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GEOSUN

LiDAR Solution

Wuhan Geosun Navigation Technology Co.,Ltd
Make the LIDAR/SLAM solution more affordable and applicable



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About Geosun

Make the LIDAR/SLAM solution more affordable and applicable

About Geosun

Established in 2015, Geosun Navigation is a high-tech enterprise with fully independent intellectual property rights, dedicated to applying advanced technologies such as GNSS, INS, Visual Positioning (VL), LiDAR (Light Detection and Ranging), and Simultaneous Localization and Mapping (SLAM) to deliver accurate spatial status and environmental perception solutions. As a technology-driven company integrating software and hardware R&D, system design, and production, Geosun is committed to the research, development, manufacturing, sales, service, and training of GNSS satellite positioning systems, mobile LiDAR systems, multi-sensor combined positioning and attitude measurement systems, intelligent driving high-precision combined positioning systems, road reality capture systems, and intelligent driving ground truth reference systems. Our solutions have been widely applied in natural resources, intelligent driving, agriculture, forestry, water conservancy, electric power, smart city construction, surveying and mapping, and transportation. Today, Geosun's products and services are trusted by customers in more than 100 countries and regions worldwide.

Honour



Core Technology

- Completely independent intellectual property rights
- The key technology of high-precision module has reached the international advanced level
- Leading Standard Developer for High-Precision LiDAR
- Shuttle software is one of three Trajectory processing software in the world
- Mastering precision-critical technologies: GNSS ambiguity resolution and INS high-order error model



Make the LIDAR/SLAM solution more affordable and applicable

Senior Consultant



Academician Li

Academician Li Deren, photogrammetry and remote sensing expert, academician of the Chinese Academy of Sciences, academician of the Chinese Academy of Engineering, academician of the International Eurasian Academy of Sciences, director of the Academic Committee of Wuhan University.

In 1963, Academician Li Deren graduated from Wuhan University (Wuhan Technical University of Surveying and Mapping, WTUSM).

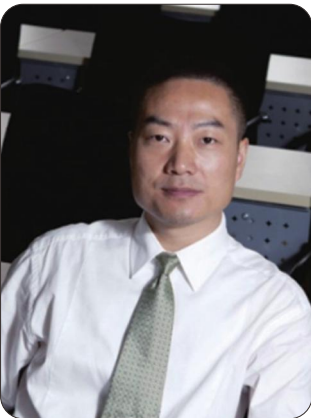
In 1981, he got master's degree.

In 1985, he got doctorate degree from the University of Stuttgart.

In 1991, he was elected as an academician of the Chinese Academy of Sciences.

In 1994, he was elected as an academician of the Chinese Academy of engineering.

In 2008, he won an honorary doctorate from the University of Technology Zurich.



Dr.Sun

The founder of the Geosun, Dr. Sun, received the B.S. degree in geodesy in 1995 and the M.S. and Ph.D. degrees in photogrammetry and remote sensing from Wuhan University, Wuhan, China, in 2000 and 2004, respectively. His research interests include precise kinematic positioning with GNSS, GNSS/INS integration for direct platform orientation, and integrated multisensory geospatial data acquisition systems.

Dr. Sun has more than 20 years of experience in geospatial industry.

He was selected into the "3551" Talent Program of Wuhan City and the "Hundred Talents Program" of Hubei Province, China; he is the executive director of the Chinese Global Satellite Navigation Association, the director of the navigation branch of the Chinese Institute of Electronics, and the Member of ION.

gAirHawk

LiDAR Scanning System



gAirHawk series is a compact LIDAR point cloud data acquisition system independently developed by Geosun. It integrates laser scanner, GNSS satellite positioning system, INS (inertial navigation system), camera (built-in) and storage unit, which can collect high-precision point cloud data and various image information in real time, dynamically and massively.

With wide field of view, high-density point clouds and rich visible multispectral images, it can be widely used in power, forestry, agriculture, natural resources, smart city, geological disasters, mining, energy, transportation and other fields.

GS-100C+

Your First UAV LiDAR Scanning System



GS-100C+ is an entry-level, short-range detection Aerial LiDAR solution independently developed by Geosun Navigation. With advantages of cost-effective, strong practicability, rich point cloud data and image information, GS-100C+ is widely used in general mapping, especially for corridor mapping and other industries.

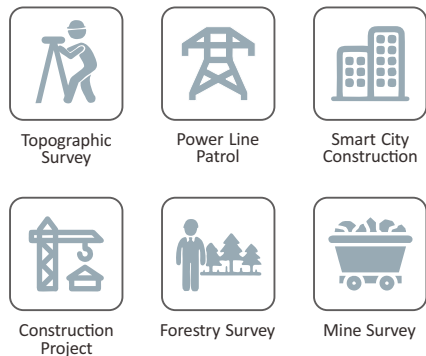
Range: ≤120m

Recommended Application:General-purpose mapping

Features

- ◆ Entry-level UAV LiDAR system
- ◆ Lightweight and compact design
- ◆ Best data quality in its kind
- ◆ One-key solution for data processing

Applications



System Parameters

System Parameters	Accuracy	10cm@100m	Point Density	140pts/m²@100m@10m/s
	Storage	64GB, Max support 256GB TF card	Weight	1kg
	Dimension	13.6cm*9.4cm*9.1cm	System consumption	20W
	Working Temperature	-20°C~+55 °C	Voltage Range	12V-24V
	Carrying Platform	Multi-Rotor/VTOL		
POS Unit	Model	gSpin 210	Update Frequency	200Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.015°
	Heading Accuracy	0.040°	Roll Accuracy	0.015°
Laser Unit	Measuring Range	230m@20%	Range Accuracy	±1cm
	Laser Line Number	Equivalent to 64-beam	Data	Triple echo, 720,000 Points/Sec
	FOV	70°		
Camera	Effective Pixels Focal Length	26 MP / 16 mm	FOV	83°

GS-130X

Enhanced Precision, Deeper Penetration



GS-130X is a high-precision, surveying grade LiDAR solution independently developed by Geosun Navigation, which is integrated with laser sensor, mapping camera, and high-precision POS system. It can be mounted on most brands' drones in the market and can also be used for vehicle-mounted operations. With simple and convenient operation, it can generate true-color point cloud models and widely used in many fields, such as mapping & surveying, forestry, power Line patrol, agriculture, land and resources, water conservancy, smart city construction etc...

Range: ≤120m

Recommended Application:Forestry

Features

- ◆ Professional grade UAV LiDAR system
- ◆ Both Mobile and Aerial Solution are available
- ◆ Up to 1,280,000 Points per second (Dual returns)
- ◆ 0.03°×0.03° beam divergence, good at dense forestry

Applications



System Parameters

System Parameters	Accuracy	10cm@100m	Point Density	80pts/m²@100m@10m/s
	Storage	64GB , Max support 256GB TF card	Weight	1.4kg
	Dimension	14.2cm*10.9cm*12cm	System consumption	20W
	Working Temperature	-20°C~+55 °C	Voltage Range	12V-24V
	Carrying Platform	Multi-Rotor/VTOL/Vehicle		
POS Unit	Model	gSpin 210	Update Frequency	200 Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.015°
	Heading Accuracy	0.040°	Roll Accuracy	0.015°
Laser Unit	Measuring Range	Max 120m	Range Accuracy	±1cm
	Laser Line Number	32-channel	Data	Double echo, 1,280,000 Points/sec
	FOV	360°		
Camera	Effective Pixels Focal Length	26 MP / 16 mm	FOV	83°

GS-260H

Starting with Versatile Solutions



GS-260H is a high-precision, surveying grade LiDAR solution independently developed by Geosun Navigation. The GS-260H features a 300-meter range, weighs 1.1 kg, and provides 1,920,000 points per second with three returns. It includes a camera for synchronized point cloud and image capture, making it ideal for efficient data collection in mapping, inspections, forestry, and urban planning.

