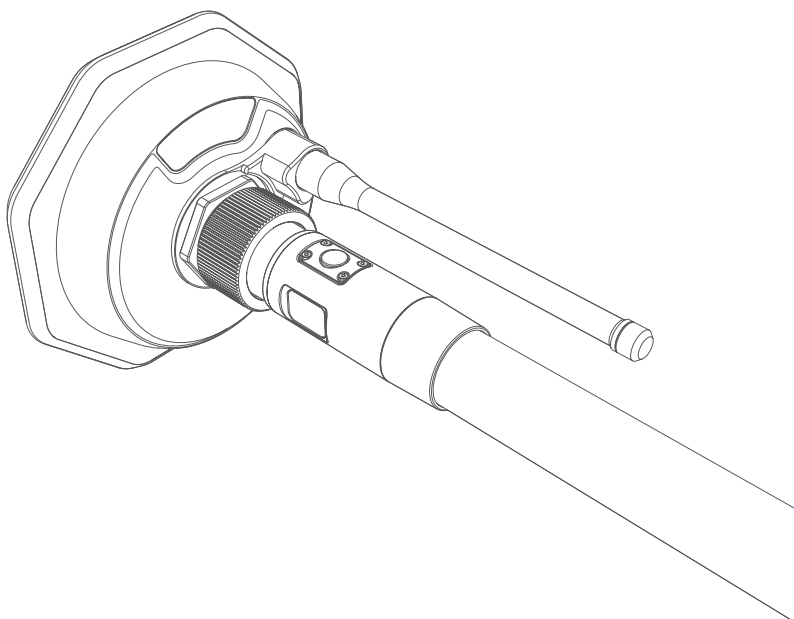


GNSS XRTK4 Mobile Station

User Manual

Version AU V3.1 **EN**



Disclaimer

Carefully read and understand this User Manual before using this product for the first time. Failure to read and follow the instructions may result in serious injury to yourself and/or others, damage to your Products and/or other objects in the vicinity. By using this product, you hereby signify that you have read document carefully and that you understand and agree to abide by all terms and conditions of this document and all relevant documents of this product. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. XAG accepts no liability for damage, injury, or any legal responsibility incurred directly or indirectly from the use of this product.

XAG reserves the rights for final interpretation and revision of the Terms and conditions herein to the extent permitted by law. XAG also has the right to update, modify or terminate these terms and conditions via its official website without prior notice.

This document and all other collateral documents are subject to change without prior notice at the sole discretion of XAG.

Warning

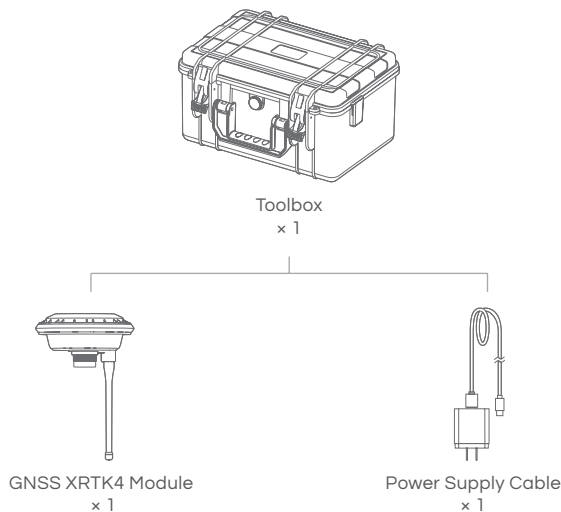
This product must be operated with Strong safety awareness. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by those who are under 18 years old. DO NOT alter this product or use this product with incompatible components or parts.

