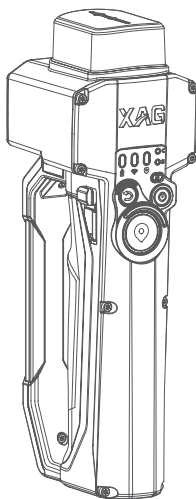


XAG XRTK6 Pro Ground Module

User Manual

Version 1.0 



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

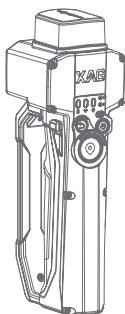
Technical Support Team: support@xa.com

Introduction

XAG XRTK6 Pro Ground Module (hereinafter referred to as "XRTK6 Pro") is a next-generation rover featuring Mark-to-Map and Portable Base Station Setup. With its stable transmission signals, it effortlessly handles various scenarios, making it a precise and efficient tool for agricultural tasks.

List of Items

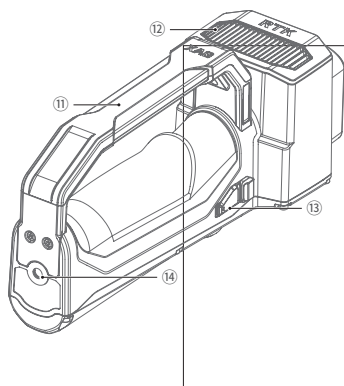
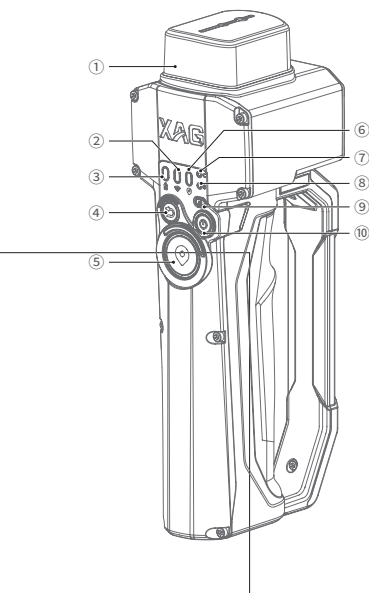
Please see that all of the following items are present when unpacking the box. Should there be any item missing, please contact your seller.



XRTK6 Pro Ground Module

×1

Overview



① RTK Antenna

② Connection Status Indicator

③ Power indicator

④ Undo Marking Button

⑤ Marking Button

⑥ Positioning Indicator

⑦ Mapping Mode Indicator

⑧ Portable Base Station Mode Indicator

⑨ Mode Switching Button

⑩ Power Button

⑪ Handle

⑫ Cooling Fin

⑬ USB Charging Port

⑭ Tripod Fixing Hole

Indicator

Indicators tell you the status of XRTK6 Pro when it is on.

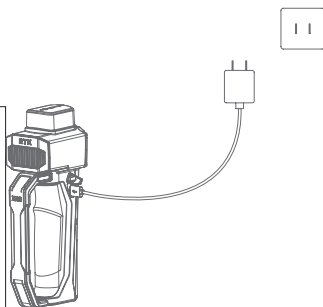
Battery Level Indicator 		Description
Solid Green		Battery level 51%-100%
Solid Yellow		Battery level 21%-50%
Solid Red		Battery level 1%-20%
Connection Status Indicator 		Description
Mapping Mode		
Solid Green		Connected to phone via Bluetooth
Off		Not connected to phone
Portable Base Station Mode		
Solid Green		Networking successful
Off		Not networked
Positioning Indicator 		Description
Single Blinking Green		Single
Double Blinking Green		Float
Solid Green		RTK
Triple Blinking Green		Fix
Mapping Mode Indicator 		Description
Solid Green		In mapping mode
Blinking Green		Tilt angle > 50°
Off		Not in mapping mode
Portable Base Station Mode Indicator 		Description
Solid Green		In portable base station mode
Off		Not in portable base station mode

Before Use

Charge

Plug the Type-C end of the cable into the charging port of the XRTK6 Pro and the USB end into the adapter, then connect to a power source.

When charging the XRTK6 Pro with the fast charging adapter, the power indicator blinks fast, accompanied by two beeps from the buzzer. The light turns solid green once the XRTK6 Pro is fully charged.



