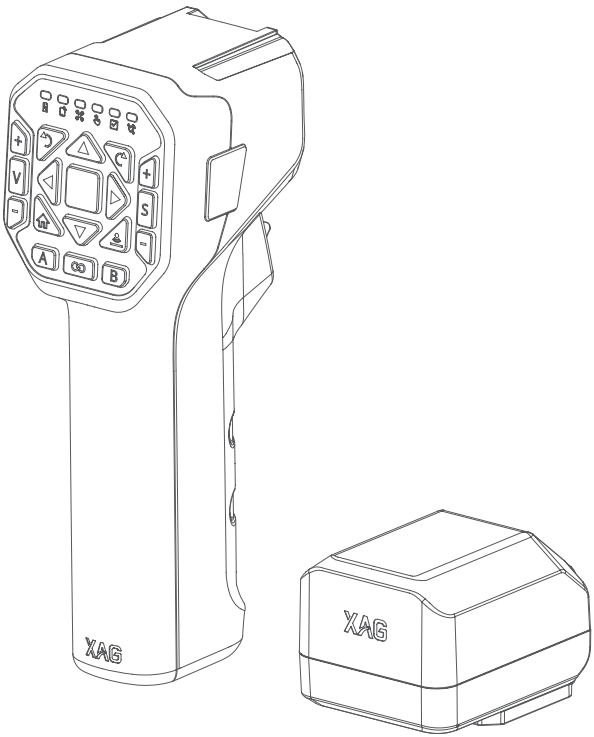
ACS2G Remote Controller

User Manual

Version AU V1.0 EN



XAG
AUSTRALIA

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 this 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

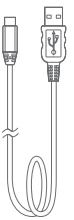
This product must be operated with Strong safety awareness. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by those who are under 18 years old. DO NOT alter this product or use this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

- ACS2G is only compatible with the XAG V40 / P40 / P100 Aircraft, and the firmware of the Aircraft and APP must support the Remote Controller.
- DO NOT use the Remote Controller with other non-compatible Devices.
- This Product is not a Toy, and it is not suitable for those who are under 18 years old. Please keep children away from this product and be particularly cautious with children present.

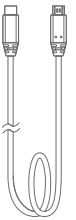
Content

List of Items

Please carefully check if the product contains all the items listed below and your dealer if there are any missing items.



USB To Type-C Cable
× 1



Micro USB To Type-C Cable
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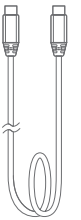
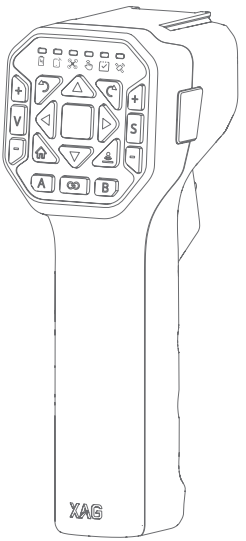
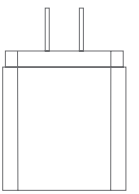


