

# Safety Guidelines

Autel Multi-rotor Drone Nest

EVO Nest



## Important

This manual is copyrighted by Autel Robotics Co., Ltd. with all rights reserved. Without prior written authorization from the company, no person (or entity) may copy, scan, store, distribute, reproduce, sell, transfer, or modify any part or all of this manual in any form for personal use or use by others. Users should only refer to this manual and the content thereof as instructions to operate this product. This manual should not be used for other purposes.



## Abbreviations

The following abbreviations are used in this manual, and their complete explanations are as follows:

- **Autel Robotics:** Autel Robotics Co., Ltd.
- **Nest:** Autel Multi-rotor Drone Nest EVO Nest.
- **Aircraft:** EVO Max Series Multi-rotor Drone.
- **Battery:** ABX40 Smart Battery (Nest Version).
- **AICS:** Autel Integrated Command System.
- **Remote controller:** Autel Smart Remote controller V3 (optional).

## Legend

Please pay special attention to the following symbols in this manual, which represent different degrees of potential danger caused by improper operations.

	<b>Warning: Alerts to a potentially hazardous situation.</b>
	Failure to follow the instructions may result in major safety accidents, serious personal injury, and property damage
	<b>Important: Reminds the user to pay attention to a point.</b>
	Failure to follow the instructions may result in minor personal injury and property damage

## Disclaimer and Warning

- Before using this product, please read and follow the operating requirements and safety precautions listed in this manual carefully.
- Please visit the links in this manual to obtain the latest electronic version of the product instructional videos and related user documents.
- To ensure safe and successful operation of this product, please read and understand all relevant user documents provided by Autel Robotics, and strictly follow the operating instructions and steps in each document.
- This product and its related components should be kept out of the reach of children or pets.
- This product is not suitable for people under the age of 18. Professional operation training is required before using this product.
- If the user does not comply with the relevant safety operating instructions, Autel Robotics will not be responsible for any product damage or personal property loss caused by violations of the risks indicated during use, and will not provide free warranty services.
- Do not use incompatible components or modify this product in any way that does not comply with the official instructions of Autel Robotics. Otherwise, Autel Robotics will not be responsible for any product damage or personal and property loss caused by such behaviors.
- Please confirm that your actions do not endanger the personal and property safety of you and others.
- If flight records are not provided, Autel Robotics may not be able to analyze the cause of the accident and therefore cannot provide you with after-sales services such as warranty.
- Once you start using this product, you are deemed to have read, understood, and accepted all terms related to this product.
- The content of user documentation related to this product will be updated irregularly based on product feature upgrades. If the content is updated, no further notice will be given. Please be aware that Autel Robotics will not be responsible for any product damage or personal and property loss caused by usage of outdated user

documentation. Every time before product update, please obtain latest version of user documentation.

- This product may be subject to export control laws in China, U.S, EU or other countries, which can only be authorized for civil (not military) use in sale, export or domestic transfer. Users need to confirm the product will not be used in the following situations, otherwise he or she will assume all losses caused by usage in such situations and legal responsibility on their own: 1) any military end use; 2) used for nuclear weapons, biological or chemical weapons or missiles that carry those weapons; 3) export or re-export or transfer it to any entity or person sanctioned by China, U.S, EU or any other government with jurisdiction; 4) export, re-export or transfer it to Cuba, Iran, North Korea, Syria, Crimea, Sevastopol and other areas under embargo; 5) any device or equipment that supports monitoring purpose.

## Obtain Instructional Videos and User Documentation

If the content is updated, no further notice will be given.

You can scan the QR code below or visit the following website to check the instructional videos and user documentation of this product.



<https://www.autelrobotics.com/videos/nest/>.



[https://manuals.autelrobotics.com/  
?dir=/EVO%20Nest/Suite/#/home](https://manuals.autelrobotics.com/?dir=/EVO%20Nest/Suite/#/home).

## Instructions for First Use

- The nest and the aircraft need to be activated and matched in frequency before they can be used normally. Please connect the remote controller to the nest through a data cable and perform relevant operations.
- After connecting the remote controller to the nest, please follow the instructions on the remote controller interface for relevant configuration.

