

AU20 MMS

Multi-Platform High-End LiDAR Solution



► Highlights

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.



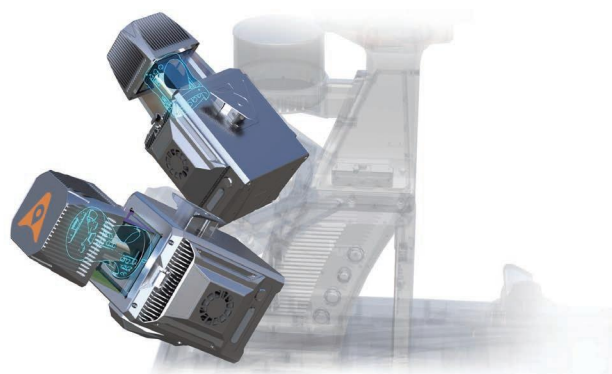
► Extreme Laser Performance

Up to **2,000,000 PRR**

5 mm accuracy **3 mm** precision

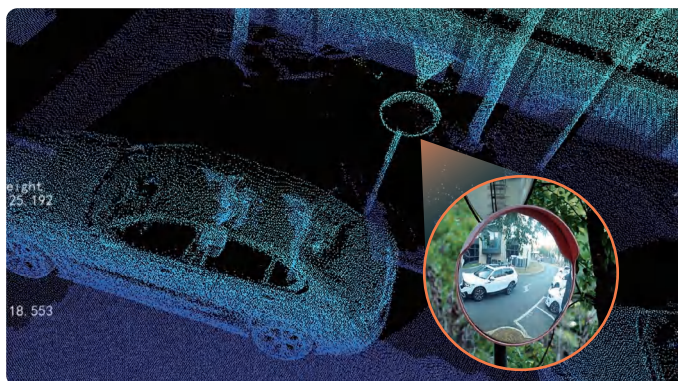
200 r/s maximum rotation speed

Pavement textures and lane markings are captured with exceptional details.



Advanced Multi-time-around (MTA)

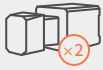
2 M PRR at 250 m, increasing point density by up to 4 times to significantly improve point cloud quality along roadsides.



Ultra-Sensitive High-Dynamic Detection

Even when scanning highly reflective surfaces such as mirrors or glass, it accurately captures ranging information while effectively preventing detector damage.

► Next-Generation Vehicle-Mounted Platform



Advanced dual-head scanning platform eliminates blind spots and delivers complete and clear feature capture.



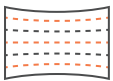
Supports multiple external sensors for expanded industry applications.



Compatible with mainstream panoramic cameras, offering greater flexibility in configuration and deployment.



► AI-Powered Processing



Advanced panoramic colorization algorithms automatically identifies and filters vehicles and pedestrians.

95%
recognition accuracy

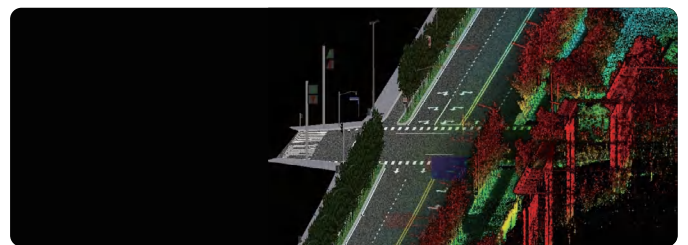


VMA bundle adjustment algorithm supports AI-assisted computation and automatic control point recognition
In severely occluded environments point cloud deviations can be corrected to within **2 cm**

► Application



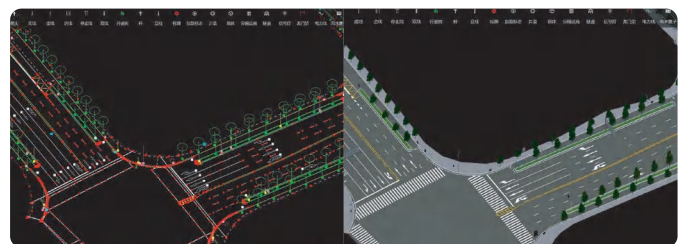
Highway Surveying



Road Asset Management



Road Reconstruction and Expansion



As-built Road Measurement

SPECIFICATIONS

► General system performance

Multi-platform	Support vehicle-mounted, airborne, and other carriers; supports C4800, C7200 and other cameras, enable data capture from up to 6 cameras simultaneously	
Data storage	512 GB, optional for 1 TB (airborne)	2 TB external hard drive (vehicle-mounted)

► Laser scanner

Laser Product Classification			Class 1 Laser Product according to IEC 60825-1:2014						
Laser Pulse Repetition Rate PRR	100kHz	200 kHz	300 kHz	400 kHz	500 kHz	800 kHz	1000 kHz	1500 kHz	2000kHz
Max. range,@p>80% ⁽¹⁾	1450m	1320 m	1220 m	1120 m	1000 m	790 m	706 m	576 m	500m
Max. range,@p>20% ⁽¹⁾	750m	660 m	610 m	560 m	500 m	395 m	353 m	288 m	250m
Max. Operating Flight Altitude AGL, @p>20% ⁽²⁾	530m	467 m	431 m	396 m	354 m	279 m	250 m	204 m	177m
Max. Number of return pulses up to	16	16	16	16	16	16	16	10	8
Dimensions of instrument	262.3 mm × 141.5 mm × 161 mm								
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	490 × 186 × 552 mm (with installed AU20 and C4800)		511 × 604 × 638 mm (with installed AU20 and C7200)	
Weight	7.5 kg (without laser and camera)		8.3 kg (without laser and camera)	

► Imaging system

Camera type	C4800	C7200
Panoramic Resolution	32 MP (8192 × 4096), 5 FPS	72 MP (12288 × 6144), 10 FPS
FOV	360° × 175°	360° × 154.5°
Focal Length	4.8 mm	6.5 mm
Dimensions/Mass	157 mm × 157 mm × 125 mm / 1.8 kg	280 mm × 240 mm × 200 mm / 4 kg
Sensor Resolution (single sensor)	4096 × 3072	
High Dynamic Range (HDR)	Digital HDR, Equivalent to 90dB	

► 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° RMSE pitch/roll 0.010° RMSE heading
Position accuracy after post-processing	0.010 m RMSE horizontal 0.020 m RMSE vertical

► 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	IP 64
Humidity (operating)	80%, non-condensing

► Electrical

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

* 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.

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