

# XAG GNSS RTK Fix Station

Installation Guide

Version 1.0 **EN**



## To Users

Dear user, thank you for choosing XAG products. For safety reasons and the best experience possible, XAG recommends that you read through the Installation Guide and Disclaimer in this document before attempting to use the XRTK4 Fix Station.

## Contact Us

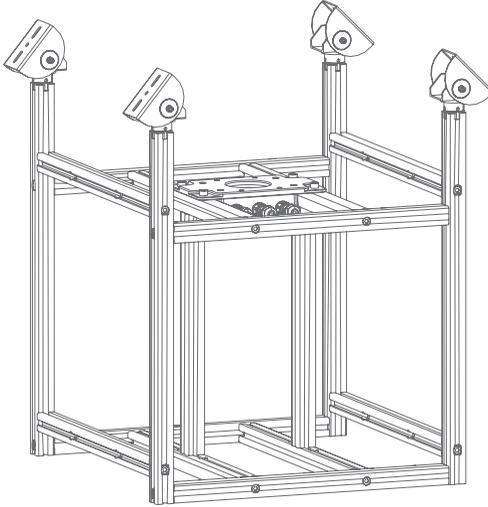
If you have any questions about this document, please contact our Technical Support via email: [info@xa.com](mailto:info@xa.com)

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# List of Items

Before unpacking and using the product, please carefully check if it contains all the items listed below. Please contact XAG™ or your dealer if there are any missing items.



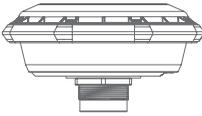
Station Bracket  
x 1



Support Rod  
x 1



Solar Panel (With Battery)  
x 4



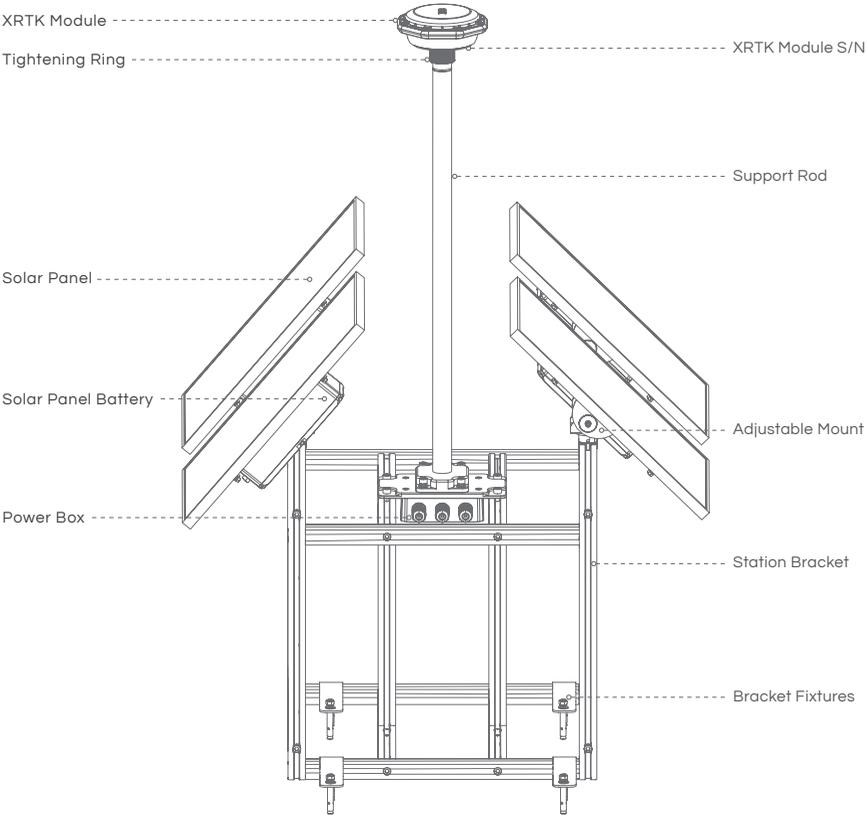
XRTK Module  
(SIM Card Not Included)  
x 1