## Site Inspection

- Ensure that the aircraft battery is installed in place, fully charged, and the battery unlock button is locked firmly.
- Ensure that the aircraft propellers are installed correctly, locked and fastened, the blades are neither damaged nor deformed, the motor and propeller surfaces are clean and free of foreign objects, and the propellers and arms are fully expanded.
- Ensure that the visual obstacle avoidance lens of the aircraft, the lens of the gimbal camera, and the lens surface of the aux light are free of foreign objects, dirt, and fingerprints and are not blocked by the mounting or external accessories on the fuselage.
- Ensure that the protective cover of the aircraft gimbal has been removed and the three-axis movement of the gimbal is in normal condition.
- Ensure that the microSD card slot of the aircraft is tightly covered with a rubber protective cover, and the RTK module is firmly installed on the fuselage PSDK interface, otherwise the aircraft's protective performance will be affected.
- Ensure that there are no foreign objects in the battery compartment and the interfaces of the aircraft.
- Ensure that the installation between the aircraft and the charging stand is stable, and the fixing screws are tightened.
- Ensure that there are no foreign objects in the charging interface of the aircraft charging

stand, and the charging cable is securely connected to the battery.

- Ensure that the aircraft has completed the official authorization of the target flight airspace and the application for lifting the ban (if necessary).
- Ensure that the mechanical wind speed sensor of the nest can rotate normally, and the surface of the rainfall sensor, and the temperature and humidity sensor is not covered with dirt or foreign objects.
- Ensure that there is no foreign object accumulation on the surface of the nest cabin door and the bottom of the nest, otherwise it will affect life and rotation of the door.
- Ensure that the landing pad of the nest is in a horizontal state and there are no foreign objects and dirt on the surface of the landing pad.
- Ensure that the emergency stop button of the nest is in the released state.
- Ensure that the external power supply of the nest is normal and the network connection is normal.
- Ensure that the nest has completed network configuration, cloud service configuration, RTK base station calibration, and backup landing point setup, and local debugging is normal.

## important

- After changing the installation location of the nest, it is necessary to re-calibrate the RTK base station and set up the backup landing point.

## AICS Inspection

- Before starting the flight, click "Alive" column on AICS and perform the following checks:
  1. Ensure that the nest network connection is normal, the nest is online, and the aircraft stays in the nest.
  2. Ensure that wind speed, environmental temperature and humidity, and rainfall at the installation site of the nest are within the range required for safe takeoff.
  3. Ensure that the aircraft has good satellite

signal and sufficient battery.

4. Turn on the surveillance camera of the nest to ensure that there are no foreign objects or snow icing on the surface of the cabin door.
  5. Open the window of the aircraft gimbal camera to ensure there is sufficient storage capacity of the aircraft.
- In the "Assets" column, make sure that nest firmware and aircraft firmware have been updated to the latest version.
  - In the "Assets" column, make sure that the nest has completed RTK base station calibration, takeoff and landing altitude setting, backup landing point setting, and the nest has sufficient storage capacity.
  - Ensure that the created route is within non-controlled airspace or legally authorized controlled airspace, and the takeoff point, altitude type, and flight altitude are reasonably set, and loss of connection actions, finish action are set.
  - During the flight test of the flight route, attention should be paid to the basic parameters such as flight altitude, flight speed, and battery level of the aircraft to ensure that the flight route can be completed normally.
  - If multiple aircraft are flying at the same time, please plan the airspace flight reasonably to avoid mid-air collisions and serious safety accidents.

## important

- Before creating a new flight route, please follow local laws and regulations regarding unmanned aerial vehicles. If necessary, obtain authorization from the local aviation authority for the target flight airspace in advance and report it.
- When creating a new flight route, please be sure to stay away from all kinds of no-fly zones where there are crowds, animals, and buildings. In planning a route, the route shall be within the airspace authorized by the official authority.
- After creating or modifying a new route, it is necessary to conduct on-site flight tests to ensure that the nest and the aircraft are in

normal condition before performing flights as required.