Type-C To Type-C Cable
× 1



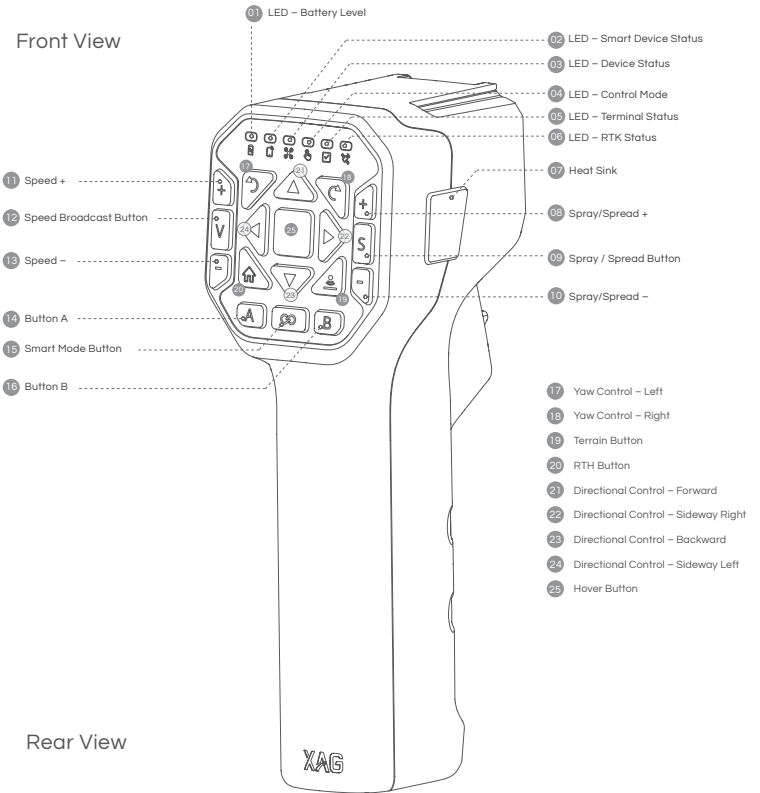
ControlStick (Body)
× 1

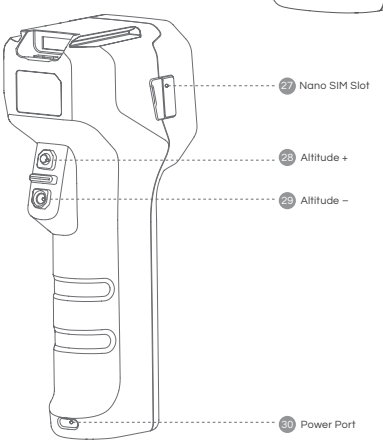


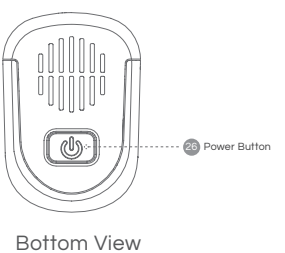
Power Adapter
× 1

ACS2G Remote Controller Overview

The main structural components of the ACS2G Remote Controller are as follow.







01 LED – Battery Level	Indicates the Battery Level of the Remote Controller
02 LED – Smart Device Status	Indicates whether the remote controller is connected to Smart Device
03 LED – Device Status	Indicates whether the remote controller is linked to the Aircraft
04 LED – Control Mode	Indicates the Flight mode of the Device (Manual / Autonomous)
05 LED – Terminal Status	Indicates whether the remote controller is connected to Terminal
06 LED – RTK Status	Indicates the RTK Status of the Remote Controller
07 Heat Sink	Used to dissipate heat from internal Components
08 Spray/Spread +	Increase the rate of Spray / Spread
09 Spray / Spread Button	Press to Enable / Disable Spray or Spread
10 Spray/Spread –	Decrease the rate of Spray / Spread
11 Speed +	Increase Speed
12 Speed Broadcast Button	Press to broadcast the current Speed
13 Speed –	Decrease Speed
14 Button A	Mapping Mode: Add Point
15 Smart Mode Button	Long Press to Enter / Exit mapping Mode
16 Button B	Mapping Mode: Undo previous Added Point
17 Yaw Control – Left	Rotate Device CCW (Counter-Clockwise)
18 Yaw Control – Right	Rotate Device CW (Clockwise)
19 Terrain Button	Used to Broadcast and Turn ON/OFF Terrain Following
20 RTH Button	Press and Hold this RTH button to initiate Return to Home (RTH)
21 Directional Control – Forward	Press and Hold to command the Aircraft to fly Forward
22 Directional Control – Sideway Right	Press and Hold to command the Aircraft to fly Sideway to the Right
23 Directional Control – Backward	Press and Hold to command the Aircraft to fly Backward
24 Directional Control – Sideway Left	Press and Hold to command the Aircraft to fly Sideway to the Left
25 Hover Button	Press to Hover or Long Press to resume Autonomous Operation
26 Power Button	Used to turn ON/OFF the remote controller
27 Nano SIM Slot	Provides Cellular connection
28 Altitude +	Increase Altitude
29 Altitude –	Decrease Altitude
30 Power Port	Connects to a power source to charge the Remote Controller

Status Indicator Description

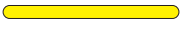
Status Indicator – Battery

INSTRUCTION

When ACS2G is OFF, press the power button once to display the battery level. The battery level is indicated by the 6 Status Indicator.

Status Indicator		Description
1 Solid Green		01% - 04%
2 Solid Green		05% - 19%
3 Solid Green		20% - 39%
4 Solid Green		40% - 59%
5 Solid Green		60% - 79%
6 Solid Green		80% - 100%

When ACS2G is ON, the battery level indicator display the current battery level.

Battery		Description
Solid Red		01% - 29%
Solid Yellow		30% - 59%
Solid Green		60% - 100%

⚠ Warning

ACS2G Remote Controller will broadcast “Low Battery” when the remaining power is less than 5% and will automatically switch off after 60 seconds. Please command the drone to return and land immediately before the remote controller is switched off.

Status Indicator – Smart Device

Smart Device		Description
Solid Green		Smart Device Connection Normal
Solid Red		Smart Device Connection Error
OFF		Smart Device Not Connected

Status Indicator – Device

Device		Description
Solid Green		Device Connection Normal
Solid Red		Device Connection Error
OFF		Device Not Connected

Status Indicator – Control Mode

Control Mode		Description
Solid Green		Manual Mode
OFF		Autonomous Mode / No Device

Status Indicator – Terminal

Local Network Terminal		Description
Solid Green		LNT Connected
OFF		Not Connected

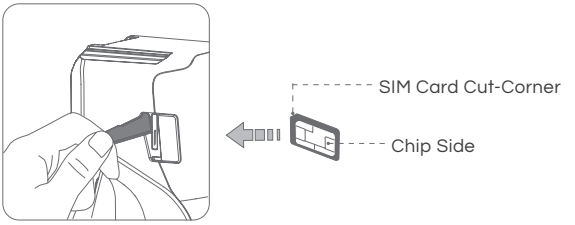
Status Indicator – RTK

RTK		Description
Green Flashing		Rover Mode – Float
Solid Green		Rover Mode – RTK
Solid Red		Rover Mode – Position Error
Solid Yellow		ACS2G RTK on Standby Mode
OFF		ACS2G has no RTK Module

Using the Remote Controller

Inserting SIM Card

01. Before inserting the nano-SIM Card, please ensure the remote controller is turn OFF.
02. Gently unplug the rubber plug on the left of the Remote Controller.
03. Insert the nano-SIM card in as the direction shown in the figure.
04. Close and Secure the Rubber Plug.



