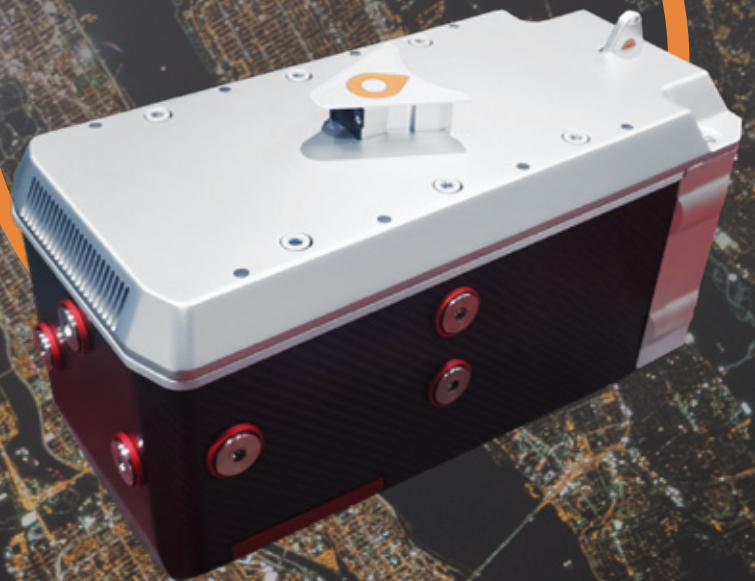


CHCNAV

AlphaAir 1400/2400

LiDAR SOLUTIONS



**MAPPING
& GEOSPATIAL**

PREMIUM CORRIDOR MAPPING LiDAR SOLUTIONS

The AlphaAir 1400 & 2400 are lightweight airborne laser scanners that belong to the Alpha Mobile Mapping series, recognized for their high accuracy and data quality without compromising on reliability and specially designed for use on various UAV platforms, helicopters or small airplanes. These airborne laser scanners offer a wide field of view and an extremely fast data acquisition rate of up to 1.8 MHz. They are ideally suited for high-density point corridor mapping applications, and provide reliable results day or night, under leaf-on and leaf-off conditions and in dense vegetation.

HIGHEST DATA QUALITY

The VUX LiDARs use RIEGL's unique Waveform-LiDAR technology, enabling digitization of echoes and online waveform processing. Multi-target resolution is the basis for penetrating even dense foliage. A continuously rotating polygonal mirror wheel enables scan speeds of up to 400 lines per second, to efficiently cover large areas when used from fast drones or aircraft.

OUTSTANDING ACCURACY

The VUX-120 and VUX-240 1.8 MHz LiDAR sensors provide linear accuracy of 1 to 2 cm on long-range scanning. By combining industrial grade GNSS with high precision IMU, the AlphaAir 1400 & 2400 deliver 2-5 cm accuracy depending on the range. To further improve accuracy and precision, users can apply adjustment techniques in the CHCNAV CoPre software.

OPERATIONAL FLEXIBILITY

The AlphaAir 1400 & 2400 are compact units with an embedded system controller and data storage, making them easy to install in any small survey aircraft, helicopter or UAV. The systems can also be equipped with high resolution nadir and/or oblique cameras.

HIGH IMAGE QUALITY

CHCNAV offers several external cameras add-on for the AlphaAir. Users can choose from 42, 100 or 150 MP fully calibrated sensors for data acquisition. Setups can include nadir or nadir and oblique cameras from Sony or PhaseOne. Data processing is supported by our CoPre Software, which is fully compatible.

CABLE FREE CONNECTION

The one-click connection of the AlphaPort to the power source and camera makes installation of the AlphaAir 1400 and 2400 very quick and easy, reducing the risk of cable damage due to aircraft vibration and acceleration during takeoff and landing.

ENTIRE OWN ECOSYSTEM

CHCNAV provides a full range of solutions that allow users to add a LiDAR scanning to their existing geomatics services. The software suite includes CoCapture UAV field application for fully automated reality capture and real-time mission tracking, and CoPre desktop software for semi-automated point cloud processing.



**PREMIUM
AIRBORNE
DATA**



Flexible installation

AlphaAir 1400/2400 are compact and lightweight LiDARs that can be easily installed not only on helicopters or airplanes but also on various drones like CHCNAV BB4.



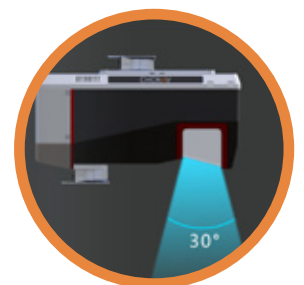
Alphaport interface

Alphaport interface integrates power supply and connection to cameras without any cables.