## Working Environment

### Warning

- Without permission, the nest shall not be installed near dangerous places, such as gas station, gas filling station, oil depot, and dangerous goods warehouse.
- Do not install the nest in places with flammable materials, such as debris accumulation areas, seasonal willow catkins areas, dead wood forests, hay fields, and vines.
- Do not install the nest on the surface of mobile platforms, such as moving cars, and ships.
- Do not fly the aircraft in severe weather such as strong winds, snow, rain, fog, sandstorms, extreme cold or high temperatures. The aircraft can withstand a strong wind with speed of up to 12 meters per second.
- Please use the nest and the aircraft within the specified ambient temperature range. When flying the aircraft in a low temperature environment, it is necessary to check the real-time monitoring of the nest on-site through AICS, check whether the cabin door surface is covered with snow and ice, whether the aircraft fuselage is covered with snow, and whether the blades are frozen.
  1. The working environment temperature of the nest is -30 °C~ + 50 °C.
  2. The working environment temperature of EVO Max series aircraft is -20 °C~ + 50 °C.
- When flying the aircraft, stay away from people, animals, vehicles, and other moving or fixed obstacles.
- When flying the aircraft, please stay away from water, snow, glass curtain walls and other specular reflection areas, otherwise the visual obstacle avoidance system of the aircraft will be affected, potentially leading to flight safety accidents.
- When flying the aircraft near electromagnetic interference sources, please operate it with caution. It is recommended to conduct a test flight in advance through a remote controller to continuously observe and evaluate the

stability of image transmission signal and image transmission display. Common electromagnetic interference sources include but are not limited to: high-voltage transmission lines, high-voltage transmission stations, mobile communication base stations, and television broadcast signal towers. If the interference signal is too strong when the aircraft is flying in the above places, it may not be able to fly normally. Please return and land as soon as possible. Set the flight plan after the flight test is stable.

### important

- When planning the location of the aircraft nest, please consider the environmental factors of the installation location. The altitude of the installation location should not exceed the maximum allowable flight altitude of the aircraft, and the installation location should not be areas with large-scale construction plans or significant seasonal changes in the environment (including but not limited to vegetation growth, new buildings, bridges, and communication base stations, high-voltage iron towers). If there is any change, new survey and site selection should be conducted.
- When planning the location of the nest, please consider whether the nearby airspace is within or near the controlled airspace. You can apply for flight airspace authorization from the local aviation authority in advance and promptly contact Autel Robotics for aircraft lifting.
- Do not install the nest in places with obvious biological detrimental factors, such as termites, rodents, bird colonies, and large predators.
- Do not install the nest in lightning strike areas, windy and rainy areas, fog gathering areas, and areas with a draught.
- Do not install the nest in areas prone to geological disasters, such as ground subsidence, debris flows, landslides, snow burial, and sandstorms
- Do not install the nest downwind from chemical plants, septic tanks, or areas less than 500 meters away from the coastline in coastal areas to prevent chemical gases or salt spray from polluting and corroding the nest.

- Do not install the nest near the flickering lights and uncontrolled strong light sources. Strong reflections may interfere with the visual obstacle avoidance system of the aircraft, affecting the safe landing and flight stability of the aircraft.
- Keep the aircraft at least 200 meters away from areas with strong electromagnetic interference, such as radar stations, microwave stations, and mobile communication base stations.
- Keep the aircraft at least 2000 meters away from drone interference equipment. Otherwise, the drone interference equipment and the aircraft cannot work at the same time.
- The nest should be installed away from steel structures and iron mines to avoid interference with aircraft compass.
- The nest should be installed away from strong vibration sources and noise areas as much as possible to avoid interference with the environmental sensors of the nest and decrease in service life of the nest.
- Please fly in open areas or high ground. Tall mountains, rocks, city buildings, and forests may block GNSS signal and image transmission signal of the aircraft.