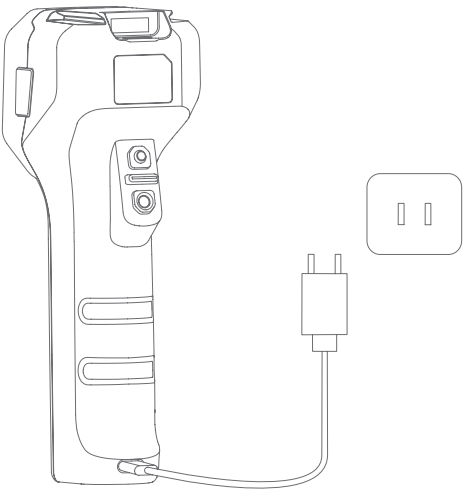
⚠ Warning ACS2 uses a nano-SIM. Damages caused by the use of other specifications of SIM will be beared by user

IMPORTANT

SIM Card is not necessary if operating with LNT

Charging the Remote Controller

Uses a Type-C USB Cable to connect the Charging Adapter and the Remote Controller Power Port. The Battery Level and the mode of charging is indicated by the Battery Level Indicator.



Charging Mode

Status Indicator - Battery	Description
Quick Flash	Quick Charging Mode
Slow Flash	Standard Charging Mode

IMPORTANT

When the charging adapter is applicable with Quick Charging, ACS2G will have a Voice Prompt indicating the Quick Charging Mode and the Indicator flashes more rapidly.

Battery Level (Charging)

Battery	Description
Flashing – Red	01% - 29%
Flashing – Yellow	30% - 59%
Flashing – Green	60% - 99%
Solid Green	100%

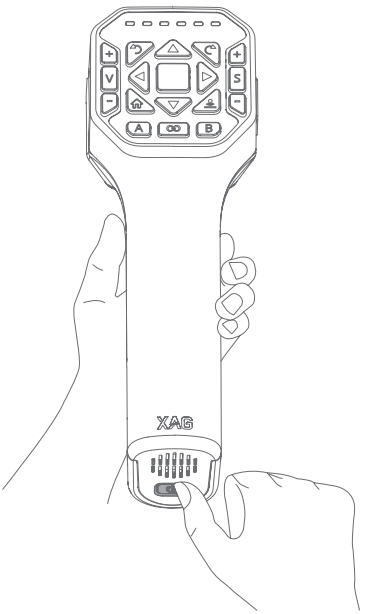
Turning the Remote Controller ON/OFF

TURN ON

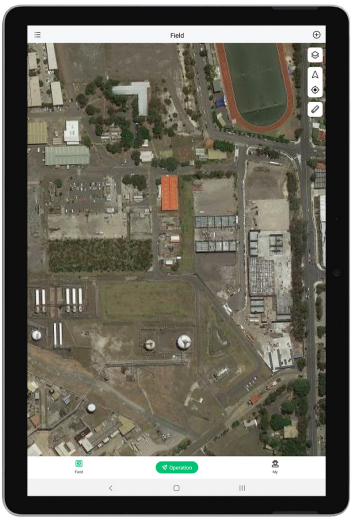
1. Press and Hold the Power Button until all the indicators flash simultaneously.
2. Release and then Press and Hold the Power Button again until a Broadcast is heard from the Remote Controller.

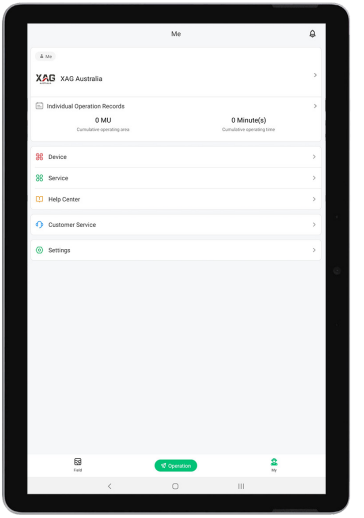
TURN OFF

1. Press and Hold the Power Button until all the indicators flash simultaneously.
2. Release and then Press and Hold the Power Button again until all indicators are OFF.



Device Binding





PREREQUISITE

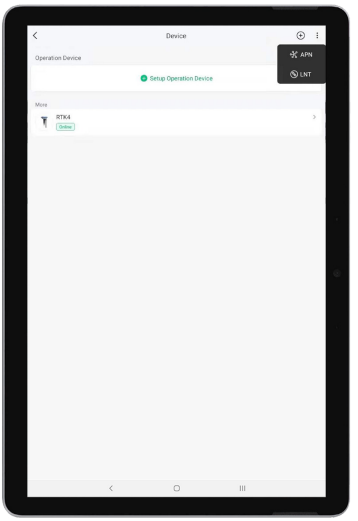
√ LNT (Local Network Terminal) Wi-Fi Network had been setup.

