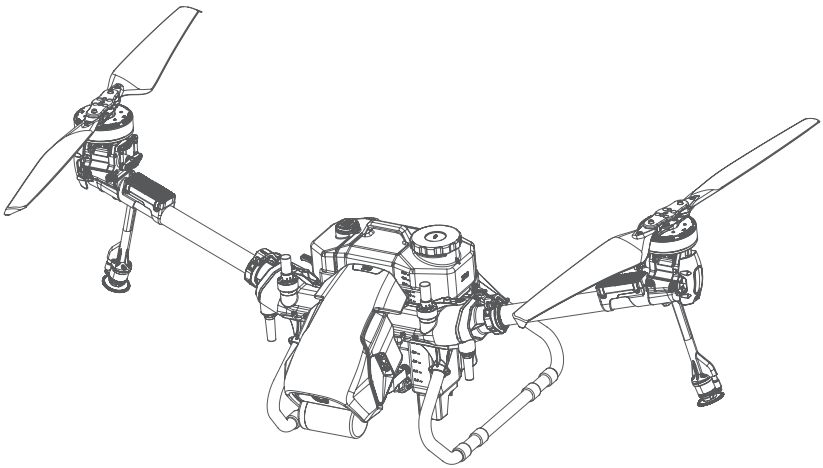
XAG V40 2022

Pilot's Operating Handbook - LNT Mode

Version AU V1.5 EN



XAG AUSTRALIA

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AGGREGATE LIABILITY

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Data Storage and Usage

By using this product, you hereby signify that you have agreed you may provide XAG with data regarding the use and operation of the product, such as flight telemetry data (E.g., Speed, Altitude, Battery Cycle, Battle Life) and operations records.

Safety

Pesticide Usage

- Pesticides are poisonous and pose severe risks to safety. Only use them in strict accordance with their specifications.
- Chemicals residues on the equipment caused by splashes or spills during refilling or mixing can irritate your skin, rinse with clean water and seek medical attention accordingly.
- Uses clean water or specialised mixing agents prescribed by Experts or Agronomist for mixing chemicals.
- Ensure to stay in an upwind location when conducting chemical spraying to reduce and avoid health hazards.
- Wear protective clothing and avoid direct physical contact with chemicals. Rinse your hands and skins after handing chemicals and post-Flights.
- Effective use of pesticides depends on chemical density, spray rate, spray distance, flight speed, wind speed, wind direction, temperature, humidity, and more... Consider all factors and applicable laws or regulations when using chemicals.
- Do not compromise the safety of people, animals, or the environment.
- Do not contaminate rivers and sources of drinking water.

Environment Considerations

- Consider the surroundings and ensure a safe distance from obstacles or people.
- If there is strong wind, rain, snow, hail, or other adverse weather conditions, return or land the aircraft at a safe location.
- Maintain a Visual line of sight of your aircraft at all times.
- Make sure your operations do not violate any applicable laws or regulations and have obtained all appropriate authorisation before the operations. Consult with the relevant government agency or authority to ensure compliance with all relevant laws and regulations.

Flight Operation

- Pre-flight Calibration and Inspection must be conducted before Operation.
- Stand clear and do not approach rotating propellers and motors.
- Operate within the specified max take-off weight to avoid potential safety risks which may result in serious injury to yourself and/or others, damage to your Products, and/or other objects in the vicinity.
- Maintain a Visual line of sight of your aircraft at all times.
- If the radar is not operating properly in the operating environment, the aircraft will not be able to avoid obstacles that are not previously mapped within the APP. Manual Control is recommended to ensure flight safety.
- Maintain complete control of the aircraft at all times. Obstacle avoidance is disabled in certain situations and operating environments.
- Effectiveness of the Obstacle radar is dependent on the obstacle's material, location, shape, size, etc. Maintain visual line of sight and pay attention to its flight, and prepare to operate the aircraft and manually avoid obstacles promptly or during an emergency.
- Strictly forbidden to conduct obstacle avoidance tests on humans or animals (regardless of static or dynamic) as obstacles, it is also strictly prohibited for humans, animals, or objects to obstruct, interfere or impact the aircraft directly.
- DO NOT fly above or near a populated area or population.
- DO NOT fly when you are fatigued or under the influence of alcohol or drugs.
- DO NOT refill the Liquid tank until the tank has been removed from the aircraft as residues may pose health hazards and damage aircraft components.

Ingress Protection Rating

Under stable laboratory conditions, this aircraft has a protection rating of IP67, which is waterproof, dustproof, corrosion-resistant, and can be cleaned using a small amount of water. However, this protection is not permanent and may reduce overtime after long-term use due to aging and wear. Liquid leakage or penetration may damage electrical and internal components, and it is not covered by the Product warranty.

Some of the scenarios that may decrease the Ingress Protection include but are not limited to the following:

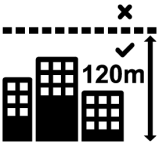
- There is a flight incident/collision causing the sealing to deform.
- Sealing structure is cracked or damaged.
- Waterproof covers or sealing are not adequately secured or installed.

Maintenance and Upkeep

- Check & ensure the equipment is in good condition; replace aged or broken parts before the flight.
- Check & ensure the correct Propellers & Propeller Type (CW & CCW) are correctly installed.
- Conduct Regular Maintenance & record Logbook per warranty and regulation requirements.

Abide Local Laws and Regulations

Visit - Know Your Drone - for a safe and responsible flight



You must not fly your drone higher than 120 metres (400 feet) above ground level.

You must keep your drone at least 30 metres away from other people.

Remember, you must not operate your drone in a way that creates a hazard to another aircraft, person or property.

You must keep your drone within visual line-of-sight. This means always being able to see the drone with your own eyes (rather than through a device, screen or goggles).

You must not fly over or above people or in a populous area. This could include beaches, parks, events, or sport ovals where there is a game in progress.

Respect personal privacy. Don't record or photograph people without their consent — this may breach other laws.

You must not fly your drone over or near an area affecting public safety or where emergency operations are underway. This could include situations such as a car crash, police operations, a fire or firefighting efforts or search and rescue.

If you're near a helicopter landing site or smaller aerodrome without a control tower, you can fly your drone within 5.5 kilometres. If you become aware of manned aircraft nearby, you will have to manoeuvre away and land your drone as quickly and safely as possible.

If your drone weighs more than 250 grams, you must fly at least 5.5 kilometres away from a controlled airport, which generally have a control tower at them.

Content

V40 Agricultural RPA

Product Profile

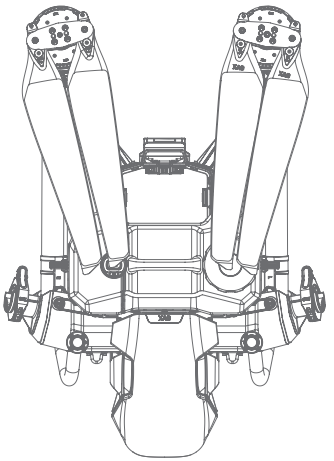
XAG V40 Agricultural Remote Pilot Aircraft (RPA) is an innovative twin-rotor flying platform. The V40 is reimagined based on XAG's vast accumulation. Different from traditional multi-rotor drones, it adopts the tilting twin-rotor structure: significantly improving aircraft performance and energy efficiency. Breakthroughs in material science and manufacturing technology, dramatically reduce the mass and volume of the V40, making it more flexible and efficient during flight and transportation. The twin-rotor structure has a more concentrated wind field with multiple aerodynamic optimisations. Spray penetration is more than double of traditional Agricultural drones, and the modular design allows for rapid switching of task systems. The task system can be freely switched between field mapping, precision spraying, and intelligent broadcast functions, fulfilling various operation scenarios. V40 has overall IP67 protection, efficiently dealing with harsh operation environments and simplifying daily maintenance. The Airframe and the propeller fold-over doubly reducing the handling volume by a third, effectively saving space and reducing cost. The bionic design reduces noise by mimicking the posture and movements of a bird to make every flight beautiful.

V40 is equipped with SuperX4 Intelligent Flight Control System, which perfectly combines robust AI algorithms and high-performance power assembly. The highly integrated SuperX4 Intelligent Flight Control System integrates flight control, environmental perception, data transmission, RTK navigation and 5G extended functions. Significant improvement of the chip's hash rate gives V40 the most intelligent functionality. The terrain radar, front dynamic radar and the optional top view radar provide accurate perception and obstacle avoidance capabilities, with the PSL (Pilot perspective image) can displaying the field conditions clearly, makes it possible to adapt to complex environments. making flying safer than ever.

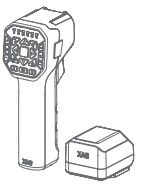
The V40 has powerful performance and exceptional efficiency, and it can be tasked with RevoSpray, RevoCast, or RealTerra System with an adequate load of 20kg to achieve intelligent and fully autonomous field operations. it is the perfect partner for all your digital agricultural needs.

List of Items – V40

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



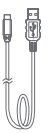
Airframe (Including Liquid Tank)
×1



ACS2G Remote Controller
(With ACS2 RTK)(Optional)
×1

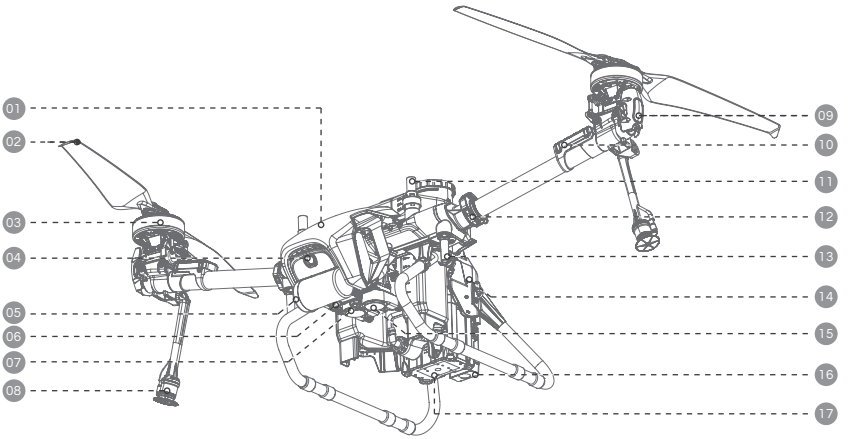
RealTerra (Optional)
×1

Tool Kit
×1

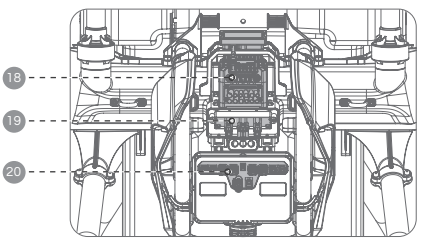


USB-Type-C Cable
×1

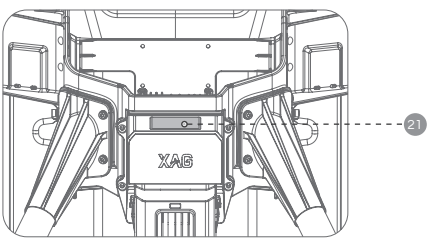
Overview – V40



01	Head Cover	09	Spraying Status Indicator
02	Propeller	10	ESC (Electronic Speed Controller)
03	Motor	11	RTK Antenna
04	PSL Camera	12	Arm Fastener
05	Dynamic Radar	13	2.4GHz Antenna
06	Terrain Sensor	14	Airframe Nameplate
07	Searchlight	15	Peristaltic Pump
08	Spray Bar	16	RealTerra
		17	Smart Battery