Screw Pack  
x 1

# Overview - XAG GNSS RTK Fix Station

XAG XRTK (Beidou) Fixed Station is comprised of the RTK Positioning Module, Solar Panel and Station Bracket



# Site Selection - XAG GNSS RTK Fix Station

To ensure the continuous operation of the XAG GNSS RTK Fix Station, Site selection must follow the following principles:

1. The XAG GNSS RTK Fix Station as the horizontal plane, there are no obstructions higher than 15° around the XAG GNSS RTK Fix Station
2. Distance from objects prone to multipath effects (such as trees, water bodies, beaches, water-prone areas and metal objects) is not less than 100 meters.
3. Distance from electromagnetic interference areas (such as microwave stations, radio towers, high-voltage lines, high-speed railway crossing areas, etc.) is not less than 100 meters and avoid areas prone to vibration (such as railways, highways, etc.).
4. 4G network signals are normal, and there are no buildings will be built near the base station to interfere with the satellite signals.
5. Avoid areas with unstable geological structures, fractured fault zones, and locations prone to local deformation such as landslides and subsidence (such as mining areas, oil and gas mining areas, Groundwater funnel settlement area, etc.), while avoiding places that are prone to flooding or large changes in groundwater level.

# Installation - Station Bracket

Prior to the installation, ensure there are no obstruction and the Solar Panel are facing:

Northern Hemisphere: Southward facing with 5° ~ 10° West

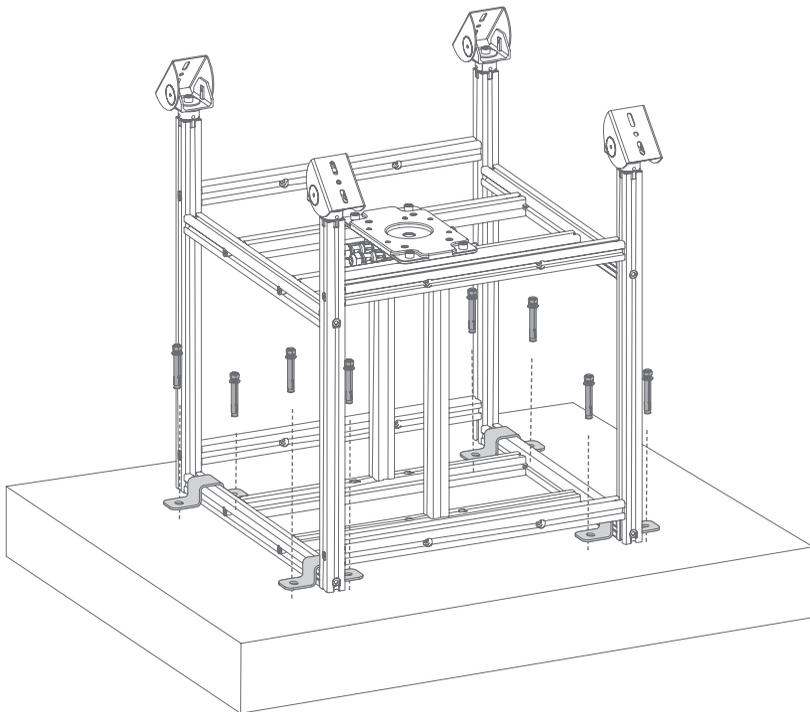
Southern Hemisphere: Northward facing with 5° ~ 10° West

## 01 Method 1 – Build Platform & Installation (Recommended)

Build a cement platform of 1m x 1m x 0.15m. Once the cement is solidified and harden, install the 4 fixtures in the proper position on the cement platform and secure the Station Bracket with 8 expansion bolts.