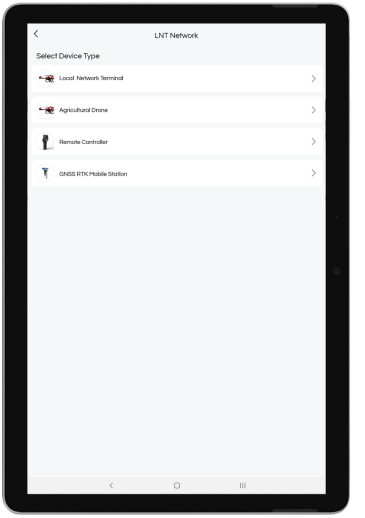
√ LNT (Local Network Terminal) Wi-Fi Network is Connected before Opening APP.

IMPORTANT

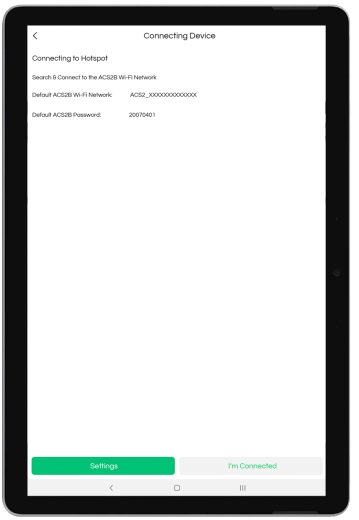
LNT (Local Network Terminal) must be connected to an external & internet available network indicated by the WAN indicator on the LNT. Device Binding can only be achieved once all the Indicators on LNT is ON.

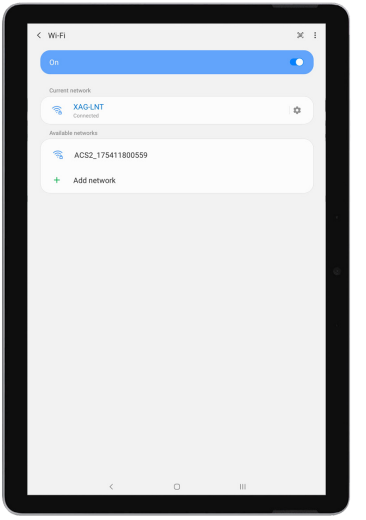
01. Turn ON the Remote Controller & Open XAG One APP.
02. Tap on “My” to access Account Menu.
03. Tap on “Device”.





04. Tap on " ⋮ " for more options, then Tap on " ⛓ " for Device Binding.
05. Tap on "Remote Controller" to start Binding.

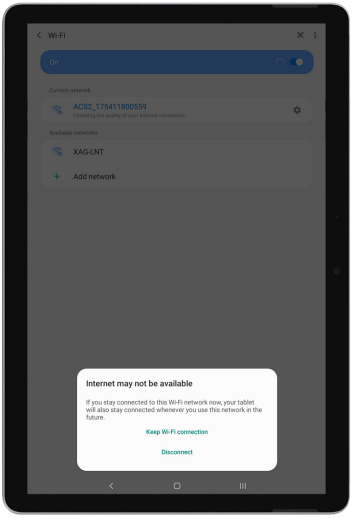


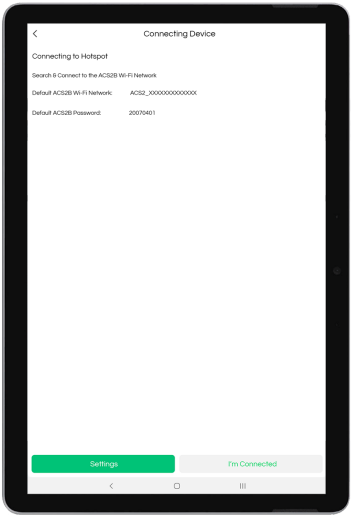


06. Tap on "Settings" to bring up the Available Wi-Fi List.
07. Select the corresponding ACS2 Wi-Fi.

    Default ACS2G Wi-Fi Network: ACS2_XXXXXXXXXXXX

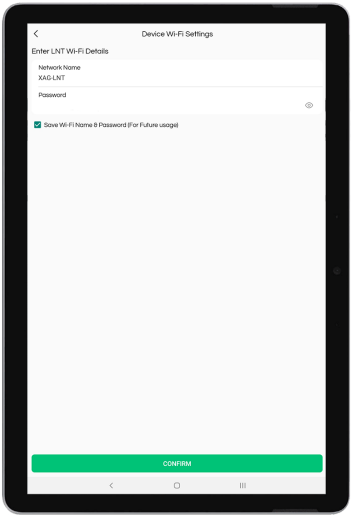
    Default ACS2G Password: 20070401





08. After connecting to the ACS2 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”.

09. Return to the APP, and Tap on “I’m Connected” to access Equipment Network Settings”.



10. 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:

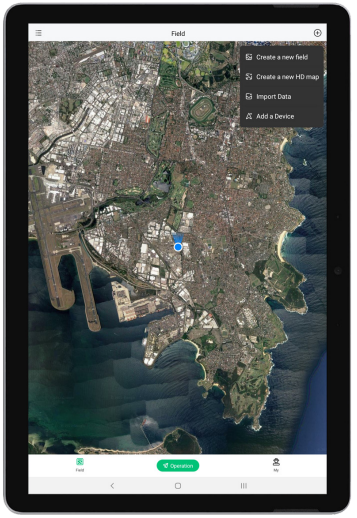
    XAG-XXXX

    Default LNT Password:

