iRTK5, the high-quality scalable GNSS receiver, provides industry-leading GNSS RTK surveying solutions.

KEY FEATURES



Next-Generation GNSS Engine

With the full-wave GNSS antenna and the next-generation GNSS engine, it supports full constellation by 336 tracking channels, enhanced initialization speed and anti-noise performance.



ProPoint (optional)

Brand-New ProPoint GNSS engine allows you to expand the boundaries of GNSS performance, with at least 30 per cent improved performance in challenging GNSS environments.



L-Band

Connected to 3rd-party L-Band corrections services, the iRTK5 GNSS receiver provides accurate, sub-decimeter positioning in all regions where RTK Network, GSM coverage or traditional GNSS base station are not available.



Revolutionary Tilt Survey with Built-in IMU

You can benefit from the calibration-free tilt compensation technology, which means that once reaching the surveying points, you can immediately start the operation without centring and the error is less than 2 cm within 30° inclination. The function also provides resistance to the interference of magnetic disturbances, ensuring the high accuracy of data. Compared with bubble leveling, it has boosted working efficiency by 20%.



Hi-Fix Technology

It can reduce downtime in the field with continuous RTK coverage during correction outages from an RTK base station or VRS network.



360° Omni-directional Antenna and Multi-protocol Radio

The top-mounted radio antenna extends the radio working range and enables full omni-directional communication, making the distance of data transmitting and receiving extend to 20% longer. Multi-protocol radio, support Hi-Target, TRIMTALK450S, TRIMMARK III, TRANSEOT, SATEL-3AS, etc.



Web UI Management

A built-in Web management system for real-time controlling and free configuration of the receiver. Users can check the status and information, make basic settings, upgrade firmware and download data, etc.



HD Touch OLED Screen

The 1.3-inch newly-designed color touch screen with 240*240 resolution allows users to quickly check and set the receiver status for easier fieldwork.



iRTK4

A Simple but not Simplistic GNSS System

- iRTK4 is a full-featured, intelligent GNSS receiver system equipped with an integrated new-generation full-frequency antenna and advanced multi-channel engine, allowing users to attain accurate, reliable solutions. Users can also take advantage of calibration-free tilt compensation technology without leveling the survey pole to collect point data in more places. In addition, the Smart Base function in iRTK4 automatically pairs the Rover with the Base by using Hi-Target global servers and ensuring communication by providing the best connection. The iRTK4 system can maximize your productivity in unprecedentedly challenging environments with these powerful features and Hi-Survey Road Field Software.

KEY FEATURES

- Advanced RTK engine**
Flexible Satellites signal management helps you to get a more accurate solution and provides a 20 per cent improved performance in challenging GNSS environments.
- IMU**
The calibration-free tilt compensation technology assists you to survey or stake out points accurately without leveling the pole, which boosts the working efficiency by 20 percent, with error that is less than 3cm within a 45° inclination.
- Fast-Charge**
With the fast-charge capability, it will take you only 50 minutes to charge the battery up to 50 per cent when using a 45-watt adapter, greatly saving your time.
- WebUI**
It is a fast and efficient way to monitor and control hardware devices, offering accesses to the most commonly-used features via the existing web browser on your device, so there is no need to download or install any other software.
- Hi-Fix Technology**
It can reduce downtime in the field with continuous RTK coverage during correction outages from an RTK base station or VRS network.

Smart Base

Greatly optimizes the working mode setting, automatically pairing your Base and Rover by using the Hi-Target global service, extending your work range and saving you time.

Auto Setting Auto Pairing

Hi-Target Global Service

New Generation External Radio

HDL-460A provides reliable data communications for mission-critical applications that require a combination of stability, supreme performance and long range.



V30 Plus

Smart and Portable RTK System

- V30 Plus GNSS RTK system adopts modularized design, so as to enable users to change into different differential transmission modules according to various requirements. Meanwhile the designed self-diagnosis function can automatically check the working status of all hardware and software, and arouse the problem part by its intelligent voice messenger in case of some problems.

KEY FEATURES

- Multi-Constellation GNSS Engine**
Auto-selected satellite constellations, unique boundary control algorithm provide reliable location in harsh environments.
- Tilt Survey and Electronic Bubble**
The optimized tilt survey algorithm and procedure electronic bubble can achieve conner points measurement by shaking the receiver.
- Hi-Fix Technology**
Reduce downtime in the field with continuous RTK coverage during correction outages from an RTK base station or VRS network.
- Practical Interface**
Mini USB, USB Quick Upgrade Firmware, 8G Storage, Support OTG, NFC Quick Connection.



New iHand55

Professional Field Controller

- The iHand55 Handheld Controller is a professional field controller with a big vision. More features of the latest Hi-Survey Software contribute to achieving high intelligence. Keeping robust and reliable in fieldwork under any conditions, iHand55 is a perfect choice for your survey work.

