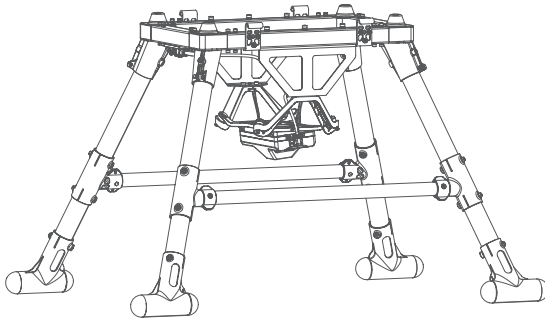


# XAG P150 RealTerra 3 User Manual

Version 1.0 **EN**



## **To User**

Dear user, thank you for choosing XAG's products.

For safety purposes and better user experience, it is highly recommended that you read this manual carefully and strictly follow the instructions hereof.

## **Contact Us**

Manufacturer: Guangzhou Xaircraft Technology Co., Ltd.

Add: XSpace, No.115, Gaopu Road, Guangzhou, Guangdong Province, China

Technical Support Team: support@xa.com

# Safety Guidelines

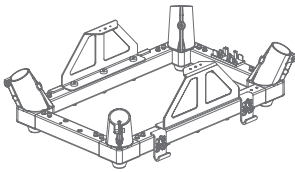
- XAG P150 RealTerra 3 (Model: M5CPN12-C) is only compatible with the XAG P150 2024 Agricultural Drone. Do NOT use it on other products or for purposes other than plant protection.
- It is advisable to use the product on sunny, cloudy, or overcast days with winds of force 3 or below. NEVER use it in adverse weather conditions including rain, snow, frost, fog, thunder, hail, dust storms, and gale, or in an area with strong electromagnetic interference.
- Please install and use the product in strict accordance with this User Manual.
- Do exercise caution when using the drone. Ensure that the area within a 10-meter radius of the drone's takeoff or landing point is clear of people, animals, or obstacles when the drone is taking off, landing, or hovering. When creating a route, observe the surrounding area and avoid zones with people, animals, or obstacles to ensure safe operation.
- When using the drone, keep a close eye on the route. If people or animals are detected, issue a warning immediately and take control of the device to prevent accidents.
- After installation, ensure all parts are properly and securely installed; otherwise, the drone's mapping performance will be affected.
- Clean the lens of the RealTerra module before and after each mapping, and keep the lens clean and free of foreign matter.
- Please use RealTerra in scenes with rich texture characteristics, rather than those with poor texture characteristics such as deserts or bodies of water.
- It is recommended to use RealTerra in environments with normal daylight brightness. Insufficient lighting may result in mapping failure.
- Ensure a stable 4G or Wi-Fi network connection when using RealTerra for mapping.
- RealTerra is not suitable for use in mountainous terrain with significant drop-offs (greater than 30°), on water surfaces, or on transparent surfaces.
- It is prohibited to fly near sources of electromagnetic interference such as high-voltage power lines, high-voltage transmission stations, and TV and radio signal towers.
- Do not assemble/disassemble the module or plug/unplug circuits while the product is powered on.
- When the product is not in use, thoroughly clean and inspect the system. After ensuring that the product is free of clogs or any abnormalities, store it in a dry, cool, and safe place.
- Please ensure that RealTerra is installed on a compatible agricultural drone and operated strictly in accordance with the instructions in this user manual.
- Do not use non-XAG components for the maintenance and operation of XAG products, as this may seriously compromise the safety and lifespan of the products. Any damage to the products arising therefrom will not be covered by the product warranty.

# Introduction

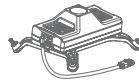
The XAG P150 RealTerra 3 (RealTerra) is designed for the XAG P150 2024 Agricultural Drone. It enhances operational efficiency across all scenarios through HD maps, and features safe and quick-release landing gear. It captures and stitches HD maps automatically during fully autonomous flight, with real-time 3D modeling enabling rapid map generation upon landing. This makes it easy to conduct HD mapping of farmland and orchards, covering up to 13.33 hectares each time.