    20070401

⚠ Warning

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

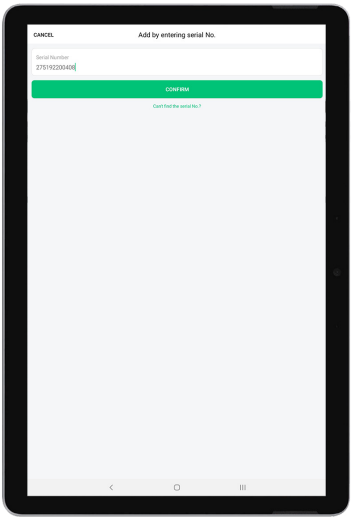


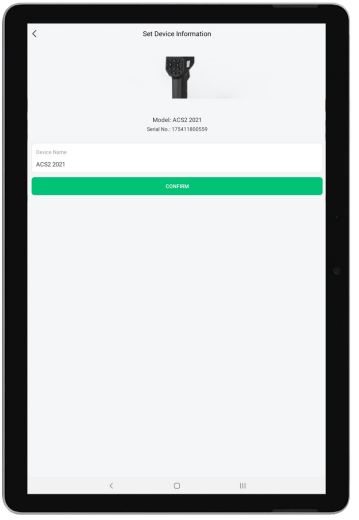
CHECK

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.

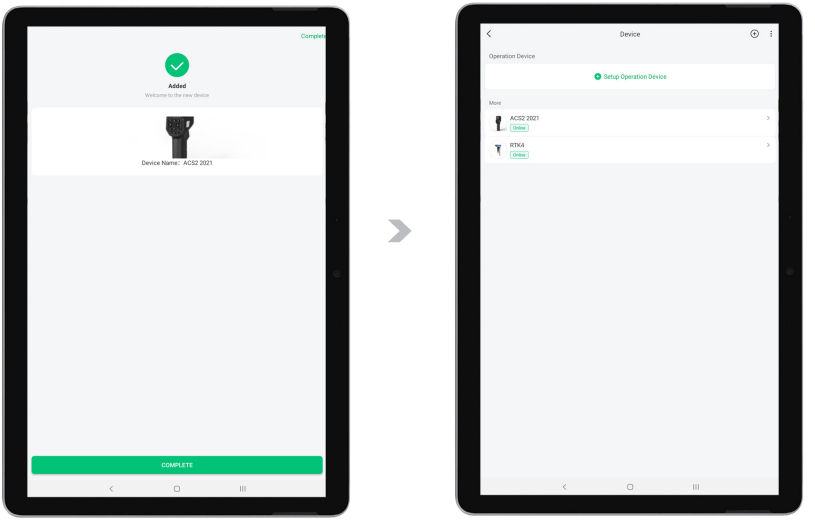
11. Return to the Main Page of the APP, Tap on the " ⊕ " and select "Add a Device".

12. Press and hold the Power Button of the Remote Controller for 6 - 10 seconds and release after all indicators are flashing Red. This indicates that the Remote Controller is now ready to be added.





13. Add the Device by Scanning the QR Code on the Device or Enter the Device S/N Manually.
14. Rename the Remote Controller, and Tap "Complete" to Save.



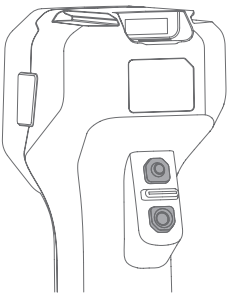
15. If the APP display " " , the Device has been added successfully.
16. Return to the Device Menu and check if the Device is displayed in your list of Device.
17. Please restart APP once the binding is completed.

Controls

Remote Pilot Aircraft (RPA)

ACS2G Remote Controller has a maximum control distance of up to 800 meters. Try to keep the Remote Controller vertically and the rear-facing the direction of the Aircraft for optimal performance.

- TAKE-OFF / LAND



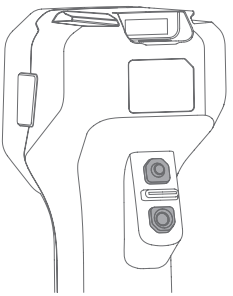
TAKE-OFF: Press and Hold both Altitude Control Buttons for 3 Seconds, the RPA will automatically take off to a height of 2.5 meters and hover

IMPORTANT

If any of the button is released within 3 seconds, the command will be cancelled

LAND: Press and Hold both Altitude Control Buttons to command the RPA to land

- Altitude Control



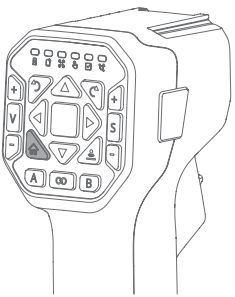
↑ Ascent: Press & Hold the Altitude + Button

↓ Descent: Press & Hold the Altitude - Button

IMPORTANT

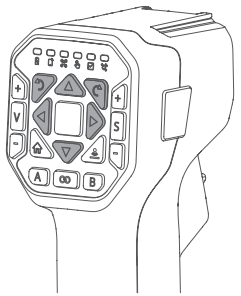
The minimum safety distance of the RPA in manual control is 2 meters above ground, RPA will not be able to descent once it reaches the height of 2.5 meters above ground

- Return to Home (RTH)



RTH: Press and Hold the RTH Button to command the RPA to return to Take-off-Point

- Motion Control



Move the RPA Forward

Move the RPA Backward

Move the RPA Sideway to the Left

Move the RPA Sideway to the Right

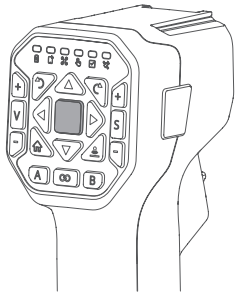
Rotate the RPA Counter-Clockwise (CCW)

Rotate the RPA Clockwise (CW)

IMPORTANT

During Autonomous Mode, Manual Mode can be activated by pressing any of the Motion Control Button. The Control Status Indicator will turn Green indicating it is in Manual Mode, and Aircraft Tail Indicator will flash Green twice.

