CHC Navigation Headquarter

577 Songying Road, Qingpu, 201703, Shanghai,
China
MARKETING@CHCNAV.COM
+86 21 54260273

CHC Navigation Europe

Office Campus, Building A, Gubacsi út 6, 1097
Budapest, HUNGARY
+36 20 421 6430
Europe_office@chcnav.com

Comprehensive UAV Solutions Brochure





Comprehensive Industrial UAV Solution Provider

CHC Navigation is a global provider of high-precision geospatial technologies, specializing in positioning and navigation, sensing and measurement, and intelligent control technologies for professional applications.

CHCNAV has developed a range of professional-grade UAV platforms and payload solutions for aerial surveying, inspection, public safety, emergency response, and environmental monitoring. The portfolio includes the X500 multirotor UAV, the P35 and P60 VTOL fixed-wing UAVs, airborne LiDAR systems, aerial survey cameras, inspection payloads, communication devices, and mission-specific sensors.

As CHCNAV's flagship multirotor UAV platform, the X500 integrates seamlessly with the Drone Dock station, intelligent accessories, and professional software to support a complete UAV operation workflow. With a maximum payload capacity of 5 kg, the X500 can carry multiple payloads and is compatible with LiDAR systems, aerial survey cameras, inspection gimbal cameras, edge computing modules, lighting and public-address devices, emergency delivery systems, radar flow velocity meters, water samplers, gas detectors, and other specialized sensors.

By combining UAV platforms, intelligent payloads, and application-oriented workflows, CHCNAV solutions support land surveying and mapping, power line inspection, forestry inventory, emergency response, water resource monitoring, mining operations, transportation inspection, and 3D reality capture. These integrated solutions help organizations improve field efficiency, enhance data quality, and accelerate digital transformation across industries.

CONTENTS

Professional UAV Platforms

X500 Multirotor UAV 01
P60 VTOL Fixed-Wing UAV 03
P35 VTOL Fixed-Wing UAV 05

Accessories & Payloads

Accessories

AirInsight Box 07
CS1 Circular-Scanning Millimeter-Wave Radar 08

Geospatial Payload

CHCNAV AlphaAir 6 Series Airborne LiDAR system 09
AlphaAir 15 Pro Lidar System 11
C504 Aerial Survey Gimbal Camera 13

Public Safety Payload

MP130C Digital Voice Broadcast System 14
C640-SE Gimbal Camera 15
GL60C Plus Gimbal Searchlight 17
LP35 Integrated Searchlight & Loudspeaker System 18
TK3-X500 Tethered Power Supply System 19
TH4C Four-Channel Payload Drop System 20

Software

CoProcess 21

CHCNAV Developer Tools 23

Industry Applications 24

X500 Multirotor UAV

The CHCNAV X500 is a professional multirotor UAV engineered for high payload capacity, long endurance, and reliable flight performance. Equipped with advanced flight control, high-precision positioning, Visual SLAM, and obstacle detection sensors, it delivers stable maneuverability and intelligent flight operation for demanding professional missions. Its open and versatile platform design makes it suitable for aerial mapping, inspection, public safety, emergency response, and industrial operations.



High Payload Capacity, Long Endurance

5 KG Max. payload

supports mainstream payload weights



50 mins with AA6

Multiple Redundancies Combined with Intelligent Safeguards Ensure Stable and Safe Flight

Stable Flight

GNSS, IMU, flight control, and other key components feature redundant design for reliable, worry-free flight performance.

Safe Flight

Fully protected by millimeter-wave radar, TOF, vSLAM visual systems, and HD FPV smart sensors, ensuring worry-free flight safety

Exceptional Flight

Highly sensitive, anti-interference, and fault-tolerant flight control ensures an exceptional flying experience.

High-Efficiency Energy System



B10 Intelligent Battery

- 450-cycle lifespan, reducing average operational costs
- Supports hot-swappable dual batteries

BS10 Intelligent Battery Station

- Holds up to 6 batteries, charges 2 simultaneously
  Allows fast charging from 20% to 90% in just 40 minutes
- Advanced battery management system with 3 charging modes

Multiple Payloads and Open SDK for Versatile Applications

Supports up to three payloads simultaneously Compatible with LiDAR, photogrammetric cameras, gimbal cameras, searchlight, loudspeakers, etc.

LiDAR	Photogrammetric cameras	Gimbal-mounted cameras	Illumination devices	Loudspeakers

General system performance

Type	Quadcopter with 4 propellers
Structure	Carbon fiber, quickly release design
Dimensions (unfolded, without propellers)	770 × 804 × 450 mm (L × W × H) 30.3" × 31.7" × 17.7"
Dimensions (folded, with propellers)	485 × 490 × 450 mm (L × W × H) 19.1" × 19.3" × 17.7"
Diagonal wheelbase	1000 mm
Empty weight (with single downward gimbal)	Approx. 4.4 kg (without batteries) Approx. 8.9 kg (with two batteries)
Max. payload	5.0 kg
Max. takeoff weight	13.9 kg
Hovering accuracy (with moderate or no wind)	Vertical: ±0.5 m (with GNSS positioning) ±0.1 m (with RTK positioning) Horizontal: ±1.5 m (with GNSS positioning) ±0.1 m (with RTK positioning)
RTK accuracy (RTK FIX)	1 cm ± 1 ppm Hz 1.5 cm ± 1 ppm V
GNSS	GPS + GLONASS + BeiDou + Galileo
Operating temperature	-20 to 50 °C (-4 to 122 °F)
Storage temperature	-40 to 70 °C (-40 to 158 °F)
Transport container dimensions	792 × 520 × 313 mm (L × W × H) 31.2" × 20.5" × 12.3"

Flight performance

Max. ascent speed	8 m/s
Max. descent speed	6 m/s
Max. speed	23 m/s
Max. flight time (1)	58 mins with no payload 40 mins with 4 kg payload
IP rating (2)	IP55
Obstacle avoidance module	Forward obstacle detection sensor
Obstacle detection range	80 m
Landing deviation (3)	≤ 10 cm (with vision positioning) ≤ 8 cm (with RTK fixed)

Remote controller

Model	EC10
Screen	10.1-inch touchscreen resolution: 1920 × 1200 max. brightness: 1000 nits
Weight	Approx. 1.5 kg
Built-in battery	Li-ion
Operating time	Approx. 5 hours
Operating temperature	-20 to 50° C (-4 to 122° F)
Operating frequency	2.4015 GHz to 2.4814 GHz
Max. transmission distance (with moderate or no wind)	Specialized UAV frequency, anti-disturb feature, radius 20 km

Intelligent Battery

Model	B10
Battery	Li-ion (10000 mAh @ 47.04 V)
Energy	470.4 Wh
Weight	Approx. 2.25 kg
Operating temperature	-20 to 50 °C (-4 to 122 °F)
Ideal Storage temperature	22 to 30 °C (71.6 to 86 °F)
Charging temperature (4)	-20 to 40 °C (-4 to 104 °F)
Charging Time	Approx. 70 mins to fully charge 2 × B10 Approx. 40 mins to charge them from 20% to 90%