## List of Items

Please see that all of the following items are present when unpacking the boxes. Should there be any item missing, please contact your seller immediately.



RealTerra Frame  
×1



RealTerra Module  
×1



Shock Absorbing Bracket  
×2



Landing Gear #1  
×2



Landing Gear #2  
×2



Crossbar  
×2



T-clamp  
×4

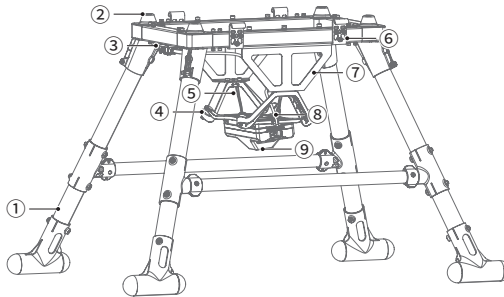


Nylon Cord  
×2



Screw Kit  
×1

# Main Components

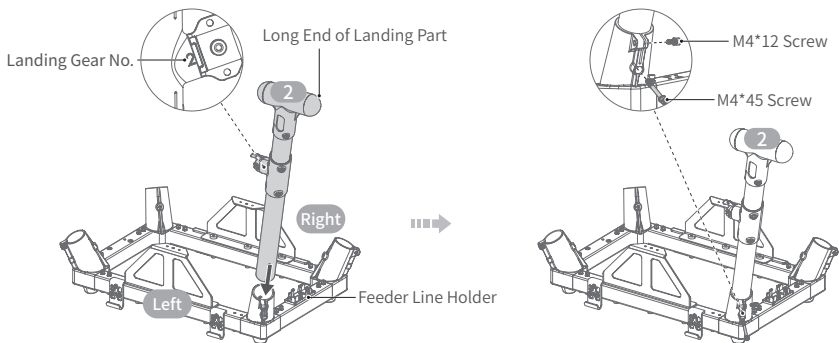


- ① Landing Gear
- ② Boss
- ③ Shock Absorber
- ④ Nylon Cord
- ⑤ Hook
- ⑥ Feeder Line Holder
- ⑦ Shock Absorbing Bracket
- ⑧ RealTerra Feeder Line
- ⑨ Lens

## Installation

### Landing Gears

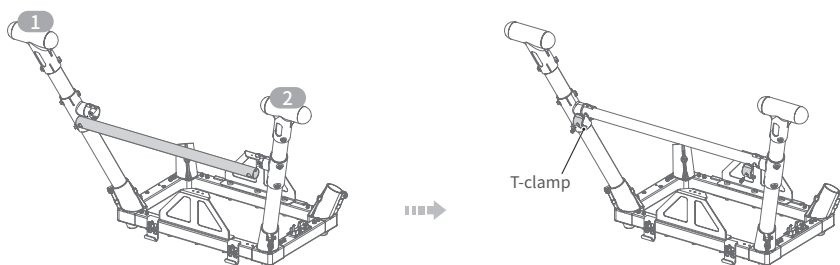
① Attach landing gear #2 into the hole at the left rear of RealTerra frame (with the long end of the landing part of the landing gear facing outward). Pre-fix the landing gear with M4\*45 screws, and pre-tighten it with M4\*12 screws. After making proper adjustments, tighten all the screws (torque: 5-8kgf.cm) to secure the landing gear to the RealTerra frame. Repeat the above steps to complete the installation of landing gear #1 at the left front of the RealTerra frame.



