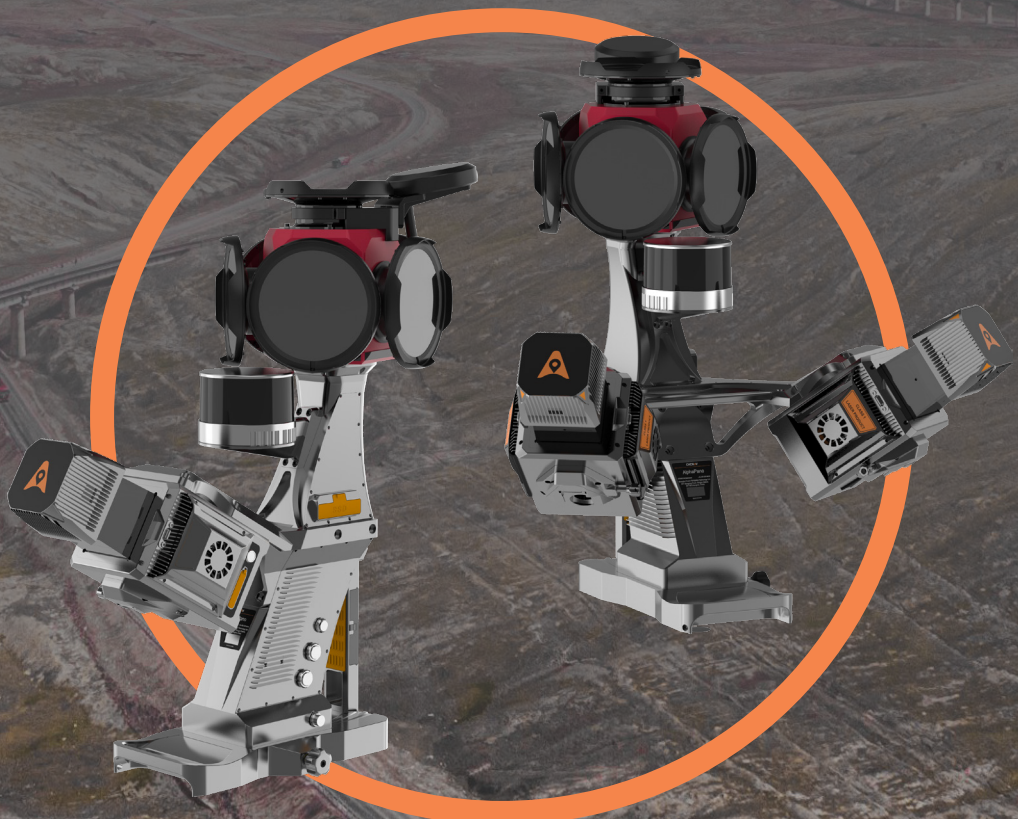
CHCNAV

AU20 MMS

MULTI-PLATFORM HIGH-END LiDAR SOLUTION



3D MOBILE MAPPING

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FLEXIBLE AND EFFICIENT MOBILE MAPPING SYSTEM

The CHCNAV AU20 MMS is a high-precision vehicle-mounted mobile mapping system. With its enhanced LiDAR system, the AU20 MMS captures highly detailed and accurate 3D representations of ground objects. Its next-generation vehicle platform supports the integration of a wide range of sensors, expanding its versatility across different project types. AI-based algorithms optimize the AU20, enabling intelligent pre-processing and significantly improving office processing workflow and data quality. The AU20 MMS is used for road surveying, infrastructure management, reconstruction and expansion projects, and as-built documentation, empowering professionals to efficiently execute road mapping tasks.

OUTSTANDING ACCURACY AND PRECISION

Equipped with fourth-generation real-time waveform processing (RWP) technology, the AU20's laser achieves 2 million points per second and 200 revolutions per second. With 5 mm accuracy and 3 mm precision, it captures fine road textures and features like manhole covers and lane marking thickness.

HIGH-DENSITY POINT CLOUD DATA

The CHCNAV MMS's long-range, multi-cycle laser technology enables data capture of up to 2 million points per second within a 250-meter range. The fourfold increase in point density ensures enhanced quality of roadside and surface detail.

MULTI-SENSOR INTEGRATION

The AP7's built-in processor supports up to 8 external sensors, including pavement detection cameras, delivering a comprehensive road damage detection solution and supporting various applications. It seamlessly integrates with popular panoramic cameras, such as the Ladybug5+ and Ladybug6, providing users with maximum system flexibility.

DUAL SCANNER PLATFORM

The AP7 vehicle platform supports dual laser scanners, doubling data density. A 45° scanning angle allows simultaneous multi-angle acquisition, reducing blind spots, improving road sign recognition, and enhancing data reliability.

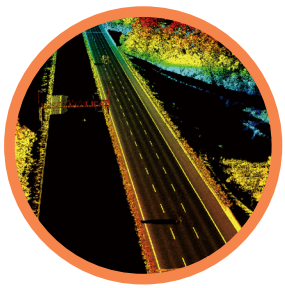
AI-POWERED PANORAMIC COLORING

Leveraging advanced AI for vehicle and pedestrian recognition, the AU20's panoramic coloring accuracy exceeds 95%. One-click optimization ensures clean, interference-free colorized point clouds.