Supported payload

Supported payload configurations	Single downward payload Single upward payload Dual downward payload Single downward payload + single upward payload
Supported CHCNAV payload (5)	RGB camera: C5/C30 LiDAR: AU20/AA15/AA10/AA9/AA6/ AA6D/AA15P
Third-party payload (5)	Supports only certified payloads developed based on CHCNAV SDK

Intelligent Battery Station

Model	BS10
Size	576 x 372 x 302 mm(L x W x H) 22.7" × 14.6" × 11.9"
Net weight	Approx. 9.9 kg
Compatible stored items	Six B10 intelligent flight batteries
Input voltage	100-120 VAC, 50-60 Hz 220-240 VAC, 50-60 Hz
Max. input power	1500 W
Output power	1280 W
Operating temperature	-20° to 40° C (-4° to 104° F)

*** Specifications are subject to change without notice.**

(1) Measured with X500 flying at approximately 10 m/s in a windless environment until the battery level reached 0%. Data is for reference only, and actual usage time may vary based on flight mode, accessories, and environmental conditions. please follow app reminders.
(2) The IP rating was tested under controlled conditions; it is not permanently effective and may decrease due to product wear and tear.
(3) GNSS performance was measured with the X500 in open environments with good signal conditions. Results may vary based on takeoff/landing environments and weather conditions.
(4) When the temperature drops below 11 °C (51.8 °F), the battery activates an auto-heating function. Charging at low temperatures may reduce battery life. It is recommended to charge within 15 to 35 °C (59 to 95 °F).
(5) Supported payload types are listed in the user manual and updated with the latest support details.

P60 VTOL Fixed-Wing UAV

The CHCNAV P60 is a heavy-payload VTOL fixed-wing UAV system designed for extended-endurance aerial data acquisition. Built around portability, long flight duration, and streamlined field operation, it combines vertical takeoff and landing capability with efficient fixed-wing flight performance.

Deep integration with CHCNAV payloads simplifies mission preparation, data capture, and post-processing workflows. The P60 is well suited for large-area mapping, corridor inspection, terrain surveying, and professional geospatial applications requiring high coverage efficiency and reliable field deployment.



Payload capacity: 3 kg, 120 min endurance flight time

Equipped with **AA15P** payload



19m/s
Cruising speed

4.2m
Wingspan

40km²
Max coverage per flight



One-click terrain-following flight planning

Automatically generates terrain-adaptive flight routes, ensuring safe operation while maintaining terrain-conformal paths



Proactive after-sales service

24/7 support with proactive maintenance reminders and insurance status notifications

Max operating altitude: 6,500 m

Designed with an airframe structure closer to commercial aviation standards, enabling reliable performance in high-altitude and low-temperature environments



Quick assembly & portable transport



Simple assembly design enables fast deployment and recovery

Specifications

Material	Aerospace composite material	Differential Frequency	1000 Hz
Wingspan	4.2 m	RTK Accuracy [2]	H: ±1 cm + 1 ppm V: ±2 cm + 1 ppm
Fuselage Length	1.6 m	Vertical Take-off Height	50 m to 200 m
Transport Case Dimension	1660 × 960 × 550 mm	Max. Flight Altitude (MSL) [3]	6500 m
Propulsion System	Fully electric	Operating Temperature	-20 to 50 °C (-4 to 122 °F)
Electric Motors	4 + 1	Transmission Distance [4]	Up to 20 km
Max. Takeoff Weight	24.8 kg	Terrain-following Flight	Yes
Max. Payload	6 kg	Setup Time	≤10 mins
Max. Flight Time [1]	120 min @ 3 kg	Pack-up Time	≤10 mins
Cruise Speed	19 m/s	Ground Control Software	EasyFly (Windows)

*** Specifications are subject to change without notice.**

(1) Under optimal condition, ≈1000 hPa pressure, no wind or breeze, +10 to +25°C.
(2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition.
(3) With plateau tail paddle.
(4) Under optimal condition, open area, no obstacle between the base and drone.

P35 VTOL Fixed-Wing UAV

The CHCNAV P35 is an all-electric VTOL fixed-wing mapping UAV designed for high-precision aerial surveying. Combining vertical takeoff and landing with efficient fixed-wing flight, it enables stable and productive data acquisition across complex environments.

Designed for control-point-free operation, long endurance, multi-payload compatibility, and ease of use, the P35 supports efficient aerial mapping workflows for land surveying, infrastructure projects, environmental monitoring, and large-area geospatial data collection.



1000 Hz Control-point-free operation (1)

User-friendly flight planning software

Triple redundancy safety design

IP43 protection rating

Smart battery system

Operating temperature -20 to 50°C

Supports multiple payloads

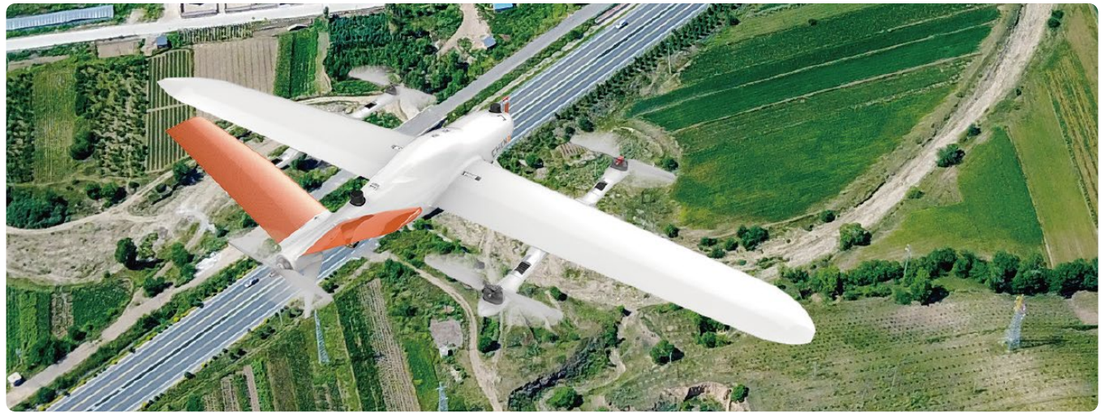
The 1000 Hz control-point-free system effectively reduces project costs

The aircraft is equipped with a built-in 1000 Hz high-frequency differential module, which synchronizes high-frequency, high-precision data with the payload and flight control system. This ensures stable aircraft attitude while acquiring highly accurate differential data. Combined with high-precision PPK processing software, it generates aerial imagery with precise POS data, enabling large-area 1:500 control-point-free operations, reducing both field ground control work and post-processing workload, and lowering overall project costs.



1000 Hz
High-frequency differential module

1:500
Control-point-free mapping



160 min endurance with a single-flight coverage of 30 km²

With a wingspan of only 2.53 m and a fuselage length of 1.21 m, the P35 achieves up to 160 minutes of endurance under payload conditions. When equipped with an orthophoto camera, it can cover up to 30 km² per flight, demonstrating its advanced aerodynamic design and power system.