CONTENT

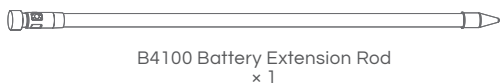
Disclaimer	3
Warning	3
List of Items (Mobile Station)	5
Overview - Mobile Station	6
Battery Extension Rod Console	7
Battery ON/OFF	7
Battery Level	7
Battery Charging	8
Battery Status Indicator	8
GNSS RTK Module Console	9
Checking Operation Status	9
Checking Network Status	9
Checking Positioning Status	9
Factory Reset	10
Buzzer Alert	10
Device Binding	11
RTK Mobile Station Setup	16
Station Location selection	16
Assembling the Mobile Station	17
DATUM SETUP	18
Technical Specifications	19

List of Items (Mobile Station)

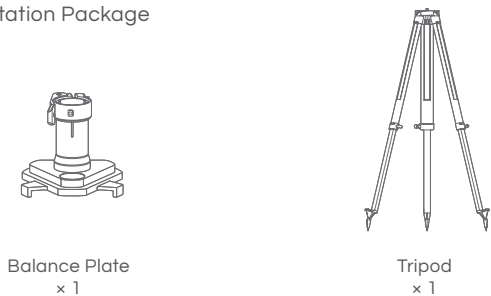
GNSS RTK Module



GNSS RTK Battery

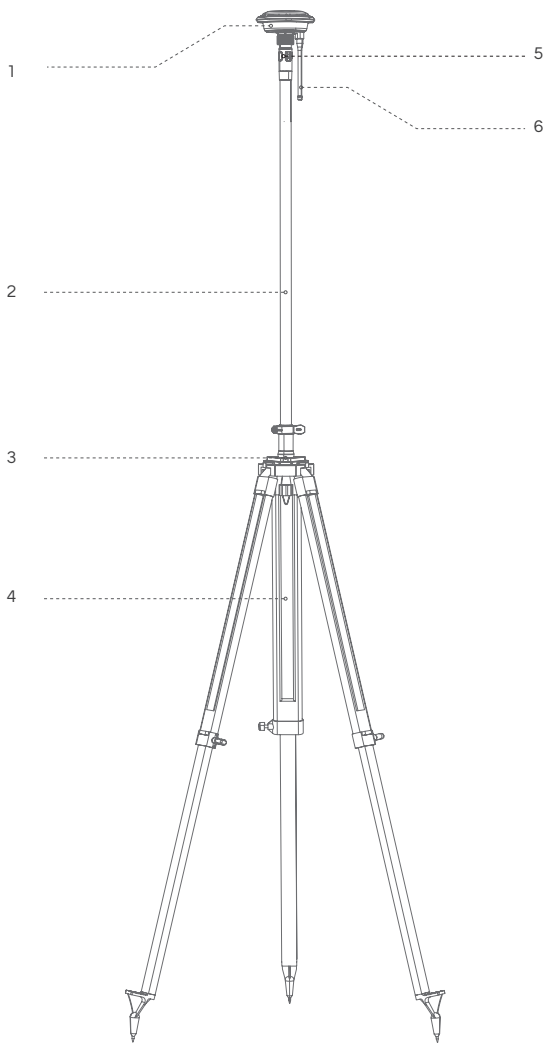


GNSS RTK Mobile Station Package



Overview - Mobile Station

The XRTK4 Mobile Station is comprised of the GNSS RTK Module, B4100 Battery Extension Rod, Base Plate, and Tripod.

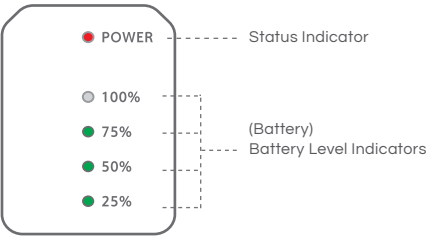


- ① GNSS RTK Module
- ② B4100 Battery Extension Rod
- ③ Balance Plate
- ④ Tripod
- ⑤ Battery Extension Rod Console
- ⑥ Antenna

Battery Extension Rod Console

The B4100 Battery Extension Rod has a built-in 7500mAh/14.4V lithium battery. The Extension Rod is integrated with a battery level/status display panel (see below figure), a power button, and a Type-C charging port.

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



Battery ON/OFF

INSTRUCTION

01. When the Battery is OFF, press the Power button once to check the current battery level indicated by the Battery level LED. If the battery is too low, recharge before use.
02. Connect the battery to a device, then press the Power button once for at least 1 second until all the indicator lights flashes, then press and hold the power button again for at least 1 second until you hear a beep from the battery.
03. Repeat Step 02 to turn OFF the Battery.