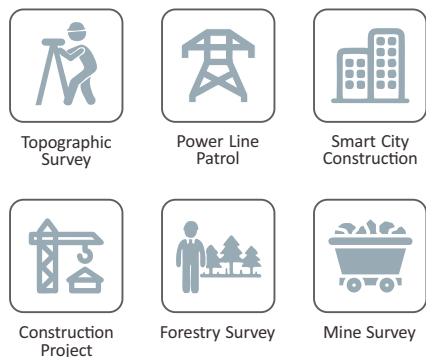
Range: ≤150m

Recommended Application:Forestry

Features

- ◆ Survey grade LiDAR system
- ◆ Designed for challenging applications
- ◆ Equipped with higher-level POS system
- ◆ 300m max detection range

Applications



System Parameters

System Parameters	Accuracy	10cm@150m	Point Density	50pts/m²@150m@10m/s
	Storage	64GB, Max support 256GB TF card	Weight	1.1kg
	Dimension	14.4cm*10.9cm*12cm	System consumption	20W
	Working Temperature	-20°C~+55 °C	Voltage Range	12V-24V
	Carrying Platform	Multi-Rotor/VTOL/Vehicle		
POS Unit	Model	gSpin 210	Update Frequency	200Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.015°
	Heading Accuracy	0.040°	Roll Accuracy	0.015°
Laser Unit	Measuring Range	MAX 300m	Range Accuracy	±0.5cm
	Laser Line Number	32-channel	Data	Triple echo, 1,920,000 Points/Sec
	FOV	360°		
Camera	Effective Pixels Focal Length	26 MP / 16 mm	FOV	83°

GS-260X

Much Longer, Much Better



GS-260X is a medium detection, higher precision & surveying grade LiDAR solution independently developed by Geosun Navigation, with a maximum range of 300m laser sensor. The weight is only 1.1kg, which maximizes the operation time. With high density point cloud and strong penetration capability, it is deeply integrated with a camera for simultaneous acquisition of point cloud and imagery. GS-260X is widely used in industries such as mapping & surveying, forestry, power line patrol, agriculture, land and resources, water conservancy, smart city construction, making large-scale data acquisition easier.

Range: ≤200m

Recommended Application:General-purpose mapping

Features

- ◆ Survey grade LiDAR system
- ◆ Designed for challenging applications
- ◆ Equipped with higher-level POS system
- ◆ 300m max detection range

Applications



System Parameters

System Parameters	Accuracy	10cm@150m	Point Density	53pts/m²@150m@10m/s
	Storage	64GB , Max support 256GB TF card	Weight	1.1kg
	Dimension	14.4cm*10.9cm*12cm	System consumption	20W
	Working Temperature	-20°C~+55 °C	Voltage Range	12V-24V
	Carrying Platform	Multi-Rotor/VTOL/Vehicle		
POS Unit	Model	gSpin 310	Update Frequency	200Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.005°
	Heading Accuracy	0.017°	Roll Accuracy	0.005°
Laser Unit	Measuring Range	MAX 300m	Range Accuracy	±1cm
	Laser Line Number	32-channel	Data	Triple echo, 1,920,000 Points/Sec
	FOV	360°		
Camera	Effective Pixels Focal Length	26 MP / 16 mm	FOV	83°

GS-920

Better Penetration and Precision



GS-920X is a next-generation airborne LiDAR scanning system newly developed by Geosun Navigation. Equipped with mapping-grade LiDAR, a self-developed high-performance POS system, and a modular mapping camera, the system features long measurement range, lightweight design, strong penetration capability, and high efficiency. It is suitable for large-area topographic surveys with significant elevation differences, emergency surveying, 3D real-scene modeling development, as well as exploration and design applications.

Range: ≤300m

Feature: **Single-beam, long-range with high precision**

GS-960

Precision Redefined and Range Extended



The GS-960X is the flagship airborne LiDAR system of GEOSUN, built for demanding geospatial missions. Combining a high-performance LiDAR sensor, proprietary precision POS, and modular imaging, it delivers exceptional range, accuracy, and data density. Engineered for complex terrain, large-scale topographic mapping, and 3D reconstruction, the GS-960X ensures reliable results where performance matters most.

Range: ≤300m

Feature: **Single-beam, unlimited echoes**

Recommended Application: **Forestry**

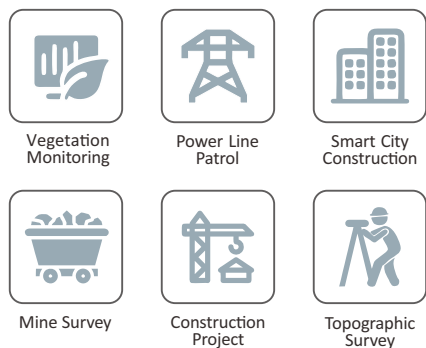
Features

- ◆ Supports real-time point cloud and real-time feedback
- ◆ Has 7-echo capabilities and can easily penetrate vegetation
- ◆ The entire machine weighs as little as 1.6 Kg, It supports the DJI M300/M350 SDK interface
- ◆ Highly integrated, it features a smaller size, lighter weight, enabling drones to operate for a longer time

System Parameters

System Parameters	Accuracy	5cm@150m	Point Density	120pts/m³@200m@10m/s
	Storage	256GB MicroSD Card	Weight	1.7kg
	Dimension	21.4cm*8.8cm*10.6cm	System consumption	50W
	Working Temperature	-20°C~+55 °C	Voltage Range	9V~36V
	Carrying Platform	Multi-Rotor/VTOL		
POS Unit	Model	gSpin 310	Update Frequency	200 Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; GAL E1/E5a/E5b; BDS B1c/B1/B2/B2a/B2b/B3		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.005°
	Heading Accuracy	0.017°	Roll Accuracy	0.005°
Laser Unit	Measuring Range	Max 1000m	Range Accuracy	5mm@100m
	Laser Line Number	Single Beam	Data	Seven echo, 100Khz - 1000Khz
	FOV	90°		
Camera	Effective Pixels Focal Length	45 MP / 18 mm	FOV	100.5°

Applications



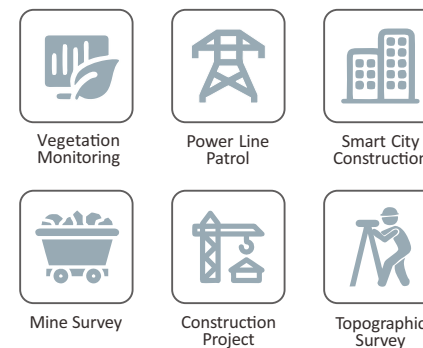
Features

- ◆ Supports real-time point cloud and real-time feedback
- ◆ Has unlimited-echo capabilities and can easily penetrate vegetation.
- ◆ The entire machine weighs as little as 1.6 Kg, It supports the DJI M300/M350 SDK interface
- ◆ Highly integrated, it features a smaller size, lighter weight, enabling drones to operate for a longer time

System Parameters

System Parameters	Accuracy	5cm@150m	Point Density	120pts/m³@200m@10m/s
	Storage	128GB MicroSD Card	Weight	1.6kg
	Dimension	21.7cm*9cm*9.9cm	System consumption	70W
	Working Temperature	-20°C~+55 °C	Voltage Range	24V-30V
	Carrying Platform	Multi-Rotor/VTOL		
POS Unit	Model	gSpin 310	Update Frequency	200 Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; GAL E1/E5a/E5b; BDS B1c/B1/B2/B2a/B2b/B3		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.005°
	Heading Accuracy	0.017°	Roll Accuracy	0.005°
Laser Unit	Measuring Range	750m@80%	Range Accuracy	0.5cm
	Laser Line Number	Unlimited	Data	Unlimited echo, 100KHz - 550KHz
	FOV	80°		
Camera	Effective Pixels Focal Length	45 MP / 18 mm	FOV	100.5°

Applications



GS-1500N

Airborne Precision, Long-Range Mastery



GS-1500N LIDAR Solution is a long range detection & large-scale 3D data acquisition system independently developed by Geosun Navigation. Its shell is made of advanced aluminium alloy materials and integrates long range laser scanners, GNSS satellite positioning systems, INS inertial navigation systems and other functional modules. It can quickly obtain high-precision point cloud data and has the characteristics of easy application, high integration, small volume, and low power consumption. It can be widely used in mapping & surveying, forestry, power line patrol, agriculture, land and resources, water conservancy, smart city construction.

Range: ≤400m Feature:Single-beam, unlimited echoes,
designed for VTOL and fixed-wing UAVs with wider vision

Features

- ◆ Equipped with high-end POS system
- ◆ 1,500m max detection range
- ◆ For UAVs and manned aircrafts
- ◆ Large scale aerial surveying

Applications



Topographic Survey



Power Line Patrol



Smart City Construction



Mine Survey



Construction Project

System Parameters

System Parameters	Accuracy	10cm@400m	Point Density	40pts/m²@400m@10m/s
	Storage	64GB , Max support 256GB TF card	Weight	2.5kg
	Dimension	23.8cm*10.2cm*13cm	System consumption	55W
	Working Temperature	-20°C~+55 °C	Voltage Range	24V
	Carrying Platform	Multi-Rotor/VTOL		
POS Unit	Model	gSpin 410	Update Frequency	200 Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.003°
	Heading Accuracy	0.010°	Roll Accuracy	0.003°
Laser Unit	Measuring Range	1500m@80%	Range Accuracy	5mm@100m
	Laser Line Number	Single Beam	Data	Five echo, 500,000 Points/Sec
	FOV	100°		
Camera	Effective Pixels Focal Length	45 MP / 18 mm	FOV	100.5°

GS-1800N

Wider Vision, Richer Capture



GS-1800N is a long-range and high-precision airborne LiDAR scanning system independently developed by Geosun Navigation. It is an advanced scanning system independently developed by Geosun Navigation. It captures high-precision point cloud data quickly and efficiently. With its user-friendly design, high integration, compact size, and low power consumption, the GS-1800N is ideal for applications in surveying, land management, transportation, power, and digital city projects.

