



GS1200-Map

Professional Mapping Drone System for cm grade survey



The Geospace GS1200-Map is a complete integrated drone mapping system that provides extended operational air-time with 5 x the efficiency in aerial image capture than a single camera system, capturing 5 x 24Mp images in each shot, total 120Mp per shot.

For UAV based photogrammetry this increased productivity means that a project normally requiring 5 flight sessions of 20 minutes each, requiring multiple battery sets and a full day on site, can be achieved in a single flight of just 20 minutes on a single battery charge.

In addition each single shot acquires 5 different views, Nadir plus 45 degree obliques in forward, reverse, left and right views, all registered to each other, on a single memory card and with cm precision based on the Emlid RTK/PPK system which minimizes the need for pre-surveyed Ground Control Points.

The included lens calibration files allow easy migration for post processing in Pix4D or other 3rd party systems.

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GEOSPACE

The Geospace GS1200 airframe is lightweight Carbon Fiber construction providing the best possible power to weight ratio and includes two 22000mAh 6S batteries for extended airtime operation.

The package is conveniently housed in a robust wheeled flight case for transportation and includes a complete extra set of 2 x 22000mAh batteries and charger unit in a separate flight case.

The triple redundant IMU flight controller provides professional grade robust operation and supports live FPV video streaming to the provided daylight viewable 10" display.

The system can be flown directly by manual controller provided, or on pre-programmed flight path using the provided Ground Control system software, the Pro version UGCS platform which can run on any Win OS laptop.

The UGCS-Pro GCS also provides for downloadable maps for remote operation and supports "terrain follow" mode which maintains constant flying height above the map terrain.

GS1200 Airframe



GS1200 5-camera unit



Emlid RTK/PPK



UGCS Pro



10" DV



Flight Controller



GS1200 Flight case



Key system features

- 120mp images per single frame shot
- Up to 40 minutes flight time
- Survey grade cm level precision with PPK
- Triple redundant flight control systems
- Complete integrated package
- Manual LOS control or programmed BVLOS mapping



GS1200-Lidar Option

Integration with Riegl MiniVUX-1UAV Lidar

Data Capture Analysis in typical scenario 15 minutes data capture (20 minute flight time)

Scanner Type
miniVUX-1UAV

Project Requirements
Project Type: Wide Area Mapping
Uniform Point Pattern: ON
Point Density: Avg. 50.00 pts/m²
Stripe Overlap: 20.0 %

Terrain
Min. Altitude (AMSL): 33 ft 10 m
Terrain Variation: 66 ft 20 m

Flight Height Constraints
Min. Height (AGL): 98 ft 30 m
Max. Height (AGL): 1640 ft 500 m
Max. Altitude (AMSL): 1969 ft 600 m
Laser Safety: Observe ENOHD

Surface / Target / Atmosphere
Min. Reflectance: 20.0 %
Target Type: Topography
Object Diameter: 0.1 m
Visibility: 23km Standard Clear
FOV: 90.00 °

Aircraft
Select Aircraft: Geospace GS1200-Lidar
Min. Speed: 0 kn 0 km/h
Max. Speed: 16 kn 30 km/h
Max. Altitude (AMSL): 1640 ft 500 m

Result Qualifier
Scanner Settings
PRR: 100 kHz
Laser Power: 100 %
Scan Rate: 35.4 ips
FOV: 90.0 °
Angular Step Width: 0.127 °

Flight Parameters
Flying Height AGL: 164 ft 50.0 m
Flying Height AMSL: 197 ft 60.0 m
Aircraft Speed: 9.72 kn 18.0 km/h 5.00 m/s

Scan Pattern
Line Distance: 0.141 m
Point Distance: Min. 0.111 m, Avg. 0.141 m, Max. 0.222 m
Point Density: 31.8 pts/m², Avg. 50.0 pts/m², Max. 63.7 pts/m²
Swath Width: 100 m

MTA Details
MTA Zone Width: 1499 m
MTA Zones Used: Min. 1, Max. 1

Productivity
Net Area Rate: 400 m²/s
Typ. Data Rate: 1.62 GB/h
Max. Data Rate: 3.33 GB/h

Laser Safety Information
NDHD: 0 m 0%
ENOHD: 0 m 0%

Auxiliary Limits
Max. Meas. Range: 78.0 m 51%
Scan Rate-Range-Prod.: 2751 m³/s 13%

3D Visualization
Flight Height = 50m AGL
Min. Flight Height = 30m
FOV = 90.00°
Terrain Variation = 20m
Terrain Altitude = 10m
Swath Width = 100m
Overview, subsampled by a factor of 35

Key deliverables in this configuration:

- Total scanned area **40 hectares**
- Total data points captured **20 Million**
- Data Points per square meter **50ppm2**
- Data capture flight path length **4km**
- Swath width **100m**
- Scan overlap allowed **20%**