



# V500

GNSS Receiver







# V500

## 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 positioning accuracy.

### ● Key Features



Upgraded IMU



AR Measurement



Live View Stakeout



24 Hours Ultra-Long Battery life



Advanced RTK Engine



Portable and Compact



### 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.
- Professional-grade starlight night vision HD camera with wide angle. Excellent performance and algorithm in tracking signals, achieving an accuracy of up to 1cm.
- Seamless switch of 360-degree AR stakeout between the handheld controller and the rover brings out immersive stakeout experiences making stakeout fast and accurate.



### Built-in High-precision Tilt Survey

- Based on the new generation of IMU, initialization occurs automatically at the startup without obtaining a fixed solution.
- Measure as reaching the point, efficient and convenient.
- Stable performance for reliable results.



### 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.
- Multi-frequency interference detection technology and multi-stage adaptive filtering technology with a strong signal, good data, fast fixed procedure, and high accuracy.



# 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.

<b>Hardware Configuration</b>	OS: Android 11 operating system Processor: CPU:8 core; 2.0GHZ Storage: 4GB RAM+64GB ROM; T-Flash memory card, up to 128GB Display:720*1440, 5.5", 500 nit, 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
<b>GNSS Features</b>	GNSS antenna, GPS, GLONASS, BDS, AGPS
<b>Communication Interface</b>	Network modem: FDD-LTE B1/B3/B5/B7/B8/B20/B28/B2/B4/B12/B17 TDD-LTE B38/B39/B40/B41/B34 TDSCDMA B34/B39 WCDMA B1/B2/B5/B8/B4 GSM B2/B3/B5/B8 CDMA1X/CDMA2000 BC0 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)
<b>Power Supply</b>	Battery: 9200 mAh internal Duration: ≥15 hours Charging time: 4 h (typical)
<b>Application</b>	Camera: Built-in 13 million pixel camera Flash: Highlight Flash LED flash (support flashlight function) Sensor: Gravity sensor, compass, light sensor, gyroscope
<b>Physical Features</b>	Weight: 406g (within battery) Size: 221 mm*78 mm*16.5 mm Operating temperature: -20°C ~ +60°C Storage temperature: -30°C ~ +70°C Free fall: 1.8m Shock and vibration: MIL-STD-810H



# 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..



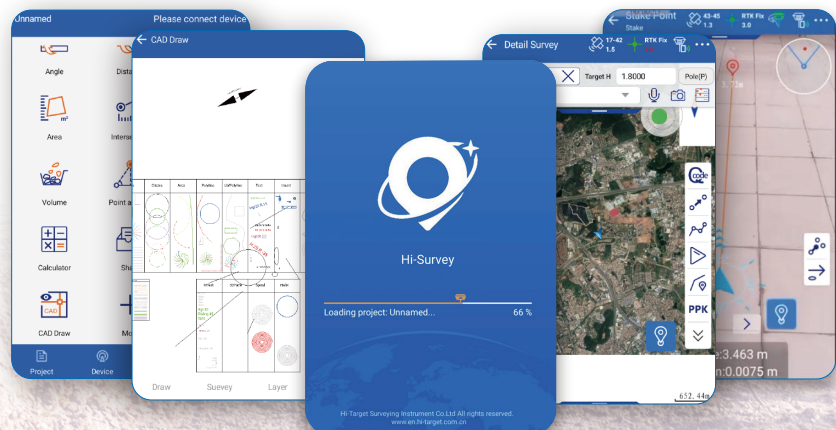
**Integrated professional measurement functions for engineering application.**

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..



