



Alpha Surveying

Alpha 400

Visual Positioning RTK

10cm × 10cm × 8cm | 650g | Optics+AR



Alpha 400 Visual Positioning RTK

Alpha 400 is a lightweight visual positioning RTK with intelligent platform, powerful vision processing, and AR visual stakeout capability.



7 satellites and 24 frequencies Soc positioning engine

BT,WiFi, 4G,GNSS all model antenna

Optical boresight

Linux System



AR Stakeout



Signal and battery indicator light

Type-C interface + SIM card

UHF Antenna Interface

Loudspeaker

Excellent Performance



Anti-block



Instant fix



High precision

Calibration-free

Alpha 400 integrates GNSS, IMU, and magnetometer data, and adds temperature compensation and other algorithms to achieve real-time output of accurate tilt measurement data at high tilt angles and high dynamic postures, with a 60° tilt angle and an accuracy of 2cm. No initialization is required, just take a few steps to enter inertial navigation mode.

Long Working Hours



18h at CORS mode



15h at radio receiving mode

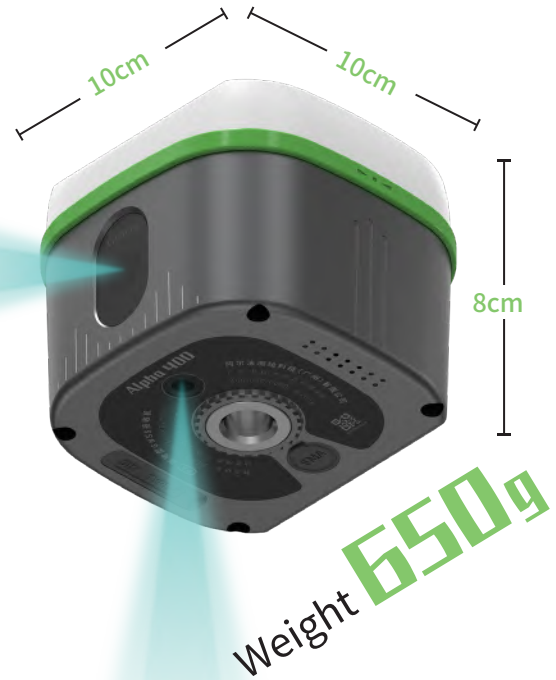


8h at radio transmitting mode



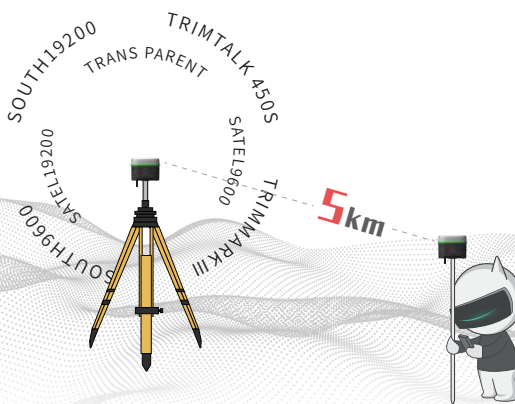
Visual Positioning

Photoelectric measuring Integrated with satellite, IMU, and visual technologies. Get what you see with professional camera, and measure in backlighting. Equipped with a professional image processing engine, real-time coordinate data can be obtained by clicking on the screen, achieving 2cm measurement accuracy.



2 Watts Fully Compatible Transceiver Internal UHF Radio

supports external radio



AR Visual Stakeout

Visual stakeout with immersive experience, instant result. 360° real-time clear display under strong light. Professional lens, algorithms, and few optical distortion, it can achieve 1cm accuracy in finding points in real scenes.

Professional Surveying Instrument DiMap Pro

Besides point survey, detail survey, control point survey, point stakeout, CAD mapping, stake road, electric lines survey, DSM stakeout, also include polyline survey, polygon survey, spiral stakeout, electric towers stakeout, photovoltaic stakeout.



Stronger CAD engine and performance, it can smoothly open and run files over 100M, supports loading more layers, has complete drawing functions, and supports multiple text encoding formats.

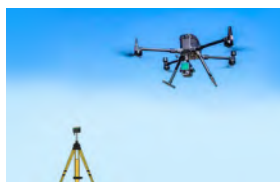
Supports Amap and other map and code management; supports offset point correction, background layer setting, and tilt measurement accuracy inspection; supports function customization, post-test correction, and built-in calculator.

Professional set



Alpha 400	× 1
Radio Antenna	× 1
Host Adapter	× 1
Host Cable	× 1
Controller	× 1
Controller Adapter	× 1
Controller Cable	× 1
Centering Pole	× 1
Bracket	× 1
Instruction	× 1
Carrying Case	× 1

Technical Specification



Base station for UAV

Alpha 400 can be the base station for UAV; supports interface customization; offer positioning fusion for uncrewed vehicles and SLAM.

Technical Specification

GNSS	Channel	1408
	GPS: L1C/A, L1C, L2C, L2P, L5	
	BDS: B1I, B2I, B3I, B1C, B2a, B2b	
	GLONASS: G1, G2, G3	
	Galileo: E1, E5a, E5b, E6	
	QZSS: L1C/A, L1C, L2C, L5	
	SBAS: L1	
Tilt Compensation	NAVIC: L5	
	Static Accuracy	H: $\pm (2.5+0.5 \times 10^{-6}D)$ mm V: $\pm (5+0.5 \times 10^{-6}D)$ mm
	RTK Accuracy	H: $\pm (8+1 \times 10^{-6}D)$ mm V: $\pm (15+1 \times 10^{-6}D)$ mm
System Parameters	Compensation Accuracy	$\pm (8+0.3TILT)$ mm
	*Compensation Angle	0~60°
	Update Rate	200Hz
Radio	Operating System	LINUX
	Memory	32G
	Data Record	DAT、Rinex
	Network	4G
	WiFi	802.11a/b/g/n/ac
	Bluetooth	BT5.0 backward compatibility
	Power	2w
Power	Frequency	410-470MHz
	Global Communication Protocol	TRIMTALK 450S、TRIMMARKIII、SOUTH9600、SOUTH19200、SATEL9600、SATEL19200、TRANS PARENT
	Operation Mode	Transceiver
AR Stakeout	Voltage	9 - 20V Power Delivery
	Working Time	18h (Ntrip)、15h (Radio Receiving)、8h (Radio Transmitting)
	Pixel	2M Pixels
Port Indicator	Field Angle	75°
	Accuracy	1cm
	SMA	Radio UHF Antenna
Physical	Type-C	Charging, data transmitting, external port connection
	Indicator Lights	Satellite, Datalink, Bluetooth, battery light
	Loudspeaker	Support intelligent voice
Environmental	Dimension	100mm*100mm*80mm(Excluding 5/8 pin interface)
	Weight	650g
	Operating Temperature	-30℃ ~ +70℃
	Storage Temperature	-40℃ ~ +80℃
	Water/Dust Proof	IP67
	Shock	Normal temperature resistance of 1.6 m drop (hard ground)
	Humidity	Up to 100%

*The above technical parameters are for your reference. The company reserves the right to change the design and planning of the product based on the actual product.

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