## Safety Operating Instructions

### Warning

- Please entrust Autel Robotics or its authorized service providers for installation. Installation on your own may pose risks to product safety and lead to losing your free warranty eligibility. Users can contact Autel Robotics for relevant technical support.
- Operators are not allowed to operate the nest or the aircraft when being intoxicated, using drug, taking drug anesthesia, having a headache, feeling tired or nauseous and in other poor physical conditions or mental conditions.
- High-speed rotating propellers and motors may cause personal injury. Do not approach the aircraft with its propellers rotating, and stay away from the nest during takeoff and

landing.

- When flying the aircraft in windy weather, it is necessary to reserve enough power to ensure that the aircraft can return normally, to avoid forced landing after the aircraft enters critically low battery power, and the aircraft falling after losing control or power may cause harm to humans or animals.
- After the aircraft falls into the water and is retrieved, please do not immediately turn on the power. Instead, remove the battery and place it in an open area at a safe distance until it is completely dry. After that, please stop using the battery and contact Autel Robotics Customer Service Center for handling it.
- Before obtaining official maintenance services from Autel Robotics, users are not allowed to use aircrafts that have experienced accidents (such as collisions or overturns) or have abnormal flight conditions.
- Please make sure to use original accessories or accessories that have been officially certified by Autel Robotics. Using non-original accessories may pose a danger to the safe use of the device.
- Do not modify the aircraft and the nest by yourself, otherwise the performance of those devices will be affected, and even flight safety accidents will occur and you will lose your warranty eligibility.
- Before starting the flight, make sure that a backup landing point has been set up within the range of 5-50 meters around the nest. If the aircraft cannot land in the nest, it will land at the backup landing point. When deploying the nest, please follow the guidance on the remote controller to set up the backup landing point. The backup landing point area needs to be marked prominently, and it is required that there is no debris within a radius of 1 meter around the backup landing point.

### important

- When an alarm message appears in AICS, please promptly perform remote debugging and troubleshooting according to the prompts.

- If the meteorological environment (wind speed, rainfall, ambient temperature and humidity) at the installation site does not meet the required conditions for takeoff, please do not perform takeoff.
- To ensure the accuracy of the route, after importing the route through AICS, please be sure to check whether the generated route meets the requirements.
- Do not rely solely on the obstacle avoidance system of the aircraft, information provided by AICS, and other system functions. Some safety features may not work properly or be unavailable in specific flight modes or flight environments.
- Before issuing the mission, please make sure to confirm the safety of the route in advance and set a reasonable return altitude. The return altitude is the relative altitude to the takeoff point of the nest. Please set the return altitude higher than the height of the highest obstacle around the nest.
- During the first flight test, keep the remote controller connected to the nest so that in case of emergency, so users can take over the aircraft manually by using the remote controller in a timely manner.
- It is recommended to turn off unnecessary Wi-Fi and Bluetooth devices around the nest to avoid interference from other wireless devices on communication signal.

## Battery Safety Notice

### Use the Battery

#### Warning

- Please do not use batteries and charging devices that are not provided or authorized by Autel Robotics. If you need to replace them, please contact Autel Robotics for support. Autel Robotics is not responsible for battery accidents and flight failures caused by using third-party batteries or charging devices.
- Please use the battery at a suitable temperature (referring to the working environment temperature of the aircraft). Using it at high or low temperatures will affect the safety and lifespan of the battery, and may lead to battery combustion or battery being permanently damaged.
- Do not use the aircraft in a strong electrostatic (such as thunderstorms) or electromagnetic environment. Otherwise, some functions of the smart battery may fail (e.g., abnormal battery output and power failure), resulting in serious aircraft malfunctions.
- Do not use a battery that has ever been dropped from the aircraft or subjected to external impacts.
- Do not use a water-soaked battery or immerse a battery in water or other liquids. Water contact inside the battery may cause corrosion, resulting in spontaneous battery combustion and even an explosion.
- Do not use a battery that emits smoke, is bulged, leaks liquids, or has a damaged appearance.
- The liquid inside the battery is corrosive. If it leaks, please keep away from it. If it accidentally contacts your skin or eyes, rinse immediately with clean water for at least 15 minutes and seek medical attention.
- Do not disassemble, pierce, knock, crush, or burn the battery in any way. Otherwise, it may lead to battery combustion or even explosion.
- Do not short-circuit the positive and negative terminals of the battery.
- Do not place the battery in a microwave or pressure cooker.
- Do not place the battery directly on the surface of conductors (such as a metal casing or panel).
- Do not expose the battery to open flames, explosions, or other dangerous situations.
- Do not place heavy objects on the battery. External impact on the battery may cause damage or even fire and explosion.
- If the battery catches fire, solid fire extinguishing equipment such as sand or dry powder fire extinguishers should be used.
- If the battery interface is dirty, please use a dry soft cloth to wipe it clean. Otherwise, it will cause poor contact, resulting in energy loss or