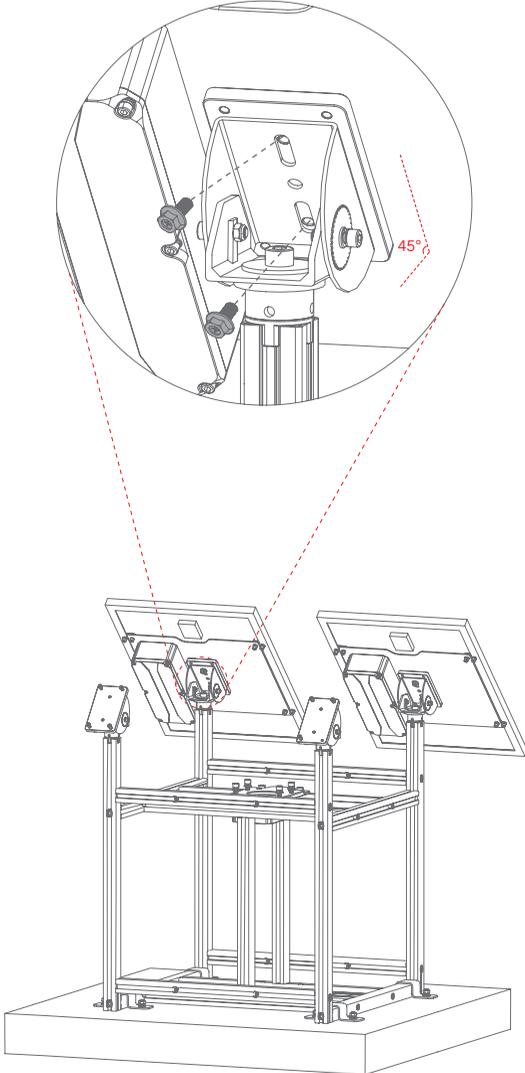
## 02 Method 2 – Direct Drilling & Installation

Where conditions permit, you may choose to drill and install the 4 fixing pieces directly on the ground at a suitable position, then secure the Station Bracket with the 4 fixtures and 8 expansion bolts.



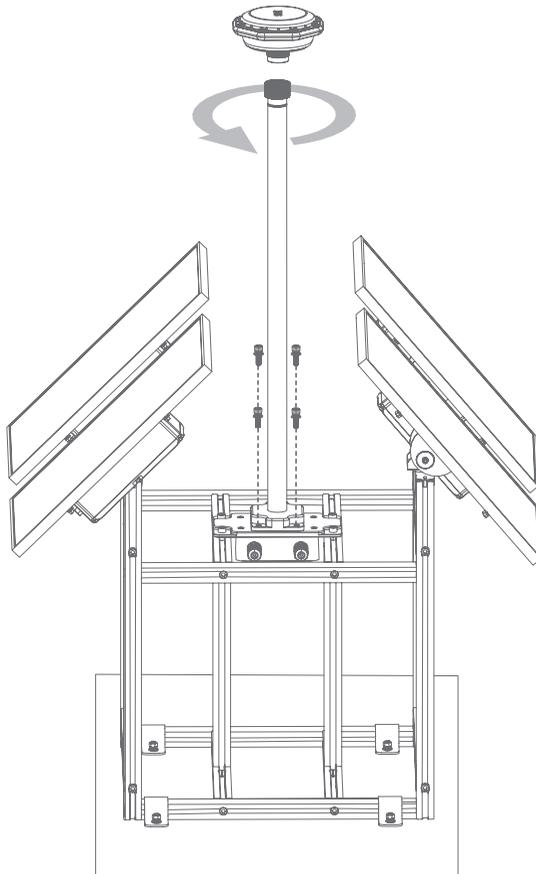
# Installation - Solar Panel

Refer to the figure below to align the 4 solar panels with the reserved screw holes on the Adjustable mount of the Station bracket, then tighten the screws to secure each Solar Panel (2 screws for each panel). Once the Solar Panel is secured, adjust the solar panels to a deflection angle of 45°.