Range: ≤ 600 m, designed for mobile mapping with robust platform compatibility

Features

- ◆ Multi platform highly integrated system
- ◆ Rapid-release design for simplified installation
- ◆ High-performance laser with ultra-low error
- ◆ High-precision INS with enhanced accuracy

Applications



Topographic Survey



Power Line Patrol



Smart City Construction



Mine Survey



Construction Project

System Parameters

System Parameters	Accuracy	10cm@600m	Point Density	10pts/m²@400m@10m/s
	Storage	256GB MicroSD Card	Weight	5.3kg
	Dimension	34.8cm*14.8cm*18.8cm	Voltage Range	24V
	Working Temperature	-20°C~+55 °C	Carrying Platform	Multi-Rotor/VTOL/ Vehicle/Shipborne
POS Unit	Model	gSpin 410	Update Frequency	200~1000 Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.003°
	Heading Accuracy	0.010°	Roll Accuracy	0.003°
Laser Unit	Measuring Range	Max 1845m	Range Accuracy	≤15mm
	Laser Line Number	Single Beam	Data	Unlimited echo, 1,500,000 Points/Sec
	FOV	360°		
Camera	Effective Pixels Focal Length	45 MP / 18 mm	FOV	100.5°
Panoramic Camera (Optional)	Effective Pixel	30MP (6 X 5MP)	Focal Length	4.4mm (Fixed Focus)

GS-2000N

Born for Aerial Surveying



GS-2000N LiDAR Solution is a long range detection & higher precision 3D data acquisition system specially designed by Geosun Navigation for large-scale aerial survey projects. It is integrated long-range laser sensor, GNSS satellite positioning systems, INS inertial navigation systems, full frame cameras and storage control units. It can be loaded on multiple platforms such as multi-rotor, fixed-wing, and helicopter, supports non-base station operation mode, and can provide customers in many fields with a complete integrated solution, including terrain surveying, road measurement, power inspection, etc...

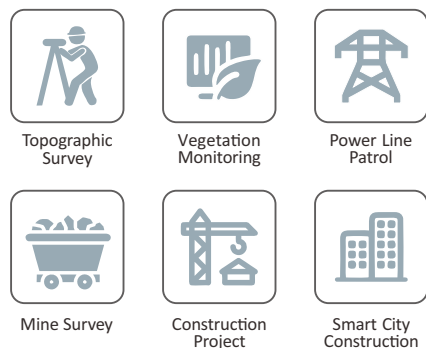
Range: **≤1000m**

Feature: **Unlimited Echoes, Single-beam, long-range with high penetration**

Features

- ◆ Equipped with high-end POS system.
- ◆ 2,000m max detection range
- ◆ For UAVs and manned aircrafts
- ◆ Large scale aerial surveying

Applications



System Parameters

System Parameters	Accuracy	10cm@600m	Point Density	40pts/m²@400m@10m/s
	Storage	64GB , Max support 256GB TF card	Weight	3.3kg
	Dimension	25.4cm*13.3cm*12.5cm	System consumption	70W
	Working Temperature	-20°C~+55 °C	Voltage Range	18V-24V
	Carrying Platform	Multi-Rotor/VTOL		
POS Unit	Model	gSpin 410	Update Frequency	200Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.003°
	Heading Accuracy	0.010°	Roll Accuracy	0.003°
Laser Unit	Measuring Range	MAX 2000m	Range Accuracy	3mm@100m
	Laser Line Number	Single Beam	Data	Seven echo, 2,000,000 Points/Sec
	FOV	75°		
Camera	Effective Pixels Focal Length	45 MP / 40 mm	FOV	57°

GS-2000R

Powered by RIEGL, Premium Performance



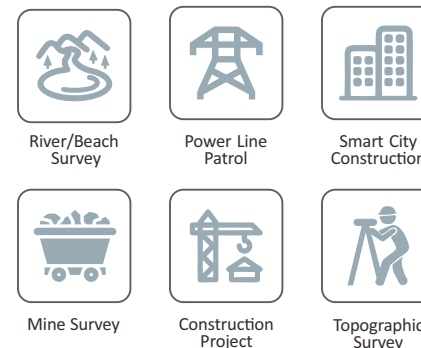
GS-2000R is a long-range and high-precision airborne LiDAR scanning system independently developed by Geosun Navigation. It highly integrates a mechanical laser scanner, a GNSS satellite positioning system, and an INS inertial navigation system. This allows it to rapidly acquire high-precision LiDAR point cloud data and can be widely applied in industries such as surveying and mapping, land and resources, transportation, power, and digital cities.

Equipped with RIEGL laser sensor; flagship-level precision and performance

Features

- ◆ Equipped with high-end POS system
- ◆ 1,845m max detection range
- ◆ Imported laser has withstood the test of the market for a long time
- ◆ Large scale aerial surveying

Applications



System Parameters

System Parameters	Accuracy	≤5cm	Point Density	10pts/m²@400m@10m/s
	Storage	512GB MicroSD Card	Weight	4.5kg
	Dimension	30.8cm*22.2cm*12.8cm	System consumption	75W
	Working Temperature	-20°C~+55 °C	Voltage Range	24V
	Carrying Platform	Multi-Rotor/VTOL/Vehicle/shipborne		
POS Unit	Model	gSpin 410	Update Frequency	200~1000 Hz
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.003°
	Heading Accuracy	0.010°	Roll Accuracy	0.003°
Laser Unit	Measuring Range	Max 1845m	Range Accuracy	≤15mm
	Laser Line Number	Single Beam	Data	Unlimited echo, 1,500,000 Points/Sec
	FOV	360°		
Camera	Effective Pixels Focal Length	45 MP / 18 mm	FOV	100.5°

gAirHawk-series

LiDAR Scanning System

Parameter Comparison



GS-100C+



GS-130X



GS-260X

System Parameters	Accuracy	10cm@100m	10cm@100m	10cm@150m
	Weight	1kg	1.4kg	1.1kg
	Dimension	13.6cm*9.4cm*9.1cm	14.2cm*10.9cm*12cm	14.4cm*10.9cm*12cm
	Carrying Platform	Multi-Rotor/VTOL	Multi-Rotor/VTOL/Vehicle	Multi-Rotor/VTOL/Vehicle
	Voltage Range	12V-24V	12V-24V	12V-24V
	Point Density	140pts/m²@100m@10m/s	80pts/m²@100m@10m/s	53pts/m²@150m@10m/s
	Storage	64GB , Max support 256GB TF card	64GB , Max support 256GB TF card	64GB , Max support 256GB TF card
	System consumption	20W	20W	20W
	Working Temperature	-20°C~+55 °C	-20°C~+55 °C	-20°C~+55 °C
POS Unit	Model	gSpin 210	gSpin 210	gSpin 310
	GNSS Signal Type	GPS L1/L2/L5;GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b	GPS L1/L2/L5;GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b	GPS L1/L2/L5;GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Horizontal 0.02m Vertical 0.03m	Horizontal 0.02m Vertical 0.03m
	Update Frequency	200 Hz	200 Hz	200 Hz
	Heading Accuracy	0.040°	0.040°	0.017°
	Pitch Accuracy	0.015°	0.015°	0.005°
	Roll Accuracy	0.015°	0.015°	0.005°
Laser Unit	Measuring Range	230m@20%	Max 120m	MAX 300m
	Laser Line Number	Equivalent to 64-beam	32-channel	32-channel
	FOV	70°	360°	360°
	Range Accuracy	± 1cm	±1cm	± 1cm
	Data	Triple echo, 720,000 Points/Sec	Double echo, 1,280,000 Points/Sec	Double echo, 1,280,000 Points/Sec
Camera	Effective Pixel	26MP	26MP	26MP