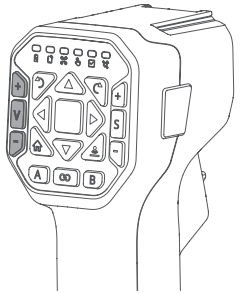
- Hover / Switch Mode



Hover: Press the Hover Button to command the RPA to Hover

Switch Mode: Press and Hold the Hover Button to switch Mode. The ACS2 Remote Controller will exit Manual Control and enter Autonomous Mode, the Controller will also broadcast Autonomous Mode

- Speed Control



Broadcast: Press the Speed Broadcast Button once to broadcast the current Speed

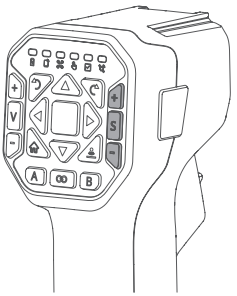
Increase Rate: Press the Speed + Button to increase the Flight Speed by 0.5m/s

Decrease Rate: Press the Speed - Button to decrease the Flight Speed by 0.5m/s

IMPORTANT

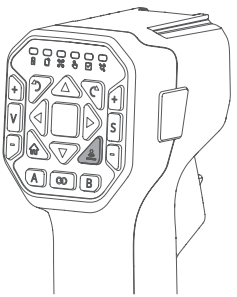
The Maximum Flight speed of the RPA with Obstacle detection is 0.5m – 6.0m/s

- Spray / Spread Control



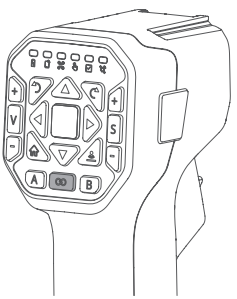
Enable/Disable:	Press the Spray/Spread Button to turn on/off the Spraying / Spreading
Increase Rate:	Press the Spray/Spread + Button to Increase the Dosage Rate of Spray/ Spread
Decrease Rate:	Press the Spray/Spread + Button to decrease the Dosage Rate of Spray/ Spread

- Terrain Button



Broadcast:	Press the Terrain Button Once to broadcast the current Mode (GPS Height / Terrain Follow)
Switch Mode:	Quick press the Terrain Button Twice to switch between GPS Height and Terrain Follow

- Mapping Mode



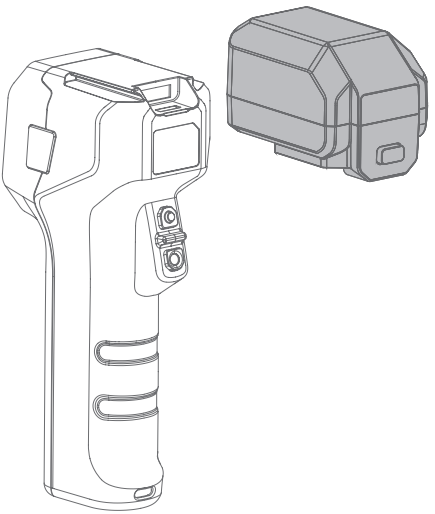
PREREQUISITE

GNSS RTK Module had been attached

	Enable / Disable Mapping Mode
A:	Add Point
B:	Undo previous Added Point

ACS2 RTK Module

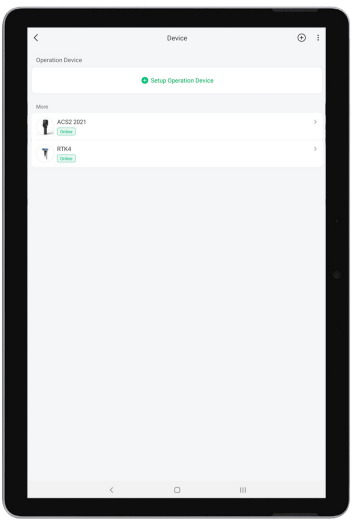
When ACS2G Remote Controller is equipped with ACS2 RTK Module, the ACS2G Remote Controller can be paired with GNSS RTK Mobile Station for Field Planning for XAG Agricultural Drone's Operation Task.