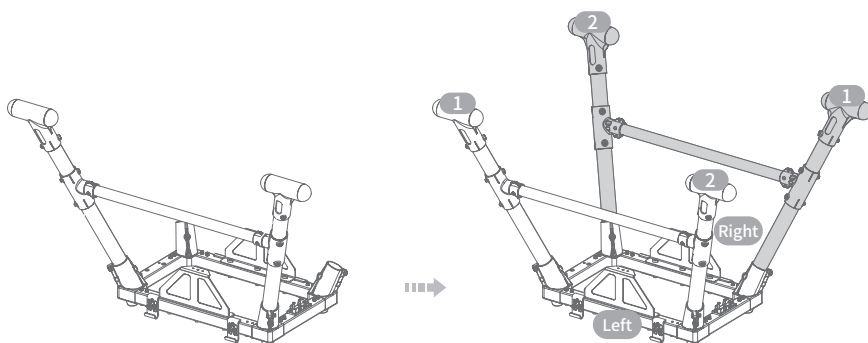
#### Note

△ The orientation of the feeder line holder of the RealTerra frame (placed upside down) is defined as the rear direction. The left rear landing gear is numbered as #2 and the left front one is #1. Diagonal landing gears have the same number.

- ② Attach and fix the crossbar to the T-joints on both landing gears. Then attach the two T-clamps to both ends of the crossbar, and pre-fix them with two M4\*16 screws. After making proper adjustments, tighten all the screws (torque: 5-8kgf.cm) to complete the installation of the landing gears on the left side.



- ③ Following the previous steps, proceed to install the landing gears on the right side.

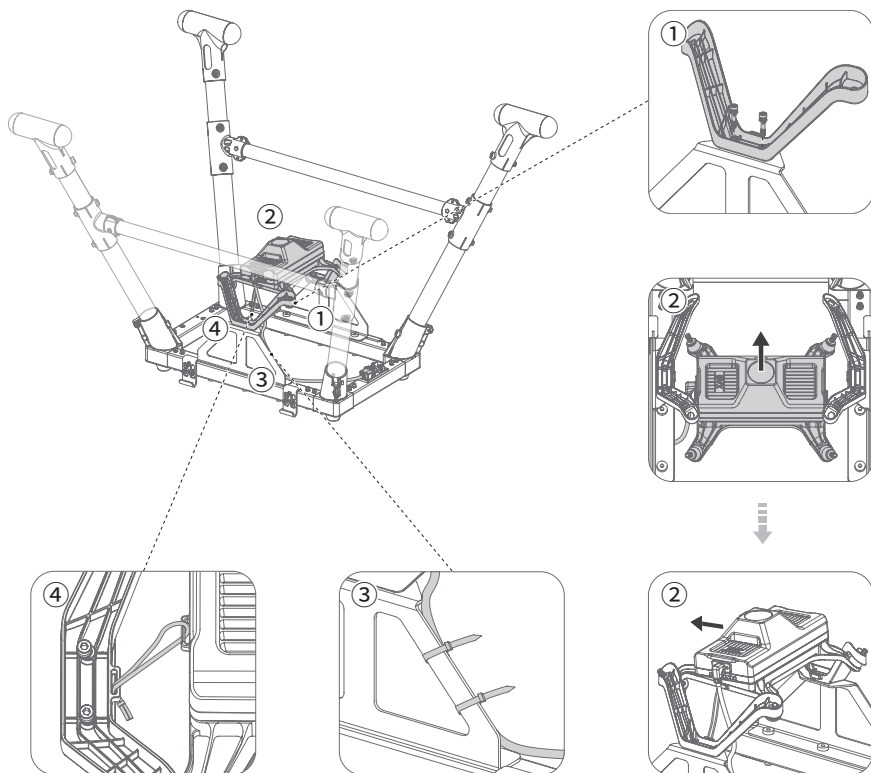


**Note**

- ⚠ Landing gear #1 and #2 are not interchangeable. Install each according to its number to avoid installation failure or damage.