Various cameras

We provide support for different nadir or/and oblique, such as PhaseOne. AlphaAir can use up to 4x external cameras.

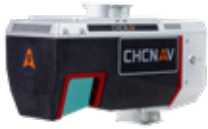



3x scan directions

AA1400 scans consecutively in three different directions to provide geometry on complex vertical structures in a single pass.

SPECIFICATIONS

General system performance

Product		
	AlphaAir 1400	AlphaAir 2400
Absolute Hz & V accuracy	< 0.050 m RMS	
Accuracy conditions	Without control points, @100 m flight altitude AGL	
Mounting	The connection between equipment and aircraft uses quick disassembly structure, simple and easy to operate. There is no cable between unit and aircraft, camera and unit	
Weight of instrument ⁽¹⁾	2.98 kg	5.05 kg
Dimensions of instrument	27.0 × 11.7 × 16.7 cm 10.62" × 4.6" × 6.57"	34.0 × 16.4 × 20.6 cm 13.38" × 6.45" × 8.11"
Communications	1 x Alphaport to power the unit 1 x Alphaport to connect the camera 1 x RS232 data transfer port	1 x Alphaport to power the unit 1 x RS232 port to connect the camera 1 x RS232 data transfer port
Remote control	Up to 8 km, wireless control of instrument parameters and data recording in real time	
Data storage	1 TB internal SSD	
Point density on airborne setup 10.3 m/s (20 kn) speed	500 pts/sqm @ 120 m AGL	800 pts/sqm @ 120 m AGL

Laser scanner

Laser class	1 (in accordance with IEC 60825-1:2014)	3R (in accordance with IEC 60825-1:2014)
Max. range, reflectivity >80% ⁽²⁾	1430 m	2150 m
Max. range, reflectivity >20% ⁽²⁾	760 m	1200 m
Max. operating flight altitude AGL, reflectivity > 60% ⁽²⁾	720 m	1400 m
Minimum range	5 m	
Accuracy ⁽³⁾	10 mm	20 mm
Precision ⁽⁴⁾	5 mm	15 mm
Field of view	±50° = 100°	±37.5° = 75°
Maximum scan rate	1 800 000 shots/sec	
Scan speed(selectable)	50-400 scans/sec	40-400 scans/sec
Max. returns supported	5 to 15 (depending on selected scan rate)	

Positioning and orientation system

GNSS system	Multiple GPS, GLONASS, Galileo, BeiDou, SBAS and QZSS constellation, L-Band
IMU update rate	Standard 100 Hz (user selectable up to 600 Hz)
Position accuracy NO GNSS outage	0.010 m RMS horizontal, 0.010 m RMS vertical, 0.005 degrees RMS pitch/roll, 0.010 degrees RMS heading

Imaging system

Camera type	Modular upgrade options: DSLR, thermal, multispectral
Airborne default camera setup	CHC AS-C4200 (calibrated Sony A7 RII)
Resolution	7952 x 5304, 42.4 MP, 5 fps

Environmental

Operating temperature	-10 °C to +40 °C
Storage temperature	-20 °C to +50 °C
IP rating	IP64
Humidity (operating)	80%, non-condensing

Electrical

Input voltage	24 V (wide range 11 V ~ 34 V)
Power consumption	60 W
Power source	Depending on aircraft or UAV battery

*Specifications are subject to change without notice.

(1) Weight calculated without camera. (2) Typical values for average conditions.
(3) Accuracy is the degree of conformity of a measured quantity to its actual (true) value. (4) Precision is the degree to which further measurements show the same results.

© 2022 Shanghai Huace Navigation Technology Ltd. All rights reserved. The CHC and CHC logo are trademarks of Shanghai Huace Navigation Technology Limited. All other trademarks are the property of their respective owners. Revision March 2022.

WWW.CHCNAV.COM | SALES@CHCNAV.COM

CHC Navigation Headquarter
Shanghai Huace Navigation
Technology Ltd.
599 Gaojing Road, Building D,
Shanghai, 201702, China
+86 21 54260273

CHC Navigation Europe
Infopark Building, Sétány 1,
1117 Budapest, Hungary
+36 20 235 8248
+36 20 5999 369
info@chcnav.eu

CHC Navigation USA LLC
6380 S. Valley View Blvd
Suite 246 Las Vegas,
NV 89118 USA
+1 480 399 9533

CHC Navigation India
409 Trade Center, Khokhra
Circle, Maninagar East,
Ahmedabad, Gujarat, India
+91 90 99 98 08 02