KEY FEATURES

Android 11 AR Measurement







1.8m Drop-proof 5.5" display

IP68 Waterproof and Dustproof 3GB RAM+32GB storage

Long Battery Life Qwerty Full Keyboard

Hardware Configuration	OS: Android 11 Processor: CPU: 8core; 2.0 GHZ Storage: 3GB RAM+16GB ROM; T-Flash memory card, up to 128GB Display: 720*1440, 5.5", 500nit, bright Outdoor Color capacitive multi-touch screen (with touch pen, can be operated with gloves) Input Configuration: Qwerty full keyboard, number / letter separate, professional custom smart input method
Communication Interface	Network modem: FDD-LTE, TDD-LTE, TDSCDMA, WCDMA, GSM Cellular mobile: 4G, Dual Nano-SIM WiFi: IEEE 802.11 a/b/g/n/ac, Wapi, AP (2.4G / 5G) Bluetooth: BT5.1, BLE, NFC USB: Type-C interface, OTG, supports fast charging (5V,3A)
Physical	Weight: 406 g(with battery) Size: 221 mm*78 mm*16.5 mm Operating temperature: -20℃ ~ +60℃ Storage temperature: -30℃ ~ +70℃ Free fall: 1.8 m Shock and vibration: MIL-STD-810H
GNSS Features	GNSS antenna, GPS, GLONASS, BDS, AGPS
Power Supply	Battery: 9200 mAh internal Duration: ≥ 14 hours Charging time: 4 h (typical)

Product Comparison

Model		vRTK	V500	V200	iRTK5	iRTK4	V30 PLUS
Picture							
Satellite Signal Tracking	Channels	1408/800+(optional)	1408/800+(optional)	1408/800+(optional)	1408/800+(optional)	800+	800+
	GPS	●	●	●	●	●	●
	GLONASS	●	●	●	●	●	●
	BDS	●	●	●	●	●	●
	GALILEO	●	●	●	●	●	●
	QZSS	●	●	●	●	●	●
	SBAS	●	●	●	●	●	●
	PPP-B2b Service	●	●	●	●	—	—
Communication	Cellular Mobile	●	—	—	●	●	●
	Wi-Fi	●	●	●	●	●	●
	Bluetooth	●	●	●	●	●	●
	Internal Radio	●	●	●	●	●	●
	NFC	●	●	●	●	●	●
Physical	Internal Data Storage	8 GB	8 GB	8 GB	16 GB	8 GB	8 GB
	Dimensions	130mm×79mm	130mm×68mm	132mm×67mm	158mm×98mm	156mm×77mm	164mm×83.5mm
	Weight	0.97 kg	≤0.75 kg	0.8 kg	1.2 kg	1.2 kg	1.4 kg
	Screen	—	—	—	●	●	—
	Internal Battery	6900 mAh	6800 mAh	6800 mAh	6800 mAh	6800 mAh	5000 mAh
Environment	Operation Temperature	-40℃~+75℃	-40℃~+75℃	-30℃~+70℃	-40℃~+75℃	-30℃~+70℃	-45℃~+75℃
	Water/Dustproof	IP68	IP68	IP67	IP67	IP68	IP67
Others	Tilt Survey	IMU	IMU	IMU	IMU	IMU	Tilt Survey 2.0
	WebUI	●	●	●	●	●	●
	Hi-Fix	●	●	●	●	●	●

* The scope of PPP-B2b services only covers Asia-Pacific region and the surrounding areas.

*NOTE: ● means YES, — means NO.

Hi-Survey

Survey Data Collection Software

- Hi-Survey is an Android software that is designed for all types of land survey and road engineering projects in the field. It is compatible with Hi-Target professional controllers, Android phones, tablets and other third-party Android devices. It is a sleek and easy-to-use software that supports the operating of big data with built-in tools. With customized industrial application solutions, more possibilities are created for users.

KEY FEATURES



High accuracy and good reliability with various algorithms even in tough environments.
Supporting tilt survey, quasi-dynamic technology, electronic bubble, detail survey, time mode static survey, etc..



Integrated professional measurement functions for engineering application. Providing road functions, DTM surface operations, Cross-projects points selection, DXF and DWG format, Google map, OGC map service of WMS, WMTS, and third-party rangefinders, etc..



Strong interaction function to empower every surveyor.
AR stakeout, QR code scanning, COGO, FTP transmission, multi-format support, etc..



ROAD ENGINEERING SURVEY

- Integrated road function that supports the LandXml format in road staking out. The Hi-Survey Road supports road design, staking out and store cross-section.



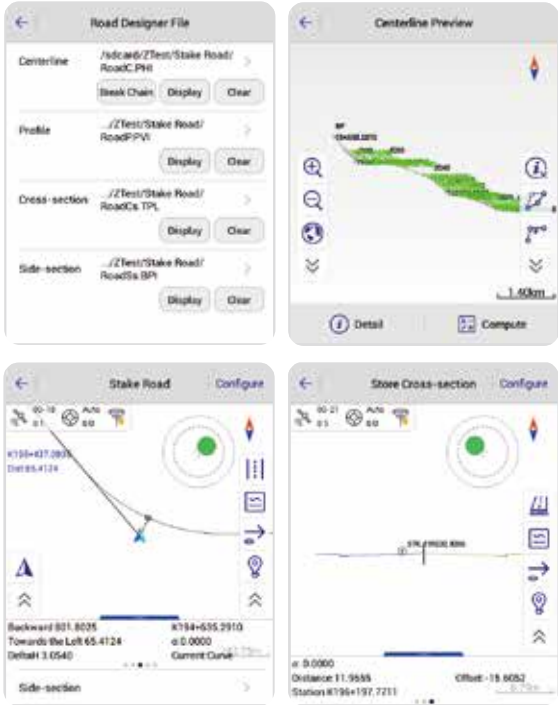
Design and apply the road in the Road Design, including the Centerline, Profile, Cross-section and Side-section.



View the graphic, confirm the location of stakeout points, and stake out the road in the Stake Road.



Survey and store cross-section points in the Store cross-section to get the undulating terrain.