## Install RealTerra Module

- ① Install the two shock absorbing brackets on the mount, and secure them using four M3\*16 screws.
- ② Fit the four locating pins of RealTerra module into the holes of shock absorbing brackets and secure them; fix the feeder line plug on the holder.
- ③ Secure the feeder line on the mount using cable ties.
- ④ Thread two nylon cords through the holes of shock absorbing parts on both sides, then through the holes of shock absorbing brackets. Insert the cord ends into the lead sheaths, and tighten the sheaths using a crimping tool.
- ⑤ Turn the RealTerra module upright.

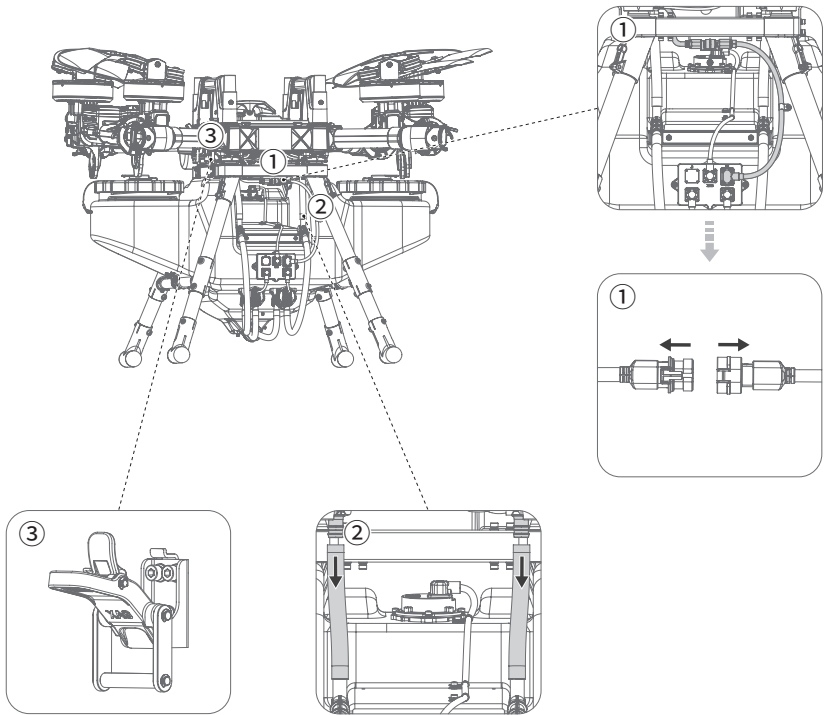


### **⚠ Note**


- ⚠ The orientation of the feeder line holder of the RealTerra frame (placed upside down) is defined as the rear direction. The RealTerra module should be installed with a forward tilt. Ensure that the RealTerra feeder line and the RealTerra installation markers (P and arrow) are on the right side.

## Remove RevoSpray

- ① Remove the airframe application system cable and the RevoSpray application system cable from the cable holder and disconnect them.
- ② Disconnect the two liquid tubes connected to RevoSpray from the fuselage.
- ③ Open the fuselage hasps (two on each side) and remove the RevoSpray.