Battery Level

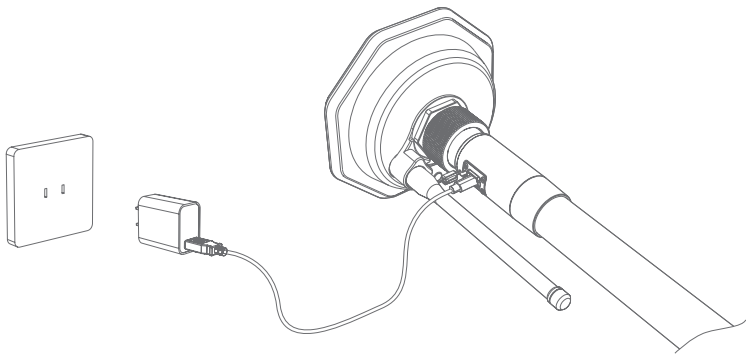
INSTRUCTION

When the battery is OFF, press the power button once to display the battery level.
When the battery is ON, observe the battery level indicators to see the battery level.

Battery Level Indicator LED	Description
1 Green Flash	00 - 09 %
1 Solid Green	10 - 24 %
2 Solid Green	25 - 49 %
3 Solid Green	50 - 74 %
4 Solid Green	75 - 100 %

Battery Charging

The battery can be charged when it is either ON or OFF. During the battery charging, the battery level indicators corresponding to the current battery level will be ON, while the remaining lights will flash in series, indicating that the battery is being charged. After charging is completed, all battery level indicators will be on.



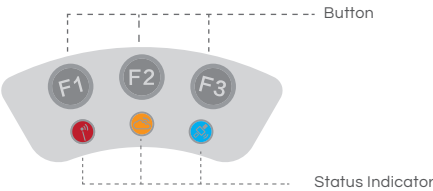
Battery Status Indicator

Once the Battery is ON, its status will be displayed on the console. Battery Status are defined as follows:

Battery Status Indicator LED	Status	Description
Red Solid		Normal
Red Quick Flash		Too HOT
Red Slow Flash		Too COLD
Red Double Flash		Anomalous

GNSS RTK Module Console

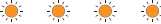
The GNSS RTK Module Console has three function buttons and three status indicators in different colours.



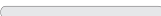
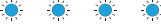
Checking Operation Status

Operation Status Indicator		Status
Red Light ON		Normal
Red Slow Flash		WLAN initializing (about 30 seconds)
Red Quick Flash		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

Network Status Indicator		Status
Yellow Single Flash		Not connected
Yellow Double Flash		Connected
Solid Yellow		Connected, but no available fixed station nearby (Automatic switch to 24-hour selfcapturing mode).

Checking Positioning Status

Positioning Status Indicator		Status
Blue Light OFF		Not connected
Blue Single Flash		Single
Blue Double Flash		Float
Blue Triple Flash		Fix