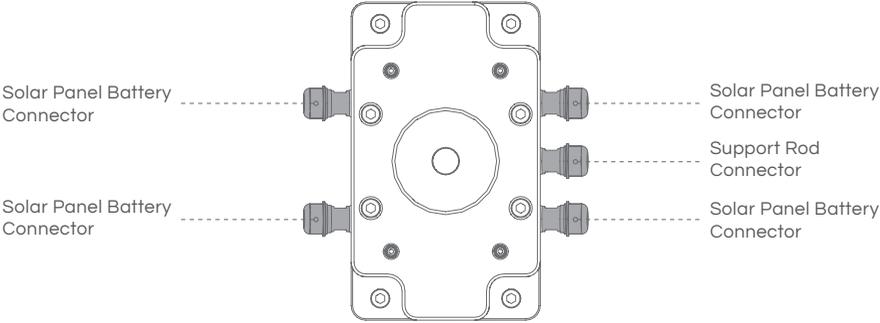
# Installation - XRTK (Data SIM Required)

1. Position the Support Rod vertically and align with the Station Bracket, then secure and tighten the screws (4)
2. Align and insert the XRTK Module vertically on the top of the support rod, and rotate the tightening ring CCW (Counter-Clockwise) to firmly secure the connection of the support rod.



# Installation - Wiring Guides

Refer to the wiring guidelines in the figure below, respectively connect the 4pin power cords on the 4 solar battery boxes to the main power box of the bracket, and then connect the power cords of the support rod to the main power box.



 **IMPORTANT**

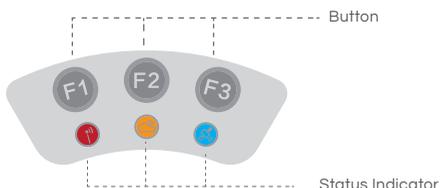
During the installation, check and ensure the power cords of the solar panel and the support rod are properly and connected. Unsecured or Improper Connection may result in water penetration resulting in rusting or damage to the interface.

# RTK Module Status Indicator

## • Console of the RTK Positioning Module

The Console of RTK Positioning Module is composed of three function buttons and three corresponding indicator lights in different colors (see right figure).

The functions of the button/indicator lights are defined as follows:



## • Checking Operation Status

Status LED	Warning/Alert	Status
RED LIGHT ON		Normal
RED SLOW FLASH		WLAN initializing (about 30 seconds)
RED QUICK FLASH	Beep	Voltage is low (< 12.5V) (Immediate charging required; when the voltage is higher than 13.5V, the red light will return to Normal and the alert stops).

## • Checking Network Status

Status LED	Status
YELLOW SINGLE FLASH	Not connected
YELLOW DOUBLE FLASH	Connected
YELLOW LIGHT ON	Connected, but no available fixed station nearby (Automatic switch to 24-hour selfcapturing mode).

## • Checking Positioning Status

Status LED	Status
BLUE LIGHT OFF	Not connected
BLUE LIGHT ON	RTK
BLUE SINGLE FLASH	Single
BLUE DOUBLE FLASH	Floaf
BLUE TRIPLE FLASH	Fix

### IMPORTANT

## • Buzzer Alert

- ▶ **Coordinates Different:** The buzzer sends an alert when the difference between the coordinates manually entered and the actual coordinates is more than 8 meters.
- ▶ **Low Voltage:** The buzzer sends an alert when the battery voltage is lower than 12.5V. Immediate charging required; when the voltage is higher than 13.5V, the red light will return to Normal and the alert stops

# Fix Station Activation & Firmware Update

## • Activation

Once the Installation of the XAG GNSS RTK Fix Station is completed,

1. Record the following Details:
  - Detail Address of the Installation Site
  - S/N of the Fix Station (Located on the back of the RTK Module)
  - Photos of the QR Code (Located on the back of the RTK Module)
  - Photos (Close-Up) of the GNSS RTK Fix Station
  - Photos (Long-Shot) of the GNSS RTK Fix Station
  - Photos (Front, Rear, Left & Right) of the GNSS RTK Fix Station
2. Contact and Notify XAG Technical Support via email: [support@xagaustralia.com.au](mailto:support@xagaustralia.com.au), XAG Technician will assist in the setup and the testing of the station. Notification will be provided once the Fix Station is ready to be used (Generally within 1 Business Day).