Power ON/OFF

When the XRTK6 Pro is off, press and hold the button  for 2 seconds until the buzzer emits one beep. Release the button  and all indicators will blink simultaneously, indicating that the XRTK6 Pro is powered on. Once the blinking stops and the battery level indicator turns solid, initialization is complete and the XRTK6 Pro is ready for use.

When the XRTK6 Pro is on, press and hold the button  for 2 seconds until the buzzer beeps once. Release the button  and all indicators will go off, meaning that the XRTK6 Pro has turned off.

Warning

 When the battery level drops below 5%, the buzzer will sound three beeps and the XRTK6 Pro will automatically turn off after one minute. Please charge immediately.

Add XRTK6 Pro

To use XRTK6 Pro to mark points and map a field, or to set up a portable base station, you can add XRTK6 Pro to XAG One as follows.

1. After XRTK6 Pro is turned on, open the XAG One, tap the icon  in the upper right corner, and select "Add a Device".
2. Scan the QR code of XRTK6 Pro or enter its serial number to add the device. Alternatively, you can add it by tapping the icon  in the upper right corner of the "Add a Device" screen of the app and selecting "Add a device via Bluetooth".
3. Name the device and tap "OK" to finish adding.

Firmware Update

Check if the current firmware is up to date before using the device. If not, it is a must to install the latest updates.

1. Open XAG One, tap "Me" - "Device", select the XRTK6 Pro and go to the Device Details screen. Then tap  to go to the "General" screen, then tap "Firmware Update" to check for firmware updates.
2. If updates are available, tap "Download and Install". When the installation is complete, tap "Finish" and return to the device list to see if all firmware has been updated to the latest version. If not, repeat the update process until all updates are installed.

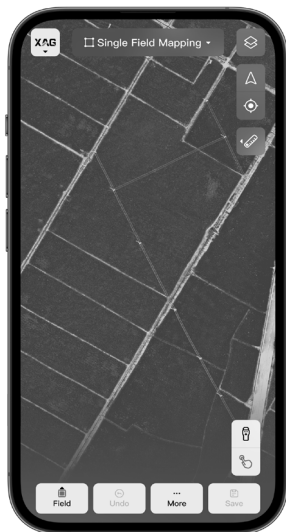
How to Use

XRTK6 Pro offers two modes of operation: **Mark-to-Map** and **Portable Base Station Setup**. Each mode will be explained below.

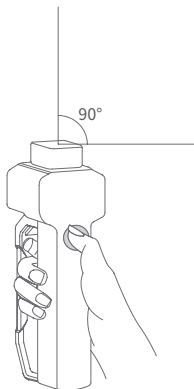
Mark-to-Map

When used as a rover, the XRTK6 Pro can be employed for point marking and field mapping.

- ① Open XAG One and go to the mapping screen by tapping "Mapping" on the home screen (main screen). Then, tap the icon  in the lower right corner to select the paired XRTK6 Pro.



- ② Hold the XRTK6 Pro and move to the boundary of the field that needs mapping. Short press  to mark the boundary points of the field. After marking all the boundary points, tap on the "Auto Close" in the app or long press , and the system will automatically generate the field.



- ③ In the app, tap on the "Field Boundary"  to switch the marking type. Select "Obstacle" or "Non-spraying Zone". Hold the XRTK6 Pro, walk around the obstacle/non-spraying zone and short press  (short press  to undo the point) to mark the boundary points of the obstacle/non-spraying zone.
- ④ After mapping the operating area, tap "OK" in the upper right corner.
- ⑤ Complete field information and tap "Complete" to save the field.

Warning

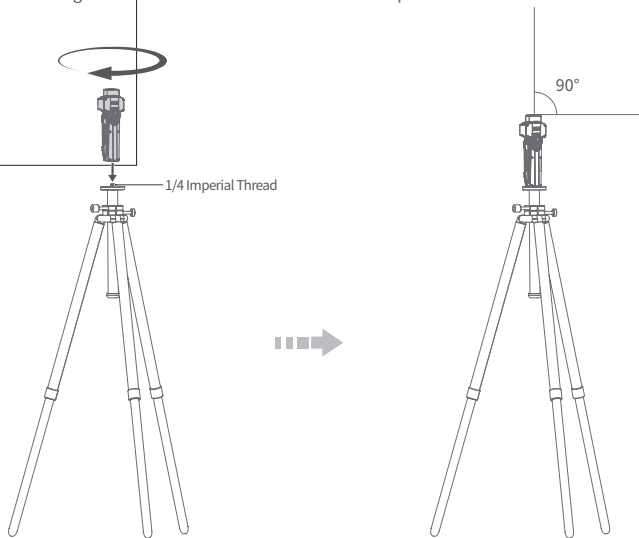
-  When using the XRTK6 Pro for marking points, ensure that it is held vertically to ensure accuracy. Also, avoid XRTK6 Pro being obstructed, which may cause communication signal interruption.
-  In mapping mode, if the tilt angle of the XRTK6 Pro exceeds 50° , the mapping mode indicator light will flash green rapidly. Please adjust the angle promptly to avoid affecting its normal use.