gAirHawk-series

LiDAR Scanning System

Parameter Comparison



GS-960



GS-2000N



GS-2000R

System Parameters	Accuracy	5cm@150m	10cm@600m	5cm@600m
	Weight	1.6kg	3.3kg	4.5kg
	Dimension	21.7cm*9cm*9.9cm	25.4cm*13.3cm*12.5cm	30.8cm*22.2cm*12.8cm
	Carrying Platform	Multi-Rotor/VTOL	Multi-Rotor/VTOL	Multi-Rotor/VTOL/Vehicle/shipborne
	Voltage Range	24V-30V	18V-24V	24V
	Point Density	120pts/m²@150m@10m/s	40pts/m²@400m@10m/s	10pts/m²@400m@10m/s
	Storage	64GB , Max support 256GB TF card	64GB , Max support 256GB TF card	64GB , Max support 512GB TF card
	System consumption	70W	70W	75W
	Working Temperature	-20°C~+55 °C	-20°C~+55 °C	-20°C~+55 °C
POS Unit	Model	gSpin 310	gSpin 410	gSpin 410
	GNSS Signal Type	GPS L1/L2/L5;GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b	GPS L1/L2/L5;GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b	GPS L1/L2/L5;GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b
	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Horizontal 0.02m Vertical 0.03m	Horizontal 0.02m Vertical 0.03m
	Update Frequency	200 Hz	200 Hz	200 Hz
	Heading Accuracy	0.017°	0.010°	0.010°
	Pitch Accuracy	0.005°	0.003°	0.003°
	Roll Accuracy	0.005°	0.003°	0.003°
Laser Unit	Measuring Range	MAX 750m	MAX 2000m	MAX 1845m
	Laser Line Number	Singl beam	Singl beam	Singl beam
	FOV	80°	75°	360°
	Range Accuracy	5mm	3mm@100m	≤15mm
	Data	Unlimited echo, 100KHz - 550KHz	Seven echo, 2,000,000 Points/Sec	Unlimited echo, 1,500,000 Points/Sec
Camera	Effective Pixel	45MP	45MP(Full-frame Camera)	45MP(Full-frame Camera)

Sky-Ground Unity

gFireEye

Hand-held LiDAR Scanning System

The handheld LiDAR scanning system developed by Geosun Navigation. Its compact design, combined with its lightweight and easy-to-use features, make it a versatile tool for various applications. The device has a 360° rotating cloud platform that can generate 270°x360° point cloud coverage. With industry-level SLAM algorithms, it can seamlessly acquire high-precision and high-resolution 3D point cloud data in both GNSS and non-GNSS environment.



Multi-platform



Hand-held SLAM LiDAR

	GS-100G	GS-120G	GS-130G
General System Performance			
Absolute Accuracy	≤5cm	≤5cm	≤5cm
Battery Duration	2h	2h	2h
Weight	2.15kg	2.15kg	1.7kg
Data Storage	128GB	128GB	128GB
Battery Capacity	11600mAh	11600mAh	11600mAh
Power Consumption	25W	25W	25W
Carrying Platform	Handheld, Backpack	Handheld, Backpack	Handheld, Backpack
Operating Temperature	-20° - +55°	-20° - +55°	-20° - +55°
Voltage	12V - 18V	12V - 18V	12V - 18V
POS Performance			
POS Model	gSpin 210	gSpin 210	gSpin 210
IMU Update Rate	200Hz	200Hz	200Hz
GNSS System	GPS L1/L2/L5; GLONASS L1/L2; GAL E1/E5a/E5b; BDS B1c/B1/B2/B2a/B2b/B3		
Position Accuracy	0.020m horizontal, 0.030m vertical	0.020m horizontal, 0.030m vertical	0.020m horizontal, 0.030m vertical
Pitch Accuracy	0.015°	0.015°	0.015°
Roll Accuracy	0.015°	0.015°	0.015°
Heading Accuracy	0.040°	0.040°	0.040°
Laser Scanner Performance			
Measuring Range	120m	120m	300m
Range Accuracy	±1.5cm	±1.5cm	±1cm
Laser Line Number	16-channel	32-channel	32-channel
Data	640,000 Points/Sec	1,280,000 Points/Sec	1,920,000 Points/Sec
Field of View (FOV)	270°/360°	270°/360°	270°/360°
Camera			
Resolution	2×20MP	2×20MP	2×20MP
Mapping			
Mapping Method	SLAM; RTK-SLAM; PPK-SLAM		
Software			
PointCloudCreator	Self-developed point cloud preprocessing software		
Point Cloud Automata (Optional)	World-leading point cloud classification and post processing software		

GS-200G

Lighter Weight, Lower Cost



GS-200G is a lightweight, high-performance handheld LiDAR system developed by Geosun Navigation. Featuring the Livox Mid-360 laser sensor and powered by advanced SLAM algorithms, it delivers full-coverage 3D point cloud acquisition with high precision and stability in both GNSS-available and GNSS-denied environments. Its compact design enhances mobility, making it ideal for indoor and outdoor mapping tasks such as urban surveying, infrastructure inspection, and digital twin modeling. Combining LiDAR, GNSS, and INS technologies, the GS-200G offers seamless, reliable data processing in a wide range of professional applications.

Dimension: 16.5cm*12cm*32.4cm
Weight: 1.0kg

Pitch/Roll Accuracy : 0.015°
Heading Accuracy : 0.040°

Features

- ◆ Lighter and cheaper
- ◆ Rapid-release design for simplified installation
- ◆ High-performance laser with ultra-low error
- ◆ High-precision INS with enhanced accuracy

System Parameters

System Parameters	Accuracy	≤5cm	System consumption	< 25W
	Storage	128GB MicroSD Card	Weight	1.0kg
	Dimension	16.5cm*12cm*32.4cm	Voltage Range	12V~20V
	Working Temperature	-20°C~+55 °C	Carrying Platform	Handheld
POS Unit	Position Accuracy	Horizontal 0.02m Vertical 0.03m	Pitch Accuracy	0.015°
	Heading Accuracy	0.040°	Roll Accuracy	0.015°
	GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b		
Laser Unit	Measuring Range	40m@10% 70m@80%	Range Accuracy	≤2cm@10m ≤3cm@0.2m
	Scanning Method	Non repetitive scanning	Data	Single echo, 200,000 Points/Sec
	FOV	Horizontal 360° Vertical -7°~52°		
Camera	Effective Pixel	2*20MP	FOV	200°

Applications



Underground Parking



Factory Digital Management



Cave Survey



Earthwork Survey



Topographic Survey



Digital Heritage Preservation

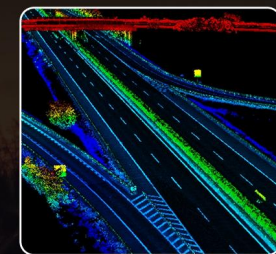
gCollector

Road Reality Capture System

Applications



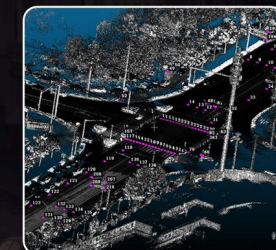
Intelligent Driving
Data Annotation



Highway Surveying



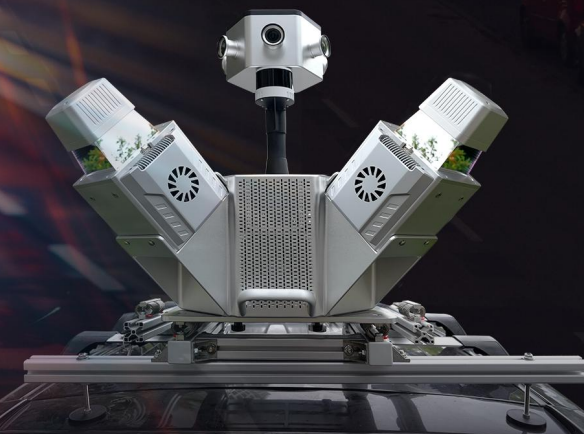
Road Asset
Management



As-built
Surveying



际上导航
GEOSUN



gCollector-series

Road Reality Capture System



The gCollector Road Information Collection System is a mobile real scene collection system that integrates LiDAR, panoramic cameras, GNSS, IMU, WS and PC. It can be mounted on cars, trains or ships to collect centimeter-level high-precision point clouds and panoramic views data, and intelligent software can independently implement functions such as route optimization, calibration, data processing, and result extraction. The gCollector Road Information Collection System is autonomous, intelligent, easy to use, and has excellent performance. It can easily handle real scene 3D urban scenes, road component census, highway, railway retesting and other scenarios.

Features

Precise positioning

GNSS+INS+WS+LiDAR+Camera+Intelligent algorithms reduce the layout of control points in underground garages, etc.
High-precision data can be obtained through SLAM in areas without GNSS data, broaden application scenarios.

Versatile platforms,flexible applications

Supports GNSS antennas and compliance with different traffic regulations Mechanical, optical and railway odometers meet the requirements of railways and ships positioning of on-board and vehicle-mounted, one machine can be used for multiple purposes.

