



Alpha 40

Optic-electric RTK

10cm × 10cm × 8cm | 650g



Alpha 40 optic-electric RTK

Alpha 40 is a lightweight optic-electric RTK, an intelligent platform designed for the future, with rich communication modes and interfaces for collaboration with intelligent terminals, optoelectronic products, and unmanned systems.

7 satellites and 24 frequencies Soc positioning engine

BT,WiFi, 4G,GNSS all model antenna

Laser

Linux System

Optical boresight

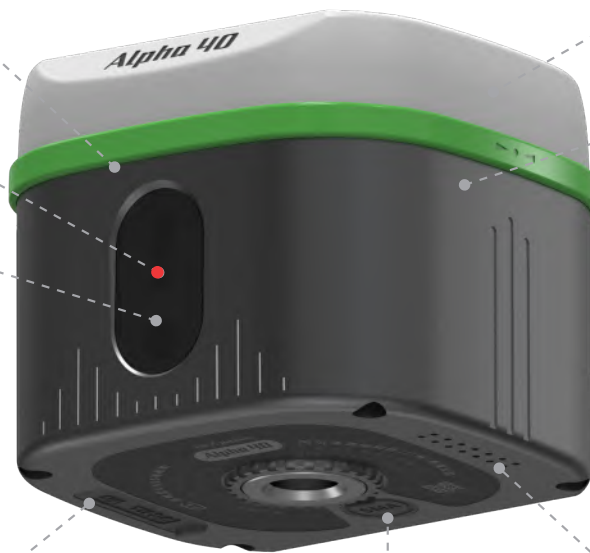


Signal and battery indicator light

Type-C interface + SIM card

UHF Antenna Interface

Loudspeaker



Excellent Performance



Anti-block



Instant fix



High precision

Long battery life



18h at CORS mode



15h at radio receiving mode



8h at radio transmitting mode

Calibration-free

Alpha 40 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.

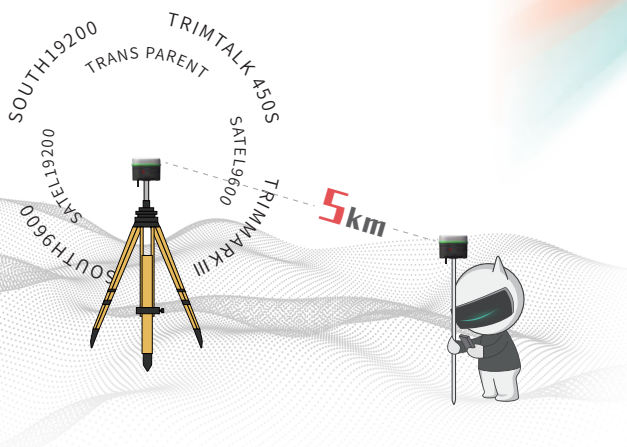
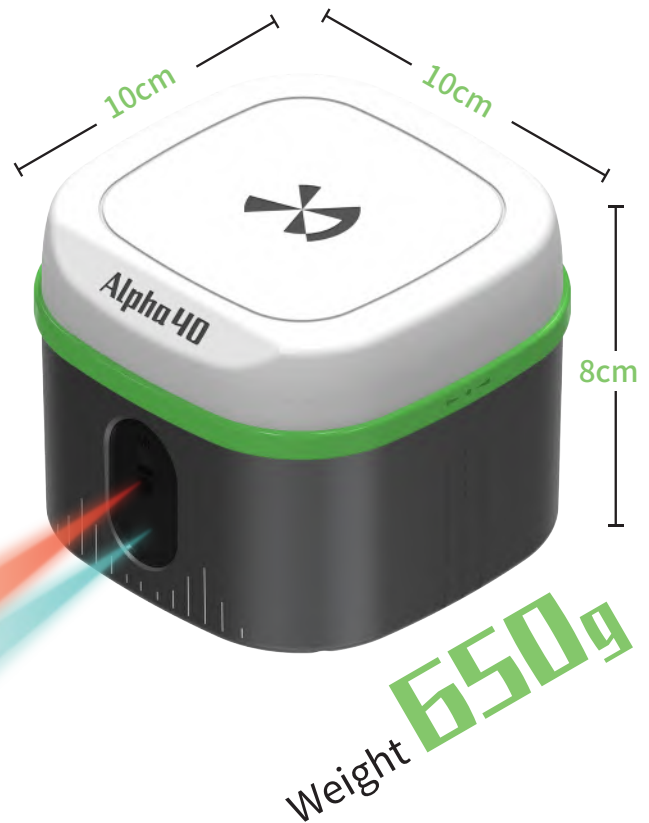


Optic-electric Measurement

With the advanced optic-electric technologies from Alpha Surveying, laser is combined with the RTK to provide 360° measurement without blind spots, 30 meters measuring radius with accuracy of millimeter. With high speed calibration-free IMU, unlike ordinary laser RTK, Alpha 40 can perform non-contact measurement of target points through optical system calibration when the laser point is invisible under strong light.

2 Watts Fully Compatible Transceiver Internal UHF Radio

supports external radio



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.

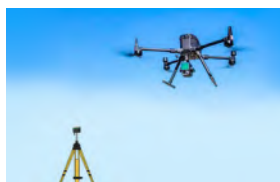
Supports Amap and other map and code management; supports offset point correction, background layer setting, and tilt measurement accuracy inspection; supports function customization, post-test correction, and built-in calculator.

Professional set



Alpha 40	× 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 40 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	
	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	
Tilt Compensation	Compensation Accuracy	$\pm (8+0.3TILT)$ mm
	*Compensation Angle	0~60°
	Update Rate	200Hz
System Parameters	Operating System	LINUX
	Memory	32G
	Data Record	DAT、Rinex
	Network	4G
	WiFi	802.11a/b/g/n/ac
	Bluetooth	BT5.0 backward compatibility
Radio	Power	2w
	Frequency	410-470MHz
	Global Communication Protocol	TRIMTALK 450S、TRIMMARKIII、SOUTH9600、SOUTH19200、SATEL9600、SATEL19200、TRANS PARENT
	Operation Mode	Transceiver
Power	Voltage	9 - 20V Power Delivery
	Working Time	18h (Ntrip)、15h (Radio Receiving)、8h (Radio Transmitting)
Laser Measurement	Measuring Range	30m
	Measuring Accuracy	± 1 mm
Port Indicator	SMA	Radio UHF Antenna
	Type-C	Charging, data transmitting, external port connection
	Indicator Lights	Satellite, Datalink, Bluetooth, battery light
	Loudspeaker	Support intelligent voice
Physical	Dimension	100mm*100mm*80mm(Excluding 5/8 pin interface)
	Weight	650g
Environmental	Operating Temperature	-30°C ~ +70°C
	Storage Temperature	-40°C ~ +80°C
	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.

Alpha Surveying Technology Co.,Ltd.

📍 NO.9 Caipin Road, Science City Huangpu District, Guangzhou

☎ +86-20-82108930

🌐 www.alpha-surveying.com