Hi-Target Business Center

All-in-One Post-Processing Desktop Software



- HBC, the all-in-one post-processing desktop software, supports processing multi-sourced data from all kinds of surveying equipment, including RTK, total station, UAV, GIS, 3D laser and levels. This one-stop service simplifies the workflow and improves the efficiency of field data processing. HBC enables you to finish the joint-operation on multiple pieces of equipment in projects more easily, helping to fix various problems, like switching between lots of different processing software and data results that are not interconnected, as well as complex, cumbersome workflows.

JOINT WORK

HBC combines all the procedures of field survey:

Preparation

Surveyor organization (team-building management), coordinate system setting, RTK project control point/stake point input, road design and DTM surface design.

Field survey

GNSS static survey / RTK survey (surveying control).

Post process

GNSS static data processing, RTK Data processing, TS data processing, post mapping.

FUNCTION



GNSS Data Processing

Full constellation support:
GPS/GLONASS/Galileo/BeiDou
Supports the batch processing of more than 100 baselines
Greatly improved accuracy and speed



Mapping

Joint processing of various data:
GNSS static data/RTK/Total station data
Massive data management:
Supports GB level data import and smooth the process of browsing



Total Station Data Processing

Various data compatibility:
Hi-Target total station data/COSA traverse data/South coordinate point data
Adjustment:
Plane adjustment/plane + elevation adjustment Supports visualization of traverse
Export of adjustment results

RTK & Joint Work

- Multi-task management:
Creates/imports multiple RTK project files
- Data preparation: Stake point/control point/graphic
- Code/CAD
- Distribution of measurement tasks
- Field data return to office
- Mapping
- Inspection/export of survey results

Road Design

- Batches multiple road designs: More convenient and efficient for data import
- Supports a variety of road file formats
- Line information is clear at a glance:
- Centerline/Profile/Cross-section
- Compatible with a more complex road file
- Data check, pile-by-pile table output

DTM

- Variety of DTM formats: Hi-Target/-Cass/LandXML
- Batch import point data
- Quick create TIN
- Earthwork calculation and result output



HTS-720

Android Total Station

- HTS-720 features a 5.5-inch touch high-definition large screen, powered by the Android operating system and our brand-new Android measurement software. With the addition of a built-in camera, measuring and stakeout tasks have never been easier.

KEY FEATURES



Android 9.0



5.5 inch touch screen



EDM 1000 m



Wireless Connection



8 MP Camera



Type-C



Qualcomm CPU



2 GB RAM, 16 GB ROM

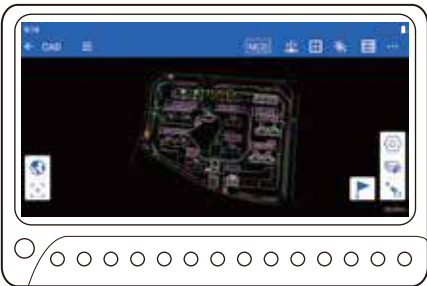
Intuitive T-Survey software

- Quick settings without switching back and forth between pages. Fast, simple, and convenient operation.
- Comprehensive functions specifically designed for different measurement scenarios.
- Supporting updating to the latest version online.



Visual Stakeout

Reducing frequencies of staring at the telescope and finding points easily through the image guidance, which is accessible to both experienced and novices.



CAD Stakeout

Enabling millisecond-level dynamic response, the high-performance CAD engine makes selecting stakeout points and lines in one click possible, and makes stakeout more intuitive.



HTS-521^{L10}

HD Color Screen Long Range Total Station

- HTS-521^{L10} adopts a high-definition color screen to provide better human-computer interaction. The new optical design and absolute coding technology improve the measurement performance. High-precision compact bead shafting and sealed encoder disk enhance accuracy and stability. Built-in abundant measurement programs and comprehensive maintenance procedures will provide a new measurement experience.

KEY FEATURES



New EDM
Reflectorless range 1000 m.
Speed down to 0.3 s.




Colorful Screen
2.8-inch 240*320 pixel,
clearly visible in sunlight.



Auto Sensor
Get temperature and pressure automatically.
One-click access.



Stable Hardware Design
Dual-axis tilt sensor.
High-precision bead shafting.Sealed encoder disk.




Data Transmission
USB cable and U disk.
Format: (*.csv), (*.txt),(*.dat),(*.dxf),(*.gt7),(*. htf) etc..



Trigger Key
More efficient and accurate.



Power
3000 mAh high-capacity Li-ion battery, LED display, Type-C charging.
Battery life exceeds 18 h.



Software Connection
Support connection with SurvCE and Hi-Survey Road.
Support secondary development.

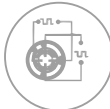


HTS-420R


The New Durable Total Station

- Upgraded by a new accurate EDM and built-in temperature and air pressure sensors, the new HTS-420R is going to provide a better experience for users.


KEY FEATURES




Dual Axis Compensator
Configured with advanced dual-axis compensator for auto error elimination, within the tilting range between +3' and -3'.



Temperature and Air Pressure Sensor
A built-in temperature and air pressure sensor provides precise temperature and pressure readings, guaranteeing precise PPM for accurate measuring on demand.



Long Reflectorless Ranging
Up to 600 meter long reflectorless range surveying with just one click.



Rugged Waterproof Design
Waterproof and dustproof IP65 design handles all kinds of tough environments.