inability to charge.

- Before replacing the battery of the aircraft, please confirm that battery interface, battery compartment interface, battery surface, and battery compartment surface are dry and free of water, and then insert the battery into the fuselage.
- Please check the battery level and battery discharge frequency regularly. When the battery discharge frequency exceeds 200 times, or if the abnormality cannot be repaired after two consecutive standard charging and discharging operations, be sure to replace the battery with a new one, otherwise it may affect flight safety.
- Please make sure the battery is fully charged before each flight. If the aircraft enters a low battery warning state, you should land the aircraft and stop the flight as soon as possible, and replace the battery with a new one or charge the battery.
- When the battery temperature is below -10 °C, the aircraft is not allowed to take off and needs to wait for the battery to self-heat before operation. In extremely cold environments, even if self-heating measures are taken, the battery may still not reach the usable temperature.

## Charge the Battery

### Warning

- When the battery is installed in the aircraft, it can be charged through the nest. A separate battery can also be charged using a battery charger (please contact Autel Robotics to purchase one).
- Do not charge batteries that smoke, bulge, leak, or have a damaged appearance.
- Please regularly check and maintain the charging connector, the aircraft charging stand, the battery and other components of the nest. Do not use alcohol or other flammable agents to clean the battery.
- If you need to charge a battery separately, please note the following:

1. Do not use a damaged battery charger to charge the battery.
2. When the battery temperature is below 5 °C or above 45 °C, the battery triggers temperature protection and stops charging.
3. During the charging process, the battery should be kept away from flammable and explosive materials.
4. When the battery charger is no longer in use, it should be disconnected from the battery and power supply in a timely manner.

### important

- Usually, when a battery charger is used to charge a separate battery, it takes up to 90 minutes to charge from zero to full, but the charging time is related to the remaining power.
- Before using the device, please check whether there is any dirt or foreign object on the charging connector of the nest, the charging interface on the aircraft charging stand, the interface of the aircraft battery compartment, and the battery interface, so as to avoid poor contact.
- When the battery is being charged by using the nest, the built-in air conditioner in the nest can automatically adjust the ambient temperature to quickly cool down the battery.

## Storage and Transportation

When the aircraft is placed in the nest for work, the built-in air conditioning in the nest can adjust the ambient temperature and humidity to make it suitable for battery storage. Once the battery is stored separately, the following requirements must be followed:

### Warning

- Batteries should be stored out of reach of children and pets.
- Batteries should be stored away from direct sunlight, water, or reactive chemicals.
- Please do not store the battery in extreme



temperatures. Extreme temperatures will shorten the battery life and even cause battery damage or failure. If the battery is not used for more than 1 day, it should be stored in an environment of -10 °C~ + 30 °C.

- Do not store or transport batteries with sharp objects, watches, metal necklaces, earrings, or other metal objects.
- Do not transport batteries with appearance damage or batteries with battery level higher than 30%.
- Please refer to the local lithium battery transportation policy for consignment or carrying.

**! important**

- Batteries should be stored in a cool, dry, and ventilated environment. The ideal storage conditions are: the battery level should be maintained at around 60%, and the ambient temperature and humidity should be maintained at + 22 °C~ + 28 °C, within 65% ± 20% RH.
- Do not leave the battery unused for a long time after discharging it (it should be charged every 3 months) to avoid damaging the battery cells due to over-discharge.
- When the battery level is low, the battery will automatically enter sleep mode; when the battery is idle for more than 12 hours and the battery is below 8%, it will enter ultra-low power mode, and the battery

needs to be activated with a battery charger.