Panoramic camera improves efficiency

A surveying-grade panoramic camera that delivers smooth and stable imaging, providing users with a more comfortable panoramic experience and better meeting their needs to improve overall work efficiency.

Highly integrated, lightweight and compact

Host integration, integrated panoramic camera, LiDAR, GNSS, IMU and WS modules, suitable for various vehicles, highly integrated equipment effectively protects internal sensors and operates stably.

System Parameters

gCollector 302

Laser Unit	Measuring Range	Max 300m	FOV	360°/40.3°
	Range Accuracy	±0.5cm	System Consumption	220W
	Laser Line Number	32-channel	Data	Triple echo, 1,920,000 Points/Sec
POS Unit	Model	gSpin310	Position Accuracy	Horizontal 0.01m Vertical 0.02m
	Update Frequency	200Hz	Pitch/Roll Accuracy	0.005°/0.005°
	GNSS Signal Type	GPS /BDS / GALILEO /Galileo/QZSS	Heading Accuracy	0.017°
Panoramic surveying camera	Resolution ratio	(2448*2048)*7	Focal length	3. 37mm
	Max Frame rate	30 fps	Exposure time	25μs~2.5sec
	Pixel format	Bayer RG 8/10/10Packed/12/12Packed ; YUV422Packed,YUV422_YUYV_Packed RGB 8,BGR 8		

gCollector 502

Laser Unit	Measuring Range	Max 300m	FOV	360°/40.3°
	Range Accuracy	±0.5cm	System Consumption	220W
	Laser Line Number	32-channel	Data	Triple echo, 1,920,000 Points/Sec
POS Unit	Model	gSpin 510	Position Accuracy	Horizontal 0.02m Vertical 0.03m
	Update Frequency	200Hz	Pitch/Roll Accuracy	0.003°/0.003°
	GNSS Signal Type	GPS /BDS / GALILEO /Galileo/QZSS	Heading Accuracy	0.010°
Panoramic surveying camera	Resolution ratio	(2448*2048)*7	Focal length	3.37mm
	Max Frame rate	30 fps	Exposure time	25μs~2.5sec
	Pixel format	Bayer RG 8/10/10Packed/12/12Packed ; YUV422Packed,YUV422_YUYV_Packed RGB 8,BGR 8		

gCollector-504

Road Reality Capture System

Integrates LiDAR, panoramic camera, GNSS, IMU, WS, and a machine learning platform.Mounted on various mobile platforms, it captures centimeter-level 3D point clouds and panoramic images.Its intelligent software supports route planning, calibration, data processing, and result extraction.Featuring autonomous operation, easy workflow, and excellent performance, it serves applications in autonomous driving, HD mapping, urban 3D modeling, road inspection, and highway or railway surveying.



System Performance Specifications

Absolute Accuracy	3cm (RMSE, open area)	Relative Accuracy	3cm (RMSE, open area)
Repeatability	5cm (RMSE, open area)	Power Supply	Vehicle-mounted
Data Storage	4 TB SSD (removable)	Operating Temperature	-20°C ~ +50°C
Power Consumption	220W		

SLAM & LiDAR Parameters

SLAM Laser	1	Measurement Lasers	2
Maximum Measurement Range	1,800m	Echoes	Unlimited
Accuracy	±3mm	FOV	360°
Point Rate	4million pts/sec	Scan Beams	Single beam

POS Parameters

POS Unit	Model	gSpin 510	Pitch/Roll Accuracy	0.003°
	Update Frequency	200Hz	Heading Accuracy	0.010°
	Positioning Accuracy	0.02m -0.03m		
	GNSS Signal Types	GPSL1/L2/L5; GLONASS L1/L2; GALILEO E1/E5a/E5b; BDS B1c/B1/B2/B2a/B2b/B3(supports single Beidou)		
Gyroscope Parameters	Type	Fiber-optic	Range	±500°/s
	Bias Repeatability	0.05°/hr	Bias Stability (10 s smoothing)	0.1°/hr
	Angle Random Walk	0.01°/√ hr	Nonlinearity	10ppm
Accelerometer Parameters	Type	Quartz	Range	20g
	Bias Repeatability	0.02mg	Bias Stability (10 s smoothing)	0.02mg
	Velocity Random Walk	0.05mvs/√ hr	Nonlinearity	30ppm

Panoramic Camera Parameters

Resolution ratio	2448×2048	Number of Cameras	7
Frame Rate	30 fps	Exposure Time	25μs~2.5sec
Pixel Format	Bayer RG 8/10/10Packed/12/12Packed ; YUV422Packed,YUV422_YUYV_Packed; RGB8,BGR8		
Ladybug	Optional	PANODUX	Optional

PointCloudCreator

Point Cloud Preprocessing Software



Automatic identification
of raw data



One Key
processing



Automatic identification
of hardware parameters



Supports a variety
of coordinate
transformations



True color
point cloud



One key strip
adjustment and point
cloud optimization



PointCloudCreator

Point Cloud Preprocessing Software



PointCloudCreator is a point cloud preprocessing software that integrates the proprietary trajectory calculation software Shuttle, and point cloud calculation and optimization modules. Shuttle combines base station GNSS data, mobile station GNSS data, IMU data, LiDAR data, etc. To provide high-precision position, velocity, and attitude information for scanning systems.

Point cloud calculation and optimization are then performed using the high-precision POS information.



Mesh Model

Generate OBJ and OSGB 3D mesh models easily and turn any scene into an editable digital space.



3DGS Model

Smart 3D GS technology creates high-precision ultra-realistic3D models with accurate measurement and interactive capabilities for diverse scenarios.

Features

- ◆ **Easy to Operate**
Supports parameter memory and import/export, has simple parameter configuration, and features a guided operation process that can be completed in just a few steps.
- ◆ **Strip Adjustment**
Optimizes point clouds to an output of 2-3 cm colored point clouds, and provides direct geographic information reference for point cloud data using high-precision POS results.
- ◆ **Data Calculation**
It has strong applicability and can perform data calculation for LiDAR devices such as helicopters, drones, vehicles, and hand-held devices.
- ◆ **Wide Selection of LiDAR Sensors**
It has a wide selection of LiDAR sensors available, including commonly used sensors on the market such as Livox, Riegl, and Hesai.
- ◆ **Diverse Calculation Range**
During calculation, it can perform distance filtering, angle filtering, GNSS time splitting, range filtering, laser line filtering, etc. to eliminate unnecessary data.
- ◆ **Autonomous Coordinate Conversion**
Coordinate conversion is autonomous during the calculation process, allowing for the conversion of point clouds to the coordinate system required by the customer.
- ◆ **Fast Calculation Speed**
It can quickly calculate data obtained from LiDAR scanning systems and generate LAS format point clouds.

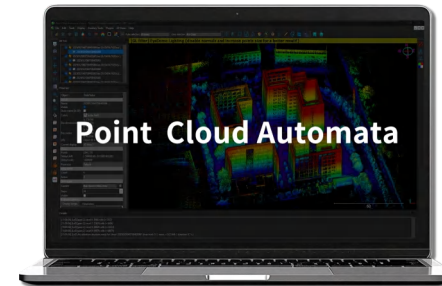
Point Cloud Automata

A World-Leading Software for Point Cloud Classification and Post-Processing



Point Cloud Automata

A World-Leading Software for Point Cloud Classification and Post-Processing



The PCA is a LiDAR point cloud processing and analyzing software. The PCA initially designed for Geosun point cloud data, but also is applicable for other type of point cloud data. The highlight of PCA is automatic processing, such as filtering, classification and individual tree segmentation.

Features

- ◆ **Basic Tools of Point Cloud**
It mainly involves basic synthesis and management of point cloud formats and coordinate conversion, slicing and merging, thinning and denoising, strip adjustment, etc., and provides realistic and three-dimensional rendering and color schemes.
- ◆ **One-click automatic classification**
One-click, parameter-free intelligent point cloud filtering algorithm, which reduces user learning and improves efficiency.
- ◆ **Typical target recognition and reconstruction**
Including identification and reconstruction of buildings, roads, trees, plane entities, power lines, poles, rock structural surfaces, etc., as well as vectorized output, with complete data exchange and manual editing functions.
- ◆ **Energy industry applications**
Widely used in land and resources, agriculture, forestry, water conservancy, electric power, smart city, petroleum, surveying and mapping, transportation, communications and other fields.