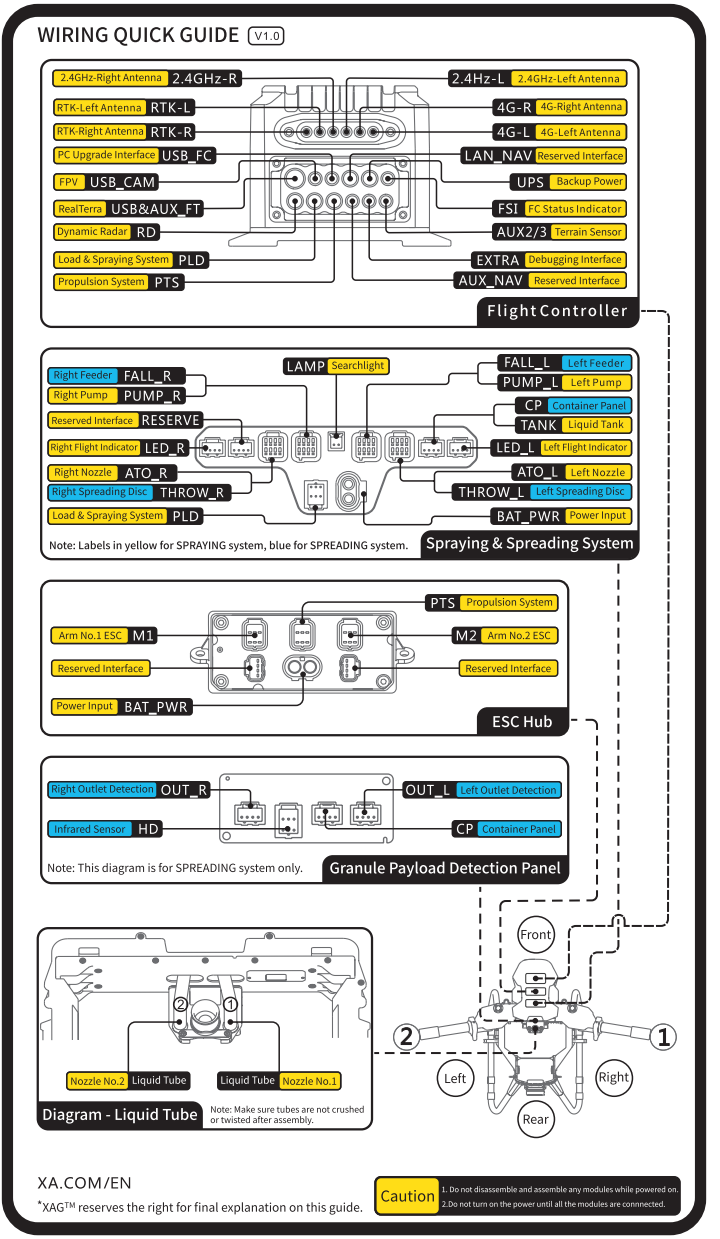
Inside of the drone



Rear view

18	SuperX4 Flight Controller (FC)	21	Flight Status Indicator
19	ESC Hub		
20	Spraying Hub		

Wiring Guide

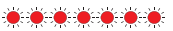


Status Indicator

SuperX4 FC Status Indicator

RTK Indicator		Description
Slow Flash – Green		Normal
Rapid Flash – Green		Insufficient Satellites (<16) Heading Accuracy >2°
Slow Flash – Red		RTK Timeout > 10s
Rapid Flash – Red		Exited RTK, no differential signal, no heading.
Solid Red		Not positioned or searching for satellites, no output from the board
Red & Green Alternate Flashing		Initializing / Configurating
Rapid Flash – Red & Green Alternate		Updating firmware

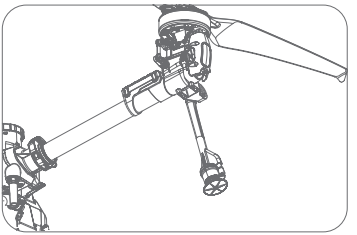
Cloud Communication Indicator		Description
Slow Flash – Green		Cloud Communication connected
Rapid Flash – Red		Cloud Communication disconnected

Wireless Communication Indicator		Description
Slow Flash – Green		Communication Module Normal DLS receiving & processing Data
Rapid Flash – Green		Communication Module Normal No data is received
Slow Flash – Red		Initialization Normal, Serial Port Disconnected
Rapid Flash – Red		Initialisation Failed, Interface Disconnected.
Red & Green Alternate Flashing		Pairing Mode Indicators will Quick flash Green whether the pairing was Successful or incomplete

System Status Indicator		Description
Solid Green		System Normal
Solid Red		System Anomalous

Spray Status Indicator (Arm)

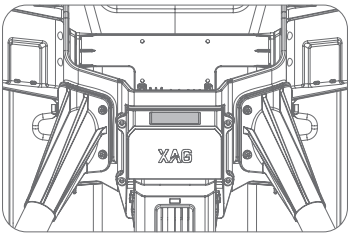
The Spray status indicator is located on each of the Motor bases. See the table below for details of the Spray status indicator.



Spray Status Indicator (Arm)	Description
Solid Green	Spraying
Illumination Green	Spraying paused for lane changes
Red Double Flash	Taking-off / Landing
Solid Red	Idling / Avoiding Obstacles
Illumination Red	Departing to Start / Returning to Land
Solid Cyan	Initializing firmware update
Rapid Flash – Cyan	Downloading firmware update
Rapid Flash – Purple	Transferring firmware update
Slow Flash – Purple	Updating firmware
Illumination Blue	No signal from FC
Rapid Flash – Blue	Spray System offline
Solid Yellow	System Error

Flight Status Indicator (Tail)

The Flight Status indicator is located on the rear of the Aircraft. See the table below for details of the Flight status indicator.

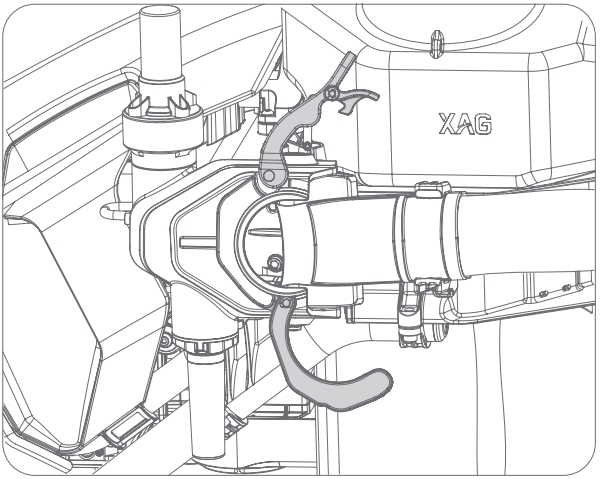


Flight Status Indicator		Description
Red & Green Alternate Flashing		Weak GPS Signal
Green Double Flash		Strong GPS Signal
Green Triple Flash		GPS Mode
Slow Flash – Red		SAFE Mode
Red Triple Flash		Low Voltage
Solid Red		FC initializing or warming up
Rapid Flash – Red		Sensor (Excluding IMU) Anomalous; or GPS Anomalous; or Low heading accuracy
Rapid Flash – Purple		FC Format; or Parameter Anomalous
Rapid Flash – Blue		Propulsion system Anomalous
Rapid Flash – White		IMU failure

Preparing the Aircraft

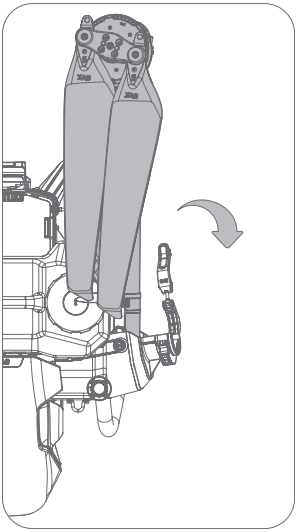
Unfolding the Arms

Unlock the Arm fasteners and leave them in the Open position.

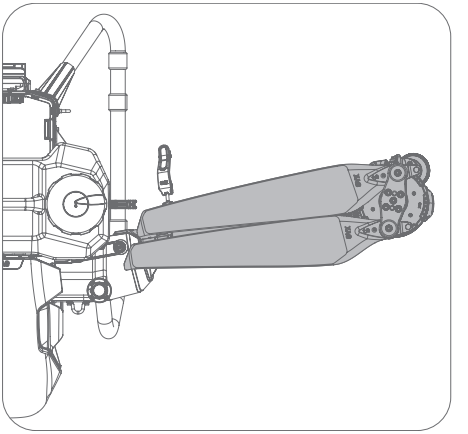


01

Unfold both Arms frontward.

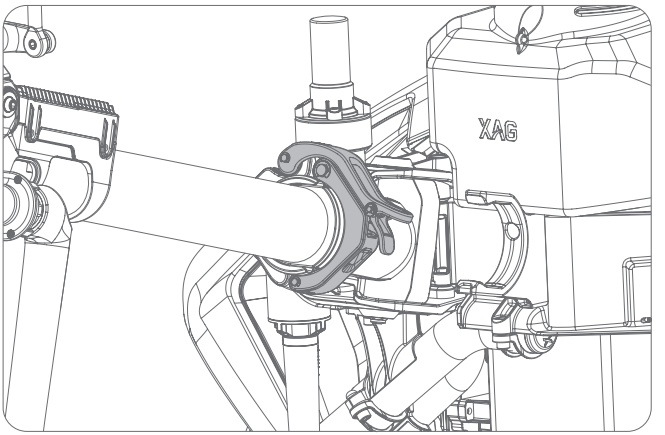


02



03

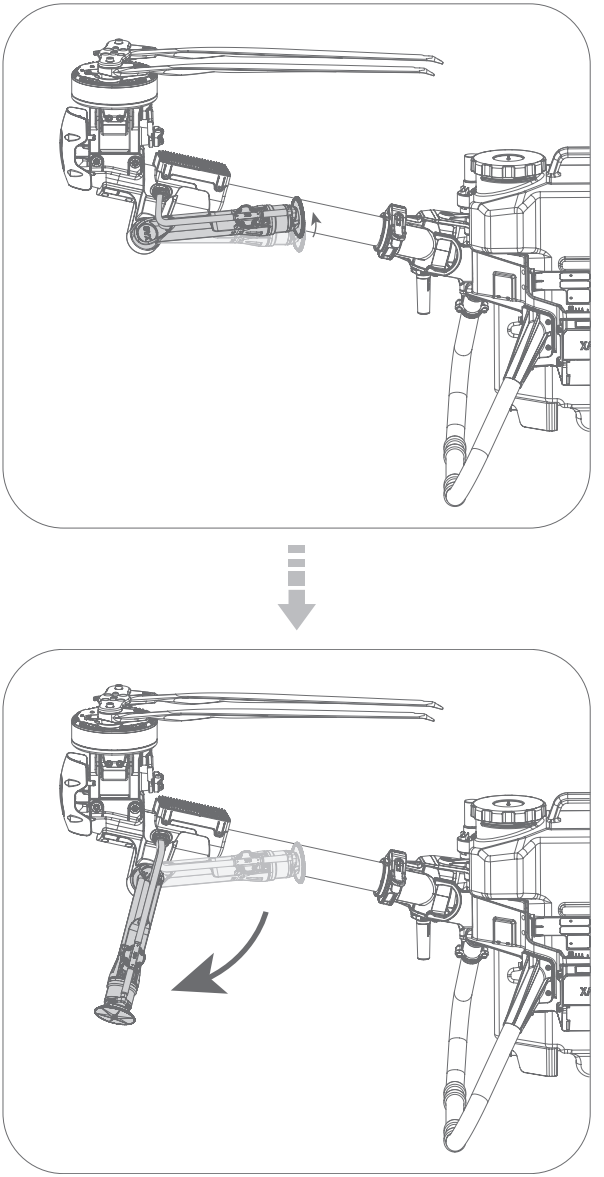
Lock and Secure the Arm fasteners and ensure the fastener is tightened.



