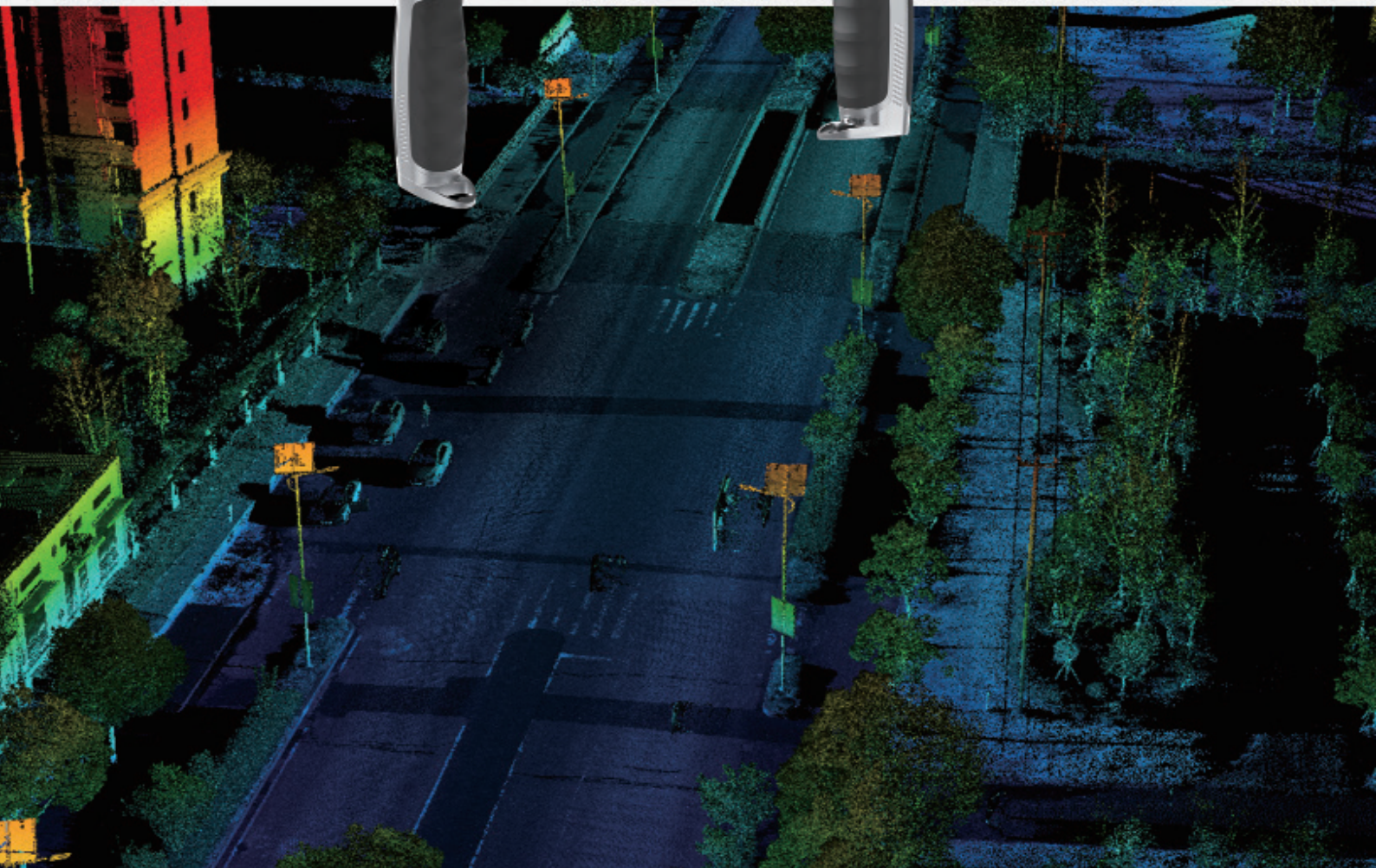


RS10

Handheld SLAM 3D Laser Scanner +
GNSS RTK System



► RS10 Surveying System

The RS10 brings a new approach to geospatial surveying by integrating GNSS RTK, laser scanning, and visual SLAM technologies into a single platform, delivering high-precision, loop-free surveying and a completely new field experience.