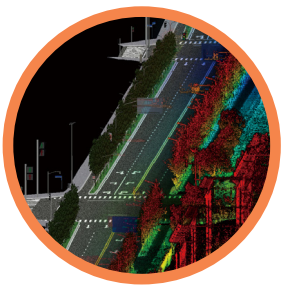
AI-BASED VMA ADJUSTMENT

AI-based computation and automatic detection of control points correct point cloud errors to within two centimeters, ensuring data accuracy meets highway-grade survey standards, even in complex environments.

MOST FLEXIBLE INSTALLATION

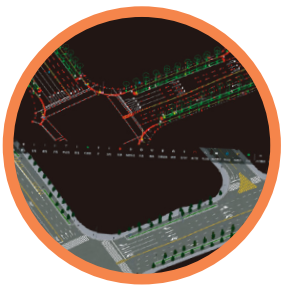


Highway Surveying



Road Asset Management

Road Reconstruction and Expansion



As-built Road Measurement

SPECIFICATIONS

General system performance

Multi-platform	Support vehicle-mounted, airborne, backpack and other carriers; supports LD5+, LD6, Basler, and other cameras,enable data capture from up to 8 cameras simultaneously
Data storage	512G, optional for 1T (airborne) 2TB external hard drive (vehicle-mounted)

Positioning and orientation system

GNSS system	GPS:L1,L2,L5 GLONASS:L1,L2 BEIDOU:B1,B2,B3 GALILEO:E1,E5a,E5b
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

Laser scanner

Laser Product Classification	Class 1 Laser Product according to IEC 60825-1:2014
Dimensions of instrument	262.3mm × 141.5mm × 161mm
Weight	2.82 kg
Range(3)	1.5~250 m (vehicle-mounted) 1.5~1450 m (airborne)
Accuracy(4)	5 mm (1σ,@ 50 m range)
Precision(5)	3 mm (1σ,@ 50 m range)
multi-period	Up to 7 zones
Field of view	360°, selectable
Scanning mechanism	Rotating mirror
Max. Effective Measurement Rate	2,000,000 meas./sec.
Scan speed (selectable)	10~200 scans/sec
Max. Number of return pulses (6)	Up to 16
Waveform	Full waveform

AP7 vehicle platform

Type	AP7 single-head	AP7 dual-head
Dimensions	528*301*638mm (with installed AU20)	505*604*609mm (with installed AU20)
Weight	7.5 kg (without laser and camera)	8.3 kg (without laser and camera)

Imaging system

Camera type	Ladybug5+	Ladybug6
Resolution	30 MP (5 MP × 6 sensors), 10 FPS	72 MP (12 MP × 6 sensors), 15 FPS
FOV	360° Spherical camera	
Lens	2.5mm	6.94 mm
Dimensions/Mass	160 mm (height) x 197 mm (diameter) /2.9 kg	198 mm (height) x 269 mm (diameter) /5.2 kg
CCD size	2048 × 2448	12,288 × 6144
Coverage	90% of full sphere	
High Dynamic Range (HDR)	Cycle 4 gain and exposure presets	

SLAM Laser scanner

Measuring Range	0.05 to 120 m
Data Points Generated	Single Return,320,000 points/sec

Environmental

Operating temperature	-20 °C to +50 °C
IP rating	IP64
Humidity (operating)	80%, non-condensing

Electrical

Input voltage	DC 24V(20 ~ 27V)
Power consumption	150W (dual head)

Optional software

CoPre Intelligent Processing SW	Data copy, POS solve, point cloud and images creation, strip adjustment & GCP refine, noise optimization, Airborne DOM and 3D model generation
CoProcess Efficient Feature Extraction SW	Terrain module, Road module, Volume module, Road Extractions module, Building Extractions module

Laser scanner

Laser Pulse Repetition Rate PRR	100kHz	200kHz	300kHz	400kHz	500kHz	800kHz	1000kHz	1500kHz	2000kHz
Max. range,@ρ>80%(1)	1450m	1320m	1220m	1120m	1000m	790m	706m	576m	500m
Max. range,@ρ>20%(1)	750m	660m	610m	560m	500m	395m	353m	288m	250m
Max. Operating Flight Altitude AGL,@ρ>20%(2)	530m	467m	431m	396m	354m	279m	250m	204m	177m
Max. Number of return pulses up to	16	16	16	16	16	16	16	10	8

* Specifications are subject to change without notice.
(1) Typical values for average conditions.
(2) Flat terrain assumed, scan angle ±45° FOV.
(3) Tested in CHCNAV standard scenarios under 25°C ambient temperature and unobstructed surroundings. Accuracy deviations may occur in certain scenarios.
(4) Accuracy is the degree of conformity of a measured quantity to its actual (true) value.
(5) Precision is the degree to which further measurements show the same results.
(6)The actual number of echoes depends on the operating environment, with up to 16 echoes supported.

disclaimer
The specifications are either theoretical values or measurements obtained by CHCNAV personnel under specific controlled conditions (see detailed descriptions). Actual results may vary due to individual product differences, firmware versions, use conditions, methods, and environments. CHCNAV strives to provide accurate information but does not guarantee that this document is free from technical, typographical, or display errors. Please refer to the actual product, and we recommend consulting in detail about the specific model and version before purchasing.
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