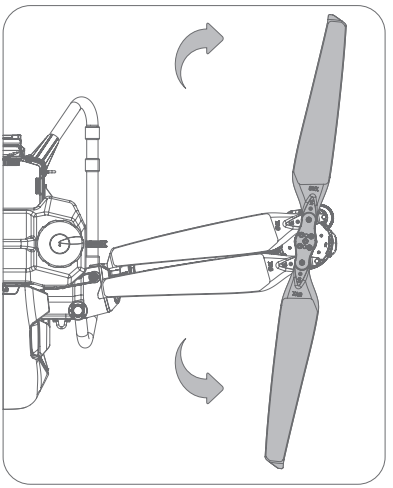
04

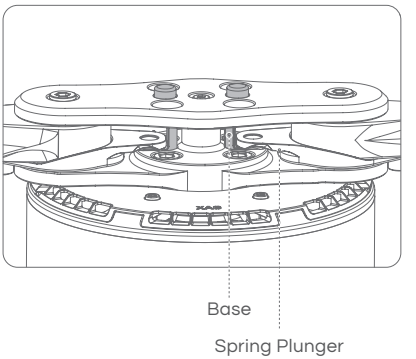
Unfolding the Nozzle Extension Rods

Gently lift the Extension Rod inwards, and then rotate it outward

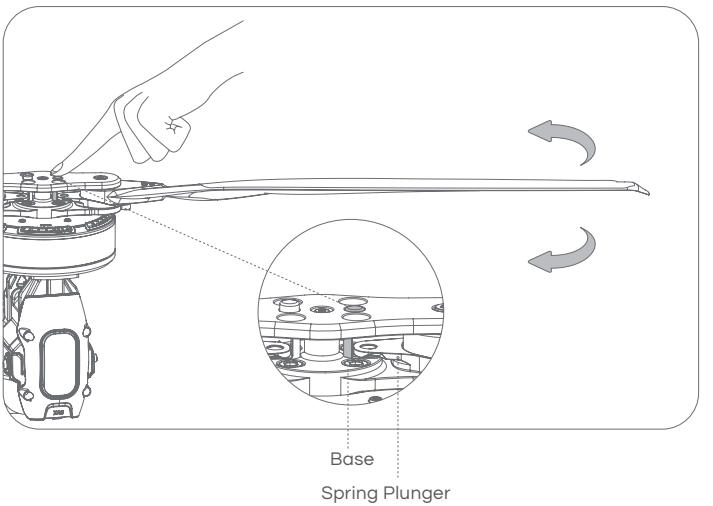


Unfolding the Propellers

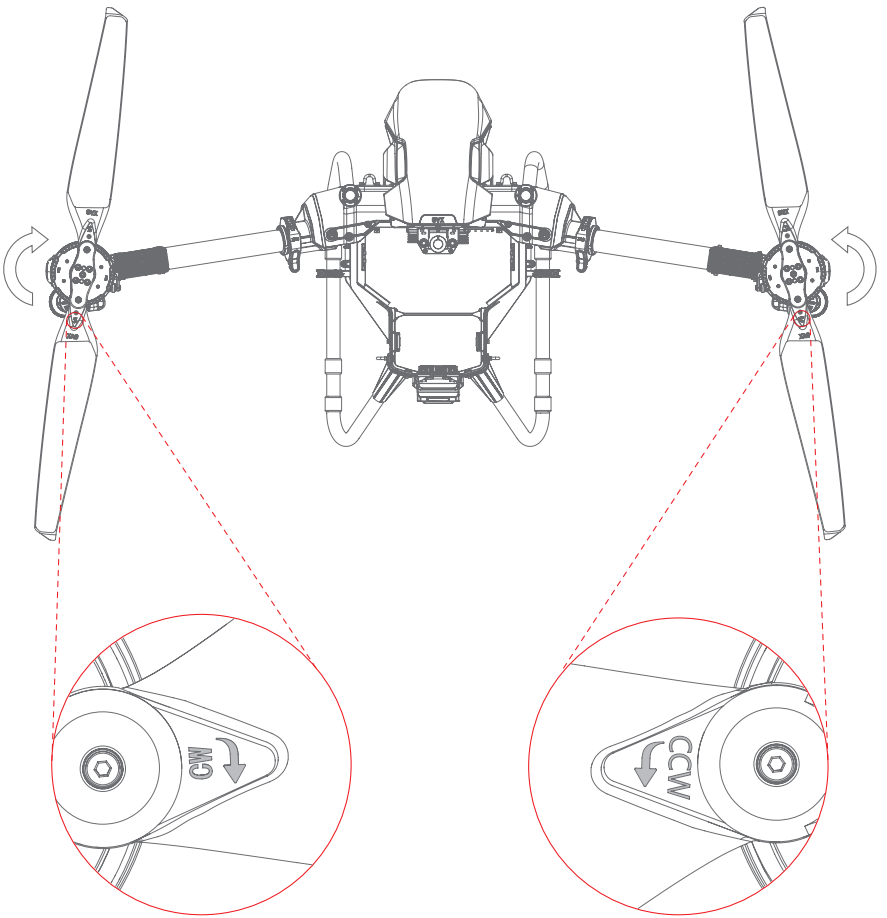




Unfold the Propellers until the spring plunger has properly snapped and secured in the base of the camp.



Folding the Propeller: Push down the base to release the Propeller, then rotate and fold the Propellers.



CW Propeller - Left Arm

CCW Propeller - Right Arm

CHECK

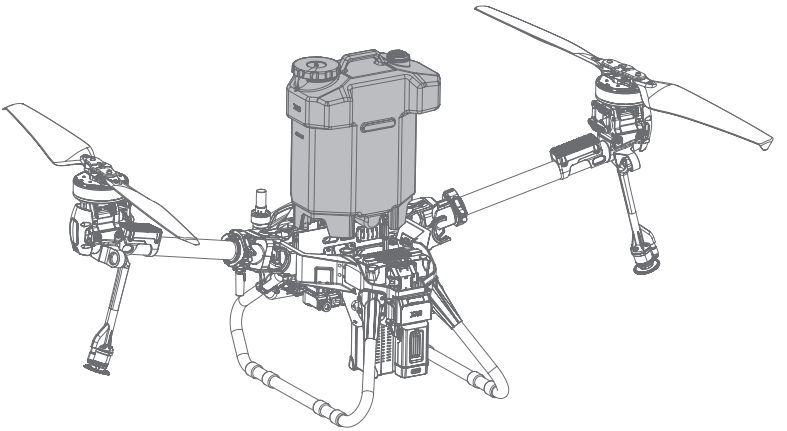
Check and ensure the correct corresponding Propeller is attached, the model of the propeller can be found between the Propeller blades and the clamp.

Arm #1 – Right Arm: CCW Propeller

Arm #2 – Left Arm: CW Propeller

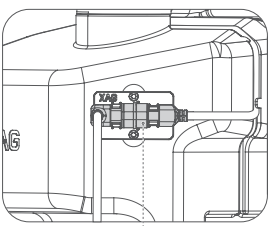
Installing the Liquid Tank

The Liquid Tank can be installed or removed vertically from the Aircraft Liquid Tank compartment, gently pushed downward. Once the liquid tank is installed, wire up the Liquid Tank signal cable and insert it into the cable order. Unwire the Signal cable before removing the Liquid Tank.



IMPORTANT

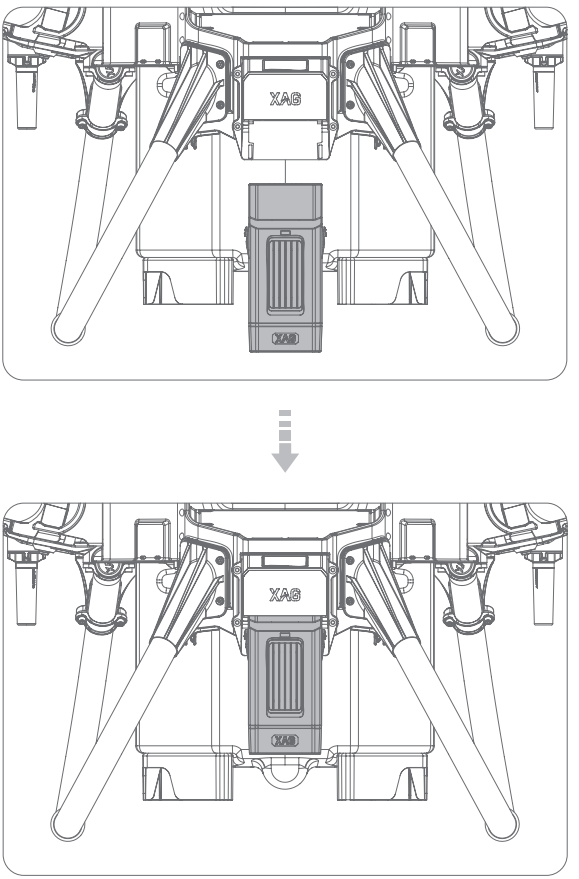
Aircraft with RealTerra Module installed are limited to Aerial Survey, detach the RealTerra Module before conducting Aerial spraying/spreading.



Liquid Tank Signal Cable

Installing the RealTerra

Insert the RealTerra Module upwards into the slot under the Flight Status Indicator until you hear a clicking sound indicating the Real Terra is connected.

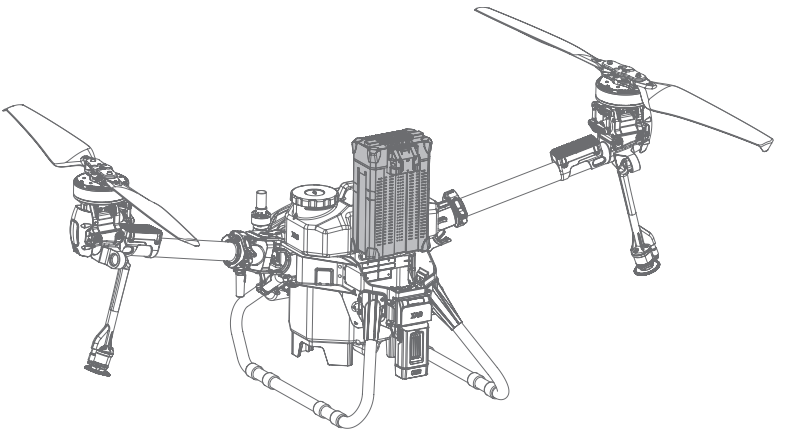


IMPORTANT

Aircraft with RealTerra Module installed are limited to Aerial Survey, detach the RealTerra Module before conducting Aerial spraying/spreading.

Installing the Battery

Insert the Battery into the Aircraft battery compartment, gently push downward until hearing a clicking sound indicating the battery terminal is now connected to the Aircraft.



Turning the Aircraft ON/OFF

TURN ON

01. Insert the Battery into the Aircraft battery compartment, gently push downward until hearing a clicking sound indicating the battery terminal is now connected to the Aircraft.

02. Press and hold the power button on the battery for approximately 1 second until all the indicator lights flashes, then press and hold the power button again for approximately 1 second until you hear a beep from the battery.

03. Unfold both the Aircraft Arms and place the aircraft in open area.

04. Please be patient and wait until the Aircraft Flight Status (Tail) Indicator Flashes Green three times, indicating the Aircraft is now ready.

TURN OFF

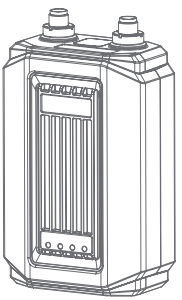
01. Press and hold the power button once on the battery for approximately 1 second until all the indicator lights flash. Then press and hold the power button again for approximately 1 second until you hear a beep from the battery.

02. Both the Battery indicator and Aircraft Flight Status (Tail) Indicator will be OFF, indicating the battery can now be removed/swapped.

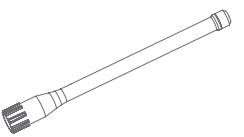
Local Network Terminal

List of Items – Local Network Terminal

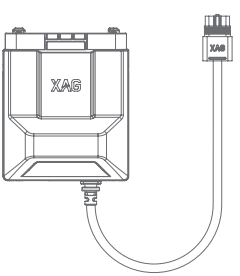
Please see that all the following items are present when unpacking the box. Should there be any item missing, please contact your seller immediately.