## • Firmware Update

Once the XAG GNSS RTK Fix Station is activated and connected to the Cloud Network, the firmware update is autonomous. During the update process, service may be temporarily interrupted (The RTK Module Status Indicator F1 & F2 will be off and F3 will flash quickly with buzzers).

# Maintenance

- 01 Before and after severe weather conditions, perform inspection to ensure the Station Bracket is firmly secured, and visual inspection of the power cables, connector and the solar panel for damages. If there are signs of liquid penetration, add waterproof glue and other waterproof materials.
- 02 Clean the surface of the solar panel every month, then check and tighten loose screws and ensure Fix Station was not moved.
- 03 Do not move the Fix Station after installation. If you need to change it, please contact XAG Technical support.
- 04 In severe weather such as hail, adjust the solar panels vertically to prevent them from being damaged.

# Technical Specifications

## Physical:

Dimension	XRTK: 154mm x 83.6mm x 87mm Solar Panel: 465mm x 350mm x 18mm
Weight	<1.5 Kg (Without Battery)
Operating ambient temperature	-20°C to 65°C
Nonoperating temperature	-40°C to 85°C
Relative humidity	100%, Condensation
Ingress Protection	IP54

## Communication:

Satellite System	BDS/GPS/GLONASS/Galileo
RTK Horizontal Accuracy	±10mm + 1ppm (RMS)
RTK Vertical Accuracy	±15mm + 1ppm (RMS)
Network Protocol	GSM, CDMA2000/EVDO, WCDMA, TD-SCDMA, LTE-FDD, LTE-TDD
BT Frequency	2.4GHz
BT Protocol	Bluetooth 3.0+, Bluetooth 4.0
Communication Interface	1 x CAN Interface 1 x Bluetooth 3 x GPRS Communication Modules
Hardware Interface	1 x Power Supply Interface 3 x SIM card slot

## Solar Panel:

Solar Panel	10400mAh
Battery Capacity	14.4V
Output Voltage	18~22V
Charging Voltage	< 20W
Power Consumption	> 7h

# Disclaimer

1. Please read this document carefully before using this product. This Disclaimer has an important impact on the safe use of the product and your legitimate rights and interests. The use of the product shall be deemed as you have known, understood, acknowledged, and accepted all terms and contents of this document.
2. This product is not a toy, and is not suitable for people under the age of 18. Please keep this product away from the reach of children, and be very careful when operating in the presence of children.
3. Please install and use this product as guided by the "Product Manual/Operation Manual". Do not modify or disassemble the product without authorization. All losses caused by the user's unauthorized modification or disassembly of this product shall be borne by the user, while XAG does not assume any corresponding legal responsibility.
4. To the maximum extent permitted by law, XAG shall not be liable for any losses caused by users' failure to use the product in accordance with this document and the "Product Manual/Operation Manual".
5. To the maximum extent permitted by law, XAG's liability or amount under any circumstances to you for all damages, losses, and litigation arising therefrom will not exceed the amount paid to XAG by you for the purchase of the product.
6. In any case, the purchaser or user shall comply with relevant laws and regulations of the country and region where the product is used. XAG does not assume any liability arising from violation of relevant laws and regulations by the purchaser or user.
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8. To the extent permitted by law, XAG has the final right to interpret and modify the above terms. XAG has the right to update, modify, or terminate these terms through its official website, the "Product Manual/Operation Manual", online APP and other means without prior notice.

## Warning

Users are required to read the complete "Product Manual" and be familiar with the product operations before using the product. Otherwise, it may cause serious injury to yourself or others, or cause product damage and property loss. Strong safety awareness is required to operate this product. Do not use the parts that are not provided or suggested by XAG. Please strictly follow the instructions of XAG to install and use the product.

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