Product Specifications

		HTS-720	HTS-521 ^{L10}	HTS-420R
Angle Measure	Accuracy	2"	2"	2"
	Single Prism Range	5000 m/6000 m	5000 m/6000 m	3000 m
Distance Measurement	Accuracy with Prism	2 mm+2 ppm	2 mm+2 ppm	2 mm+2 ppm
	Reflectorless Range	1000 m	1000 m	600 m
	Accuracy with Reflectorless	3 mm+2 ppm	3 mm+2 ppm	3 mm+2 ppm
Compensator	Working Range	Dual axis±6'	Dual axis ±3'	Dual axis ±3'
	Setting Accuracy	1"	1"	1"
Display	Graphics	LCD 720x1440	LCD 240x320	LCD 280x160
	Sides	Dual side	Dual side	Dual side
Power Supply	Battery Capacity	5000 mAh	3000 mAh	3000 mAh
	Duration	8 hours typical	18 hours typical	10 hours typical
	Weight incl. Battery	5.5 kg	5.5 kg	5.5 kg
Hardware	Bluetooth	Yes	Yes	Yes
	Memory	RAM: 2 GB, ROM: 16 GB	80,000 points	80,000 points
Industry Level	Rugged Design	IP55	IP65	IP65

Mobile GIS

With the development of smart cities, precision agriculture and data visualization, GIS technology begins to play an important role in data acquisition and management. Hi-Target is dedicated to the research and development of portable GIS data collection products, including high-performance GIS handhelds, tablets and mobile GNSS receivers. Compact and rugged design greatly facilitates single person operation in the field. Hi-Target combines professional algorithms and intelligent software to provide users with more possibilities in data collection, management, query and application through various solutions.

Qbox 20

High-Precision GNSS Receiver for Mobile Works

- Qbox 20 GNSS Receiver is a wearable device that supports high-precision positioning, network transmission of positioning information, and is suitable for long-term outdoor operations.

KEY FEATURES



Free Your Hands

Small and compact, with 100*60*25 mm in size and 120 g in weight, wearable design to free your hands

Save Your Time

A removable 2800 mAh battery, offering overall battery life of 8 hours; also equipped with a charging stand that supports charging two batteries simultaneously

Boost Your Productivity

Supporting 2G/3G/4G network, able to communicate with and be controlled by other devices through Bluetooth

TECHNICAL SPECIFICATIONS

	Product Model	Qbox 20
GNSS Feature	Positioning Technology	Channel: 184 GPS: L1, L2 GLONASS: L1OF, L2OF BEIDOU: B1, B2 GALILEO: E1, E5 SBAS QZSS
	Initialization	30 s (Typical)
	Autonomous	3 m
	SBAS	1-3 m
	RTK	5 cm+1 ppm
	Update Rate	1-5 Hz
System Configuration	OS	RTOS
	Processor	Cortex-M3
	Storage	32 MB
	LED Indicators	Battery Capacity, CORS and server connection status indicator
Data Communication	Network	FDD LTE: B1/B3/B5/B8 TDD LTE: B38/B39/B40/B41 DC-HSPA+/HSPA+/HSPA/WCDMA: B1/B5/B8/B9 GSM/GPRS/EDGE: 1800 MHz/900 MHz
	Bluetooth	Bluetooth 4.2
	USB	Type-C
Battery	Capacity	3.8 V, 2800 mAh
	Fast Charge	3 hours
	Operation Time (Continuously connecting CORS under Data Collector Internet working mode)	8 hours (single battery)
	Encryption chip	Support
Physical	Proof	IP65, anti 1.5 m free drop
	Size	100*60*25 mm
	Weight	120 g (with battery)
	Operating temperature	-30~+70°C
	Storage temperature	-40~+80°C

Qpad X8

High-Precision Rugged Tablet

- Compact and portable, the Qpad X8 integrates the high-precision GNSS RTK algorithm to provide users with a consumer-grade smart tablet experience for GIS data collection in various industries. It's rugged with exquisite design and structure to achieve industrial-grade protection that can withstand tough environments, greatly facilitates data management and application in the field.

KEY FEATURES



Rugged design with IP67, anti 1.2m free drop.



8 inches touchable highligh screen, 1200 x 1920 resolution.



Professional RTK engine with detachable spiral antenna.



Open platform for 3rd party software applications.

Qmini A10 Pro

High-Precision GIS Handheld Collector (with Intercom Function)

- Qmini A10 Pro provides a combination of Galileo positioning, dual-mode intercom, 4G smartphone, with background multi-network interconnection and other functions. It is small with complete functions and a high level of protection. Besides, it is a new type of rugged centimeter-level precision intelligent terminal product. This device can be widely used in industries, such as land and water resource inspection, land survey and electricity power inspection, etc..

KEY FEATURES



High and stable positioning accuracy of up to 2 cm

- Removable spiral GNSS antenna



UHF digital intercom + DMR analog intercom

- Intercom distance can reach 5km
- Support radio relay



Super performance

- Android 8.1
- 8 core 2.0 GHz high-speed processor, 6 GB RAM+64 GB ROM
- 5.5-inch outdoor FHD screen, resolution 1920 * 1080



Military quality

- IP67, anti 1.5 m drop
- 5500 mAh battery with 10-12 hours of battery life
- Can normally work at -20 C