Main Feature



Extremely
high density



Massive data



Precise location



Penetration
of vegetation



Fusion of RGB
and point cloud



Performing strip
adjustment



No outliers



More applications



Thunder

Multi-Payload Commercial Drone

GS-L400

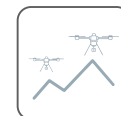
Multi-Payload Commercial Drone



GS-L400 is a new lightweight industrial-grade drone that integrates the cutting-edge technology of the UAV system. It has made major breakthroughs in terms of stability, autonomy and intelligence. It has industry-leading drone cross-line-of-sight networking technology, easily realizing intelligent interconnection of multiple drones and control equipment, doubling operating efficiency. The frame is made of magnesium alloy. The body is foldable, safe, stable and easy to carry. It is equipped with a millimeter-wave radar fusion binocular sensing system, which can achieve omnidirectional obstacle avoidance and calculate the building through the airborne edge to ensure refined automation of various inspection operations.

Product Advantages

- ◆ Multi-machine relay networking, communication across barriers
- ◆ 63 minutes of battery life
- ◆ Professional-level power, backpack-level lightness
- ◆ Millimeter wave radar senses day and night obstacle avoidance and cable obstacle avoidance
- ◆ Multi-scenario operations and supports dual mounts



Multi-machine relay networking



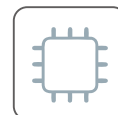
Millimeter wave radar obstacle avoidance



63 minutes of battery life



Lightweight backpack level



21T computing power

System Parameters

Unfolded Size	549 X 592X 424mm
Folded size	347 X 367X 424mm
Maximum takeoff weight	7KG
Symmetrical motor wheelbase	725mm
Maximum load	3kg
Maximum parallel flight speed	23m/s
Maximum takeoff altitude	5000m
Maximum wind resistance level	7
Maximum flight endurance	63 minute
Hover accuracy (GNSS)	level : ±1.5m vertical : ±0.5m
Hover accuracy (visual positioning)	±0.3m
Position accuracy	vertical: 1cm+lppm level : 1.5cm+lppm
IP protection level	IP 45
Image transmission distance	15Km
Omnidirectional obstacle avoidance	Obstacle sensing range (buildings above 10m, large trees, telephone poles and towers) Front: 0.7m~40m (the maximum detectable distance for metal objects is 80m) Left and right: 0.6m~30m (the maximum detectable distance for large metal objects is 40m) Up and down: 0.6m~25 Usage environment: The surface has rich texture and the lighting conditions are sufficient. (>151ux, normal indoor fluorescent lighting environment)

GS-S200

Multi-Payload Commercial Drone

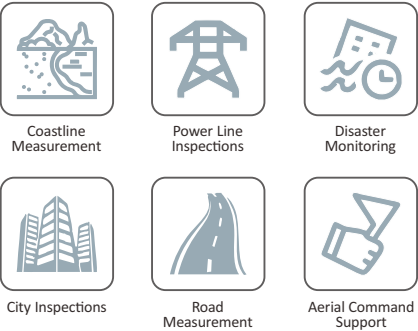


The GS-S200 is a versatile all-electric composite wing drone with a sleek and simple design that enables it to cruise at speeds of up to 90km/h, with an effective endurance of 6 hours. It can easily carry efficient equipment such as LiDAR, professional aerial survey cameras, and high-brightness sensors for efficient operations.

Features

- ◆ **Innovative product design**
Reliable safety control systems
- ◆ **User-friendly experience**
Centimeter-level positioning accuracy, One-click takeoff and landing Simplified user operation
- ◆ **Leading payload design**
A wide range of payload selection options
A mission compartment located at the aircraft's center of gravity for plug-and-play use, meeting users' needs for versatile and application-specific payloads

Applications



System Parameters

Wingspan	300cm
Maximum takeoff weight	25.8kg
Minimum Cruise Airspeed	43.2km/h
Service ceiling	5500m
Dedicated frequency	band for data transmission
Transmission distance	30+ km (depending on the usage environment)
Takeoff and landing mode	RTK centimeter-level real-time differential positioning
Mission range	60km
Operating Temperature	-40 to 50 degrees Celsius
Maximum load weight (excluding aircraft battery)	10kg
Power system	pure electric
Maximum battery life	6h
Wind resistance	level 6
Range	About 158km (10kg load) about 260km (1kg load)
Positioning method	Differential positioning after PPK centimeter level
Load size	412x212x194mm

GS-S300

Multi-Payload Commercial Drone

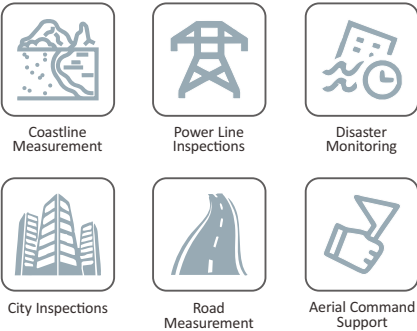


The GS-S300 is a versatile all-electric composite wing drone with a sleek and simple design that enables it to cruise at speeds of up to 90km/h, with an effective endurance of 2.5 hours. It can easily carry efficient equipment such as LiDAR, professional aerial survey cameras, and high-brightness sensors for efficient operations.

Features

- ◆ **Innovative product design**
Reliable safety control systems
- ◆ **User-friendly experience**
Centimeter-level positioning accuracy, One-click takeoff and landing Simplified user operation
- ◆ **Leading payload design**
A wide range of payload selection options
A mission compartment located at the aircraft's center of gravity for plug-and-play use, meeting users' needs for versatile and application-specific payloads

Applications



System Parameters

Wingspan	340cm
Maximum takeoff weight	30kg
Cruising speed	70-100km/h
Service ceiling	5500m
Dedicated frequency	band for data transmission
Transmission distance	30+ km (depending on the usage environment)
Takeoff and landing mode	RTK centimeter-level real-time differential positioning
Mission range	60km
Fuselage length	240cm
Maximum load weight (excluding aircraft battery)	6kg
Power system	pure electric
Maximum battery life	2.5h
Wind resistance	level 6
Range	About 180km (6kg load) about 225km (1.5kg load)
Positioning method	Differential positioning after PPK centimeter level
Load size	412x212x194mm

gSpin

POS System

GNSS/INS Integrated Positioning and Attitude Determination System



The gSpin POS system, consisting of Global Navigation Satellite System (GNSS) and Inertial Navigation System (INS), provides instant position, velocity, and attitude information (pitch, roll, and yaw) of a moving station through GNSS/INS combined differential positioning and attitude determination. In fact, Geosun POS system is divided into two series: lightweight and high accuracy.

gSpin Lightweight Series



The gSpin Lightweight POS is a GNSS/INS integrated system developed for unmanned aerial vehicle (UAV) sensor data. By compactly integrating the differential GNSS high-precision positioning module with a lightweight IMU and using GNSS/INS combination software post-processing, the system provides more accurate and efficient position and attitude information for spatial objects. The gSpin hardware and software system can be integrated with visible light cameras, infrared cameras, multi/hyperspectral cameras, and LIDAR sensors.

Applications



UAV aerial photogrammetry



UAV multi/hyperspectral remote sensing



UAV LIDAR

Features

- ◆ Provides high-precision solutions for moving carriers
- ◆ Replaces aerial triangulation and eliminates ground control points
- ◆ Uses DEM for single monocular object model mapping and single-frame correction
- ◆ Easy to integrate with cameras, LIDAR, and other sensors
- ◆ Improves the production efficiency and accuracy of traditional aerial mapping applications
- ◆ Especially suitable for applications that require quick response to motion status information in sparsely populated areas with no existing control points. It can also provide auxiliary dynamic information for other sensor systems carried by moving carriers

gSpin High-Accuracy



The gSpin High-Accuracy POS is a GNSS/INS integrated system developed for manned moving carriers in the air, on land, and on water. The IMU mainly uses fiber or laser gyroscopes, and supports more sensor data access, such as wheel counting. It provides high-precision position and attitude information for moving carriers, even in adverse GNSS observation conditions such as urban canyons, elevated bridges, tunnels, and forests.