# TECHNICAL SPECIFICATIONS

GNSS Feature	Specification		
GNSS Signal <sup>[1]</sup>	Channels	1408	1760
	GPS	L1C/A, L1C, L2P(Y), L2C, L5	L1C/A, L2C, L2P, L5
	BDS	B1I, B2I, B3I, B1C, B2a, B2b	B1I, B1C, B2a, B2b, B2I B3I
	GLONASS	L1, L2, L3	L1CA, L2CA, L2P, L3
	Galileo	E1, E5a, E5b, E6	E1, E5a, E5b, E5 AltBoc
	QZSS	L1, L2, L5, L6*	L1C/A, L1S, L2C, L5
	NavIC	L5	L5
	SBAS	L1, L2, L5	L1, L2, L5
	PPP	B2b-PPP, Galileo E6-HAS	B2b-PPP
Positioning Performance <sup>[2]</sup>	High-Precision Static	H: 2.5 mm + 0.1 ppm RMS	V: 3.5 mm + 0.4 ppm RMS
	Static and Fast Static	H: 2.5 mm + 0.5ppm RMS	V: 5 mm + 0.5ppm RMS
	Post Processing Kinematic (PPK / Stop & Go)	H: 8mm + 1ppm RMS	V: 15mm + 1ppm RMS
		Initialization time: Typically 10 min for base and 5 min for rover Initialization reliability: Typically >99.9%	
	PPP	H: 10cm	V: 20cm
	Positioning rate	1 Hz, 5 Hz and 10 Hz	
	Code Differential GNSS Positioning	H: ±0.25m+1ppm RMS	V: ±0.5m+1ppm RMS SBAS: 0.5m (H), 0.85m (V)
	Real Time Kinematic (RTK)	Horizontal: 8mm+1ppm RMS	Vertical: 15mm+1ppm RMS
	Time to first Fix	Cold start: < 45s   Hot start: < 30s   Signal re-acquisition: < 2s	
Physical	Hi-Fix <sup>[3]</sup>	H: RTK+10mm / minute RMS	V: RTK+20mm / minute RMS
	Tilt Survey Performance <sup>[4]</sup>	Additional horizontal pole-tilt uncertainty typically less than 8mm+0.7mm/°tilt (0° ~ 60°)	
	AR stakeout accuracy	1cm	
	Dimensions (W x H)	130mm × 68mm	
Electrical	Weight	≤ 0.75kg ( 1.65lb )	
	Operation temperature	-40°C~+75°C (-40°F~+167°F)	
	Storage temperature	-55°C~+85°C (-67°F~+185°F)	
	Humidity	100% non-condensing	
	IP Rating	IP68 dustproof, protected from temporary immersion to depth of 1.0m (3.28ft)	
	Shock and vibration	MIL-STD-810G, 514.6	
Communication	Free fall	Designed to survive a 2m(6.56ft) natural fall onto concrete	
	Internal Battery <sup>[5]</sup>	Internal 7.4V / 6800mAh lithium-ion rechargeable battery	
	External power	RTK rover(UHF/Cellular): up to 24 hours Using standard smartphone chargers or external power banks (Support 5V 2.8A Type-C USB external charging)	
	I/O Interface	1 × USB type C port; 1 × SMA antenna port	
Camera	WiFi	Frequency 2.4GHz, Supports 802.11 b/g/n	
	Bluetooth	BT 5.2, 2.4GHz	
	Internal UHF Radio	Power: 0.5W/1W/2W Adjustable Frequency: 410MHz~470MHz Protocol: HI-TARGET, TRIMTALK450S, TRIMMARK III, SATEL-3AS, TRANSEOT, etc. Working Range: Typically 3~5km, optimal 8~15km Channel: 116 (16 scalable)	
Control Panel	Function	Professional starlight night vision HD camera, large viewing angle, support live view stakeout	
System Configuration	Physical button	1	
	LED Lights	Satellite, Signal, Power	
	Storage	16GB ROM internal storage	
	Output format	ASCII: NMEA-0183	
	Output rate	1Hz~20Hz	
System Configuration	Static data format	GNS, Rinex	
	Real Time Kinematic (RTK)	RTCM2.X, RTCM3.X, CMR	
	Network Mode	VRS, FKP, MAC, Support NTRIP protocol	

Note:

[1]QZSS L6 can be provided by firmware upgrade.

[2]The measurement accuracy, precision, reliability and initialization time depend on various factors, including tilt angle, number of satellites, geometric distribution, observation time, atmospheric conditions and multi-path validation, etc. The data are derived under normal conditions.

[3]Accuracies are dependent on GNSS satellite availability. Hi-Fix Positioning ends after 5 minutes without differential data. Hi-Fix is not available in all regions, check with your local sales representative for more information.

[4]Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.

[5]The battery operating time is related to the operating environment, operating temperature and battery life.

Descriptions and Specifications are subject to change without notice



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