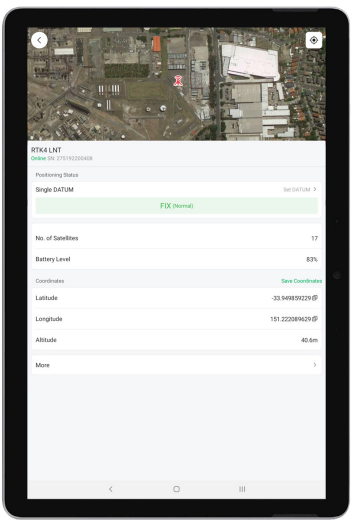


Attaching:	Slide & insert the ACS2 RTK Module onto the top of the ACS2G Remote Controller. When the ACS2G RTK Module is inserted, the ACS2G Remote Controller will broadcast "Module Inserted". ACS2G Remote Controller will then broadcast "Positioning Module Connected" when it is ready for use.
Detaching:	Press and hold the button on the back of the ACS2 RTK Module, then Slide out to detach the ACS2 RTK Module.

Field Planning

Pairing ACS2G with XRTK4 Mobile Station





PREREQUISITE

√ LNT (Local Network Terminal) Wi-Fi Network had been setup & Connected

√ Device binding of XRTK4 Mobile Station had been setup

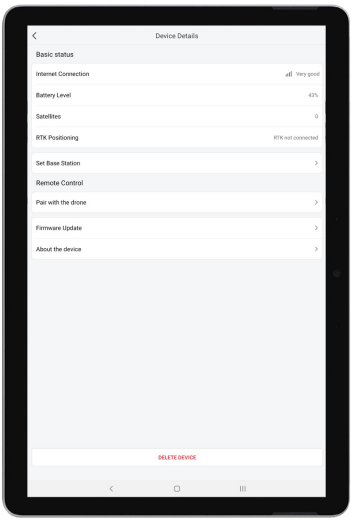
√ ACS2 RTK Module had been attached

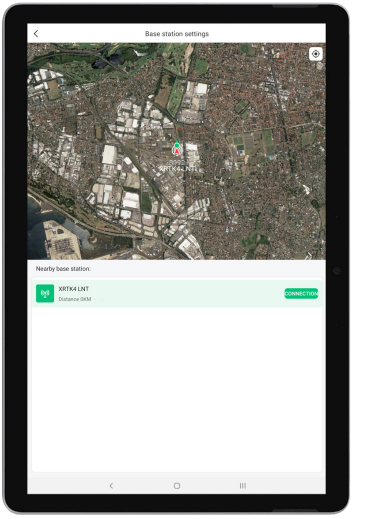
01. Power ON GNSS RTK Mobile Station and ACS2G Remote Controller.
02. Tap on “My” to access Account Menu.
03. Tap on “Device” and wait for the Remote Controller & Mobile Station is Online.

IMPORTANT

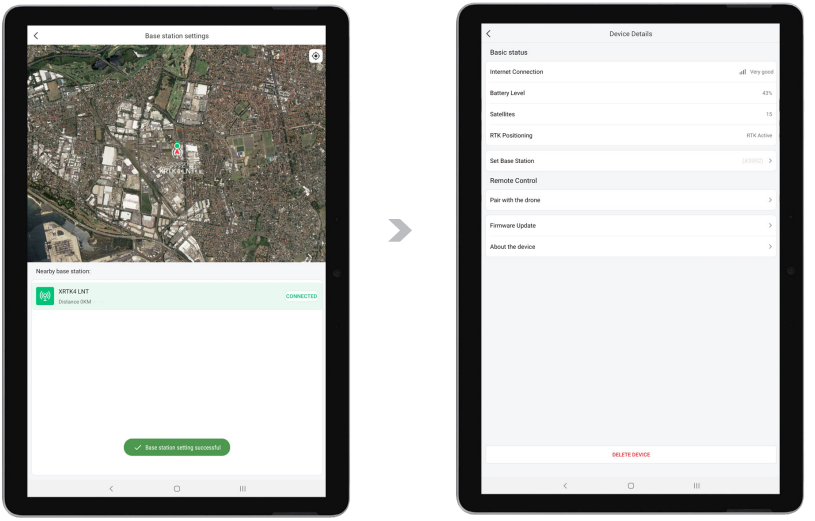
Please be patient, the devices may take up to several minutes before coming ONLINE.

04. Tap on “Mobile Station” for Mobile Station Device Details and ensure the Positioning Status is now displaying as FIX (Normal).





05. Return to the Device Menu & Tap on “Remote Controller” for Device details.
06. Tap on “Set Base Station” for Base Station Settings.
07. The APP will automatically detect and display the available base station nearby.
08. Select the available base station and tap “Connect”.



09. If the Remote Controller is successfully connected to the Mobile Station, a notification will be displayed.

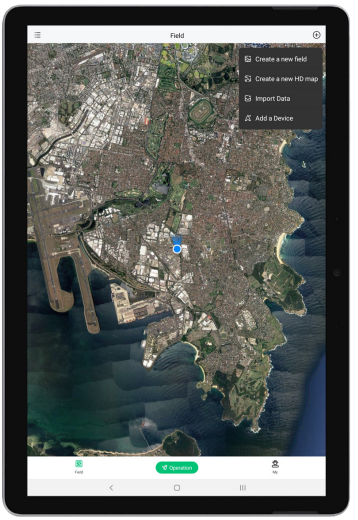
10. Tab on "<" to return to Remote Controller Device details and ensure the following:

    √ RTK Positioning is now "RTK Active".

    √ Set Base Station is now Connected to a Mobile Station (Displaying Station ID such as (#XXXX).