- When the battery needs to be stored for a long time, please discharge it to about 60% of its capacity for storage. If the battery is stored with high capacity for a long time, the battery will age easily and even bulge, while being stored with low capacity the battery will be over-discharged and the battery cells will be damaged.
- When the battery is stored in a high-temperature environment or not used for 6 days with a high battery level, the battery will activate self-discharge protection and automatically discharge to about 60%. The discharge process lasts for 2-3 days, during which the battery will slightly heat up.

**Waste Battery Treatment**

For waste battery, please handle it according to the following requirements:

- For the battery that is discarded due to damage, leakage, or other issues that compromise the integrity of the battery shell, it is recommended to fully immerse the battery in an insulated bucket filled with 5% concentration saline for more than 48 hours until the battery is fully discharged.
- For the battery that is normally retired, confirm that it is completely discharged, and then properly recycle it according to local lithium battery waste disposal policies to avoid environmental pollution.

**Specification Parameters**

Autel Multi-rotor Drone Nest EVO Nest	
Operating Temperature	-30°C~+50°C
Input Voltage	100-240V~ 50/60Hz
Input Current	Maximum 16A
Maximum Power Supply	1200W-2000W (varies with input voltage)
Weight	Approximately 70 kilograms
Ingress Protection Rating	IP55
Operating Radius	7 kilometers

Built-In Backup Battery	
Battery Capacity	18Ah
Battery Type	Lithium Iron Phosphate
Output Voltage	22.4VDC
Battery Endurance	60 minutes (room temperature, air conditioning not turned on)
EVO Max Series Multi-rotor Drone	
Operating Temperature	-20°C~+50°C
Max Service Ceiling Above Sea Level	3100 meters
Max Flight Time (no wind, for reference only)	32 minutes
Operating Frequency	<p><b>900M</b>: 902 - 928MHz*</p> <p><b>2.4G</b>: 2.400 - 2.476GHz**, 2.400 - 2.4835GHz</p> <p><b>5.2G</b>: 5.15 - 5.25GHz***, 5.17-5.25GHz****</p> <p><b>5.8G</b>: 5.725 - 5.829GHz**, 5.725 - 5.850GHz</p> <p>*Only applicable to FCC and ISCED regions</p> <p>**Only applicable to SRRC regions</p> <p>***Only applicable to FCC, CE (Germany Excluded) and UKCA regions</p> <p>****Only applicable to Germany</p> <p>Note: Some frequencies are only available in certain areas or for indoor use only. Please refer to local laws and regulations for details.</p>
Equivalent Isotropic Radiated Power (EIRP)	<p><b>900M</b>: ≤30dBm (FCC/ISED)</p> <p><b>2.4G</b>: ≤30dBm (FCC/ISED); ≤20dBm (CE/SRRC/UKCA)</p> <p><b>5.2G</b>: ≤30dBm (FCC); ≤23 dBm (CE/UKCA)</p> <p><b>5.8G</b>: ≤30dBm (FCC/ISED/SRRC); ≤14dBm (CE/UKCA)</p>
Max Transmission Distance	FCC: 15km; CE: 8 km (no interference and no obstruction)
ABX40 Smart Battery	
Rated Capacity	8070mAh
Nominal Voltage	DC 14.88V
Battery Type	Li-Po 4S
Battery Charging Temperature	<p>+ 5 °C~ + 45 °C</p> <p>(When the battery temperature is lower than 5 °C, the battery starts self-heating; when the temperature is high, the air conditioner starts to cool the battery down)</p>
Rated Energy	120Wh



**Contact**  
Autel Robotics Support



**This content is subject to change without notice.**  
Download the latest version from  
<https://manuals.autelrobotics.com/?dir=/EVO%20Nest/Suite/#/home>.

**EVO Nest** is a trademark of Autel Robotics.  
Copyright © 2024 Autel Robotics All Rights Reserved.