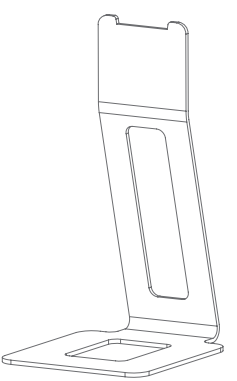
Local Network Terminal (LNT)
×1



Antenna
×2

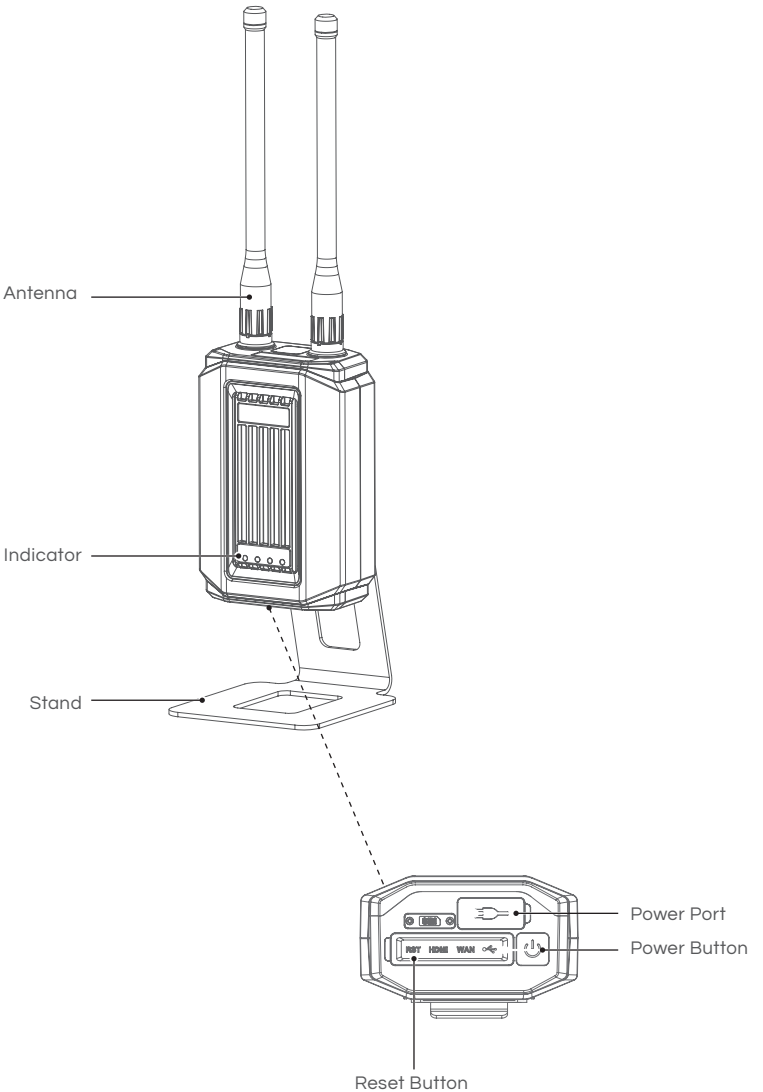


Power Adapter
×1



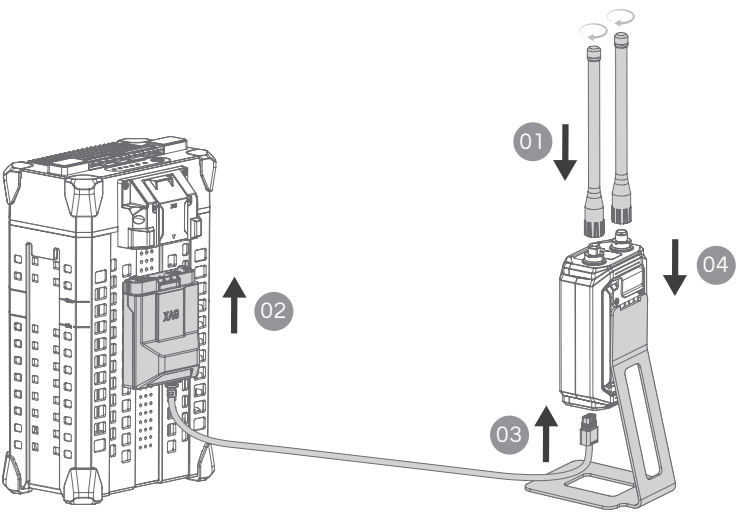
Stand
×1

Overview – Local Network Terminal



Installation Guide

01. Assemble the antennas
02. Connect the Terminal of the Power Adapter to the Battery Terminal
03. Connect the Output plug of the Power Adapter to the LNT Power port
04. Place the LNT on the stand



Turning the LNT ON/OFF

Power ON	Press and hold the Power button on the LNT for at least 1 second and release after the first indicator turns on. The device may take up to 10 minutes for the initialization, the initialization is completed approximately 2 minutes after the System Indicator (4th indicator) stops flashing and is Solid Green, indicating the LNT is ready to be used.
Power OFF	Press and hold the Power button on the LNT until the 2nd, 3rd, and 4th indicator flashes. LNT is OFF when all indicators are OFF.

IMPORTANT

DO NOT turn off the Battery or disconnect the power cable until LNT is OFF. Powering off the LNT immaturely may lead to system corruption and system failure. User will be solely responsible for any failure due to system corruption.

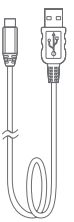
Device Indicators

Power	WLAN	WAN	System
Behaviour		Description	
Power - On		Device On	
Power - Off		Device Off/Error	
WLAN - On		Wi-Fi networking function normal	
WLAN - Flashing		Wi-Fi network is busy	
WLAN - Off		Wi-Fi network error	
WAN - On		Access to WAN for data synchronization	
WAN - Flashing		Wi-Fi network is busy	
WAN - Off		Wi-Fi network fails to access WAN	
System - On		Device is normal	
System - Flashing		Device is busy	

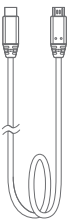
Remote Controller

List of Items – ACS2G Remote Controller

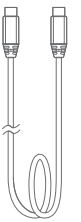
Please carefully check if the product contains all the items listed below and your dealer if there are any missing items.



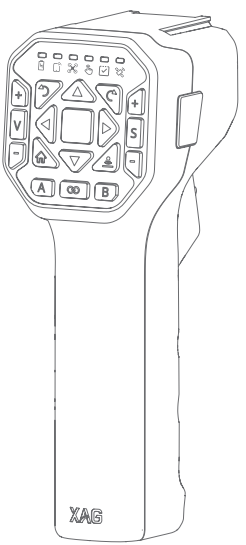
USB To Type-C Cable
× 1



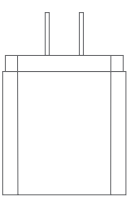
Micro USB To Type-C Cable
× 1



Type-C To Type-C Cable
× 1



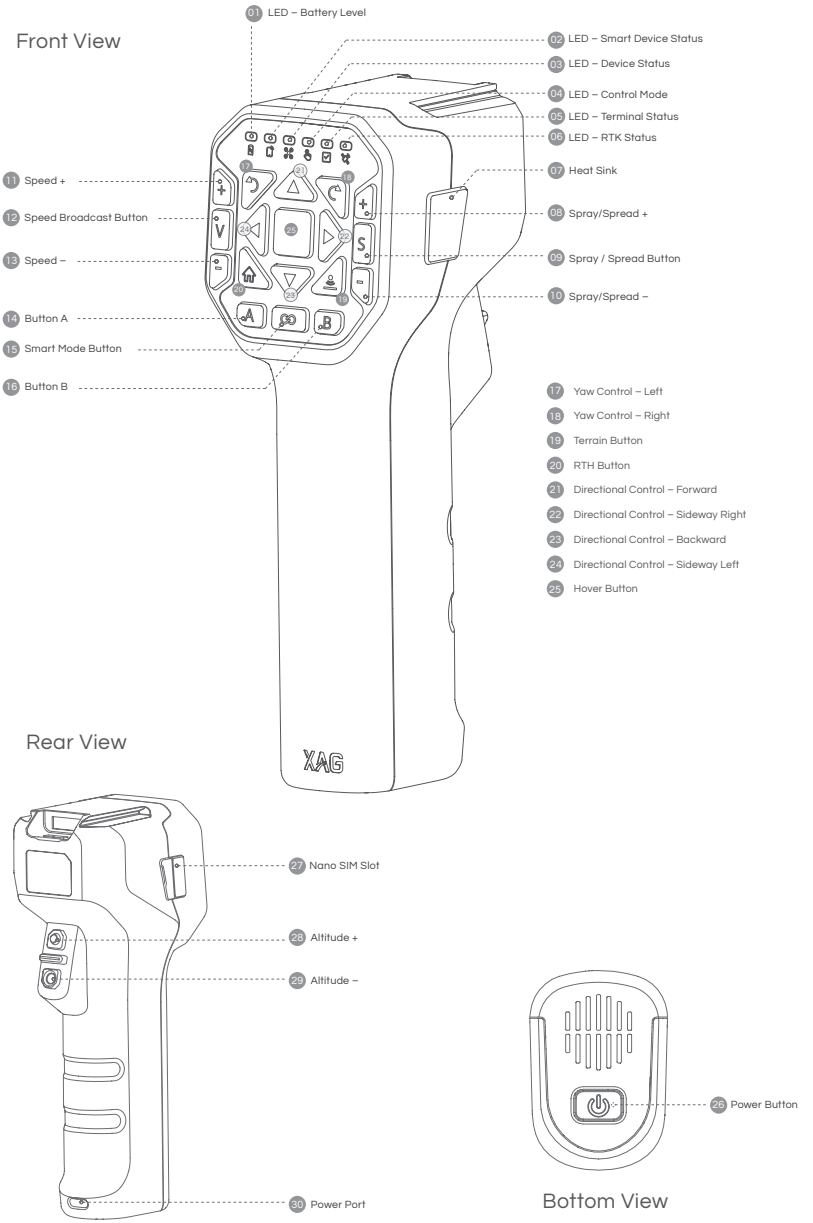
ControlStick (Body)
× 1



Power Adapter
× 1

Overview – ACS2G Remote Controller

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

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%

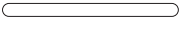
When ACS2G is ON, the battery level indicator display the current battery level.

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

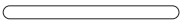
Warning

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

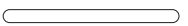
Status Indicator – Device

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

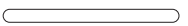
Status Indicator – Control Mode

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

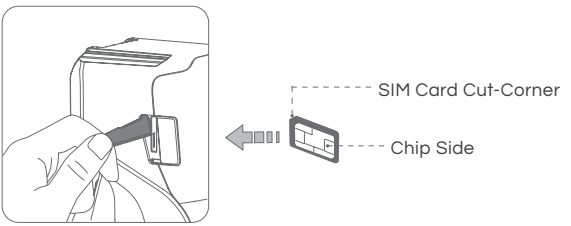
Status Indicator – RTK

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.



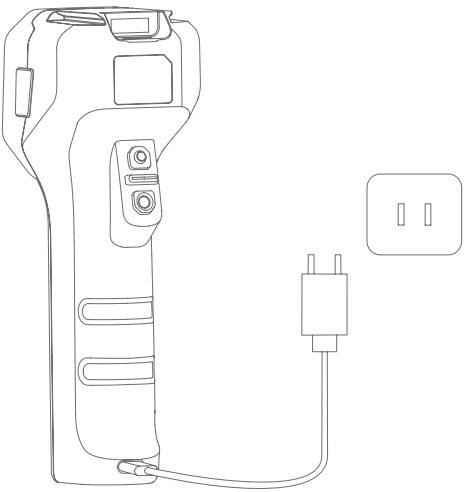
⚠ Warning ACS2 uses a nano-SIM. Damages caused by the use of other specifications of SIM will be beared by user

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%

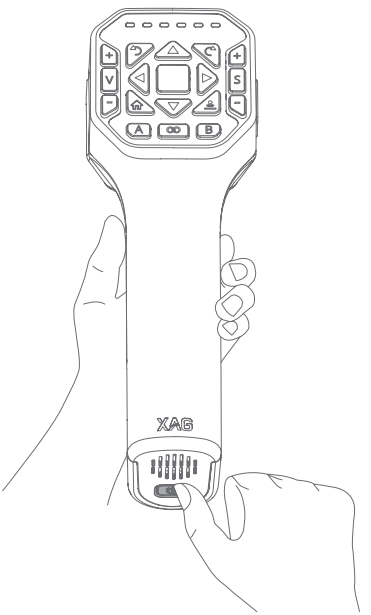
Turning the Remote Controller ON/OFF

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.

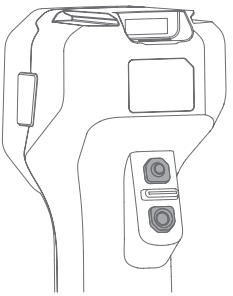


Controls

Remote Pilot Aircraft (RPA)

ACS2G Remote Controller has a maximum control distance of up to 800 meters. Keep the Remote Controller vertical and the rear towards the direction of the Aircraft for optimal performance.