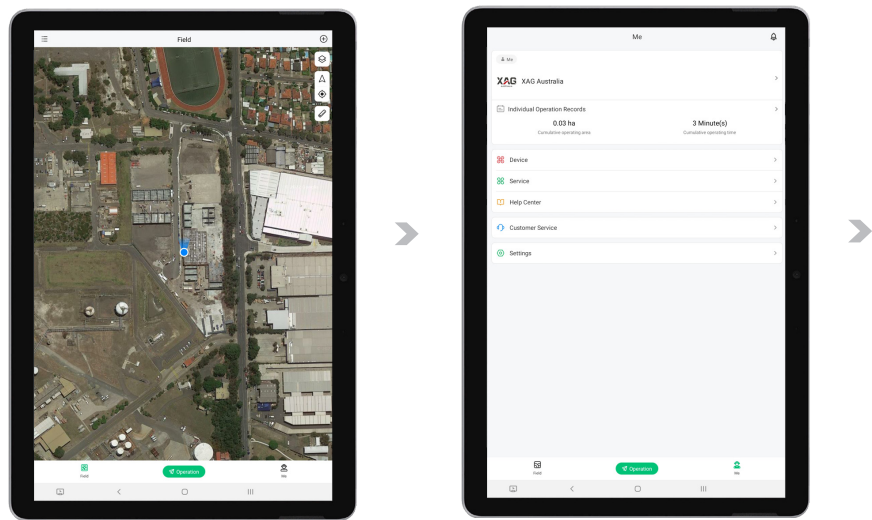
Factory Reset

Power ON the device, then press and hold F2 and F3 Button on the RTK Module Console and release after hearing a beep. After approx 8 seconds, the RTK Module will automatically restart and reset to factory default settings.

Buzzer Alert

- **Coordinates Different**
The RTK Module will send a Buzzer alert when the difference between the Entered Coordinates (Manual Entry) and the actual coordinates is more than 8 meters.
- **Low Voltage**
The RTK Module will send a Buzzer alert when the Extension Rod Battery Voltage is lower than 12.5V, Charging is required and the Buzzer Alert will stop when the Extension Rod Battery Voltage is higher than 13.5V.

Device Binding



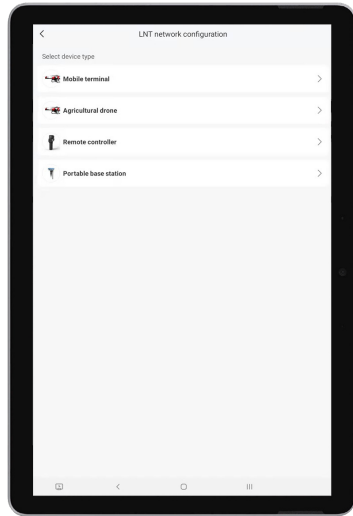
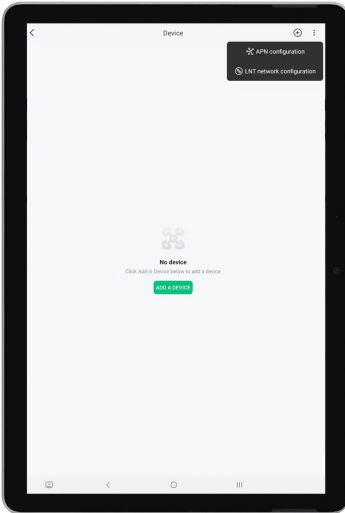
PREREQUISITE

- ✓ LNT (Local Network Terminal) Wi-Fi Network had been setup
- ✓ LNT (Local Network Terminal) Wi-Fi Network is Connected before Opening APP

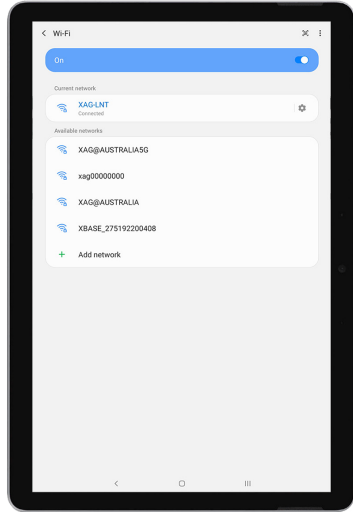
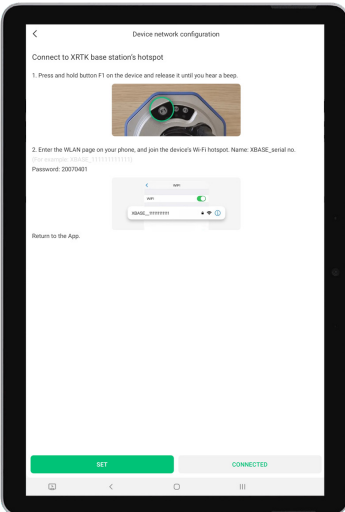
IMPORTANT

LNT (Local Network Terminal) must be connected to an external & internet available network indicated by the WAN indicator on the LNT. Device Binding can only be achieved once all the Indicators on LNT is ON.