Applications



High-accuracy vehicle dynamic testing



Collection of railway geometric parameter information



Road terrain measurement and survey

Features

- ◆ Continuous positioning even during GNSS outages
- ◆ Weak correlation between attitude accuracy and position accuracy
- ◆ Fast alignment for fast moving objects
- ◆ Quick self-calibration for fast deployment
- ◆ GIS data collection system
- ◆ Optional module combinations
- ◆ Intelligent transportation systems (ITS)

gSpin Lightweight Series					gSpin High-Accuracy		
Model	gSpin110	gSpin112	gSpin210	gSpin310	gSpin410	gSpin510	gSpin610
Update Frequency	200Hz						
GNSS Signal Type	GPS L1/L2/L5; GLONASS L1/L2; BDS B1c/B1/B2/B2a/B2b/B3; GALILEO E1/E5a/E5b						
Position Accuracy	Horizontal 0.02m; Elevation 0.03m						
Attitude accuracy (real-time)	—	Pitch/Roll Accuracy: 0.1° Heading Accuracy: 0.3°	—	—	—	—	—
Attitude accuracy (post processing)	Pitch/Roll Accuracy: 0.025° Heading Accuracy: 0.080°	Pitch/Roll Accuracy: 0.015° Heading Accuracy: 0.040°	Pitch/Roll Accuracy: 0.015° Heading Accuracy: 0.040°	Pitch/Roll Accuracy: 0.005° Heading Accuracy: 0.017°	Pitch/Roll Accuracy: 0.003° Heading Accuracy: 0.010°	Pitch/Roll Accuracy: 0.003° Heading Accuracy: 0.008°	Pitch/Roll Accuracy: 0.003° Heading Accuracy: 0.008°

Shuttle

GNSS/INS Integrated Positioning and Attitude Determination System Post-Processing Software



Aerial Photogrammetry



Urban Mobile Mapping



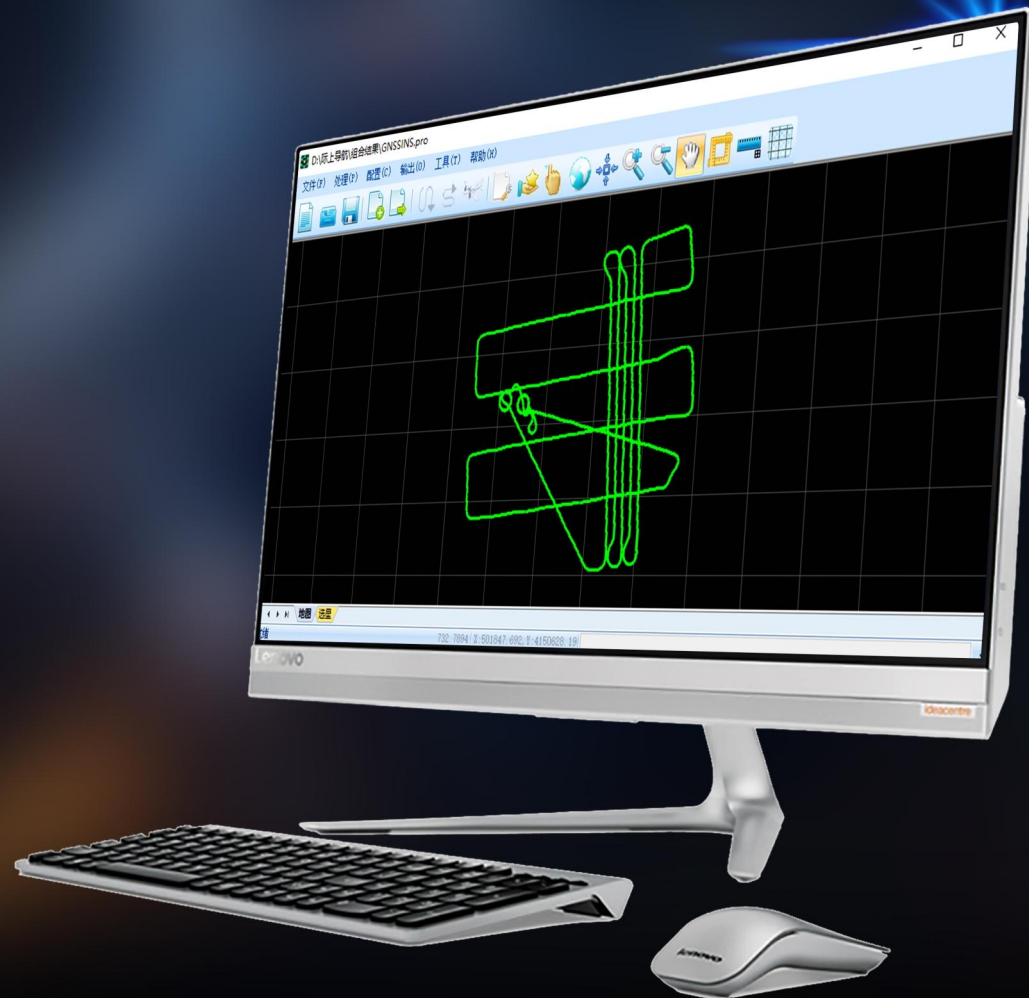
Urban Traffic Positioning and Attitude Determination



Railway



Aircraft Positioning and Attitude Determination



Shuttle

GNSS/INS Integrated Positioning and Attitude Determination System Post-Processing Software



Shuttle is one of three Trajectory processing softwares in the world, the other two are IE (NovAtel) and POSpac (Trimble).

It is a high-precision GNSS/INS positioning and attitude determination post-processing software, independently developed by Geosun Navigation, built-in high precision GPS/GLONASS/Beidou II/Galileo positioning velocity measurement processor (GnssExplorer). The system can process multi-mode GNSS positioning velocity measurement, GNSS/INS combined positioning attitude measurement, providing centimeter-level spatial position information of motion point (or carrier), centimeter-level speed information, and thousand-degree attitude information.

System Features

◆ ECEF Coordinate Navigation Calculation

Inertial navigation calculations are performed in the Earth-Centered Earth-Fixed (ECEF) coordinate system, making it easier to tightly integrate with GNSS.

◆ INS High-Order Error Model

The error model can be configured as a random constant, random walk, or first-order Markov process.

◆ Multiple Format Data Direct Input

IMU data supports incremental data and rate data input, is compatible with Novatel software imr format, and can be converted to ASCII format for easy viewing.

◆ Post-Multi-Directional Filtering

The software supports forward and backward filtering, smoothing filtering, and odometer and total station auxiliary calculation, which can effectively improve accuracy, so even during GNSS loss, continuous high-precision positioning is possible.

◆ User-Friendly Graphical Interface

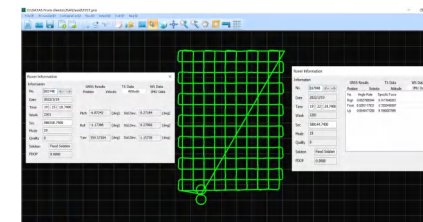
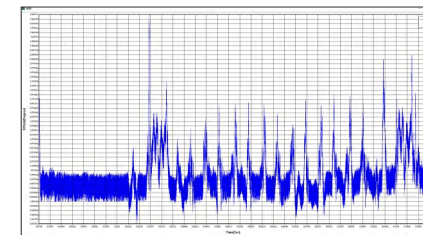
Shuttle software provides a friendly user interface that allows users to perform various graphical operations such as zooming, panning, and distance measuring on the positioning result graph.

◆ User-Defined Output

Users can define the content, units, and format of the output according to their specific needs and save it to an output configuration file for convenient future use.

◆ Coordinate System Management

The system supports common coordinate systems, supports user-defined coordinate systems, and provides conversion between different coordinate systems.



Topographic Survey

Application Cases

Topographic Survey



Conducting mapping in areas with trees and forest cover.

Data Applications

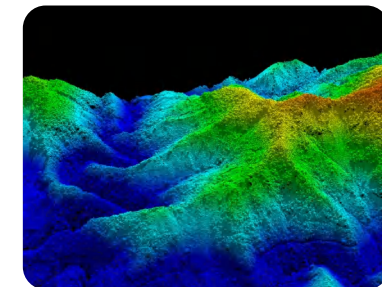
◆ Rich Topographic Results

Based on laser point cloud data, important topographic survey results such as DEM, DSM, DLG contour lines, slope, aspect, and texture roughness can be extracted.

◆ Engineering Surveying

Based on three-dimensional point cloud data collected in the field, quick analysis of earthwork volume and excavation, and measurement of cross-sections can be performed, which can be widely used in applications such as highway engineering, railway surveying, and urban renovation projects.