2.53 m
Wingspan

1.21 m
Fuselage

160 min (2)
Endurance

30 km² (3)
Single-flight coverage with orthophoto payload

Specifications

Drone Type	Vertical take-off and landing (VTOL)	Take-off & Landing Area	4 x 4 m required
Electric Motors	4+1	Setup Time	5 mins
Max. Payload	2 kg	Max. Flight Altitude (MSL) (6)	6500 m
Max. takeoff weight	14 kg	Transmission Distance (7)	Up to 20 km
Max. Flight Time (4)	135 min @ 1 kg	Operating temperature	-20 to 50 °C (-4 to 122 °F)
Cruise Speed	21 m/s	Transport Case Dimension	1280 × 570 × 435 mm
Wingspan	2.53 m	GCPs (8)	Not required with PPK
Fuselage Length	1.21 m	Ground Control Software	EasyFly (Windows)
Vertical Take-off Height	50 to 200 m		
RTK Accuracy (5)	H: 1 cm + 1 ppm V: 2cm + 1 ppm		

*** Specifications are subject to change without notice.**

(1) Under the condition of continuous water surfaces and continuous tree coverage not exceeding 50%
(2) Standard atmospheric pressure, temperature 20°C, no wind, 21m/s ground cruising speed, endurance time until power is fully depleted to ensure safe return, for reference only,
(3) Equipped with a full-frame orthophotography camera, the maximum operational area is achieved with a ground resolution of 10cm, flight altitude of 780 m, forward overlap of 75%, and side overlap of 60%.
(4) Under optimal condition, ≈1000 hPa pressure, no wind or breeze, +10 to +25°C.
(5) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition.
(6) With plateau tail paddle.
(7) Under optimal condition, open area, no obstacle between the base and drone.
(8) Depends on project requirement, please refer to the white paper of the performance without GCPs.

AirInsight Box

The AirInsight Box is a high-performance airborne computing platform independently developed by CHCNAV and powered by an advanced AI computing module. Featuring a lightweight design and up to 100 TOPS of onboard computing power, it enables real-time processing of complex algorithms directly on the UAV.

Built on an open and standardized PSDK platform, AirInsight Box lowers development barriers and empowers third-party developers to create customized industry solutions. It is widely used in applications such as public safety, smart cities, water resource management, and emergency response.



Product Advantages

Powerful Onboard Computing

Delivers exceptional computing performance in a compact form factor, achieving high computing power in a lightweight design

Open Ecosystem Platform

Third-party developers can directly access onboard computing resources, enabling rapid development and deployment of customized industry solutions.

Specifications

General Specifications	Product Name	AirInsight Box
	Weight	360 g ± 5 g
	Dimensions	108 × 103.5 × 46.7 mm
	Rated Power	Basic Version 14 W; Flagship Version 20 W
	Supported Drone Model	X500
	Memory	NX-16 GB Basic Version Nano-4 GB; Flagship Version NX-16 GB
	Storage	256 G
	Computing Power	Basic Version 20 TOPS; Flagship Version 100 TOPS
	Number of Expansion Interfaces	5
Environmental Specifications	4G Image Transmission Enhancement	Supported
	Wi-Fi	Wi-Fi 6 Supported
	Operating Temperature	-20 to 50 °C
	Storage Temperature	-20 to 60 °C
	Protection Level	IP55
Power Supply	Drone Power Supply	24 V
	PD Power Supply	Power adapter compliant with PD protocol, powered via USB-C interface

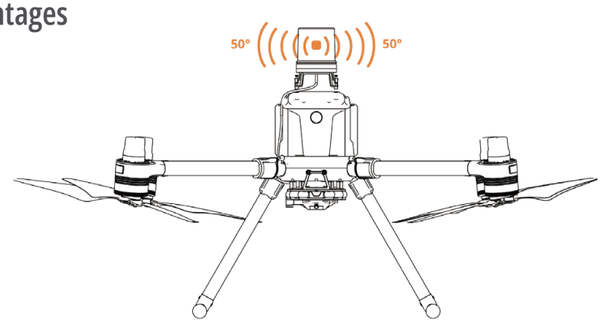
CS1 Circular-Scanning Millimeter - Wave Radar

The CS1 Circular-Scanning Millimeter-Wave Radar is an advanced obstacle avoidance solution for the CHCNAV X500 UAV platform. It helps improve flight safety during inspection missions by detecting small obstacles such as power lines, treetops, and other low-visibility objects.

Compact and lightweight, the CS1 is easy to install and has minimal impact on UAV endurance. With strong detection performance, all-weather operation, and a high level of environmental protection, it supports demanding applications in power line inspection, urban management, surveying and mapping, emergency response, and low-altitude UAV operations.



Product Advantages



Powerful Detection Capability

Accurately detects obstacles of various sizes, including buildings, mountains, power lines, treetops, and other potential hazards.

All-Weather Operation

Designed for reliable performance in complex environments and adverse conditions, including rain, snow, fog, nighttime operations, and under-bridge inspections.

Compact and Lightweight

Small form factor and lightweight design make installation simple while minimizing the impact on UAV flight endurance.

Specifications

Dimensions	80 × 80 × 85 mm	Maximum Supported Flight Speed	12 m/s
Weight	300 g	Protection Level	IP55
Frequency Band	24 GHz	Output Frequency	10 Hz
Obstacle Avoidance Ranging Range	2 to 35 m	Power Consumption	3.5 W
Ranging Accuracy	≤0.1 m	Operating Temperature	–20 to 50 °C
Detection Range	Horizontal: 360°; Vertical: 50°		

CHCNAV AlphaAir 6 Series Airborne LiDAR system

The CHCNAV AlphaAir 6 Series, including AA6 and AA6D, is designed for efficient airborne LiDAR surveying in complex and high-relief terrain. Combining advanced prism scanning technology with a high-grade inertial navigation system, the AA6 Series delivers up to 2,100 m ranging capability and supports typical flight operations from 100 to 600 m AGL.

Powered by 5th-generation waveform processing, the AA6 Series improves point cloud density, data completeness, and real-time point cloud generation. The lightweight integrated design extends flight endurance, while open interfaces ensure compatibility with multirotor and fixed-wing UAV platforms.



AA6


AA6D

Next Generation Laser + High-Grade IMU, Reliable Accuracy

2100 m
Long-range performance

100~600 m
Typical AGL extended

0.3°/ h
High-grade IMU with 0.3 °/h bias instability



AA6

- 4/3-inch CMOS sensor
- 100 MP high-resolution imaging
- Switchable to 25 MP capture mode
- 1.35 kg weight
- Up to 50 minutes of effective flight time (deployed on CHCNAV X500)
- Coverage up to 15 km² per mission



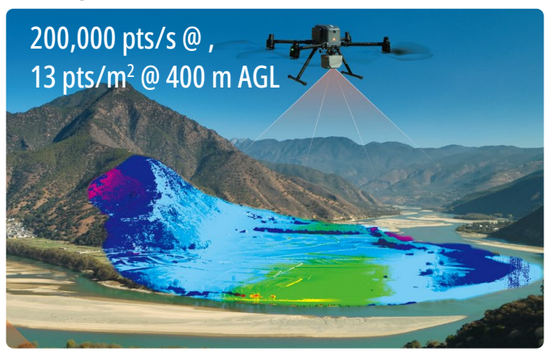
AA6D

- Dual APS-C CMOS sensors
- 26 MP imaging resolution
- 110° ultra-wide field of view
- 16 mm focal length
- Only 1.85 kg integrated design
- Up to 40 minutes of effective flight time on CHCNAV X500
- Up to 15 km² coverage per mission

5th-Generation Waveform Technology
Point Cloud Density Increased by 100%*, Greater penetration