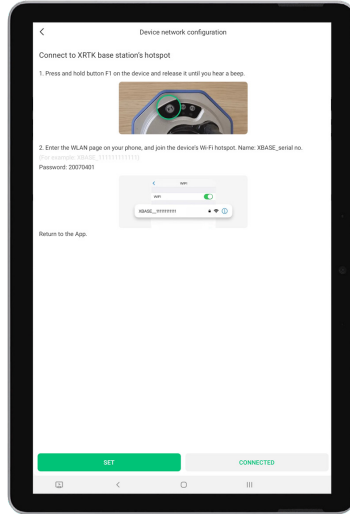
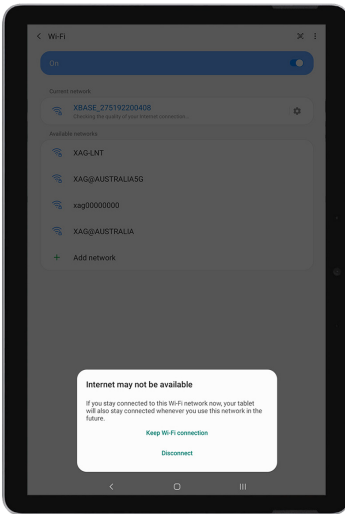
01. Turn ON the RTK Module & Open  XAG One APP.
02. Tap on "Me" to access Account Menu.
03. Tap on "Device".



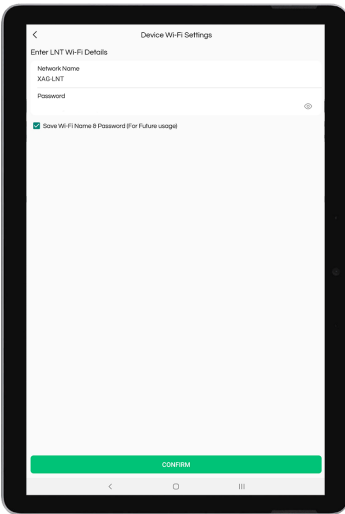
04. Tap on “⋮” for more options, then Tap on “🔑” for Device Binding options.
05. Tap on “RTK Mobile Station” to start Binding.
06. Press and hold F1 on the RTK Module Console for at least 3 seconds and release after hearing a beep. This indicate that the RTK Module is ready to bind.



07. Tap on “Settings” to bring up the Available Wi-Fi List.
08. Select the corresponding RTK Module Wi-Fi
 Default Module Wi-Fi Network: XBASE_XXXXXXXXXXXX
 Default Module Password: 20070401



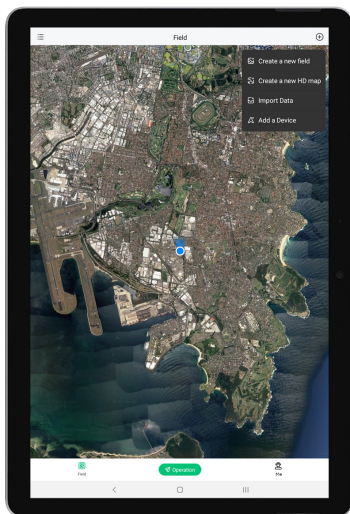
09. After connecting to the RTK Module Wi-Fi, Some Smart Device (Mobile / Tablet) may prompt a Notification to stay connected to a Wi-Fi Network without internet connection. Please select “Keep Wi-Fi connection”.
10. Return to the APP, and Tap on “I’m Connected” to access Equipment Network Settings”.



11. Enter the LNT Wi-Fi Network Name & Password for the LNT (Local Network Terminal), then save the settings via “Confirm”
- Default LNT Wi-Fi Network:
- XAG-XXXX
- Default LNT Password:
- 20070401



Check & ensure the entered LNT Network Name & Password is Correct, otherwise APP will NOT be able to add the device.

