

RTK
eBee
— senseFly



**The survey-grade
mapping drone**



1

eBee

R1k

2

DANGER
PROBE

3 reasons to choose the eBee RTK

01. Survey-grade accuracy

Absolute orthomosaic & digital surface model accuracy of down to 3 cm (1.2 in) without the need for GCPs – meaning less time spent in the field and high precision in even the most inaccessible areas.

02. Fully integrated workflow

The eBee RTK's supplied flight planning & control software (eMotion) connects to the base station and broadcasts correction data to the rover (eBee RTK) – no additional logger or third-party software required.

03. Compatible with existing base stations

The eBee RTK is compatible with most leading brands of base station, working seamlessly alongside your existing portfolio of instruments.

Out of the box and ready to fly



The eBee RTK is supplied in its own carry-on sized case, which contains all the components you need to take to the skies. It also includes your download key for eMotion, senseFly's acclaimed flight planning and control software.

To launch the eBee RTK, simply attach its wings, shake it three times to start its motor, and throw it into the air! The artificial intelligence built into the senseFly autopilot continuously analyses data from the Inertial Measurement Unit and the onboard GPS to control every aspect of its flight.



Built-in GNSS/RTK receiver

- L1/L2, GPS & GLONASS
- Onboard RTK corrections at 20 Hz
- Upstream corrections at 1 Hz

GNSS antenna

- Receives corrections from most leading brands of base station
- Absolute X,Y, Z accuracy down to 3 cm / 5 cm
- No Ground Control Points necessary

Pitot tube

- Measures dynamic & static pressure
- Precisely calculates the drone's air speed

18.2 MP still camera

- Controlled by eBee RTK's autopilot
- Captures images autonomously
- GSD of down to 1.5 cm per pixel

Green technology

- Brushless electric motor
- Low noise, low pollution
- Re-chargeable lithium-polymer battery

Super lightweight

- Durable EPP foam body & wings
- Take-off weight: 0.73 kg (1.61 lbs)

Inherently safe

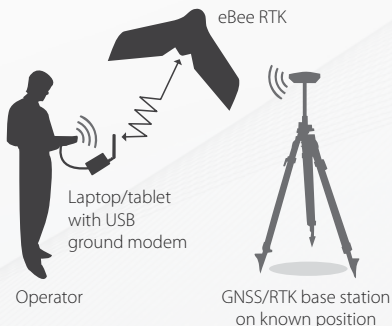
- Shock absorbent foam + low weight = low impact energy
- Minimal danger to people & property

3 ways of working with the eBee RTK

The eBee RTK is a highly flexible system. It can be used in either of three ways, depending on how you prefer to work and your access to in-country correction data networks.

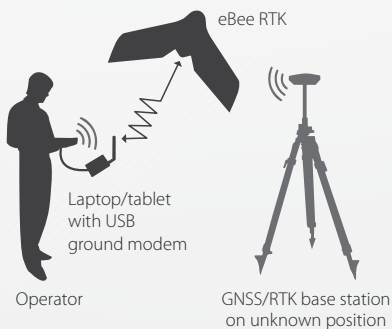
Whichever method you choose, no additional base station purchase is necessary since the eBee RTK is compatible with most leading brands of survey-focused base station.





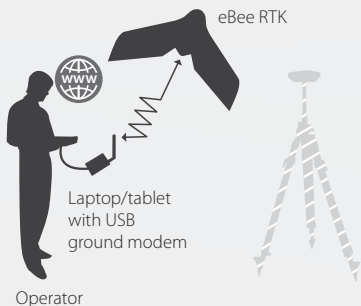
01 Local base, known position

- Place your base station on a known position
- Enter the base station's coordinates and characteristics into eMotion
- eMotion streams correction data to the drone via the ground modem