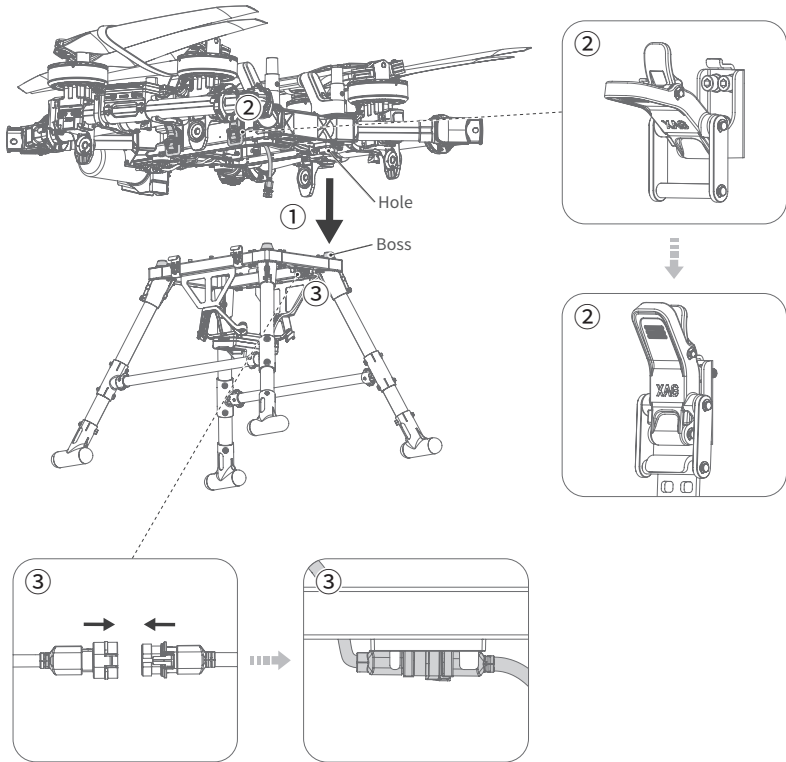
### Note

-  Before removing RevoSpray, ensure that the pesticide residue in the liquid tubes has been cleaned out.




# Install RealTerra

- ① Secure the airframe onto the RealTerra by aligning the holes of the airframe with the bosses on the RealTerra.
- ② Open the two hasps on each side of the airframe and fasten the airframe to the RealTerra.
- ③ Connect the application system cable of the airframe to that of the RealTerra, then affix them to the cable holder.



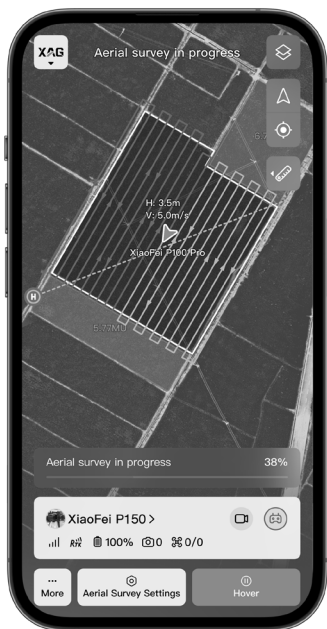
## ⚠ Note

- ⚠ The orientation of the nose is defined as the forward direction. The RealTerra module should be installed with a forward tilt, and the feeder line holder is positioned at the tail of the drone.
- ⚠ Open "XAG One" and connect to the drone. When  appears on the status bar on operation screen, the RealTerra module is successfully installed.

# Use of RealTerra

## RealTerra Aerial Survey

1. Open "XAG One", and tap on "Operation" on the home screen (main screen).
2. Select the HD map for survey, tap on "Start Aerial Survey" (or directly tap on "Start Aerial Survey" to jump to the "Confirm Survey Boundaries" screen, select "New HD Map", and tap the map to mark the boundary points of the area to be surveyed. After marking all the boundary points, tap on the starting point, and the system will automatically generate the survey area. Once the survey area is drawn, tap on "Save" in the lower right corner, and the app will automatically plan the route).
3. Tap on "Aerial Survey Settings", and select the aerial survey type (it's recommended to select "Plain Mode" for field aerial survey to generate planar HD map and "Mountain Mode" for mountain aerial survey to generate 3D HD map).
4. Tap on "Start Aerial Survey", make sure there is no one within 10 meters around the drone, and slide right to confirm takeoff. After the self-testing is completed, the drone will automatically take off for aerial survey. After that it will automatically return.



### Note

- ⚠ Before aerial survey, please update the device firmware to the latest version.
- ⚠ Ensure to start aerial survey on the fields with clear texture under clear and bright environment (if the weather is overcast, lighting is poor, or there is wind, rain, snow, or the field texture is not clear, the mapping results may be poor or fail).

