BIRDIE UAV – BASE:

BIRDIE UAV platform
Modular and rugged BIRDIE UAV platform equipped with autonomy avionics, FlyTech Radio Link system, precision landing system and full airplane lighting
BIRDIE Control panel
Mobile ground control panel with internal power, redundant FlyTech Radio Link, emergency Fly-By-Wire control system and Mission Manager Lite software and 10” tablet
Mission Manager Lite
Mission Manager Lite software with linear/aerial missions planning, emergency procedures and live weather plug-in
System accessories
3 smart Li-Ion 9000mAh UAV Batteries, with 230V portable charger, transport case and user manual
Product training
1-day training for 2 people, performed at the distributor's place with a demo flight included

BIRDIE UAV – VERSION:

BIRDIE Geo
Sony A6000 with 24MP APS-C image sensor and Voigtlander 21mm lens, with automated trigger and geotagging module
BIRDIE Geo+
Sony RX1R II with 42MP full-frame image sensor and 35mm lens, with self-timer and geotagging module
BIRDIE Agro
Micasense Sequoia multispectral camera with light sensor
BIRDIE Agro+
Micasense RedEdge-M multispectral camera with light sensor

BIRDIE UAV – Post-processing software:

Agisoft Photoscan Professional
Lifetime license with one year support services access and updates
3D Survey
Lifetime license with one year support services access and updates
Pix4D Agro
Lifetime license with one year support services access and updates

BIRDIE UAV – GPS Accessories:

UAV GPS RTK/PPK L1
Single frequency multi-constellation (GPS, GLONASS, GALILEO, BeiDou, QZSS) receiver with observation rate up to 10 Hz. Allowed to obtain camera position with centimeter accuracy. For best results in PPK mode UAV could be equipped with additional local base receiver or work with any survey grade RTK device.
UAV GPS RTK/PPK L1+L2
Triple frequency multi-constellation (GPS, GLONASS, GALILEO, BeiDou, QZSS) receiver with observation rate up to 20 Hz. Allowed to obtain camera position with centimeter accuracy. For best results in PPK mode UAV could be equipped with additional local base receiver, work with any survey grade RTK device or work with continuously operating reference station (CORS).

BIRDIE UAV – Spare parts:

Spare parts
BIRDIE UAV left wing rugged structure
BIRDIE UAV right wing rugged structure
BIRDIE UAV servomechanism
BIRDIE UAV rugged fuselage structure
Additional 9000mAh Li-Ion smart battery
BIRDIE UAV engine
BIRDIE UAV engine regulator
BIRDIE UAV propeller

BIRDIE UAV – Technical specifications:

BIRDIE UAV platform dimensions	1400mm x 570mm x 170mm
BIRDIE transport case dimensions	788mm x 468mm x 444mm
Maximum take-off weight	2300 g
Control panel weight	1350 g
Engine	Electric motor
Basic radio frequency	433 MHz
Emergency frequency	2,4 GHz

BIRDIE UAV – Performance:

Speed range	10m/s - 25m/s
Flight duration	up to 60 minutes
Radio Link range	up to 2 km
Take-off procedure	Hand-launched
Landing procedure	Belly-landing
Maximum wind speed	15 m/s
Maximum temperature	+40^{o}C
Minimum temperature	- 10^{o}C

BIRDIE UAV – RGB cameras specifications

Camera	Sony A6000	Sony RX1R II
Lens	Voigtlander Skopar 21mm	Carl Zeiss T* Sonnar 35mm
Image sensor	APS-C (15.6x23.5mm)	Full Frame (24.0x35.9mm)
Resolution	24 MP (6000x4000)	42 MP (7952x5304)
Detector size	3,9 µm	4,5 µm
Pixel dimension at 120m	2,2 cm	1,5 cm
Flight area at 120m	2,0 km^2	1,8 km^2