► High-Precision RTK and Laser SLAM Integration, Unmatched Accuracy

3 cm

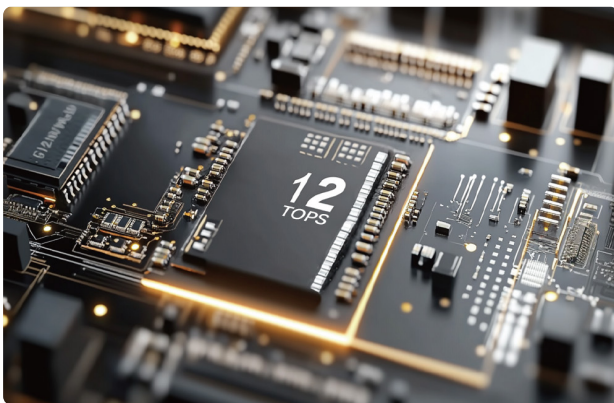
20 Years of CHCNAV RTK expertise delivering < 3 cm accuracy even in challenging environments



3 cm

Full-scenario SLAM performance, achieving 3 cm absolute accuracy

► Real-Time SLAM Processing



1.2 T

Embedded data computing power

13,000 m²

Continuous, uninterrupted SLAM processing

No Post-processing

Copy point cloud results straight from the RS10

► Post-processing for Secondary Refinement



Twice

Secondary refinement processing



1 cm

Point cloud thickness



1 cm

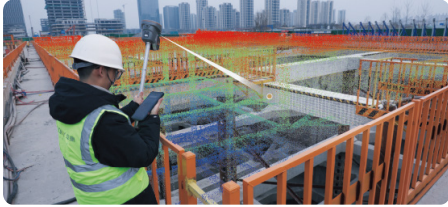
Relative accuracy

► Innovative SFix and Vi-LiDAR Technology



SFix Technology Survey Anywhere, Even Without GNSS

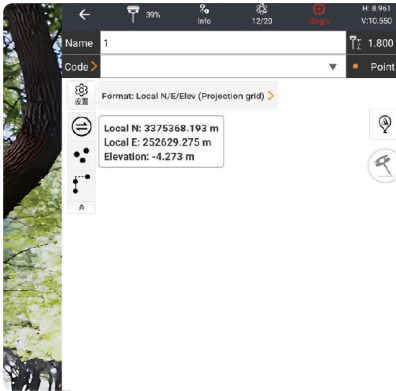
Innovative SFix combines LiDAR ranging with SLAM angular constraints, achieving 5 cm precision within 1 minute without satellites signals.



Vi-LiDAR Technology, Contactless Surveying

Performs precise target measurements like a total station, achieving 5 cm accuracy within 15 m.

► Ready for RTK Users



Operates in rover mode with CHCNV LandStar™ software for easy use and minimal training.

► Application Scenario



Road surveying



Underground Information acquisition



Stockpile measurement



Old community redevelopment



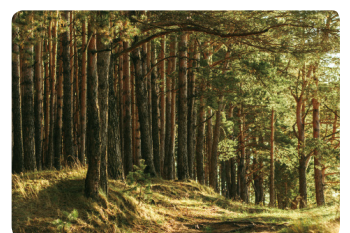
As-Built surveying



Topographic surveying



Energy facility surveying



Forestry asset management

SPECIFICATIONS

► General System Performance

	RS10(16 lines)	RS10(32 lines)
Absolute accuracy	H: < 3 cm RMS ⁽¹⁾ V: < 3 cm RMS ⁽¹⁾	H: < 2 cm RMS ⁽¹⁾ V: < 2 cm RMS ⁽¹⁾
Relative accuracy	<1cm	
Power supply mode	Lithium battery, supports hot-swapping and portable charger	
Working time from a single battery ⁽²⁾	1 h	
Data storage	512 GB	
Field of view	360° × 270°	
Weight	1.9 kg (including RTK and battery)	1.7 kg (including RTK and battery)
Loop-free data acquisition	Yes	
Real-time accuracy assessment	Yes	