- TAKE-OFF / LAND



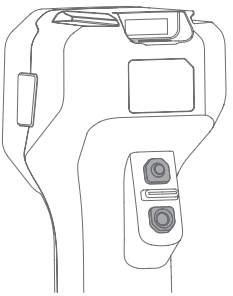
TAKE-OFF: Press and Hold both Altitude Control Buttons for 3 Seconds, the RPA will automatically take off and hover at 2.5 meters

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



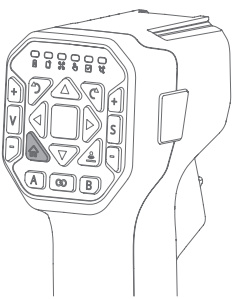
↑ Ascent: Press & Hold the Altitude + Button

↓ Descent: Press & Hold the Altitude - Button

IMPORTANT

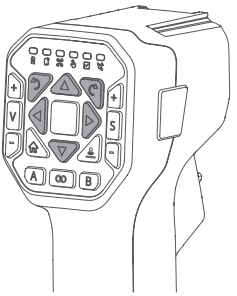
The minimum safety distance of the RPA in manual control is 2 meters above ground, RPA will not be able to descent lower once it reaches the height of 2.5 meters above ground

- Return to Home (RTH)



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

- Motion Control

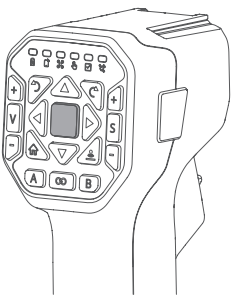


△	Move the RPA Forward
▽	Move the RPA Backward
◁	Move the RPA Sideway to the Left
▷	Move the RPA Sideway to the Right
↺	Rotate the RPA Counter-Clockwise (CCW)
↻	Rotate the RPA Clockwise (CW)

IMPORTANT

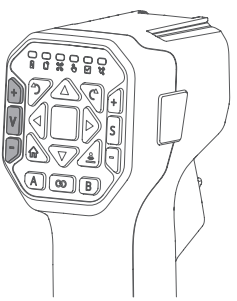
During Autonomous Mode, Manual Mode can be activated by pressing any of the Motion Control Button. The Control Status Indicator (4th Indictor) will turn Green indicating it is in Manual Mode, and Aircraft Tail Status Indicator will flash Green twice.

- 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 re-enter Autonomous Mode, the Controller will also broadcast Autonomous Mode

- Speed Control

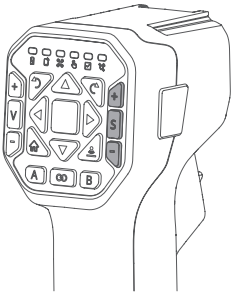


Broadcast:	Press the Speed Broadcast Button once to broadcast the current Speed
Increase Rate:	Press the Speed + Button to increase the Flight Speed by 0.5m/s
Decrease Rate:	Press the Speed - Button to decrease the Flight Speed by 0.5m/s

IMPORTANT

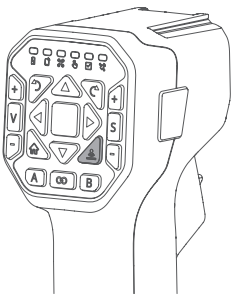
The Maximum Flight speed of the RPA with Obstacle detection is 0.5m – 6.0m/s

- Spray / Spread Control



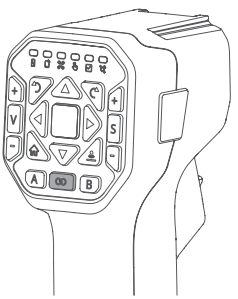
Enable/Disable:	Press the Spray/Spread Button to turn on/off the Spraying / Spreading
Increase Rate:	Press the Spray/Spread + Button to Increase the Dosage Rate of Spray/ Spread
Decrease Rate:	Press the Spray/Spread + Button to decrease the Dosage Rate of Spray/ Spread

- 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



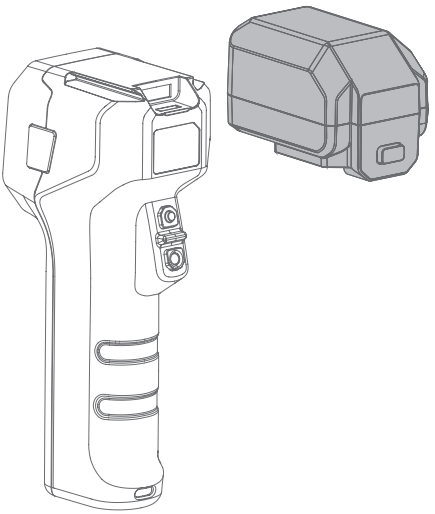
PREREQUISITE

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.

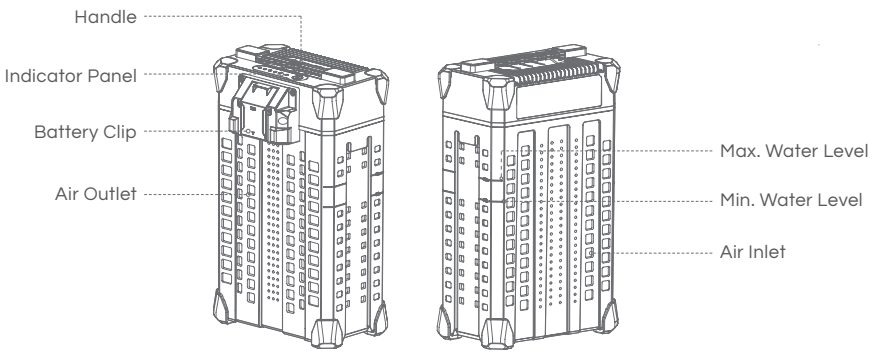


Attaching:	Slide & insert the ACS2 RTK Module onto the top of the ACS2G Remote Controller. When the ACS2G RTK Module is inserted, the ACS2G Remote Controller will broadcast "Module Inserted". ACS2G Remote Controller will then broadcast "Positioning Module Connected" when it is ready for use.
Detaching: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

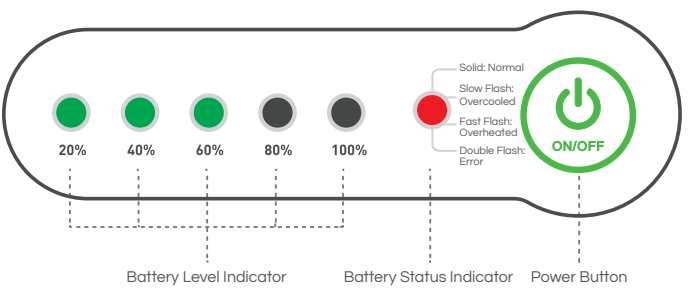
Smart Battery

Overview – B13960S Battery

Structure



Indicator Panel



Using the Battery

IMPORTANT

√ ENSURE to check and update Battery firmware and Device Software prior to any Flights.

√ ENSURE there are no liquid or foreign matter on the battery terminal, wipe and clean in a timely fashion. Otherwise, it may cause poor contact, resulting in loss of power or charging failure.

X AVOID the Liquids (Electrolytes) in the battery as it is highly corrosive. If any liquid make contact with your skin or eyes, rinse with clean water and seek medical attention immediately.

X DO NOT Fly when the Battery Level is less than 30%.

X DO NOT connect the Cathode and Anode of the battery with conductive object, otherwise it may cause a short circuit.

X DO NOT Connect or Disconnect the battery when it is turned ON, otherwise the power ports may be damaged.

X DO NOT use or store battery near heat sources such as a furnace, heater and within a vehicle during hot days.

X DO NOT use Batteries with abnormal conditions such as swollen, leaking, or deformed batteries. Contact XAG After-sales Support for further assistance.

X DO NOT use Overheated Battery exceeding 40° C, may lead to fire or an explosion.

X DO NOT disassemble, pierce or apply pressure the battery in any way, including but not limited to behaviours such as Sitting / Standing on the Battery.

Battery Level

INSTRUCTION

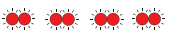
When the battery is OFF, press the power button once to display the battery level.

When the battery is ON, observe the battery level indicators to see the battery level.

Battery Level Indicator		Description
1 Green Flash		00 – 09 %
1 Solid Green		10 – 29 %
2 Solid Green		30 – 49 %
3 Solid Green		50 – 69 %
4 Solid Green		70 – 89 %
5 Solid Green		90 – 100 %

Battery Status

Battery Level Indicator		Status	Description
2 Green – Double Flash		Battery Locked (Fault)	Cell Over-discharge / Cell Failure / Temperature Failure Contact After-sales Support to Unlock
3 Green – Double Flash		Battery Locked (Remote)	Battery is locked Remotely Contact After-sales Support to Unlock
4 Green – Double Flash		Battery Locked (Anti-Dismantling)	Failed to verify Cell Contact After-sales Support to Inspect
2 / 3 Green – Alternate Flash		Overcurrent Protection	Overcurrent Protection Contact After-sales Support to Unlock
2 / 4 Green – Alternate Flash		Power Disabled	Dual-Battery Disabled Similar Battery Level on both batteries required

Battery Status Indicator		Status	Description
Red Solid		Normal	Normal
Red Quick Flash		Too HOT	Temperature is too HOT Charging / Discharging temporary Disable
Red Slow Flash		Too COLD	Temperature is too COLD Charging / Discharging temporary Disable
Red Double Flash		Anomalous	Over discharge / Cell Failure / Temperature Failure Contact After-sales Support

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 Charging

INSTRUCTION

01. Connect the Charger Plug to the Battery.
02. Power ON the device to Start Battery Charging.

The battery management system will automatically suspend the charging if the temperature is over 55° C, and resume after the temperature drops below 55° C. The ideal ambient charging temperature (20° C - 35° C) for charging helps maintain the normal service life of the battery.

The battery level indicators corresponding to the current battery level will be solid green, and the remain will be flashing in series indicating the battery is currently charging. Once the charging is completed, the buzzer will beep for 30secs and all the battery level indicators will flash for 2 minutes, then the battery will turn off automatically.

IMPORTANT

√ ENSURE there are no liquid or foreign matter on the battery terminal, wipe and clean in a timely fashion. Otherwise, it may cause poor contact, resulting in loss of power or charging failure.

√ ENSURE pure water is used for heat Dissipation.

√ ENSURE Battery & Chargers is placed on even ground with no nearby combustible materials.

√ ENSURE Batteries have a minimum of 30cm distance between the batteries and Chargers during Charging.

√ ENSURE Water level should be kept between the Minimum and Maximum Water levels to achieve the best heat dissipation effect.

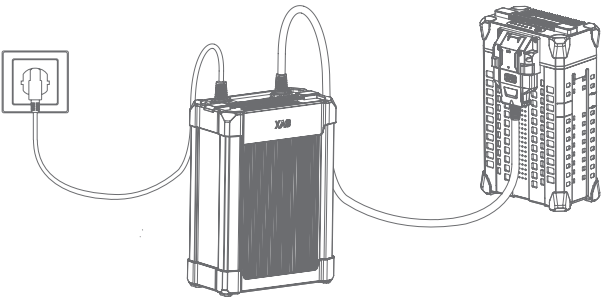
X DO NOT exceed the Max. Water level or Submerge the Battery in Water, or Battery will be damage.

X DO NOT use Corrosive liquids for heat Dissipation, or Battery will be damage.

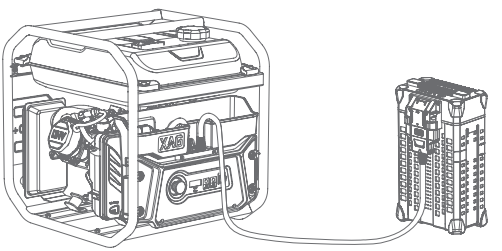
X DO NOT exceed 60 minutes for heat Dissipation, or Battery will be damage.

X DO NOT clean the charging device with alcohol or other combustible liquids.

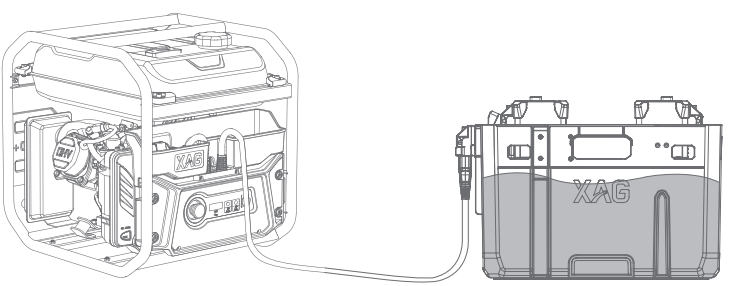
Charging with CM12500P Battery Charger



Charging with GC4000+ Auto SuperCharger Station



Charging with GC4000+ Auto SuperCharger Station with Charging Water Tank



Battery Storage

IMPORTANT

√ ENSURE the Battery is stored in a dry and ambient environment of 10° C – 30° C.