BIRDIE UAV – Multispectral cameras specifications

Camera	Sequoia	RedEdge-M
Spectral Bands	green, red, red-edge, near-infrared	blue. green, red, red-edge, near-infrared
Lens	Built-in 4/4.8 mm	Built-in 5.5 mm
Matrix	3.6 x 4.8mm / RGB 4.6 x 6.2mm	3.6 x 4.8 mm
Resolution	1.2 MP/ RGB 16 MP	1.2 MP
Detector size	3,75 µm / RGB 1,3 µm	3.75 µm
Pixel dimension at 120m	11,3 cm / RGB 3,3 cm	8 cm
Flight area at 120m	2,1 km^2	1,5 km^2

BIRDIE UAV – GPS Performance

Receiver type	Standard	RTK/PPK L1	RTK/PPK L1+L2
Measurement type	Code	Carrier phase	Carrier phase
Signals	- GPS L1 C/A - GLONASS L1OF - Galileo E1 B/C - SBAS L1 C/A - QZSS L1 C/A, L1 SAIF - BeiDou B1	- GPS L1 C/A - GLONASS L1OF - Galileo E1 B/C - SBAS L1 C/A - QZSS L1 C/A, L1 SAIF - BeiDou B1	– GPS: L1 C/A, L2E, L2C, L5 – BeiDou B1, B2 – GLONASS: L1 C/A, L2 C/A, L3 CDMA13 – Galileo: E1, E5A, E5B, E5AltBOC2 – QZSS: L1 C/A, L1 SAIF, L2C, L5 – SBAS: L1 C/A, L5
Channels	72	72	220
Frequency	4 Hz	5 Hz (GPS+GLONASS) 14 Hz (GPS)	20 Hz
Corrections	DGNSS	PPK, RTK* (RTCM), RTN* (NTRIP)	PPK, RTK* (RTCM), RTN* (NTRIP)
Modes	- DGPS	- DGPS - PPK with local base station	- DGPS - PPK with local base station - PPK with CORS - RTK/RTN*
Average accuracy	- DGPS: XY 2.5 m Z 3.0 m	-DGPS XY 2.5 m Z 3.0 m - PPK/RTK XY 20 mm + 1ppm Z 30 mm + 1ppm	- DGPS XY 0.5 m Z 0.85 m - PPK/RTK XY 8 mm + 1ppm Z 15 mm + 1ppm

*Precision positioning systems are working in PPK mode (Post Processing Kinematic). RTK/RTN mode activation is available on request.

FLY TECH UAV

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BIRDIE UAV Efficiency*

Sony a6000 with 21mm Voigtlander lens

Pixel dimension	Flight altitude	Maximum area	Pictures	Time interval
7,5 cm	404 m	6,6 km2	700	4,5 s
5,0 cm	270 m	4,4 km2	1000	3,0 s
3,0 cm	162 m	2,7 km2	1700	1,8 s
2,5 cm	135 m	2,2 km2	2000	1,5 s
2,0 cm	108 m	1,8 km2	2500	1,2 s

Sony RX1R II with 35mm Carl Zeiss lens

Pixel dimension	Flight altitude	Maximum area	Pictures	Time interval
7,5 cm	583 m	8,8 km2	450	7,0 s
5,0 cm	389 m	5,9 km2	650	4,7 s
3,0 cm	233 m	3,5 km2	1100	2,8 s
2,5 cm	194 m	2,9 km2	1300	2,3 s
2,0 cm	156 m	2,3 km2	1650	1,9 s

Micasense Sequoia

Pixel dimension	Flight altitude	Maximum area	Pictures	Time interval
25,0 cm / 7,2 cm	267 m	4,7 km2	800	3,6 s
20,0 cm / 5,8 cm	213 m	3,8 km2	1100	2,9 s
15,0 cm / 4,3 cm	160 m	2,8 km2	1400	2,2 s
10,0 cm / 2,9 cm	107 m	1,9 km2	2100	1,4 s
7,5 cm / 2,2 cm	80 m	1,4 km2	2800	1,1 s

*) Assumed flight time (without take-off and landing): 50 min, assumed coverage 70%/70%