* Compared with the previous generation





Specifications

Model	AA6	AA6D
Imaging system		
Resolution	25 MP (6144 × 4096) 100 MP (12288 × 8192)	26 MP × 2 (6252 × 4168)
Focal length	12 mm	16 mm
Sensor size	4/3 in	1.8 in
Min trigger interval	0.5 s @25 MP 1 s @100 MP	1 s
FOV	74°	110°

Laser scanner

Laser Product Classification (1)	3R (in accordance with IEC 60825-1:2014)					
Wavelength	1535 nm					
Laser Pulse Repetition Rate PRR	100 kHz	200 kHz	300 kHz	500 kHz	1000 kHz	2000 kHz
Max. range,@ρ > 80% (2)	2100 m	1800 m	2100 m	1450 m	1000 m	525 m
Max. range,@ρ > 10% (2)	960 m	870 m	750 m	640 m	460 m	320 m
Max. range (3), reflectivity > 80%	2100 m					
Minimum range (3)	10 m					
Accuracy (4)	15 mm 1σ, @150 m					
Precision (5)	5 mm 1σ, @150 m					
Multi-period	Up to 7 zones					
Field of view	90°					
Maximum scan rate (6)	Up to 2,000,000 pts/sec					
Scan speed (selectable)	400 lines/s					
Return numbers (7)	Up to 16					

General system performance

System accuracy	vertical 3 cm, horizonta 3 cm (RMSE) @ 120m AGL vertical 5 cm, horizonta 6 cm (RMSE) @ 300m AGL	
Weight of instrument	1.35 kg	1.85 kg
Dimensions of instrument	155 × 120 × 129 mm	223.5 × 120 × 129 mm
Data storage	512 GB	
Copying speed	200 MB/s	

Positioning and orientation system	GPS:L1,L2,L5 GLONASS:L1,L2 BEIDOU:B1,B2,B3 GALILEO:E1,E5a,E5b
GNSS system	500 Hz
IMU update rate	0.006° RMS pitch/roll (post-processing, 1σ) 0.015° RMS heading (post-processing, 1σ)
Attitude accuracy after post-processing	1 cm + 1 ppm (horizontal) 1.5 cm + 1 ppm (vertical)
Position accuracy after post-processing	
Environmental	-20 to +50 °C
Operating temperature	IP64
IP rating	
Electrical	24 V (voltage range 17 V to 30 V)
Input voltage	40 W @ 300 kHz, 200 l/s 50 W @ 300 kHz, 200 l/s
Typical power consumption	46 W 60 W
Max. power consumption	
Communications	WIFI 2.4G IEEE 802.11n; WIFI 5G IEEE 802.11ac, U- NII-1/3
WiFi	
Optional software	POS solve, Adjust & Refine, Generate point cloud
CoPre pre-processing software	Terrain module, CAD module, Earthwork module
CoProcess point cloud processing software	

*** Specifications are subject to change without notice.**

(1) At a speed higher than 0.5m/s, the Nominal Ocular Hazard Distance (NOHD)is 0.12m, the Extended Nominal Ocular Hazard Distance (ENOHD) is 0.96m.
(2) Typical values for average conditions.
(3) Range definition: Defined as the distance where 50% of emitted laser pulses are detectable. When multiple targets are illuminated, pulse energy dispersion may result in reduced range. Test conditions: Conducted under 100 klx ambient light, central field of view, 23 km visibility, using a planar target larger than the laser beam diameter and perpendicular laser incidence. Maximum range verification requires consultation with technical support or authorized partners.
(4) Accuracy is the degree of conformity of a measured quantity to its actual (true) value. The above specifications were achieved under specific test conditions, including ambient temperature of 25 °C, LiDAR point rate of 500 kHz, target reflectivity of 80%, and test distances of 150m. Performance may vary with environmental and operating conditions. All specifications are provided for reference only.
(5) Precision is the degree to which further measurements show the same results. The above specifications were achieved under specific test conditions, including ambient temperature of 25 °C, LiDAR point rate of 500 kHz, target reflectivity of 80%, and test distances of 150m. Performance may vary with environmental and operating conditions. All specifications are provided for reference only.
(6) Maximum scan rate: up to 2 million points per second; configurable settings include 2M, 1M, 500k, 300k, 200k, and 100k points per second.
(7) The actual number of echoes depends on the operating environment, with up to 16 echoes supported. Calculation must be performed using CHCNAV CoPre software.

AlphaAir 15 Pro Lidar System

The CHCNAV AlphaAir 15 Pro is a premium long-range airborne LiDAR system for large-area geospatial data acquisition. With up to 3,200 m ranging capability, high-density point cloud capture, strong vegetation penetration, and support for 100 MP nadir and 300 MP oblique imaging, it is designed for high-efficiency topographic mapping, corridor surveying, city-scale 3D reality modeling, and engineering survey applications.

The AlphaAir 15 Pro enables flexible integration for professional large-area mapping missions in forests, mountainous terrain, corridors, and areas with significant elevation changes.



Up to 3,200 m at ρ > 80% reflectivity
Typical flight of 500 to 1,200 m AGL.

- Flexible Deployment on UAVs and Manned Aircraft
- Integrated Aerodynamic Fairing with Streamlined Design
- Compatible with Multiple Manned Aircraft Platforms

Manned Aircraft Solution

- AA15P + 100 MP Medium-Format Camera + Aerodynamic Fairing
- Dedicated Manned Aircraft Navigation Software
- Ideal for Large-Scale Aerial Surveying Projects

Survey-Grade High-Precision Laser Scanner



High-Density Point Clouds for Detailed Reality Capture

With a maximum point rate of 2.4 million points per second and advanced multi-cycle processing algorithms, the AA15P significantly increases point cloud density for highly detailed data acquisition. It delivers up to 1,000 pts/m² at 120 m AGL and 65 pts/m² at 500 m AGL, enabling accurate representation of terrain and structures.



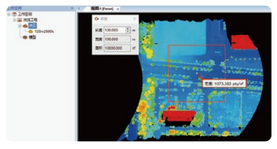
Long-Range Performance for Enhanced Productivity

Featuring a maximum measurement range of 3,200 m and an operational altitude of up to 1,200 m, the AA15P greatly improves survey efficiency. When integrated with the CHCNAV P60 VTOL UAV, a single flight can cover up to 100 km², making it ideal for large-scale mapping projects.



Designed for Both Manned and Unmanned Platforms

Equipped with an integrated aerodynamic fairing and multiple expansion interfaces, the AA15P supports deployment on both manned aircraft and UAV platforms. The navigation unit integrates the LiDAR control system, simplifying data acquisition workflows and supporting long-duration, large-area operations.



Enhanced Vegetation Penetration for Complete Ground Data

The new-generation laser scanner features a reduced beam divergence design, decreasing spot size by 40% while significantly increasing pulse energy. This delivers up to 3× stronger penetration capability. Combined with up to 16 returns, the system effectively penetrates dense vegetation to capture complete and reliable ground point information.