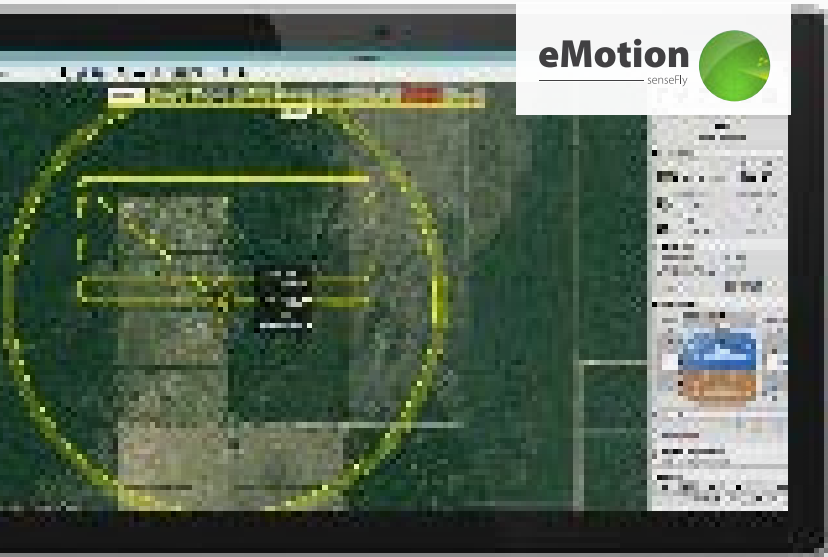
02 Local base, unknown position

- Position your base station in a convenient location
- eMotion calculates your base's approximate position
- eMotion streams correction data to the drone via the ground modem
- Correct your base's position in post-processing to achieve a high level of absolute accuracy



03 Virtual reference station

- Configure your drone's eMotion software to receive VRS/NTRIP correction data (internet connection and VRS/NTRIP subscription required)
- eMotion streams correction data to the drone via the ground modem



Plan & control your flight

senseFly's intuitive eMotion software makes it easy to plan and simulate your mapping mission.

Plan: Import your preferred base map and define the area you want to cover. Then specify your required ground resolution (with a GSD of down to 1.5 cm), and image overlap.

eMotion automatically generates a full flight plan, calculating the eBee RTK's required altitude and displaying its projected trajectory.

Configure: If you know your base station's coordinates, enter these into eMotion. If not, eMotion will calculate your base's approximate position. Or you can configure eMotion to receive VRS/NTRIP corrections.

eMotion then streams correction data to the eBee RTK via the senseFly USB ground modem.

Simulate: To ensure your mission's success, run a virtual flight that simulates wind strength and direction. Then make any flight plan updates required and prepare to launch.



Create geo-referenced maps & models

Process: Use professional photogrammetry software such as Pix4Dmapper Pro to process your flight's photos into geo-referenced 2D orthomosaics, 3D point clouds, triangle models and digital surface models (DSMs), in just a few clicks.

Trust: With the eBee RTK's GSD of down to 1.5 cm, relative orthomosaic/3D model accuracy of 1-3x GSD, and absolute horizontal/vertical accuracy of down to 3/5 cm (without GCPs), you can have full confidence in the accuracy of the outputs you produce.

Technical specifications

Hardware

Weight (inc. supplied camera)	Approx. 0.73 kg (1.61 lb)
Wingspan	96 cm (38 in)
Material	EPP foam, carbon structure & composite parts
Propulsion	Electric pusher propeller, 160 W brushless DC motor
GNSS/RTK receiver	L1/L2, GPS & GLONASS
Battery	11.1 V, 2150 mAh
Camera (supplied)	WX (18.2 MP)
Cameras (optional)	S110 RGB, S110 RE, S110 NIR, thermoMAP*
Carry case dimensions	55 x 45 x 25 cm (21.6 x 17.7 x 9.8 in)

Operation

Maximum flight time	40 minutes
Nominal cruise speed	40-90 km/h (11-25 m/s or 25-56 mph)
Radio link range	Up to 3 km (1.86 miles)
Maximum coverage (single flight)	8 km ² / 3 mi ² (at 974 m / 3,195 ft altitude AGL)
Wind resistance	Up to 45 km/h (12m/s or 28 mph)
Ground Sampling Distance (GSD)	Down to 1.5 cm (0.6 in) per pixel
Relative orthomosaic/3D model accuracy	1-3x GSD
Absolute horizontal/vertical accuracy (no GCPs)	Down to 3 cm (1.2 in) / 5 cm (2 in)
Multi-drone operation	Yes (inc. mid-air collision avoidance)
Automatic 3D flight planning	Yes
Linear landing accuracy	Approx. 5 m (16.4 ft)

Package contents

- eBee RTK foam body (inc. all electronics & built-in autopilot)
- Pair of detachable wings
- WX RGB still camera (inc. 16 GB SD card, battery, USB cable & charger)
- GNSS antenna
- 2.4 GHz USB radio modem for data link (inc. USB cable)
- Two Lithium-Polymer battery packs & charger
- Spare propeller
- Carry case with foam protection
- Remote control & accessories (for safety pilots)
- User manual
- eMotion flight planning & control software





senseFly


a Parrot company

www.sensefly.com

Where can you buy your eBee RTK? Visit www.sensefly.com/about/where-to-buy to locate your nearest distributor.



senseFly Ltd
Route de Genève 38
1033 Cheseaux-Lausanne
Switzerland

 Swiss made

About senseFly: senseFly designs, assembles and markets autonomous mini-drones and related software solutions for civil professional applications such as precision agriculture, land surveying, GIS, construction, environmental conservation and more.





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