TECHNICAL SPECIFICATIONS

	Product Model	Qpad X8
Configuration	OS & Processor	Android 8.1 2.0 GHz, 8 Core high speed processor
	Storage	RAM 6 GB, ROM 64 GB, T-Flash Card 128 GB
	Display	8 inches glare resistant, touchable screen
	Resolution	1920×1200, readable under the sun
	Camera	13 M Pixels rear camera, 8M pixels front camera, auto focus, highlight LED flash
	Build-in Sensor	G-Sensor, electronic compass, barometer, gyroscope, light sensor, distance sensor
GNSS Feature	Positioning Technology	GPS L1, BDS B1, GLONASS L1, Dual constellation system: GPS+GLONASS or GPS+BDS
	Channels	184
CM Version	Positioning Technology	GPS L1C/A L2C, GLO L1OF L2OF, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C SBAS
	Accuracy	Single positioning 2 m; Network RTK≤5 cm
Data Communication	Dual SIM	Support, Nano SIM
	Network Type	TDD-LTE/TD-SCDMA/FDD-LTE/WCDMA/GSM/CDMA/EVDO
	WIFI	IEEE 802.11b/g/n, AP, Wapi
	Bluetooth	Bluetooth 2.0/ 4.0, BLE
	USB	Type C, OTG function
	NFC	Support
Battery	Capacity	3.7 V, 10000 mAh
	Quick Charge	Support
Physical Characteristics	Size	220 mm*130 mm*18.5 mm
	Weight	600 g (with Battery)
	Temperature	-40°C ~ +75°C (Working); -50°C ~ +85°C (Storage)
	Dustproof & Waterproof	IP67, anti 1.2 m free drop

INDUSTRIAL APPLICATION



Land and water resource inspection



Electricity power inspection



Construction







Pipeline



Forestry



Agriculture

		Qmini A10	Qmini A10(CM)	Qmini A10(Pro)	Qmini A10(UWB)
	Product model				
GNSS Feature	Positioning Technology	GPS GLONASS BEIDOU	Channel: 184 BEIDOU: B1, B2	GPS: L1, L2 GALILEO: E1, E5	GLONASS: L1OF, L2OF QZSS L1C/A L2 SBAS
	Initialization	30 s (Typical)		30 s (Typical)	
	Autonomous	5 m		3 m	
	SBAS	—		1-3 m	
	RTK	—		5 cm+1ppm(with spiral antenna) 2 cm+1ppm (with AT-35101H)	
	Update Rate	1Hz		1-20 Hz	
	UWB	—		—	10cm
System Configuration	Operating System	Android 8.1 GMS certified			
	Processor	2.0 GHz, 8 core high-speed processor			
	Storage	RAM 6 GB, ROM 64 GB, supports 128 GB T-Flash card			
	Display	5.5 inches outdoor FHD screen, Corning Gorilla Glass 3			
	Resolution	1920×1080, 500 lumens			
	Touch Screen	5-point touch, support capacitor glove operation			
	Camera	8M pixel front camera, 13M pixel rear camera, autofocus, highlight LED flash			
Data Communication	Sensor	Accelerometer, distance sensor, light sensor, Angular velocity sensor, geomagnetic sensor, barometer			
	Network Type	GSM: 850/900/1800/1900 EVDO: BC0 WCDMA: B1/B2/B5/B8 TDD-LTE: Band34/Band38/Band39/Band40/Band41 FDD-LTE: Band1/Band3/Band4/Band5/Band7/ Band8/Band12/Band20			
	WIFI	IEEE 802.11b/g/n, AP, Wapi			
	Bluetooth	Bluetooth 4.1, BLE			
Battery Feature	USB	Type-C, support OTG			
	Capacity	3.7 V, 5500 mAh			
	Fast-Charge	3 hours			
Modules	Operation Time (Normal brightness, positioning and connecting internet)	10-12 hours	10-12 hours	9-10 hours	10-12 hours
	Intercom (400-470MHz, 2W)	—	—	UHF analog intercom + DMR digital intercom	—
	Encryption chip	Support			
Physical	Proof	IP67, anti 1.5m free drop			
	Size	165 * 85* 18mm			
	Working temperature	-30~+70℃			
	Storage temperature	-40~+80℃			
	Weight	339 g	346 g	358 g	353 g
	Explosion-proof certification	—	—	Exib IIB T4 Gb	—



Application of High-Precision Positioning Terminal in Safety Protection of Substation Personnel

Project Background

Traditional substation operations lack technical protection and efficient control. This deficiency leads to delayed safety warnings, unmonitored operations, and potential casualties or property losses. Hi-Target, commissioned by a client, upgraded personnel safety protection at a State Grid substation to ensure operator safety.

Pain Point Analysis

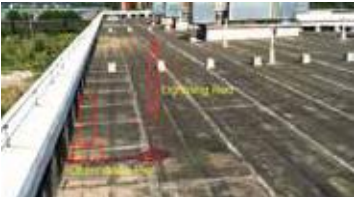
- The substation's complex environment and electromagnetic interference cause inaccurate equipment positioning.
- The project must solve the integration of indoor and outdoor positioning, as traditional methods can't achieve this on one device.
- The project demands highly accurate positioning equipment and real-time intrusion alarms for operators in the area.

WorkFlow

I.Base station and UWB base station construction

1. Base station construction

- Site selection and survey
- Observation pier construction
- Data center equipment installation and high-precision solution software deployment
- Accuracy verification



Site selection and site survey

2. UWB base station construction

II.High-precision map acquisition (substation data acquisition)



UWB base station installation

Result

By using a variety of Hi-Target high-precision positioning terminals, the functions realized are as follows:
Personnel location positioning: Managers can use the Hi-Target high-precision smart helmet Qbox S30, high-precision cell phone Qmini A10 (UWB), and UWB work card to view the real-time location and action trajectory of operating personnel, obtain personnel information, and perform visual command and dispatch.

Power equipment inspection: The high-precision cell phone Qmini A10 (UWB) enables correlating work plans, creating equipment protection records, and conducting standardized inspections on lines, inspection points, and equipment.

Operation safety warning: The safety helmet and UWB work card enable precise indoor and outdoor personnel positioning. They also allow the creation of two and three-dimensional electronic fences, with entry and exit alarms.