High-Performance Camera Integration for Advanced Mapping

The AA15P supports integration with a 105 MP medium-format orthophoto camera and a 305 MP full-frame oblique mapping camera, enabling high-quality image and LiDAR fusion workflows.
6.4 cm/pixel GSD @ 600 m AGL 2.7 cm/pixel GSD @ 250 m AGL

Specifications

General system performance

Absolute H accuracy (1) Absolute V accuracy (1)	2 cm to 5 cm RMS 2 cm to 5 cm RMS
Weight of instrument	2.6 kg (without camera)
Dimensions of instrument	245 × 131 × 159 mm
Input voltage	DC 24 V (15 to 32 V)
Data storage	512 GB (Optional: 1 TB)
Copying speed	80 MB/s (USB 3.0 compatible)
Operating temperature	-20 to +50 °C
Typical power consumption	48 W (20 °C, 1200 kHz, 250 lines/s)
Max. power consumption	60 W (20 °C, 2400 KHz, 600 lines/s)
IP rating	IP64

Laser scanner

Laser Product Classification	Class 3R (in accordance with IEC 60825-1:2014)
Wavelength	1550 nm
Max. measuring range, @ρ > 80 % (2)	3200 m
Minimum range	10 m
Max. measurement rate	2,400,000 meas./sec.
Scan speed (selectable)	50 to 600 lines/sec
Accuracy (3) Precision (4)	15 mm (1σ,@ 150 m) 8 mm (1σ,@ 150 m)
Field of view	75°
Multi-Period capability	Up to 12 zones
Maximum number of targets per pulse (5)	16
Beam divergence	0.44 mRad (0.025°)

Positioning and orientation system

GNSS	GPS: L1, L2, L5 GLONASS: L1, L2 BEIDOU: B1, B2, B3 GALILEO: E1, E5a, E5b QZSS: L1 C/A, L5
IMU update rate	600 Hz
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

R10ProS Medium-frame Orthophoto cameras (selectable)

Overall pixel quantity	100 MP
Focal length	35/50 mm (optional)
Sensor size	43.8 × 32.8 mm
Photo size	4 : 3 (11648 × 8736)
Min photoing interval	0.5 s
Typical power consumption	15 W
Max. power consumption	17 W

DG6ProS2 Full-frame oblique cameras (selectable)

Overall pixel quantity	300 MP
Focal length	Front view 40 mm / side view 56 mm
Sensor size	35.9 × 23.9 mm
Min photoing interval	0.5 s
Typical power consumption	71 W
Max. power consumption	78 W

*Specifications are subject to change without notice.

(1) Measured at the Huace experimental site under the following conditions:
  a. Select a site with distinct angular features and mount it on the CHC's P60. Utilize CHC's planar flight path, maintaining a flight speed of 44.7 mph and an AGL of 492 ft. Each straight segment in the flight path should not exceed 2.05 miles, and the data is obtained through PPK processing.
  b. Check the exposed hard material at the point that conforms to the diffuse reflection model.
  c. Perform post-processing using CoPre.

(2) Range definition: Defined as the distance where 50% of emitted laser pulses are detectable. When multiple targets are illuminated, pulse energy dispersion may result in reduced range. Test conditions: Conducted under 100 klx ambient light, central field of view, 14.3 miles visibility, using a planar target larger than the laser beam diameter and perpendicular laser incidence. Maximum range verification requires consultation with technical support or authorized partners.

(3) Accuracy is the degree of conformity of a measured quantity to its actual (true) value. The above specifications were achieved under specific test conditions, including ambient temperature of 77 °F, LiDAR point rate of 500 kHz, target reflectivity of 80%, and test distances of 492 ft. Performance may vary with environmental and operating conditions. All specifications are provided for reference only.

(4) Precision is the degree to which further measurements show the same results. The above specifications were achieved under specific test conditions, including ambient temperature of 77 °F, LiDAR point rate of 500 kHz, target reflectivity of 80%, and test distances of 492 ft. Performance may vary with environmental and operating conditions. All specifications are provided for reference only.

(5) The actual number of echoes depends on the operating environment, with up to 16 echoes supported. Calculation must be performed using CHCNAV CoPre software.

C504 Aerial Survey Gimbal Camera

The C504 is a lightweight, full-frame single-lens aerial survey camera designed for high-precision mapping and inspection applications. Equipped with a Sony full-frame sensor, it delivers 45 MP high-resolution imagery with excellent clarity and accuracy.

The C504 features a professional mapping lens and a long-life in-lens shutter to support stable and reliable image acquisition. It is suitable for aerial surveying, inspection, emergency mapping, and geospatial data collection workflows requiring high-quality imagery and efficient UAV deployment.



Product Advantages

3-axis stabilized gimbal
Maintains stable performance during high-speed flight and supports multi-angle imaging

Full-frame image sensor with 45 MP resolution, delivering outstanding image quality

HD color display
Built-in HD color screen displays real-time environment data, image count, shutter parameters, and system status

Specifications

Product Name	C504	ISO Range	Auto: 50–1600 Manual: 100–1600
Weight	280 g	Shutter Speed	1/1250，1/1000，1/800，1/500
Camera Dimensions	75.5 × 60 × 107.5 mm	Focal Length	Standard 40 mm, Customizable 56 mm
Protection Level	IP53	Lens Aperture	F5.6
Operating Temperature	-20 to 50 °C	Minimum Focus Distance	20 m
Storage Temperature	-20 to 60 °C	Video Format & Size	MP4 (H.264), 4K 3840 × 2160 @ 30 fps
Power Supply	CHC-Aport	Photo Interval	≥0.9 s
Storage Capacity	256 GB	Sensor	36 × 24 mm Full Frame, Pixel Size 4.4 um
GPS Disk Capacity	8 G	Image Size	3:2 (8192 × 5456 px)
Effective Pixels	45 MP		
Parameter Adjustment	Bluetooth Mini Program Parameter Adjustment		
Working Mode	Flight Control Trigger / Equal Time Trigger / Equal Distance Trigger		

MP130C Digital Voice Broadcast System

The MP130C is a long-range UAV loudspeaker system designed for seamless integration with the CHCNAV X500 platform. It offers an effective broadcast range of up to 500 m, with high sound pressure and strong audio penetration for field communication and emergency response missions.

The system supports real-time remote voice broadcasting, text-to-speech playback, and uploaded audio file playback. Anti-feedback and noise reduction algorithms help deliver clear audio transmission in outdoor environments. With its compact size, lightweight design, low power consumption, and strong electromagnetic shielding, the MP130C enhances UAV-based communication in emergency, safety, and industrial applications.



130 dB — Maximum Sound Pressure level

500 m — Effective Broadcast Range

Audio Upload and Playback Via Mobile Devices

Product Advantages

Real-time broadcasting with multiple operation modes

- Real-time voice broadcast
- Audio file upload playback
- TTS and voice upload
- Voice library access

130 dB / 500 m

- 130 dB high-intensity sound output
- 500 m ultra-long broadcast range

Specifications

Dimensions	140 × 140 × 125 mm
Weight	<570 g
Power	25 W
Maximum Sound Pressure	124 dB @ 1m
Effective Broadcasting Distance	500 m
Directivity	80° × 50° (Horizontal × Vertical)
Operating Temperature	-10 to +40 °C
Pitch Angle	0° to 65°

Broadcasting Mode	Real time shouting
	recording upload
	audio file playback
	background music
	text to speech (multilingual)
Audio Format	mp3 / wav / m4a / flac / aac
App System Support	Android 5.0 and above

C640-SE Gimbal Camera

The C640-SE is a powerful 3-axis AI gimbal camera system designed for inspection, public safety, and emergency response missions. It integrates a 48 MP wide-angle camera, a 48 MP zoom visible-light camera, a 1.2 km laser rangefinder, and a thermal imaging camera.