Portable Base Station Setup

After switching to portable base station mode, XRTK6 Pro can be used as a positioning base station. Once XRTK6 Pro completes positioning, it can be used as a reference source for other devices for positioning.

Tripod Installation

- ① Align the bottom screw hole of the XRTK6 Pro with the set screw on the tripod^[1]. Rotate clockwise to tighten and secure the XRTK6 Pro onto the tripod.



- ② Power on the XRTK6 Pro by long pressing  for 2 seconds. After powering on, short press  to switch to portable base station mode (or in the app, "Device Details" - "Device Mode" - "Positioning Station Mode" to switch modes). Once the status indicator light (S Light) for portable base station mode turns on, the tripod installation is complete.

⚠Warning

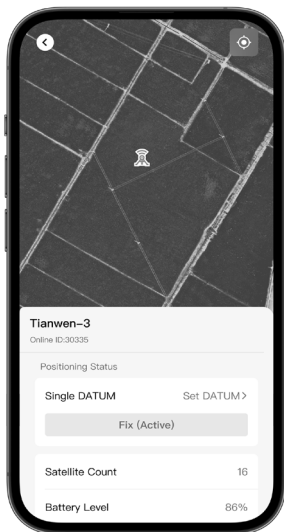
- ⚠ The structure of tripods may vary depending on the model, and users need to purchase a tripod compatible with the XRTK6 Pro (with a 1/4 imperial thread of the set screw on the tripod head).
- ⚠ Ensure the tripod is securely placed on the ground. Adjust the height of the tripod as needed, but it's recommended to have a height of at least 1.5 meters or higher.
- ⚠ When mounting the XRTK6 Pro on the tripod, ensure it is placed vertically to the horizontal plane.

[1]: The tripod is not included in the XRTK6 Pro's list of items. The tripod model shown in the user manual is for reference only. Actual installation should be based on the physical product.

Base Station Positioning

After successfully setting up the base station, you need to set the reference coordinates. There are several ways to obtain reference coordinates, including GPS Positioning, RTK Positioning^[1], and Manual Input of Known Coordinates^[2]. This user manual takes GPS Single Point Positioning as an example.

- ① Open the "XAG One" app and tap on "Me" - "Device" to select the XRTK6 Pro that needs to set up the base station.
- ② In the "Device Details" screen, Select "Positioning", and tap on "Positioning Status" - "Set DATUM"
- ③ Select "GPS Single Point Positioning". The XRTK6 Pro will automatically obtain coordinates. Wait for the signal to stabilize, and the XRTK6 Pro will automatically be set as the portable base station.
- ④ Return after setting it. When the positioning status bar displays "Fix (Normal)", it indicates successful base station positioning.



Warning

 The coordinates collected with low accuracy may have some discrepancies from the actual coordinates.

[1]: "RTK Positioning" uses RTCM signals transmitted by the fixed base station for differential positioning, thereby obtaining accurate coordinate information. RTK positioning is divided into two modes: "Cloud RTK" and "CORS". Cloud RTK refers to connecting to the XAG Cloud Base Station to obtain high-precision coordinates, while CORS refers to obtaining coordinates using a third-party CORS account.

[2]: "Manual Input of Known Coordinates" mode is suitable for use when setting up a base station for the second time. When setting up the base station again on previously mapped fixed points, the coordinates collected during the first mapping are input into the device, and then the device automatically generates and broadcasts RTCM data. Tap on "Add Known Coordinates", input the accurate coordinates in the popup window, tap OK, and wait for the "Positioning" parameters in the main screen to display FIX, indicating the base station is set up.