√ ENSURE the Batteries are recharge every 90 days to maintain battery health.

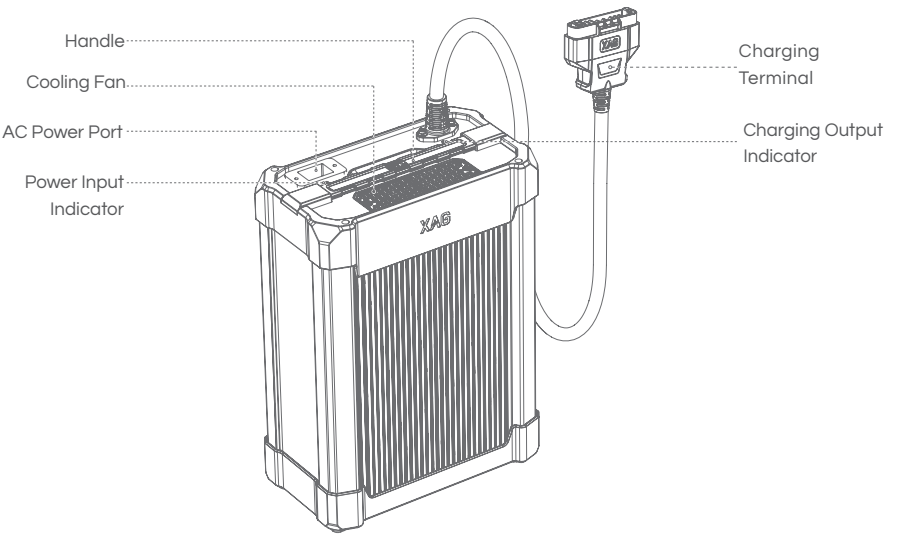
X DO NOT Store Batteries with less than 30% Power.

X DO NOT store Batteries for an extended period, otherwise it may damage the battery or impact battery life.

Battery Charger

Overview – CM12500P

Structure



Status Indicator

Power Input indicator		Status	Description
Solid Green		Normal	Normal
Flashing Green		Not Grounded	Risk Exist
Solid Red		Error	Protection Triggered – Output OFF
Flashing Red		Overheated	Protection Triggered – Output OFF

Charging Output indicator		Status	Description
Solid Green		Idle	Idle
Flashing Green		Offline	No Battery or Connection error
Solid Red		Charging	Charging

Battery Charging

INSTRUCTION

01. Connect the Power Port and AC Power source with the 15A Power cable.
02. Connect the Charger Terminal to the Battery Terminal.
03. Power ON the Battery to Start Battery charging.

The battery management system will automatically suspend the charging if the temperature is over 55° C, and resume after the temperature drops below 55° C. The ideal ambient charging temperature (20° to 35° C) for charging helps maintain the normal service life of the battery.

The battery level indicators corresponding to the current battery level will be solid green, and the remain will be flashing in series indicating the battery is currently charging. Once the charging is completed, the buzzer will beep for 30secs and all the battery level indicators will flash for 2 minutes, then the battery will turn off automatically.

IMPORTANT

√ ENSURE there are no obvious defects on the Battery or the Charger before use.

√ ENSURE there is no liquid or foreign matter on the battery terminal, wipe and clean in a timely fashion. Otherwise, it may cause poor contact, resulting in loss of power or charging failure.

√ ENSURE Battery & Chargers is placed on even ground with no nearby combustible materials.

√ ENSURE Batteries have a minimum of 30cm distance between the batteries and Chargers during Charging.

X DO NOT clean the charging device with alcohol or other combustible liquids.

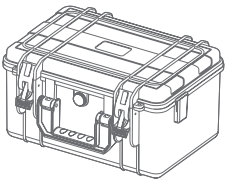
X DO NOT disconnect the AC cable or the Charging cable while the Charger is in use. Remove batteries after charging is completed.

X DO NOT use this product under direct sunlight, in rain, or in a humid environment.

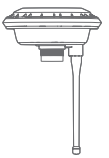
GNSS XRTK4 Mobile Station

List of Items – GNSS XRTK4 Mobile Station

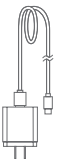
GNSS RTK Module



Toolbox
× 1



GNSS XRTK4 Module
× 1

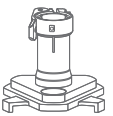


Power Supply Cable
× 1

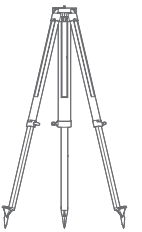
GNSS RTK Battery

B4100 Battery Extension Rod
× 1

GNSS RTK Mobile Station Package



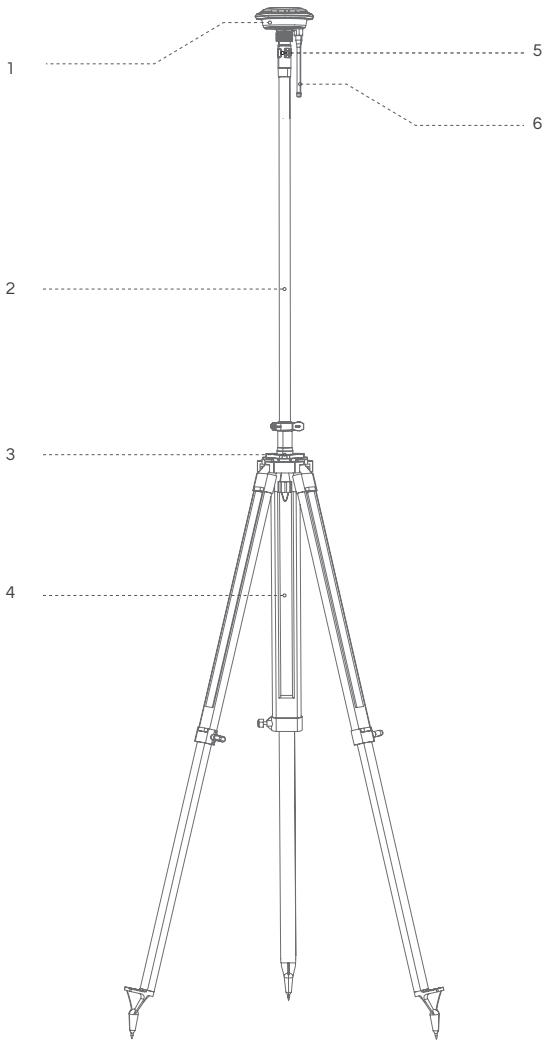
Balance Plate
× 1



Tripod
× 1

Overview – GNSS XRTK4 Mobile Station

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

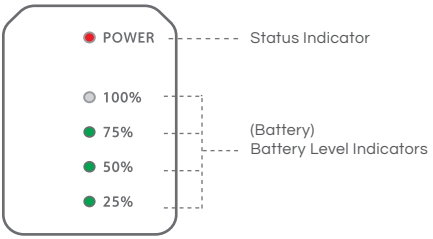


1. GNSS RTK Module
2. B4100 Battery Extension Rod
3. Balance Plate
4. Tripod
5. Battery Extension Rod Console
6. Antenna

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

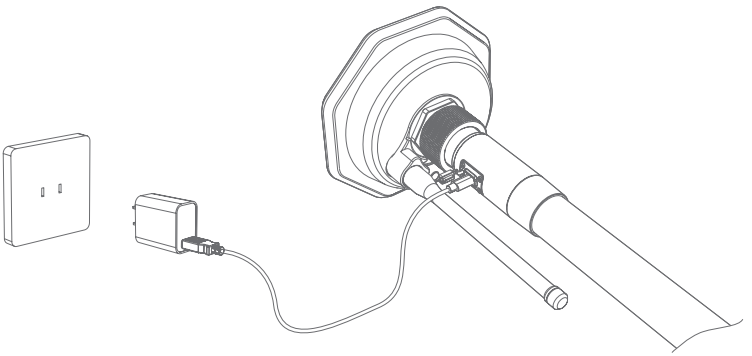
When the battery is OFF, press the power button once to display the battery level.

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.



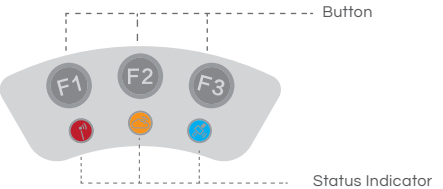
Battery Status Indicator

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	Normal
Red Quick Flash	Too HOT	Temperature is too HOT Charging / Discharging temporary Disable
Red Slow Flash	Too COLD	Temperature is too COLD Charging / Discharging temporary Disable
Red Double Flash	Anomalous	Battery Malfunction Contact After-sales Support

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

XAG One APP

XAG One APP is designed for applications of the compatible XAG Agricultural RPA. The App displays the status of the aircraft, task system (RevoCast 2, RevoSpray 2), Remote Controller, RTK Station. It enables the Users to configure various settings, planning a field, and operating the aircraft autonomous following the pre-planned flight routes and configuration, and manually with the remote controller.

Download XAG One APP

Download XAG One from XAG Australia Website or Scan the QR Code.

DOWNLOAD APK android

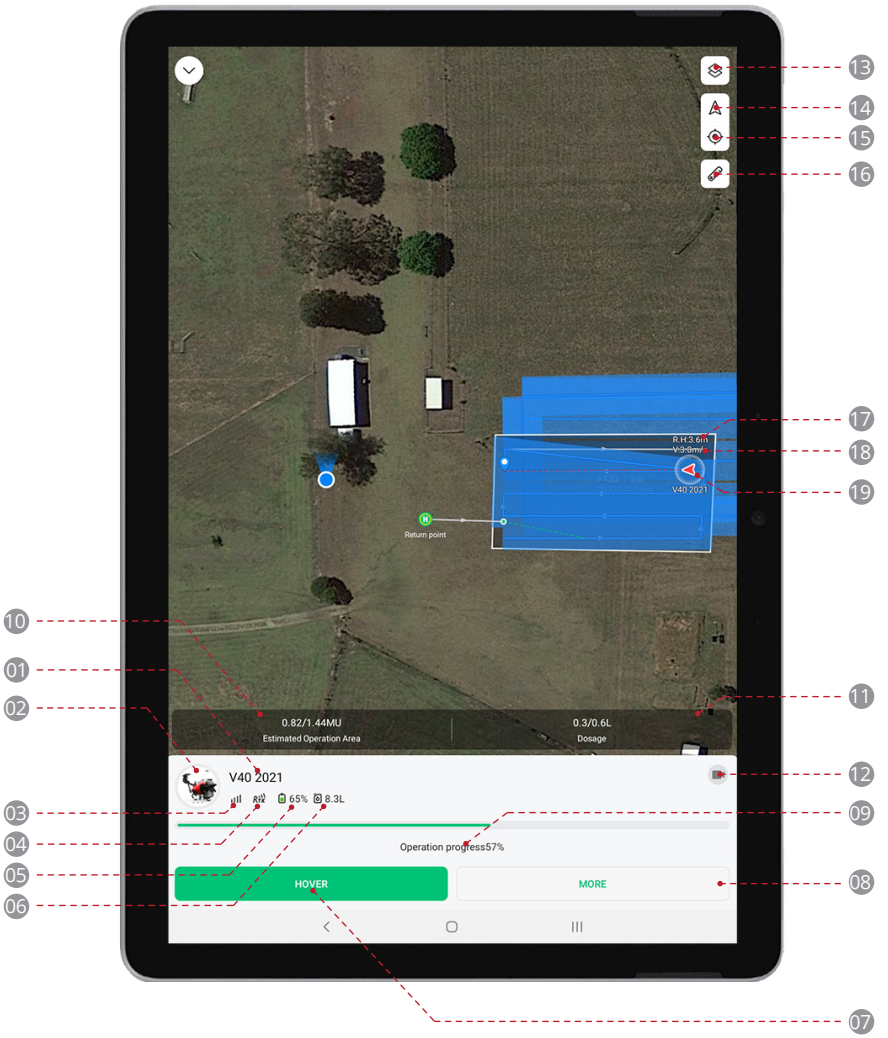
Android Version Requirements:

Android	Android 12 or later
APP Version:	V3.6.14 or later

Download on the App Store

The XAG ONE APPLE APP FOR 4G MODE ONLY.