The dual visible-light cameras support high-definition image and video capture, while the laser rangefinder enables rapid target distance measurement. The thermal camera provides heat source localization and temperature measurement, making the C640-SE suitable for power line inspection, disaster response, forestry inspection, public safety, and industrial monitoring applications.



High-resolution cameras deliver clearer images and video

48 MP wide-angle camera

and zoom visible-light camera



High-definition imaging

Captures both near and distant details with ease

High environmental reliability

IP44 Protection Rating

Ensures safe and stable operation even in harsh environments

-20 to 50°C Operating Temperature

Meets operational requirements in both high and low-temperature environments

3-axis gimbal, responsive and flexible control

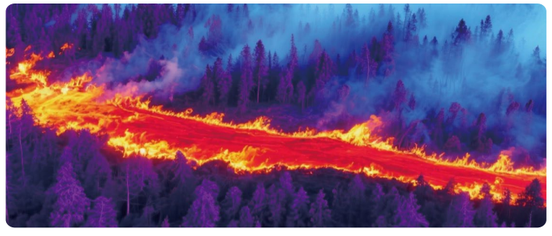
Focus tracking

After selecting a target, the gimbal can track and continuously observe it

Point-to-target aiming

The gimbal automatically aligns the camera to the selected target, enabling fast target locking and supporting timely observation and decision-making

Intelligent functions for improved efficiency



Supports area temperature measurement and spot temperature measurement (requires thermal imaging camera) Open model deployment platform supporting third-party detection models, enabling customized object recognition and tracking



AI-powered recognition supports detection and counting of people, vehicles, vessels, and license plates, enabling efficient traffic and waterway inspection operations

Specifications

Overall parameters

Dimensions	60 × 40 × 50 mm
Weight	300 g
System Power Consumption	12 W (1)
Built-in Computing Power	6 TOPS
Protection Level	IP44
Operating Temperature	-20 to 50°C

Gimbal parameters

Stabilization System	3-axis (Pitch, Roll, Pan)
Angular Jitter	±0.01°
Installation Method	CH-Port
Mechanical Angle Range	Pan ±150°, Roll ±85° Pitch -135 to +45°

Zoom camera parameters

Image Sensor	1/2 inch CMOS, 48MP Effective Pixels
Lens	Actual focal length 15 to 50 mm, equivalent focal length 81 to 270 mm, FNo. 3.7 to 4.5, FOV 24.1° to 7.3°, 11x hybrid optical zoom + 22x electronic lossless zoom
Focus Mode	Manual/Auto/One-shot Auto Focus
Exposure Control	Auto/Manual
Exposure Compensation	±3.0
Electronic Shutter Speed	1/3 to 1/30000s (Auto/Manual)
Video Resolution	4000 × 3000 @ 30 fps
Photo Format	JPEG
Video Format	H.265 / H.264 / MP4
Storage	Standard 128 GB microSD card, unlimited capacity
White Balance	Auto / Incandescent/Fluorescent / Daylight / Cloudy / Dusk / Low Light
Image Flip / Noise Reduction / Intelligent Tracking	All Supported

Wide-angle camera parameters

Image Sensor	1/2 inch CMOS, 48MP Effective Pixels
Lens	Focal Length 24mm, Aperture f/2.8, DFOV 83.4°
Video Resolution	4000 × 3000 @ 30 fps
Photo Format & Size	JPEG , 8000 × 6000
Video Format	H.265 / H.264 / MP4

Infrared thermal imager parameters

Lens	Focal Length 13.1 mm (Equivalent Focal Length 56 mm)
Digital Zoom	1X , 2X , 4X , 8X
Resolution	640 × 512

Parameters of the laser rangefinder

Wavelength Range	8 to 14 μm
Pixel Pitch	12 μm
Noise Equivalent Temperature Difference (NETD)	≤50 mK @ f/1.0 @ 25 °C
Temperature Measurement Mode	Spot Temperature Measurement, Area Temperature Measurement
Temperature Measurement Range	-20 to +150 °C , 100 to 550 °C (High and low gain modes)
Color Palette	Black Hot/White Hot/ Pseudo Color, etc.
Dimensions	60 × 40 × 50 mm
Wavelength	905 nm
Measurement Range	5 to 1200 m (5)
Measurement Accuracy	±1.0 m/±1.5 m (5)
Beam Divergence Angle	3.2 m rad
Parameter Notes	1. After enabling AI functionality, power consumption is 15 W; 2. The protection rating is not a permanent standard; 3. The C640 series is equipped with an infrared thermal imager, while the C630 series is not; 4. Ranging range/ accuracy is affected by the material of the measured object

*Specifications are subject to change without notice.

(1) This power consumption is the reference value without the AI function enabled. When the AI function is activated, the reference power consumption of the C640-SE becomes 15 W
(2) Measured in a controlled environment; the protection level is not a permanent standard, and the protective capability may degrade due to product wear
(3) The C640 and C640-SE are equipped with an infrared thermal imager, while the C630 and C630-SE do not have one
(4) The ranging range may vary depending on the material and shape of the object being measured
(5) For distances ≤1000 m from the object, the measurement accuracy is ±1 m; for distances ≥1000 m, the accuracy is ±1.5 m

GL60C Plus Gimbal Searchlight

The GL60C Plus gimbal searchlight adopts four optical imaging modules, each composed of four precision lenses, producing a sharp 15 ° beam with consistent color and uniform brightness. At an illumination altitude of 150 m, it achieves an effective coverage area of up to 1,225 m², significantly enhancing UAV night operation lighting performance. It meets the needs of nighttime patrol, warning and deterrence, direction signaling, power line inspection, and search and rescue operations.



- 0.7 kg — Lightweight Design
- 1225 m² — Large-area Illumination
- 13400 lm — Maximum Luminous Flux
- 60-120W — High-intensity Strobe Mode

Product Advantages

No Reflector Design
- No secondary light spots
- Reduced light loss
- Strobe mode
- Silent deterrence
- Directional signaling

LED Linear Dimming
- High-power LED
- Max 120 W
- 24 lux at 100 m
- Smooth brightness control
- Prevents overexposure of license plates

Imaging-grade Optical Technology
- 4 optical lens groups
- 15° beam angle

Ultra-Light Design
- Fully sealed body
- 0.7 kg weight
- Improved operational endurance and flexibility

Specifications

Electrical Interface	CHC-Cport		
Weight	750 g		
Dimensions	126 × 131 × 167 mm		
Luminous Flux	13400 lm ± 3%	8000 lm ± 3%	
Luminous Efficacy	111.67 lm / W	133.33 lm / W	
Projection Distance	50 m	100 m	150 m
Spot Diameter	13.2 m	26.4 m	39.5 m
Area	136 m²	544 m²	1225 m²
Illuminance	85 Lux	24 Lux	11 Lux
Function Mode	Constant brightness (120 W / 60 W)		
	Flashing (120 W / 60 W)		
	Pan tilt angle adjustment, automatic tracking, brightness adjustment		

FOV	15°	
Total Power	128 W; 68 W	
LED Power	120 W; 60 W	
Gimbal Rotation Range	Pitch	-95° to +20°
	horizontal	±90°
Gimbal Design Range	Pitch	-100° to +25°
	horizontal	±100°
	Roll	-90° to +60°
Operating Temperature	-15 to +50 °C	

LP35 Integrated Searchlight & Loudspeaker System

The LP35 integrates a high-power searchlight and loudspeaker system for UAV-based public safety, emergency response, and night operation missions. With a rated power of 96 W and a focused 13 ° beam, it provides uniform illumination and an effective lighting coverage area of 917 m² at an altitude of 150 m.