► Laser Scanner

	RS10(16 lines)	RS10(32 lines)
Laser product classification	Class 1 Eye Safe	
Range	0.05 to 120 m	0.5 to 300 m
Channel	16	32
Point cloud thickness	2 cm	1 cm
Range capability	80 m @10% reflectivity (Channels 5 to 12) 50 m @10% (Channels 1 to 4, 13 to 16)	80 m @10% reflectivity
FOV (Horizontal)	360°	
Horizontal angle resolution	0.18° (10 Hz)	
FOV (Vertical)	30° (-15° to +15°)	40.3° (-20.8° ~ +19.5°)
Max. effective measurement rate	Single return: 320 000 pts/sec Dual return: 640 000 pts/sec	Single return: 640 000 pts/sec Dual return: 1280 000 pts/sec Triple return: 1920 000 pts/sec
Selectable scan speed	10 Hz	
Wavelength	905 nm	

► GNSS Performance⁽³⁾

Channels	1408 channels with iStar2.0
GPS	L1C/A, L2C, L2P(Y), L5
GLONASS	L1, L2, L3*
Galileo	E1, E5a, E5b, E6*
BeiDou	B1I, B2I, B3I, B1C, B2a, B2b
QZSS	L1C/A, L1C, L2C, L5, L6*
NavIC/ IRNSS	L5*
PPP	B2b-PPP
SBAS	EGNOS (L1, L5)

► Electrical

Input voltage	9-20 V DC
Power consumption	< 30 W
Battery capacity	24.48 Wh

► GNSS Accuracies

Real time kinematic (RTK) ⁽⁴⁾	H: 8 mm + 1 ppm RMS V: 15 mm + 1 ppm RMS Initialization time: <10 s Initialization reliability: >99.9%
Post-processing kinematic (PPK)	H: 3 mm + 1 ppm RMS V: 5 mm + 1 ppm RMS
PPP	H: 10 cm V: 20 cm
High-precision static	H: 2.5 mm + 0.1 ppm RMS V: 3.5 mm + 0.4 ppm RMS
Static and rapid static	H: 2.5 mm + 0.5 ppm RMS V: 5 mm + 0.5 ppm RMS
Code differential	H: 0.4 m RMS V:0.8 m RMS
Visual-assisted positioning	Yes

► IMU

IMU update rate	200 Hz
Auto initialization	Yes
Attitude accuracy after post-processing	0.005° RMS pitch/roll, 0.010° RMS heading
Position accuracy after post-processing	0.010 m RMS horizontal, 0.020 m RMS vertical

► Camera

Number of cameras	3
Resolution	15 MP (5 MP*3)
Sensor size	2592 (H) × 1944 (V)
Pixel size	2.0 μm
FOV	210°×170°

► Environments

Operating temperature	-20 °C to +50 °C
Storage temperature	-20 °C to +60 °C
Ingress protection	IP64 ⁽⁵⁾ (according to IEC 60529)
Humidity (operating)	80%, non-condensing

► Equipped Software

SmartGo software	Data acquisition control, real-time point cloud display, etc
CoPre intelligent processing software	POS process, Adjust & Refine, Generate point cloud, modeling, etc
CoProcess efficient feature extraction software	Building feature extraction, road feature extraction, volume calculation, etc
LandStar Field Survey APP	Topographic survey, Point stakeout, Line stakeout, Elevation check, Facade survey



*All specifications are subject to change without notice.

(1) According to CHCNAV test condition.

(2) Typical observed values.

(3) Compliant, but subject to availability of BDS ICD, GLONASS, Galileo, QZSS and IRNSS commercial service definition. GLONASS L3, Galileo E6, QZSS L6 and IRNSS L5 will be provided through future firmware upgrade.

(4) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices.

(5) Splash, water, and dust resistant and were tested under controlled laboratory conditions with a rating of IP64 under IEC standard 60529.

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