- ⚠ During aerial survey, ensure that the 4G/Wi-Fi network link in the operation area is stable and good, otherwise it will affect the survey performance and the generation of HD map.
- ⚠ Before aerial survey, please make sure there are no obstacles such as high-voltage lines within the route.
- ⚠ Please do NOT power off the drone and RealTerra system when it is generating HD map.

## Aerial Survey Settings

Before or during aerial survey, tap on "Aerial Survey Settings" in the operation screen to adjust the aerial survey settings.

- Switch aerial survey mode: plain mode and mountain mode.
- Enable/disable "Obstacle Avoidance".
- Enable/disable "Radar Terrain Following".

### Note

- ⚠ Because the area of a single field varies in different modes, switching the survey mode may involve re-cutting the field and regenerating a route.
- ⚠ Result transmission requires file access. Please allow "XAG One" to access in System Settings. Result transmission requires file access. Please allow "XAG One" to access in System Settings.

## Networking

To ensure stable communication during the transmission of HD maps, the drone and the app need to be connected to the same Wi-Fi for networking. Users can follow the steps below to start Wi-Fi networking (here, SRC4 networking is taken as an example).

1. In "XAG One", follow the Wi-Fi networking guide pop-up windows and tap on "Set Network Now" to enter the networking screen.
2. Select LAN terminal device. Tap to enter the SRC4 networking screen, set the networking mode to AP mode, and select the drone for networking.
3. After the settings are completed, tap "Networking Done".

## Maintenance

- After the completion of survey, please clean the RealTerra module's camera lens. Use a wet towel to gently wipe off any liquid, stains, and debris from the lens. If the RealTerra module is stored for a long time, please regularly clean the camera lens. Before starting operation again, ensure the camera lens is free of dust to avoid affecting the operation.
- Shock absorber may show signs of wear and aging after one month of use. Please replace them as needed.

# Specifications

Model	M5CPN12-C
Dimensions	859×595×534 mm
Weight	Approx. 3.95 kg
Image Sensor	1/2.3-inch CMOS; effective pixels: 12 MP
Lens	FOV 112° 2.7 mm/16.8 mm (35 mm equivalent focal length)
Mechanical Shutter	1/30-1/2000 s
Image Format	JPEG
Rated Power	10 W
Recommended Operating Temperature	10 °C ~ 45 °C
IP Rating	IPX6K
Compatibility	XAG P150 2024 Agricultural Drone

# Disclaimer

1. Please read this Disclaimer carefully before using this product, as it has much to do with both operational safety and your legitimate rights and interests. You shall be deemed to have read, known, understood, agreed to and accepted all the terms and conditions as well as information stated herein upon the use of this product.
2. Not being a toy and with certain safety risks, this product is not suitable for those who are under 16 years old, those who have limited or no capacity for civil conduct, those with mobility impairments, or those who have not legally obtained a conventional agricultural drone operator certificate under existing laws and regulations of the location where the product is used. Individuals who have not obtained the conventional agricultural drone operator certificate as required by law are not allowed to come into contact with or use this product. Please be particularly cautious when operating this product with children, crowds, or animals present.
3. This product is the RealTerra system of the XAG P150 2024 Agricultural Drone solely designed for agricultural use. Be sure to read the User Manual carefully before using this product to understand your legitimate rights and interests, responsibilities as well as safety guidelines. Otherwise, property damage and accidents could be caused; personal safety could be at risk.
4. You undertake to use the product within the bounds of the law for legitimate purposes only and agree to the terms and conditions stated herein as well as potential related policies and norms formulated by XAG. You understand and accept that flight records and data created during use will be automatically uploaded and saved to XAG's server. XAG shall resume no responsibility for the failure to analyze such flight records and data caused by the unsuccessful upload for any reason attributable to the user.
5. To the maximum extent permitted by law, under no circumstances shall XAG offer an implicit or explicit guarantee for this product, including but not limited to implicit guarantees pertaining to vendibility, fitness for a particular use, or non-infringement.
6. Please install, use, transport, and maintain the product under the instructions in this User Manual. Do NOT convert or disassemble this product on your own as any malfunction or damage arising therefrom or resulting from your improper use will not be covered by the warranty, and you shall solely assume the liability arising therefrom, both financially and legally.
7. To the maximum extent permitted by law, XAG shall not be liable for any loss caused by your use of this product outside the instructions in this User Manual. Furthermore, XAG shall not be liable for any indirect, consequential, punitive, accidental, special or exemplary damage, including any loss incurred as a result of your purchase, use, or inability to use the product, even if you have been advised of the possibility of such loss.
8. To the maximum extent permitted by law, under any circumstances, the liability or compensation amount from XAG to you for all damage, losses and litigation arising therefrom will not exceed the amount that you paid to XAG for purchasing the product.
9. You understand that in the use of any products, accidents may occur as a result of a single or combined factors, including but not limited to improper operation, surroundings and communication networks. You understand that the aforesaid accidents are reasonable and acceptable in the use of the product, and that XAG shall not be held accountable for such accidents.