Specifications

Model	M3RTK6B
Dimensions	224 × 66 × 94 mm
Operating Frequency	SRRC: 2.4000 GHz to 2.4835 GHz
Effective Isotropic Radiated Power (EIRP)	2.4 GHz SRRC: ≤ 20 dBm
Built-in Battery Capacity	4800 mAh / 7.38 V
Operating Ambient Temperature	0 ~ 45 °C
Storage Ambient Temperature ^[1]	-20 °C to 25 °C (> 3 months, < 1 year) -20 °C to 45 °C (> 1 month, < 3 months) -20 °C to 55 °C (within 1 month)
Max. Signal Range (No Interference/Obstruction)	FCC: 1500 m CE/SRRC/MIC: 1000 m
Charging Voltage/Current	5 V=2 A, 12 V=1.5 A
Alarm Buzzer	Yes
Frequency Band for RTK	BDS: B1I, B2I, B3I; GPS: L1C/A, L2P(Y)/L2C, L5; GLONASS: L1, L2; Galileo: E1, E5a, E5b
Positioning Accuracy (Good RTK Signal)	Horizontal: < 5 cm+1 ppm (RMS) Vertical: < 7.5 cm+1 ppm (RMS)

[1]: A drop in the XRTK6 Pro's battery performance may occur when the operating ambient temperature is below -5°C .

Compliance Information

FCC Compliance Notice

Note: This equipment has been tested and found to comply with the limits for a Class B 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. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device must not be co-located or operating in conjunction with any other antenna or transmitter.

RF warning statement: The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Brand name / model number: M3RTK6B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

Guangzhou Xaircraft Technology CO.,LTD.All Rights Reserved.hereby declares that this device is in compliance with the essential requirements and other relevant provisions of the RED Directive. This equipment must be installed and operated in accordance with provide instructions and the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter.End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.



Warning:Operation of this equipment in a residential environment could cause radio interference.

NB Warning Message

“Hereby, [Guangzhou Xaircraft Technology CO.,LTD.], declares that this [XAG XRTK6 Pro Ground Module] 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”

Frequency band: 2400-2483.5 MHz

The maximum RF Power:<100 mW

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

이기는업무용환경에서사용할목적으로적합성평가를받은기기로서가정용환경에서사용하는경우전파간섭의우려가있습니다 .

NCC Statement

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices. The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Management Act. The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

減少電磁波影響，請妥適使用。

電波功率密度 MPE 標準值：0.9mW/cm²，送測產品實測值：0.088 mW/cm²，建議使用時設備天線至少距離人體 20 公分。

警告使用者：此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻騷動，在此種情況下，使用者會被要求採取某些適當的對策。

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用，前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

CAUTION

- ⚠ Risk of explosion if battery is replaced by an incorrect type.
- ⚠ Replacement of a battery with an incorrect type that can defeat a safeguard.
- ⚠ Risk of explosion if battery is replaced by an incorrect type. Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion.
- ⚠ Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.
- ⚠ A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.
- ⚠ The symbol $\equiv$ indicates DC voltage.

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 through, acknowledged, understood, agreed to, and accepted all the terms and conditions as well as information stated herein upon the use of this product.
2. Not a toy, this product is not suitable for those who are under 18 years old, those who have no or limited capacity for civil conduct, or those with mobility impairments. Please keep children away from this product and be particularly cautious when operating it with children present.
3. You pledge to use the product within the bounds of the law for legitimate purposes only and agree to all the information stated in the User Manual.
4. Please install and use the product under the instructions in this User Manual. Do NOT modify or disassemble this product on your own, otherwise, you shall be held accountable for any financial responsibility and legal liability resulting from your improper use.
5. To the maximum extent permitted by law, XAG shall not be liable for any losses caused by the user's improper operation. In addition, XAG shall not be liable for any indirect, consequential, punitive, accidental, special, or exemplary damages, 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.
6. You understand that in the use of any products, accidents may occur as a result of 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.
7. To the maximum extent permitted by law, under any circumstances, the liability or compensation amount from XAG to you for all damages, losses, and litigation arising therefrom will not exceed the amount that you paid to XAG for purchasing the product.
8. 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.
9. As exclusion clauses may be prohibited by law in some countries, your rights in different countries may vary. However, this does not imply that the terms contained in this Disclaimer are necessarily invalid.
10. To the extent permitted by law, all interpretations and revisions of the terms and conditions stated hereinabove are at XAG's sole discretion, and XAG's decisions will be final. 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

User is required to read through the User Manual and be fully familiar with the operation of this product before operating it. Otherwise, improper operation of the product may cause injury to the user or others, or cause damage to the product and property loss. Safety awareness is of great importance during operation. Do NOT use the parts that are not provided or suggested by XAG. Please install and use the product in strict accordance with XAG's instructions.



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