11. ACS2G Remote Controller is now paired with RTK Mobile Station and ready to be used as a Rover for Field Mapping.

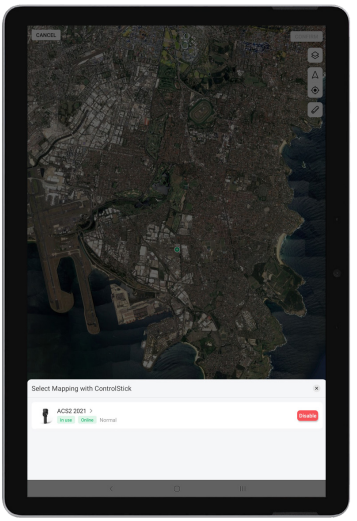
Create a new field

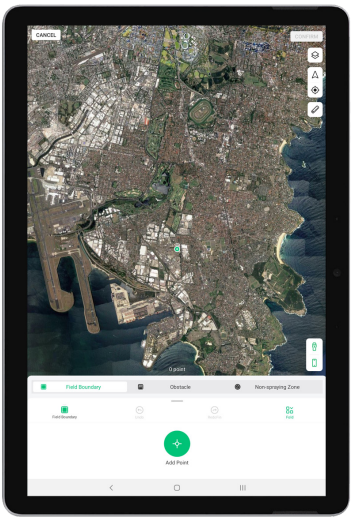


12. Tap on " ⊕ " to expand the Options menu, then tap on "  " Create a new field.

13. Tap on " ◎ " to position the map to your current location.

14. Tap on "  " to select the Remote Controller for Manual Mapping.



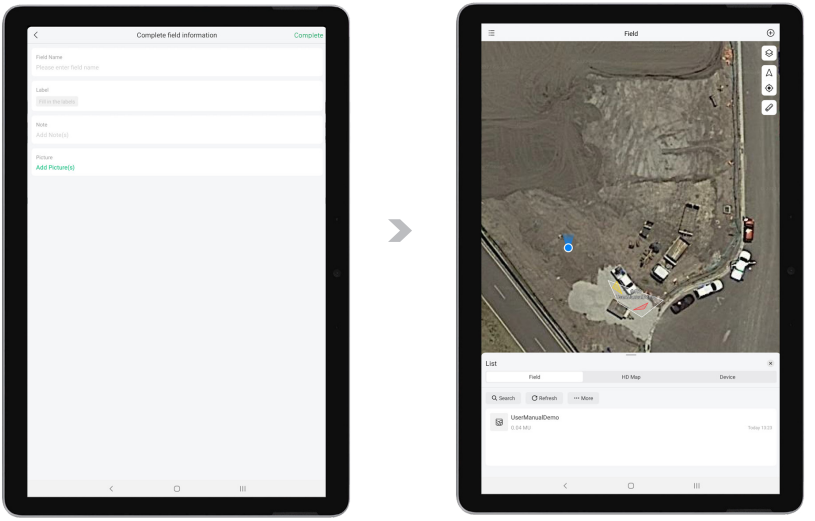


15. With ACS2 RTK Module attached, long press " " on the remote controller to enable Mapping Mode.

16. User will walk and position themselves with the Remote Controller (with RTK Module attached) at the desired location and add Points of the Field Boundary, Obstacles and Non-Spraying Zone. Points can be added via APP or Remote Controller.

Adding Point via APP:	Press " " on APP
Removing Point via APP:	Press " " on APP
Adding Point via Remote Controller:	Press Button A on Remote Controller
Removing Point via Remote Controller:	Press Button B on Remote Controller
Field Boundary	Field Boundary are individual points that form an application zone.
Obstacle	Obstacles are individual points that form an area where the RPA will not fly/enter as it has been designated as a potential hazard to the RPA
Non-Spraying Zone	Non-Spray Zone are individual points that form an area that the RPA may fly over but will be restricted from application

17. Review the Map and the points that had been added, then Tap "Confirm".



18. Enter & Insert Field Information, then Tap “Complete” to Save.
19. The field has now been created.
20. Tap on “ ” to review the List of Field / HD Map / Device, the field is now available for Route Planning.

Technical Specifications

Model	ACS2G	
Dimensions	76mm x 60mm x 177mm	
IP Rating	IP54	
Operating Frequency	2.4GHz / 5.8GHz	
Transmitting Power (EIRP)	2.4GHz 5.8GHz	SRRC ≤ 20dBm; SRRC ≤ 26dBm;
Supported Operating System	Android, IOS	
Build-in Battery	5000mAh / 37Wh	
Charging Temperature	0° C to 45° C	
Operating Temperature	-20℃ to 55℃	
Storage Temperature	-20° C to 20° C -20° C to 45° C -20° C to 55° C	< 1 Month 1 – 3 Months 3 – 12 Months
Max Transmission Distance (Unobstructed, free of interference)	800 Meters	
Charging Voltage / Current	05V / 2A 09V / 1.5A 12V / 1.5A	
Mesh Network	Supported	
Voice Broadcast	Supported	
RTK Operating Frequency	GPS: GLONASS: BDS: Galileo:	L1/L2 L1/L2 B1/B2 E1/E5b
Positioning Accuracy (With strong RTK Signal)	Vertical: Horizontal:	< 5.0cm + 1ppm (RMS) < 7.5cm + 1ppm (RMS)
Warranty Details	12 Months	