APP – Operation View



01 Aircraft Name

Customer Name / Identification of the selected Aircraft.

02 Device Details

 : Tab this icon to open Device Details of this Aircraft.

03 Signal Strength (Cellular)

 : Shows the signal strength of the Aircraft's Cellular Network.

04 RTK

Shows the status and connectivity of the RTK.

 : Insufficient Satellites for Autonomous Operation.

 : Sufficient Satellites for Autonomous Operation.

05 Battery

Shows the remaining Battery Voltage.

06 Liquid

Shows the remaining volume of the RPA's Liquid Container.

07 Hover / Continue

Hover:	Command the RPA to Hover.
Continue:	Command the RPA to resume Task.

08 More Settings

Land:	Command RPA to force Land at its current location.
Return:	Command RPA to Return and Land.
Tap & Go:	Command RPA to move to location specified by Pilot.
Follow Terrain:	Enable / Disable Terrain following in Operation route.
Obstacle Avoidance:	Enable / Disable Obstacle Avoidance.

09 Task Status Bar

Shows the Completion rate of the Aircraft's Task.

10 Estimated Operation Area

Shows the Completed Acreage / Total Operation Acreage of the Operation Area.

11 Dosage

Shows the dispersed Dosage / Total Dosage of the Operation Area.

12 PSL Camera

Tap on this Icon to enable First-Person View .

13  Map

Satellite:	Map data based on Satellites Image.
HD Map:	Map data based on previous surveyed and processed data.
Field:	Field data based on previous planned field.

14 Position (Aircraft)

Tap to centre the map around the selected Aircraft.

15 Position (Smart Device)

Tap to centre the map around the Smart Device.

16 Ruler

Tap to expand the menu for the measurement tool.

17 Height

Shows the altitude of the Aircraft in relation to the ground.

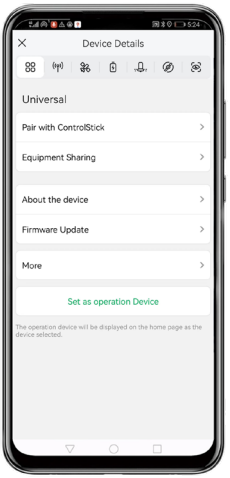
18 Speed

Shows the movement speed of the selected Aircraft.

19 Location (Aircraft)

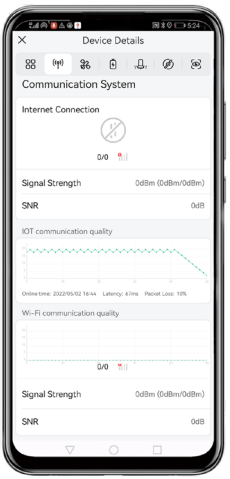
Shows the approximate location of the Aircraft.

APP – Aircraft Module



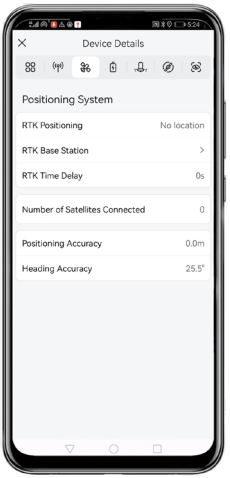
Universal

This interface includes basic information and options of the selected Aircraft. From this interface, User will be able to Pair with Remote Controller for Manual Control, Share Equipment with Team Members or Lease to other pilots, Edit the Unique name for the Aircraft, Update Module firmware, and remove device from this account.



Communication

This interface displays the basic information about the Aircraft's data link status, the options to diagnose the network health, and the manual adjustment of the Carrier Settings. Carrier Settings are reserved for professional adjustment to achieve best communication latency.



Positioning System

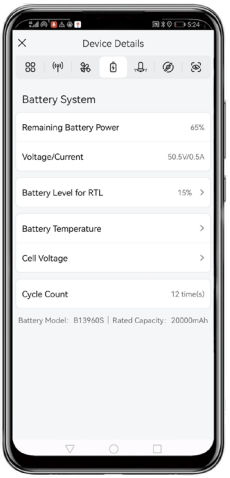
This interface display information about the Aircraft's positioning system, the accuracy, and the settings for the aircraft to connect to the GNSS RTK Station.

Before Flight operation, it is recommended to ensure

√ Number of Satellites > 16

√ RTK Time Delay < 10 seconds

√ Aircraft is connected to an RTK Base Station



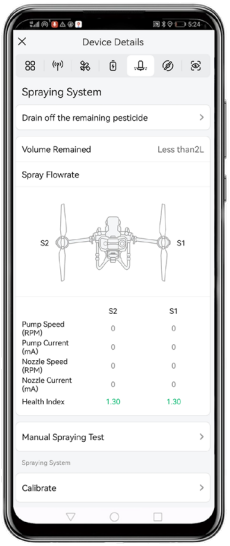
Battery

This interface contains information related to the battery on the aircraft, battery model, battery cycle, remaining power are all displayed on this page. It also contains the Return-to-Land (RTL) settings which pilot can pre-set when the aircraft will return upon battery reaching the set percentage.

Before Flight operation, it is recommended to ensure

√ Remaining Battery > 30%

√ Sufficient Battery for your Task / Flight



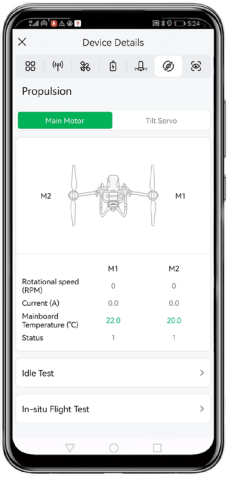
Task System

This Icons, and the related information and available options are depended on the attached Task System.

RealTerra

RevoSpray

RevoCast

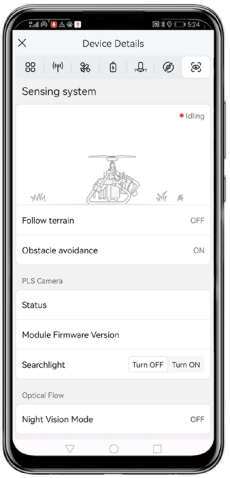


Propulsion

This Interface displays the information about Propulsion System and the options for pilot to conduct Calibration, Ground & Flight test to ensure all the motors are operating correctly.

Before Flight operation, it is recommended to ensure

Idle Test:	Ground Test for Motor
In-Situ Flight Test:	Testing via Aircraft Taking-off & Landing
Servo Calibration:	Balancing the Servo



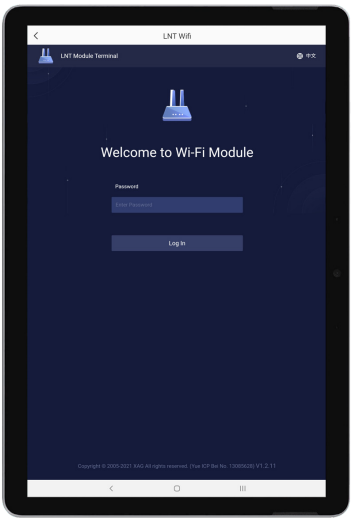
Sensor

This interface displays the information and current settings of the sensor module available on the Aircraft, primarily with Terrain Radar, Obstacle Avoidance and PSL Camera. This interface would also allow the pilot to Turn ON/OFF the searchlight for low visibility conditions.

Preparing the Equipment

Device Binding / Add Device

Device & Network Setup – LNT



01. Power ON the Local Network Terminal (LNT).

Notes

Device initialization may take up to 5 minutes, the initialization is completed approximately 2 minutes after the System Indicator (4th indicator) stops flashing and is Solid Green, indicating the LNT is ready to be used.

02. Select and Connect to the Local Network Terminal via Wi-Fi.

Default LNT Wi-Fi Network: XAG-XXXX

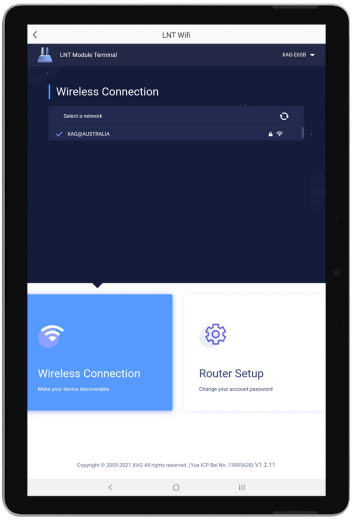
Default LNT Wi-Fi Password: 20070401

03. Open the Browser on your Smart Device and input the following Web Address:

http://www.iotlogin.com

04. Enter the password and login to the Module to edit Settings.

Default LNT Admin Password: 20070401



05. Tab on Wireless Connection for Settings to connect an External Wi-Fi to provide internet connectivity for the LNT (For Example: Office Wi-Fi or StarLink). If the connection is successful and internet connectivity is available, the WAN indicators will be Solid Green.

Notes

The connection Status of the External Wi-Fi is indicated by the WAN Indicators (3rd Indicator)

Solid Green		Successful Connection with Internet Connectivity
Flashing Yellow		Network Configuring
OFF		Unsuccessful Connection

Alternatively, the User may also select the corresponding Options for additional settings

Hotspot — Settings for Hotspot to share the LNT's Wi-Fi or Internet data connection with nearby XAG devices. Connections can be shared with up to XX devices.

Notes

Default LNT Wi-Fi Network: XAG-XXXX

("XXXX" is the last 4 digit of the MAC Address on the top of the LNT)

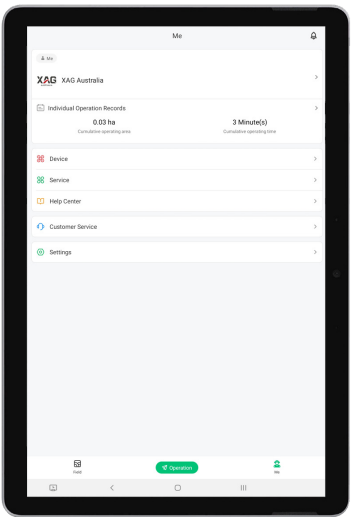
Default LNT Password: 20070401

Router Setup — Administrator Settings for Local Network Terminal

IMPORTANT

Before using the device for the first time, please ensure the LNT had successfully connected to an external Wi-Fi. Otherwise, user may not be able to login.

Device Binding – RTK Mobile Station



PREREQUISITE

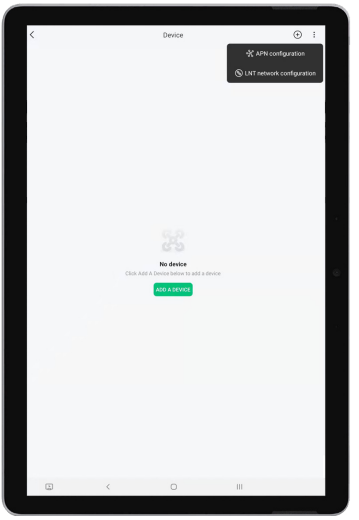
√ LNT (Local Network Terminal) Wi-Fi Network had been setup

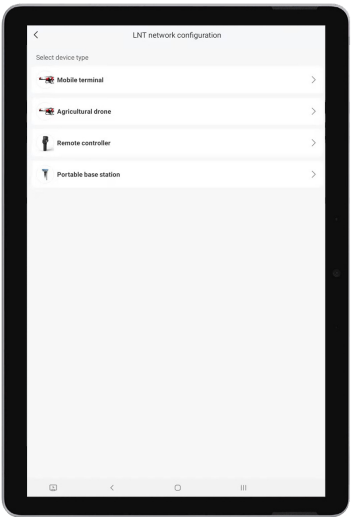
√ LNT (Local Network Terminal) Wi-Fi Network is Connected before Opening APP

IMPORTANT

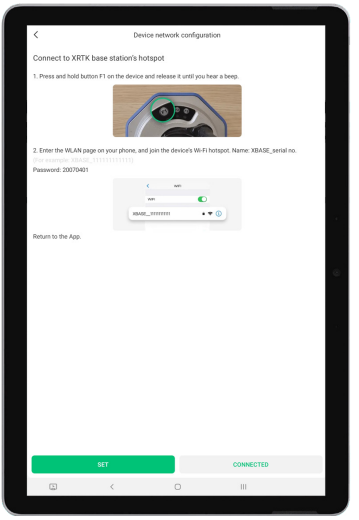
LNT (Local Network Terminal) must be connected to an external & internet available network indicated by the WAN indicator on the LNT. Device Binding can only be achieved once all the Indicators on LNT is ON.