Achievement Display



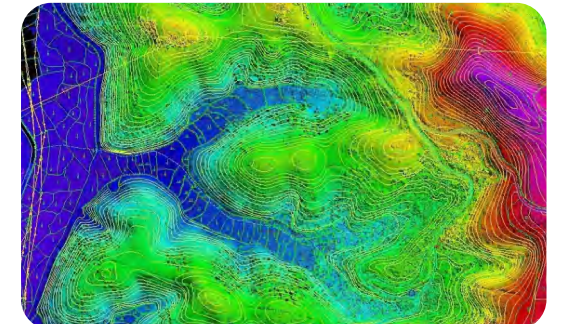
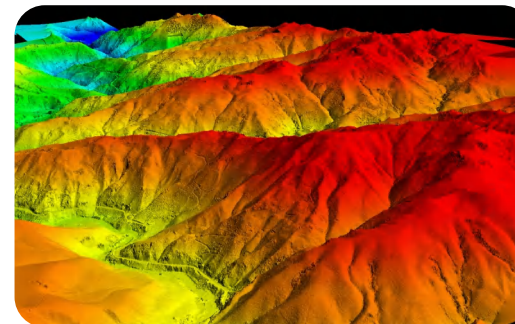
Model: GS-2000N

Flight Speed: 35m/s

Flight Altitude: 900m

Application: Terrain mapping

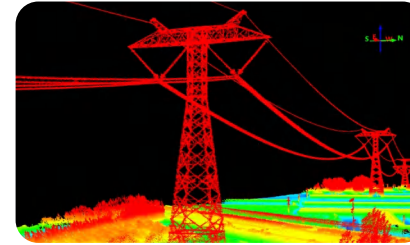
Location: Columbia



Power Line Patrol

Application Cases

Power Line Patrol

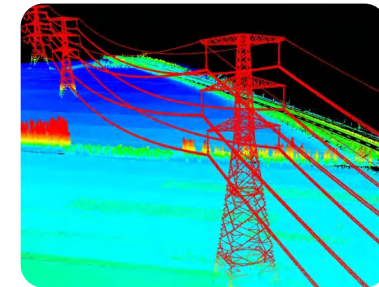


Using laser ranging principles and aerial photogrammetry, can automatically classify power line/pole point clouds and perform real-time analysis of power line conditions.

Data Applications

- ◆ Achieve high-precision and accurate 3D modeling of towers, wires, and terrain
- ◆ Analyze obstacles such as trees and crossovers in the transmission line corridor
- ◆ Support individual tree segmentation within the transmission corridor

Achievement Display



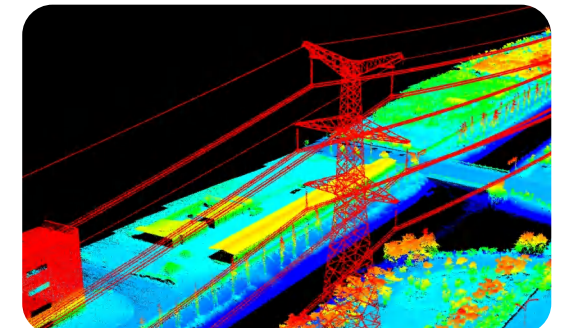
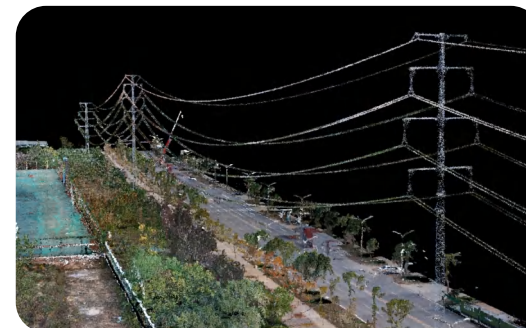
Model: GS-260X

Flight Speed: 7m/s

Flight Altitude: 20-30m above the tower

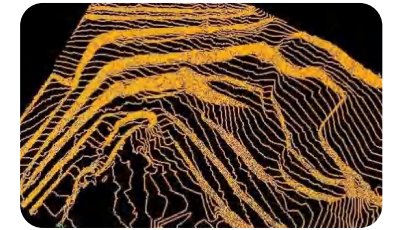
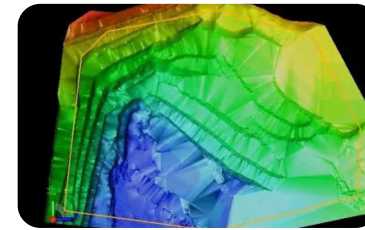
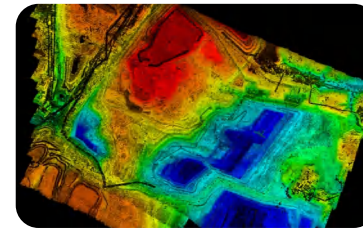
Application: Power line patrol

Location: Domestic

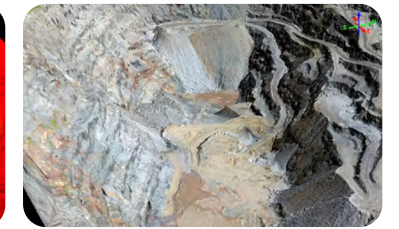
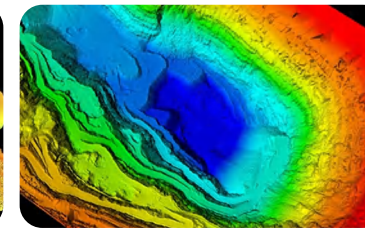
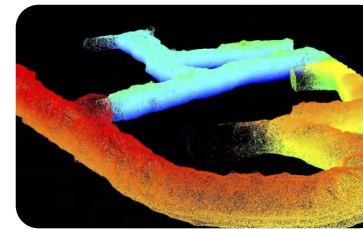
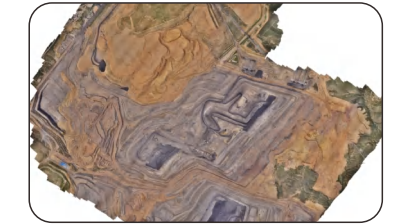


Mine Survey

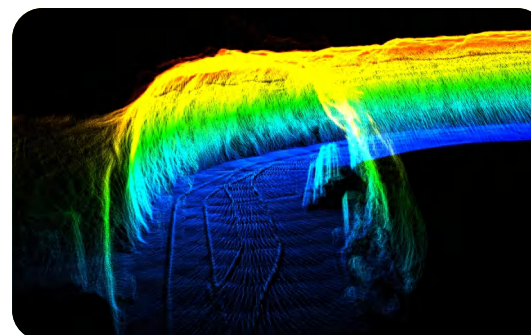
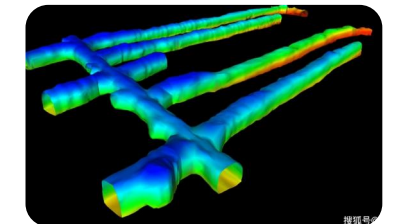
Application Cases



Mining Surveying



Mining Volume Measurement



Tunnels Mineshafts

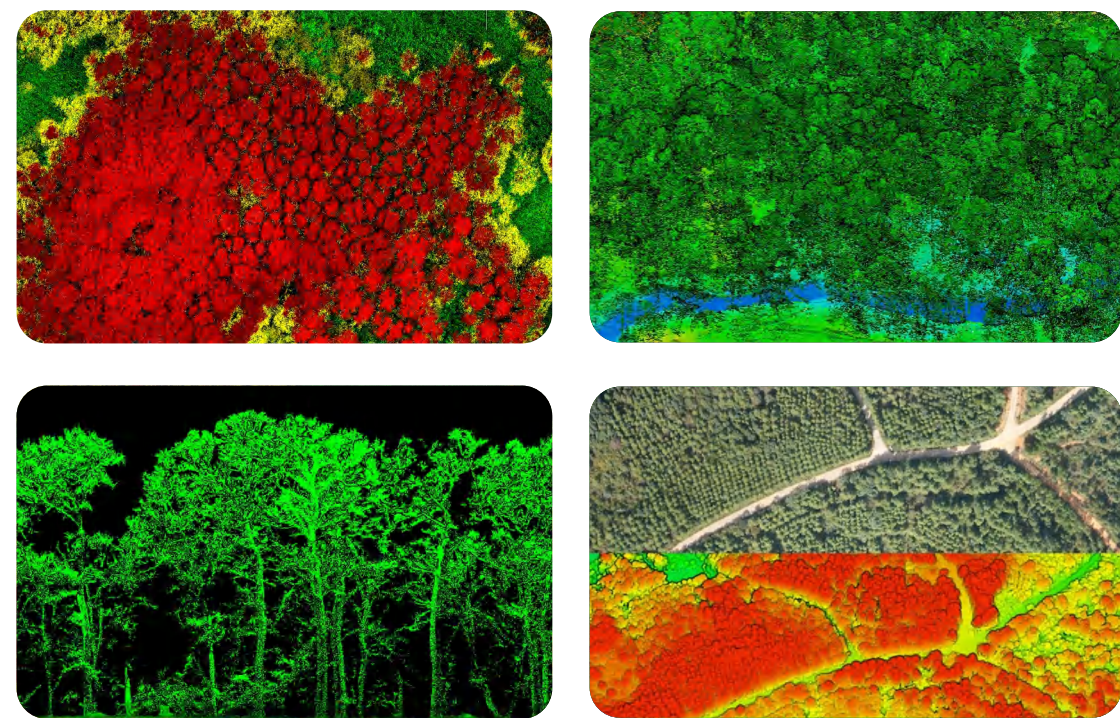
Forestry Survey

Application Cases

Forestry Survey



Achievement Display



Handheld SLAM

Application Cases