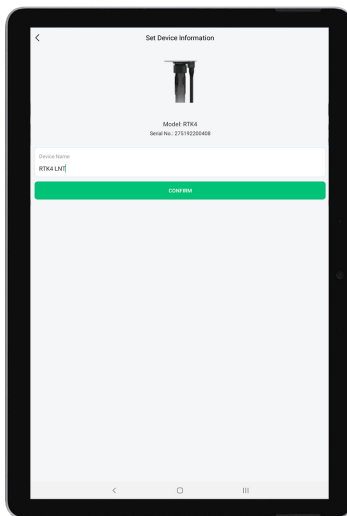
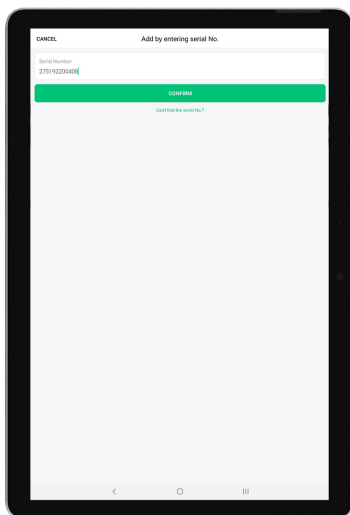


CHECK

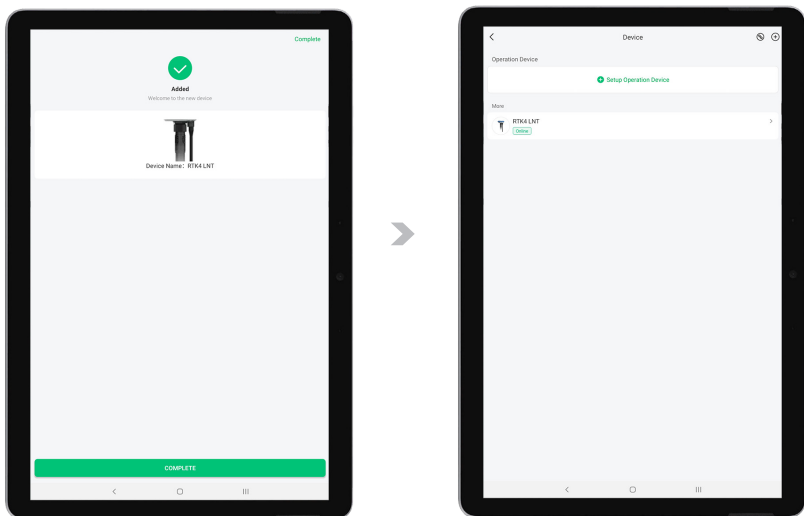
Under Normal Circumstance, your Smart Device (Mobile / Tablet) should have automatically re-connected to the LNT Wi-Fi. Check & Ensure the LNT Wi-Fi Network is connected.



12. Return to the Main Page of the APP, Tap on the “” and select “Add a Device”.
13. Press and hold F3 on the RTK Module Console for at least 3 seconds and release after hearing a beep. All the Status Indicator will flashes indicating that the RTK Module is ready to be added.



14. Add the Device by Entering the Device S/N Manually or Scanning the QR Code on the Device.
15. Rename the RTK Module and Tap on “CONFIRM” to Save.

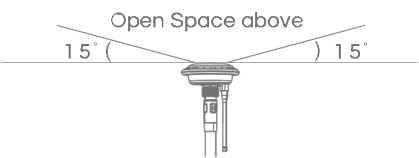


16. If the APP display “  ”, the Device has been added successfully.
17. Return to the Device Menu and check if the Device is displayed in your list of Device.
18. Please restart APP once the binding is completed.