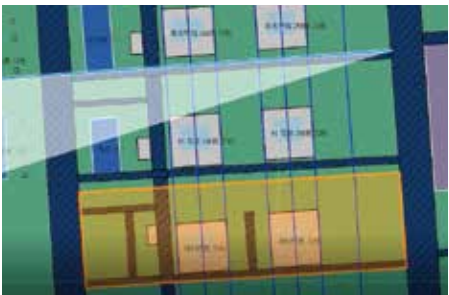
Remote command assistance: The safety helmet supports audio and video calls, allowing communication between the command center and the helmet. It also supports voice intercom, either one-on-one or in groups.



Power Equipment Inspection



View history track



Delineation of the electronic fence



Remote command assistance

Hydrographic Survey Solution

More than 70% of the earth is covered by water, deeply involving in the development of human civilization. To know more about the water covered area and contribute to the life and ecosystem, Hi-Target provides products from single beam to multibeam, from single point to point clouds, from analog signal to images, from big vessel to unmanned vessel platform...



HD-MAX

Dual Frequency Echo Sounder

- HD-MAX dual-frequency echo sounder is widely used in sediment measurement for dredging and other water depth measurement projects in shallow water, deep water, and high sandy water. The full-featured Hi-MAX Sounder hydrographic software integrates bathymetry, navigation, and post-processing. Equipped with a 17" large screen and industrial computer platform, HD-MAX offers a set of reliable solutions for hydrographic offices around the world with a robust dual-frequency transducer and a user-friendly survey pole.

KEY FEATURES



The Combination of High and Low Frequency

HD-MAX features the simultaneous operation of both high and low frequencies at the same time, making it superior in both shallow and deep water.



The Full-Featured Hi-MAX Sounder Software

The powerful Hi-MAX Sounder displays, processes, and exports dual frequency data, supporting access to standard NMEA data from any receiver to provide accurate GNSS coordinates for the bathymetry data.



Rugged Industrial Platform

HD-MAX is designed with an enhanced computer platform, and has excellent performance in terms of stability and anti-interference, and compliant with EN 60945. 3 RS-232, 4 USB ports and 1 VGA to meet data transfer needs.



Digitized Results Correction with Echogram Overlaying

Correct the faulty digitized results based on the overlaid echogram to ensure the reliability of depth result especially in complex scenario.



HD-Lite

The Compact Single Beam Echo sounder

- HD-Lite is a rugged and compact PC built-in professional portable echosounder. Boosted by an upgraded sounder platform and enhanced hardware, HD-Lite provides users with a portable solution with accuracy and credibility.

KEY FEATURES



Professional Sonar System

With a smarter algorithm and optimized internal circuit design, the sounder adapts to most environments with better echo quality and accuracy.



15" Display Built-in PC

The 32G SSD storage-based windows 7 OS boosted by dual-core 1.92GHz CPU, smoothly runs programs for versatile applications related to hydrographic surveying.



Hi-MAX Collection & PP Software

Professional bathymetric data collection and post-processing software is easy to learn and master, with innovated functions which boost the efficiency.



Compatibility & Extendability

Compatible with 3rd party software and 3rd party GNSS receivers.



iBoat BS3

A Swift and Versatile Surface Platform

- Now our BS3 can do more than ever, whether it is bathymetry, investigation or even water current monitoring tasks.



Portable and Stable Body Design

The net weight of BS3 is less than 7KG and its whole body is small enough to fit into the trunk of a car. The streamline trimaran ensures sailing stability when facing the currents.



Precise Auto-pilot

With the smart controlling system and powerful propellers, BS3 can reach any targeted positions within 10 centimeter offset, providing precise survey lanes.



Perfect work with ADCP Onboard

Working with mounted Hi-Target iFlow ADCP, the system provides data you need in anywhere. Your own ADCPs can also work perfectly on BS3.



Professional Survey Echosounder

Built-in echosounder provides excellent sounding performance, with easy-to-use data collection and post processing software onboard.



Robust Communication

Through the spring-mount antenna signals, iBoat BS3 reaches a longer communication range with optimized frequency and power by the stronger environmental endurance.



Flexible Waterbed Imaging with Portable SSS

Hi-Target iSide 900P side scan sonar can show the target even in shallow water or in any tough condition where Big boat can't access. It's easy to mount it on the bottom of BS3 and let the boat sail.

USV Application

Initialization Work of Telecom Fiber Cable Route

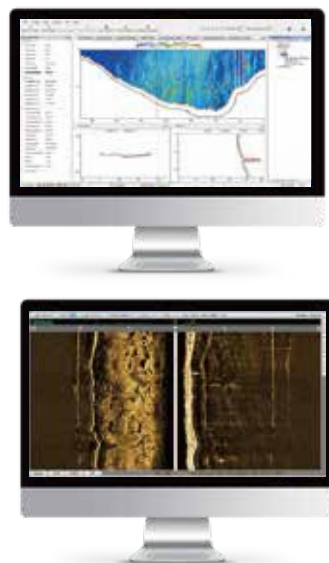
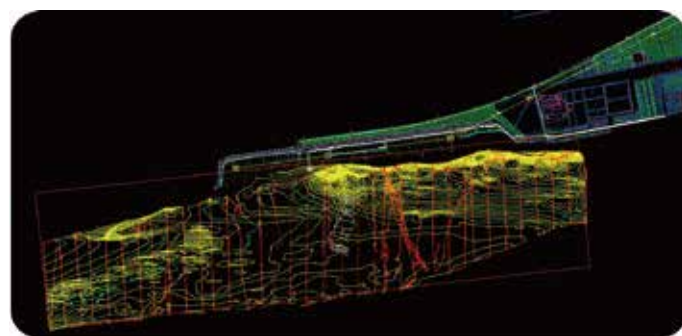
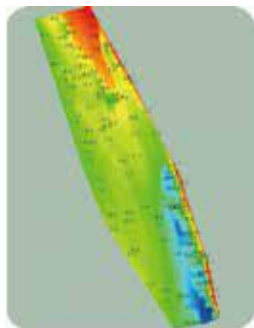
BACKGROUND:

A telecom company wanted to improve the communication robust by laying more telecom fiber cables for the region in Zhujiang delta, an important industry area for the World Factory——China. Before the laying work, the terrain of the bottom, the environment of the 5 channels which the cable is going to cross is vital to be unveiled.