The loudspeaker delivers strong sound penetration with a maximum sound pressure level of 126 dB and an effective broadcast range of up to 400 m. It supports real-time voice broadcasting, text-to-speech functions, and easy field operation. Built-in red and blue strobe warning lights improve UAV visibility for law enforcement and emergency applications, while camera linkage enables coordinated visual monitoring and response operations.



- Integrated Light Sound and Warning System
- Red & Blue Strobe Warning Lights
- 150 m — Effective Illumination Range
- 400 m — Effective Broadcast Range

Product Advantages

Multiple Functionalities
- Warning light, searchlight, and loudspeaker in one system
- Weighs only 550 g

Quick Installation and Removal
- Compatible with the X500 platform
- Quick-release mounting design

Intelligent Coordination
- Works seamlessly with gimbal cameras
- Searchlight can be synchronized with camera operations

Outstanding Audio and Lighting Performance
- Peak sound pressure level: 126 dB
- Effective illumination range: 150 m
- Effective broadcast range: 400 m

Specifications

Weight	<550 g		
Dimensions	235 × 220 × 85 mm		
Total Power	96 W		
LED Power	60 W		
Luminous Flux	6000 lm ± 3%		
FOV	13°		
Projection Distance	150 m	100 m	50 m
Spot Diameter	34 m	22.8 m	11.4 m
Area	917 m²	407 m²	102 m²
Illuminance	6.3 Lux	14.4 Lux	57 Lux
Gimbal Rotation Range	Pitch -55 ° to +65 °, horizontal ± 35 °, roll ± 25 °		
Warning Light Mode	Red blue flashing, red light flashing, blue light flashing		

Visible Distance	200 m
Sound Pressure	126 dB @ 1 m
Maximum Power	30 W
Effective Broadcasting Distance	400 m
Broadcasting Mode	Real time shouting
	recording upload
	MP3 audio playback
	text to speech conversion
Bluetooth Specifications	Bluetooth 4.2 BR&EDR + low-power, 2400-2483.5 MHz operating frequency band
Supported Drone Model	X500
Operating Temperature	-20 to +50 °C

TK3-X500 Tethered Power Supply System

The new-generation TK3 tethered power supply system features an optimized size and weight. It converts 220 V AC power into 400 V high-voltage DC power and transmits it to the UAV through a high-performance nickel-alloy power cable, enabling continuous 24-hour flight operations.
The airborne power module adopts the same structural design as the UAV battery, eliminating the need for external modules and enabling true plug-and-play operation.
When used with UAV matrix lights, high-power gimbal searchlights, gimbal cameras, and other mission payloads, it provides long-duration emergency lighting and monitoring for complex operational scenarios.



Portable Backpack Design

7.5 Kg — Lightweight Design

110 m — Cable Length

Area Illumination Support

Product Advantages

Lightweight and Portable
- Weight: 7.5 kg
- Dedicated backpack carrying solution
- Quick-release tripod design

Safe Power Supply
- Real-time power status display
- Automatic power-loss alarm
- Automatic fault notifications

Extended Hovering Endurance
- 24-hour UAV power supply
- Long-duration stationary hovering
- Supports wired and wireless OTA updates

Specifications

Ground Terminal	
Overall Dimensions	356 × 310 × 229 mm
Weight	7.5 kg
Power	3000 W (176 Vac to 264 Vac)
	1500 W (90 Vac to 175 Vac)
Cable	110 m cable (built-in 80 m + 30 m extension cable)
	Cable diameter < 2.8 mm, current carrying capacity > 10 A
	Weight < 1.2 kg/100 m, tensile strength > 20 kg
	Withstand voltage 600 V, internal resistance < 3.60 Ω/ 100 m at 20 °C
Rated Input Voltage	90–264 VAC +10%
Rated Operating Frequency	50/60 Hz
Output Voltage	400 VDC

TK3 Air Terminal No external module required, consistent with battery specifications	
Rated Input Voltage	260 to 410 VDC
Rated Output Voltage	36.5 to 52.5 VDC
Main Rated Output Current	60 A

TH4C Four-Channel Payload Drop System

The TH4C four-channel payload drop system weighs only 310 g and supports high-capacity payload delivery. It can perform up to four drop missions in a single flight and mounts directly to the CHCNAV X500 UAV via the C-Port interface. It is ideal for emergency rescue, material delivery, and related operations.



310 g — Weight: 310 g

3 kg — Up to 3 kg per drop

4 per — Up to 4 drop missions per flight

Quick installation

Product Advantages

Compact Yet Powerful
- Only 310 g
- Supports payload drops of up to 3 kg
- Up to four deliveries in a single flight

Convenient and Efficient
- Quick installation
- Rapid payload attachment

Easy Operation
- No third-party controller required
- Real-time status notifications

Safe and Reliable
- Optimized workflow reduces failure rates
- Multiple fault-handling mechanisms
- Designed to minimize operational safety risks

Specifications

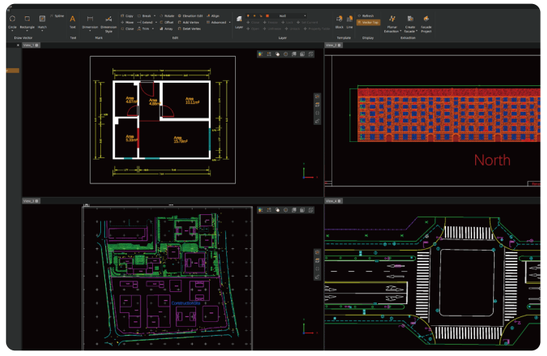
Model	TH4C
Electrical Interface	CHC-Cport
Weight	310 ± 5 g
Rated Power	10 W
Maximum Payload Per Release Hook	3 kg
Control Software	SmartGo
Operating Temperature	-20 to +50 °C

CHCNAV CoProcess

CoProcess is a professional point cloud processing software designed to convert large-scale LiDAR datasets into engineering-ready deliverables. It integrates scan-to-CAD drafting, classification, terrain modeling, and volume calculation within a streamlined AI-based workflow. Supporting datasets of over 300 GB, CoProcess enables efficient data processing, reduces manual operations, and accelerates the delivery of accurate survey outputs.