RTK Mobile Station Setup

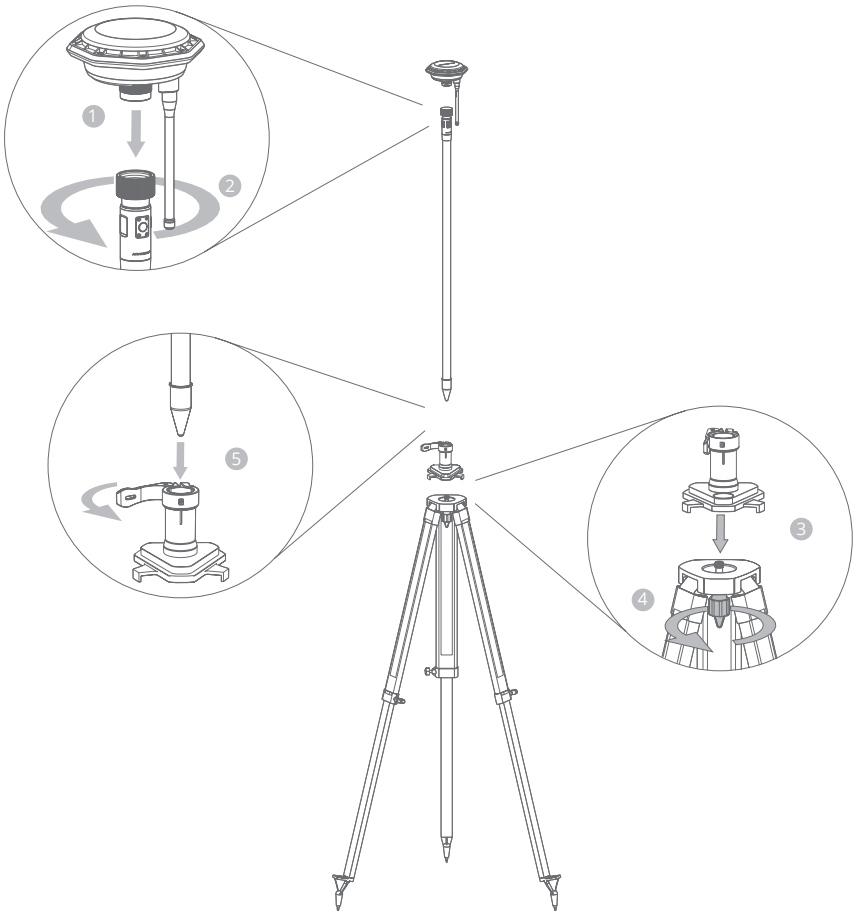
Station Location selection

Select solid and flat ground with open space above. There should be no obstacles over the elevation angle of 15° for continuous tracking and observation of the satellite and high-quality satellite signals.



Assembling the Mobile Station

01. Connect the GNSS RTK Module to the top end of the extension rod.
02. Rotate the tightening ring to firmly secure the connection of the extension rod to the Module to complete the assembly of Rover.
03. Place the Balance Plate on top of the Tripod as shown.
04. Tighten the fixing bolts on the Tripod to firmly secure the Balance plate.
05. Place the Rover assembled in Step 2 from top into the spacing hole and close the buckle to complete the assembly of the Mobile Station.



IMPORTANT

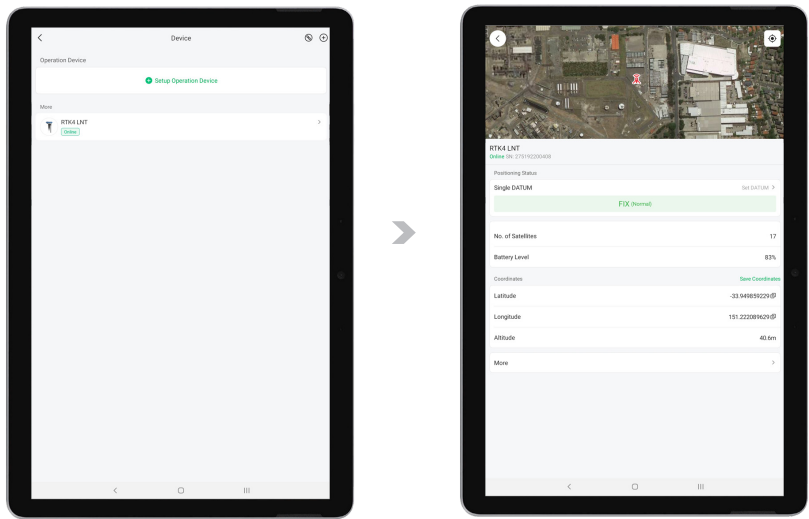
Adjust the three retractable legs of the Tripod accordingly to ensure the bubble on the Balance Plate is centred and level. Unlevelled RTK Mobile Station may lead Aircraft to behave erratically.