CHALLENGES:

- ▶ 5 channels in total to cross, they all need to be surveyed.
- ▶ Each of them has heavy traffic, 3000 ton-level vessel transportation, daily 800 vessels pass by.
- ▶ 5 days, 2 men, efficient work to finish the project with sufficient data.
- ▶ Staff safety guaranteed during the survey, risk free.

RESULT SAMPLE:



USV can greatly expand the ADCP and side scan sonar working flexibility while all things are still being processed on your professional laptop.

Smart Monitoring Solution

Providing monitoring professionals with the flexibility to swiftly analyze and understand complex projects with the highest accuracy and reliability, the Hi-Target Smart Monitoring Solution is scalable and fully customizable for the specific needs of any users. The system adopts the most advanced millimeter level GNSS monitoring algorithm developed by Hi-Target to overcome any monitoring challenges for continuous or periodic jobs.

MS302

Surface Displacement Monitoring GNSS Receiver



Full constellation
GNSS receiver



Built-in large
capacity
lithium battery



Remote management,
remote upgrade and
status feedback



Built-in mass data
storage card



Collect and
transmit data from
other sensors



MS401

All-in-one GNSS Receiver with Low Power Consumption and High Performance



Three constellations
with eight bands.



Large capacity storage:
16GB + external storage
(TF card).



The indicator is tilted at
45°, which fully
considers the visual
habit.



High integration: integrated
GNSS board, MEMS
sensor, and NB-IOT
modules.



Configuration mode: support
configuration by Bluetooth
APP, web terminal, and
remote control software.



High security: built-in
firewall, high-security port,
and other reliable functions
for system management.



Built-in MEMS sensor with
trigger function supports
dynamic adjustment of
monitoring frequency.



User-friendly: the monitoring
system is easy-to-install and
supports remote configuration.
It can be configured within 1
minute.



Support solution of
common reference
station. The interval
between the reference
station and monitoring
station is ≤ 15km.



Low power consumption:
average power
consumption ≤ 2.6W
(long link) saves the cost
of power supply.



High level of protection: an
industrial design with an IP68
protection rating for
shockproof, drop proof, and
lightning protection.



Functions of self-checking for
working status, self-diagnosis,
self-healing, power loss data
protection, and real-time clock
calibration.

Application of

MS302 GNSS Receiver in

Hong Kong Reclamation Settlement Monitoring

Project Background

The Hong Kong Government's artificial floating islands, constructed through reclamation and housing key power facilities, face a unique geographical risk. Ground settlement or displacement on these islands could endanger personnel, destroy power facilities, and incur substantial property losses.

Pain Point Analysis

The project required the construction of a monitoring site on a reclaimed floating island, which was far away from the 4G network base station, potentially causing loss of monitoring data during transmission.

Workflow

1.Place Hi-Target MS302 GNSS receiver base stations within the survey area.

2. Establish the monitoring station in areas distant from water and roads.



Result

The project utilizes a "monitoring cloud" platform that integrates industry safety monitoring, GNSS high-precision positioning, and a SAAS cloud platform for data services. This platform manages data collection, transmission, auditing, statistics, and offers professional data analysis and WebGIS display services.





MS401 GNSS Receiver to Monitoring Station

Project Background

After a stringent selection process, Hi-Target was chosen to install a mine safety monitoring system, deploying GNSS high-precision positioning devices, at a copper mine in Serbia. This project signifies the creation of Serbia's first digital, eco-friendly mine, laying a crucial foundation for the country's future economic development through green mining and sustainable practices.

Project Summary

The Hi-Target compact GNSS receiver, easy to install and cost-effective in transportation, delivers high performance, precision, and energy efficiency. It offers millimeter-level displacement monitoring, with user-adjustable frequencies ranging from 5 minutes to 6 hours. A base station, set up in a stable area outside the survey zone, extends up to 3km, providing reliable positioning corrections for external monitoring stations, enhancing result reliability. The receiver ensures survey area safety with 24-hour monitoring and immediate alerts.

Pain Point Analysis

1. Hi-Target had to establish stations in the survey area within a tight schedule, ensuring accuracy and monitoring functionality.
2. The complex mining environment required monitoring numerous feature points, with surrounding metal ores potentially impacting the GNSS Receiver's signal reception.
3. The difficult terrain provided a limited and narrow area for device installation.

Workflow

1. Survey the site and establish the Hi-Target MS401 GNSS receiver base station in a stable location outside the survey area for accurate positioning.
2. Set up simple monitoring stations on each feature, consisting of a pole, a solar panel, and GNSS receiver.
3. Link the GNSS Receiver to the "Monitoring Cloud" platform, which automates data collection, interpretation, and warning based on user-defined thresholds.



Machine Control Solution

Hi-Target's fully digitized equipment and comprehensive solutions offer a transformative approach to construction site management. By leveraging these advanced tools, we can maintain constant contact with the construction site, regardless of our physical location. This constant connectivity allows for real-time updates and immediate response to any issues that may arise, thereby maximizing productivity.