10. On any account, purchaser or user shall comply with the laws and regulations of the country and region where the product is used. XAG shall assume no liability arising from the violation of relevant laws and regulations by the purchaser or user.
11. Please note that the features of this product and its accessories include surveying and mapping. Prior to using these features, ensure you have acquired the necessary surveying and mapping certificates as required by national law. The use of this product may involve the collection, storage as well as processing of the geographic information and data of farmland, which must comply with applicable laws and regulations. Any financial or legal liability arising from violations of the laws and regulations shall be borne solely by the user.
12. As exclusion clauses may be prohibited by law in some countries, your rights in different countries may vary. However, this does not imply that certain or all terms contained in this Disclaimer are necessarily invalid. For any reason that partial terms stated herein are deemed void, other terms shall remain in effect.
13. To the extent permitted by law, XAG reserves the right for final explanation and revision of the terms and conditions stated hereinabove. XAG also has the right to update, modify or terminate these terms and conditions via its official website, User Manual, online App, etc., without prior notice.

## Warning

Before using a drone and its peripherals, user is required to read through the User Manual and obtain a UAS operator certificate accredited by XAG or the laws, regulations, and policies of the country/region where the product is used. Otherwise, improper operation of the drone and its peripherals may cause serious injury to user or others, or cause damage to the product and property loss. Safety awareness is of great importance during operation. Meanwhile, this product is not suitable for children or those who are under 16 years old, those who have no or limited capacity for civil conduct, or those with mobility impairments as prescribed by law. Please install and use the product by strictly following XAG's instructions in the User Manual. Do NOT use any components that are not provided or suggested by XAG for the repair of the product.

# Compliance Information

## FCC Compliance Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

*Brand name / model number: M5CPN12-C*

*Suppliers Name(FCC): Pegasus Spray Inc*

*Suppliers Address (FCC): 2235 79th Ave NE, Medina, WA 98039, USA*

*Suppliers phone number and / or internet contact information: +1 (503) 866-1228*

## EU Compliance Statement

“Hereby, [Guangzhou Xaircraft Technology CO.,LTD.], declares that this [XAG P150 RealTerra 3] is in compliance with the essential requirements and other relevant provisions of 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

[www.xa.com/en/service/downloads](http://www.xa.com/en/service/downloads)”

*Brand name / model number: M5CPN12-C*

*Suppliers Name(EU): NIK ELECTRONICS LTD*

*Suppliers Address (EU) : Sofia, 11B Brussels Blvd., fl.13*

*Suppliers phone number and / or internet contact information: 00359899952228*



## KCC Warning Message

이 기기는 업무용 환경에서 사용할 목적으로 적합성 평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파 간섭의 우려가 있습니다 .



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