DATUM SETUP

- 06. Turn ON the RTK Mobile Station & Open the APP Device Menu.
- 07. Tap on the RTK Module to open DATUM Settings.

The RTK Mobile Station will automatically start capturing coordinates, and may take a few minutes searching and linking with the available satellites. When sufficient satellites had been found and linked, Positioning Status will refresh and display as FIX (Normal).

- 08. RTK Mobile Station is now ready for USE.



CHECK

- ✓ Check & Ensure the Positioning Status of the RTK Module Console is in RTK Mode (Solid Blue).
- ✓ Check & Ensure the Positioning Status on the APP is now displaying as FIX (Normal).

IMPORTANT

- Please be patient, the device may take up to 30 seconds before coming ONLINE.
- XAG GNSS RTK Mobile Station provides Low Precision accuracy as default, there may be a margin of error between the coordinates captured with Low Precision accuracy and the actual coordinates.

Technical Specifications

RTK Positioning Module for Agricultural Use	
Model	XRTK4
Dimensions (Diameter x Height)	154mm x 83.6mm (RTK Module)
	154mm x 1230mm (RTK Module + Rod)
Weight	1.5 Kg (RTK Module)
Port/Panel	Button x 3, Positioning Indicator x 1
	Networking Indicator x 1, Power Indicator x 1
IP Rating	IP65
Operating Temperature	-20° - 50° C
Storage Temperature	-40° - 85° C
Relative Humidity	100%, condensation
Warranty Details	12 Months
GNSS Performance & Specifications	
Compatible motherboard	K726
GNSS Frequency	
BDS	B1I / B2I / B3I / B1C / B2a
GPS	L1 / L2 / L5
GLONASS	L1, L2, L2C,
Galileo	E1 / E5a / E5b
QZSS	L1 / L2 / L5
RTK Positioning Accuracy	
Horizontal	±10mm+1ppm (RMS)
Vertical	±15mm+1ppm (RMS)
Initialization time	Typical <10 seconds
Initialization Reliability	>99.9%
Data update rate	Maximum 20 Hz (Raw data)
	Maximum 20 Hz (Positioning data)
Communication Interface	
1 CAN port;	
3 mobile communication modules (2G/3G/4G);	
1 dedicated 2.4GHz/5.8GHz WLAN.	

Communication	
Mobile communication network	
Communication modules	2G/3G/4G
Protocols	GSM, CDMA2000/EVDO, WCDMA, TD-SCDMA, LTE-FDD, LTE-TDD
Dedicated 2.4GHz/5.8GHz WLAN	
Protocol supported	Xlink Communication Protocol
Transmission performance Frequency range	2.400-2.4835GHz/5.735-5.835GHz
Channel spacing	20 MHz
Frequency error/ frequency stability	±10 ppm
Communication mode	Full duplex
Communication protocol	Transparent
Forward error correction	FEC
Data rate	6Mbps
Modulation	OFDM
Emission performance RF output power	Less than 1W Subject to regional SRRC/FCC/CE standards
Reception performance	
Decoding sensitivity	-90dbm
External Hardware Interface	
Battery terminal × 1	
SIM card slot × 3	
Battery Extension Rod	
Model	B4100
Dimensions (Diameter x Height)	45mm x 1166mm
Capacity	7500mAh 99Wh
Input	12.0 V/1 A (Type-C port)
Output	14.4V/1A
Operating temperature	-10° - 45° C
Port/Panel	Power Button × 1, Type-C Port × 1, Battery Level/Status Display Panel × 1
Warranty Details	6 Months



Copyright©2022 XAG Australia All Rights Reserved

The copyright of all information in this user manual (including but not limited to any text description, illustrations, photos, methods, processes, etc.) belongs to XAG Australia and is protected by copyright law. No individual or organization may imitate, extract, translate, distribute or reproduce or quote all the contents of this manual without any written authorization.