Grader Control System

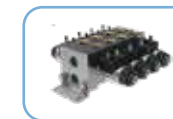
The Hi-Target Grader Control System utilizes advanced GNSS high-precision positioning technology in conjunction with an array of sensors, hydraulic control valves, and additional components. This integrated setup enables the system to achieve real-time 3D automatic control over the scraper's position and orientation. The Tablet presents a lucid 3D representation of the terrain, complete with real-time data on elevation, slope, and other pertinent information. The machine efficiency and construction accuracy improve greatly, ultimately leading to heightened productivity levels.



GNSS Antenna



ACE Sensor



Solenoid Valve



Controller



Tablet



KEY FEATURES



Achieved High Precision



Reduced Labor Costs



Improved Construction Efficiency



Reduced Manual Errors

FUNCTIONS



1. Sensor with built-in tilt compensation
2. Full motor grader speed, completely automatic



1. Dynamic area visualization with gradient colors
2. Supporting multiple data formats for importing into the machine



1. Dual antenna with centimetre accuracy
2. Automatic adjustment of spade position change

APPLICATIONS



Airport



Highway



Mining

Excavation System

Enhance your productivity and efficiency in any work environment with our versatile system. Our solution seamlessly integrates with other Hi-Target products, including GNSS receivers and total stations. By combining these tools, you can work smarter and faster, achieving optimal results in less time. Experience increased efficiency and the ability to accomplish more tasks with ease.



INDUSTRIES SMART SOLUTION

Achieve excellence with the Hi-Target smart machine control solutions



APPLICATIONS



Application of Excavator 3D Guidance System in Waterway Dredging

Project Background

The Liujiang River is an important channel for water transportation in China. In recent years, the water transportation economy along the route has developed rapidly. The throughput of the port has been rising year by year, and the demand for transportation vessels has become more and more prosperous. After the completion of the 2000-ton waterway of Liujiang River, it will greatly improve the capacity of the waterway and effectively solve the bottleneck problem of water transportation in Liujiang River.



Equipment installation

Project Summary

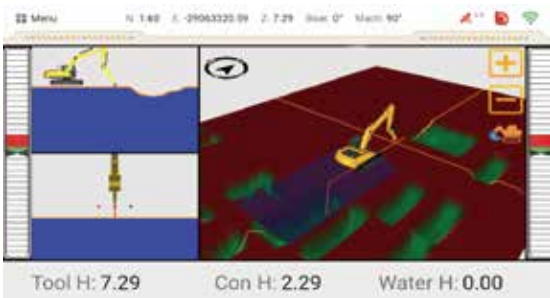
ECS900 not only displays the ship type and orientation of the crushing dredger in real time, but also provides precise assistance and guidance for the dynamic operation of the crushing hammer head and bucket, ensuring the accuracy of the construction operation, reducing the waste of manpower and material resources, and improving the operation level and efficiency.

Pain Point Analysis

1. The operator cannot accurately find the big stone blocks or control the position and elevation of clearing while crushing and clearing, leading to leakage, over-digging, under-digging, and uncontrollable construction costs.
2. Weather and light easily affect the operation, making it difficult to guarantee operational efficiency.

Workflow

1. Survey design
2. Design construction drawings
3. Surface dredging
4. Fixed-point crushing
5. Clear excavation to the specified elevation



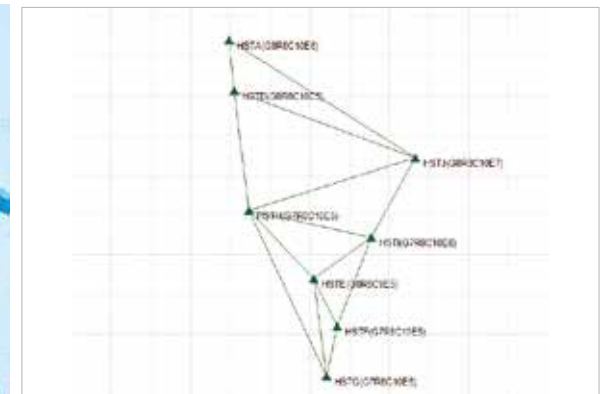
Interface of the ECS900 combined with the K20 guidance software for construction work (dynamic position and orientation of the vessel in transparent blue on the right, with remote access to set control)

GNSS Correction Service

With the development of GNSS technology, in order to overcome the difficulty of long distance, correction service brings revolution to the industry. Hi-Target CORS offers a precision position correction service for land surveying, maritime transport, earthquake monitoring, city administration and IoT, whether for temporary or long-term usage. In desert, weak infrastructure area, poor network environment, sea, snow mountain and challenge environment, Hi-Target Hi-RTP could provide global high-precision PPP service for land survey and marine, meanwhile, for autonomous driving, Hi-RTP could provide world-class precision and service, for precision agriculture, Hi-RTP could provide basic precision service for autonomous agricultural machinery and plant protection UAS.

Stable and Advanced CORS System

- The Hi-Target CORS is a highly integrated measurement system, providing Vnet GNSS reference receiver, 3D choke ring antenna hardware, data distribution and algorithm software and technical services, combining advanced and traditional GNSS technology to provide a complete solutions with data acquisition, processing, distribution and management.



KEY FEATURES



Ultra-high precision foundation reinforcement technology of centimeter and millimeter-level precision.



Millions of concurrent users server capacity enabling services varying from engineering to civilian applications.



Compatible with all brands base stations and terminal equipment.



Intelligent and firewall-protected management platform