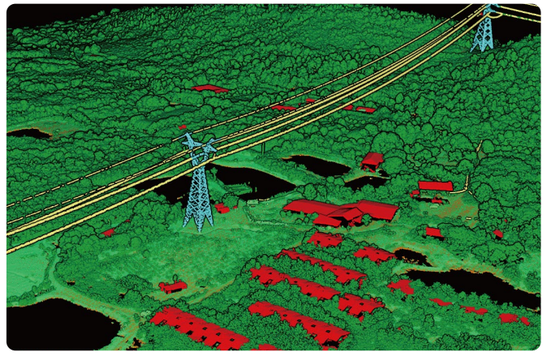


Main Features



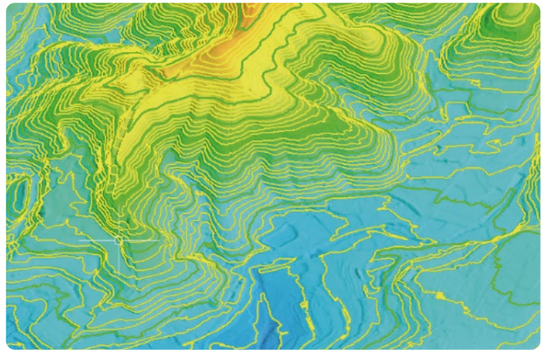
Scan-to-CAD

Generate 2D and 3D CAD deliverables from point clouds with efficient drafting tools.



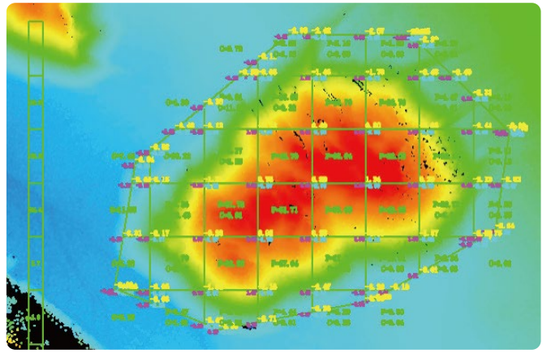
Classification

Automated classification and editing for structured point cloud data preparation.



Terrain Surveying

Create DEM, DSM, contours for surveying workflows.



Volume Calculation

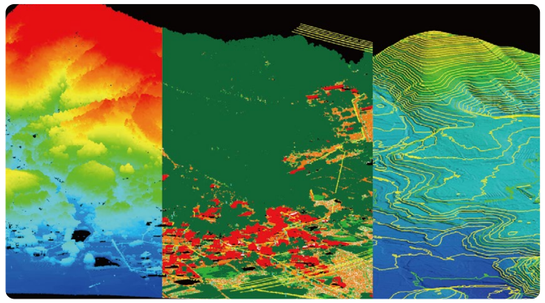
Perform fast and accurate stockpile and earthwork volume calculations, and analyze volume changes over time using multi-temporal point cloud datasets.

Benefits and Performances



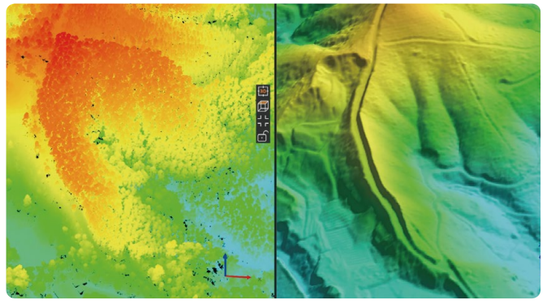
Process Large Datasets

Designed for large-scale point cloud processing, CoProcess handles datasets exceeding 300 GB in a single workflow. It supports stable rendering and efficient processing of billions of points, enabling users to work with full-resolution data and maintain detail across large projects.



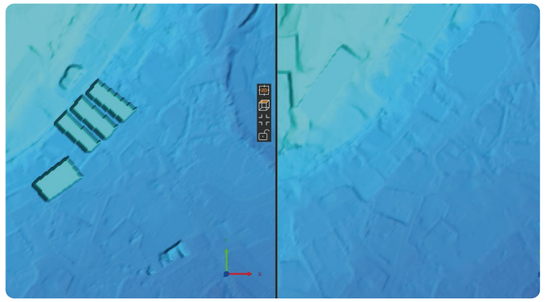
Simplified Workflows

End-to-end workflows from raw data import to final deliverables reduce the need for multiple software tools. Standardized processing templates and automation minimize manual intervention and improve consistency across projects.



High Productivity

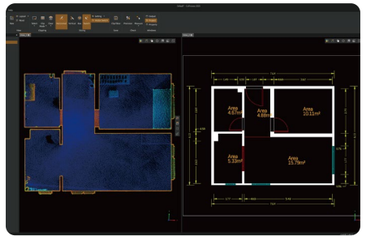
Optimized algorithms accelerate key processes such as classification and terrain generation. CoProcess can complete terrain classification for a 100 GB dataset in 2 hours, reducing processing time, increasing throughput, and enabling faster project delivery.



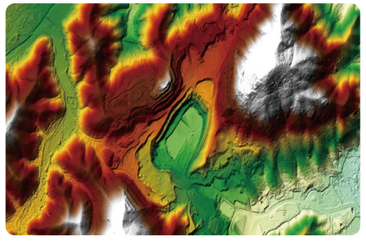
Survey Deliverables

Deliver accurate and structured outputs, including CAD drawings, terrain models, DEM/DSM products, contours, and volume reports. CoProcess supports survey-grade workflows for construction, infrastructure, terrain mapping, and engineering applications.

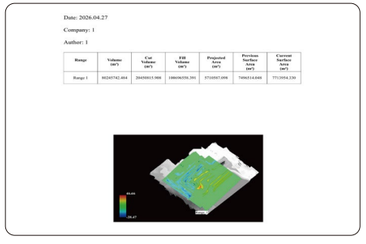
Use Cases



Scan-to-CAD Drafting



Terrain Modeling



Volume Calculation



CHCNAV Developer Tools

Build customized UAV industry solutions using CHCNAV developer tools

SmartGo-MSDK

SmartGo-MSDK

A mobile software development kit that enables developers to easily, efficiently, and securely build customized UAV applications

Payload SDK

Payload SDK

With Payload SDK (PSDK), developers can rapidly integrate computing modules, sensors, and communication systems with professional UAV platforms to build industry-specific solutions

JSDK

JSDK

A development kit for third-party drone docking stations, enabling customized UAV + docking station industry applications

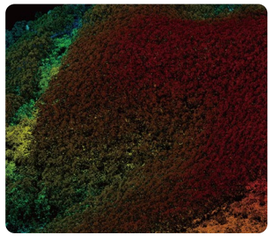
MAVLink Protocol

MAVLink Protocol

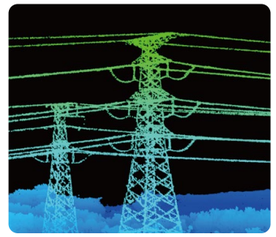
Enables third-party developers to quickly integrate flight control systems, ground stations, and payloads for cross-device and cross-ecosystem interoperability



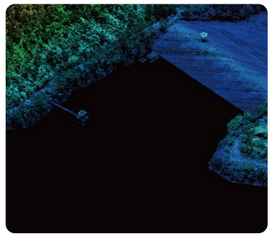
Industry Applications



Forestry surveying



Power line inspection



Water conservancy surveying



Transportation inspection



Land surveying & mapping



Urban monitoring



Mining surveying & inspection



Public safety



Emergency reconnaissance



Geological disaster monitoring



Oil & gas inspection



Other applications