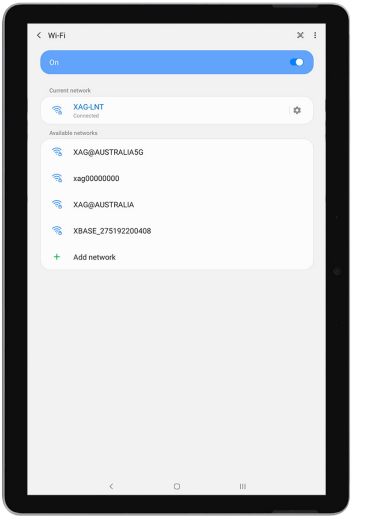
01. Turn ON the RTK Module & Open XAG One APP.
02. Tap on “Me” to access Account Menu.
03. Tap on “Device”.





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.

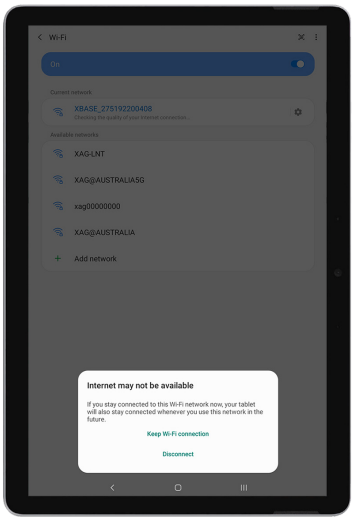


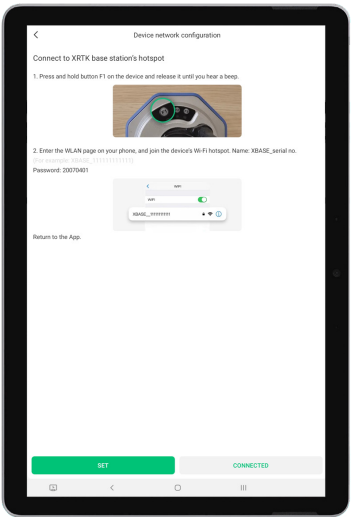


07. Tap on "Settings" to bring up the Available Wi-Fi List.
08. Select the corresponding RTK Module Wi-Fi

    Default Module Wi-Fi Network: XBASE_XXXXXXXXXXX

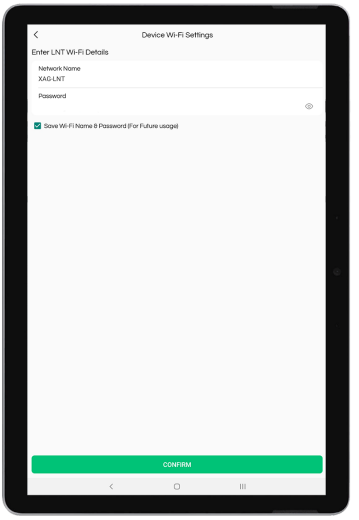
    Default Module Password: 20070401





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

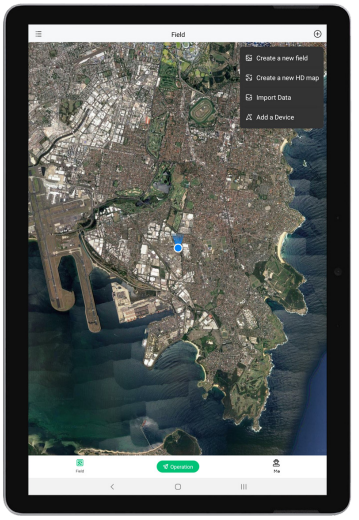
IMPORTANT

The device binding of RTK may take a few seconds, the F2 Status Indicator on the RTK module Console will flash three times when the binding is successful.

Else, the Device binding is unsuccessful, and the user will need to restart the binding process.

⚠ Warning

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

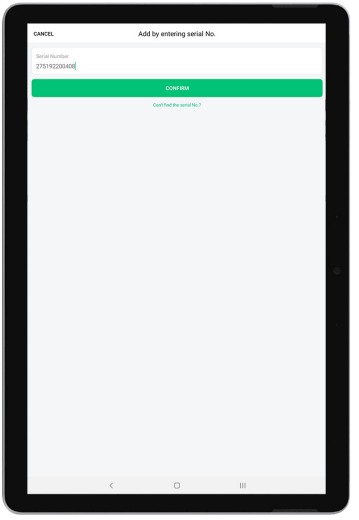


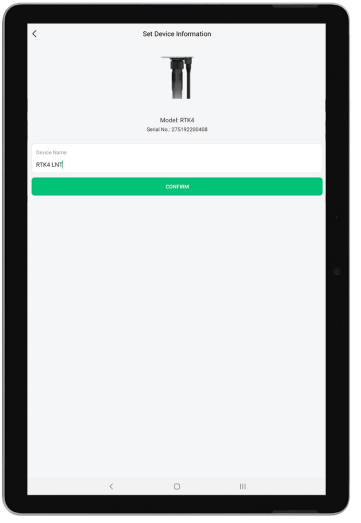
CHECK

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".

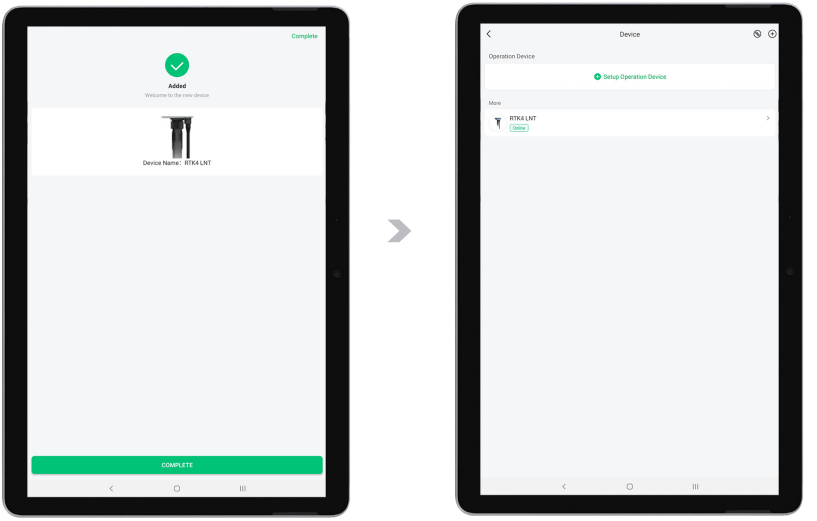
13. Press and hold F3 on the RTK Module Console for at least 3 seconds and release after hearing a beep. All the Status Indicator will flashes indicating that the RTK Module is ready to be added.





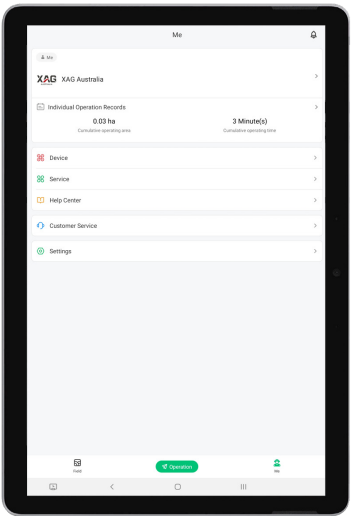
14. Add the Device by Entering the Device S/N Manually or Scanning the QR Code on the Device.

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.

Device Binding – Remote Controller



PREREQUISITE

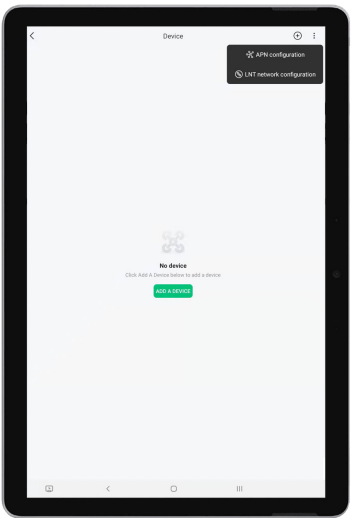
√ LNT (Local Network Terminal) Wi-Fi Network had been setup.

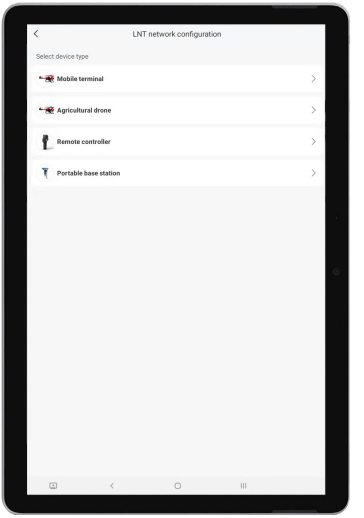
√ LNT (Local Network Terminal) Wi-Fi Network is Connected before Opening APP.

IMPORTANT

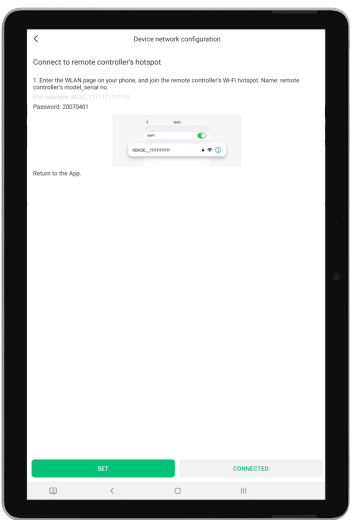
LNT (Local Network Terminal) must be connected to an external & internet available network indicated by the WAN indicator on the LNT. Device Binding can only be achieved once all the Indicators on LNT is ON.

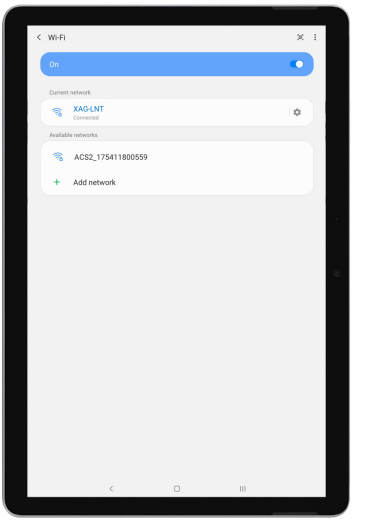
01. Turn ON the Remote Controller & Open XAG One APP.
02. Tap on “Me” to access Account Menu.
03. Tap on “Device”.





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

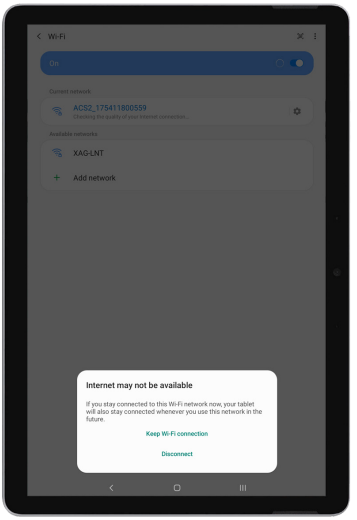


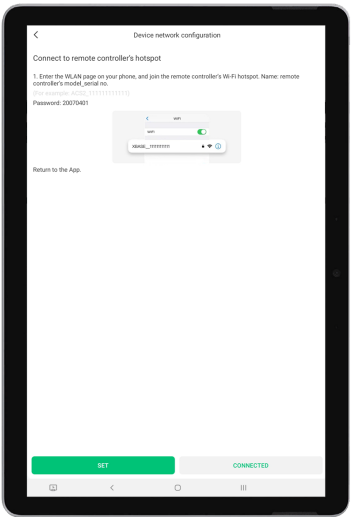


06. Tap on "Settings" to bring up the Available Wi-Fi List.
07. Select the corresponding ACS2 Wi-Fi.

    Default ACS2G Wi-Fi Network: ACS2_XXXXXXXXXXX

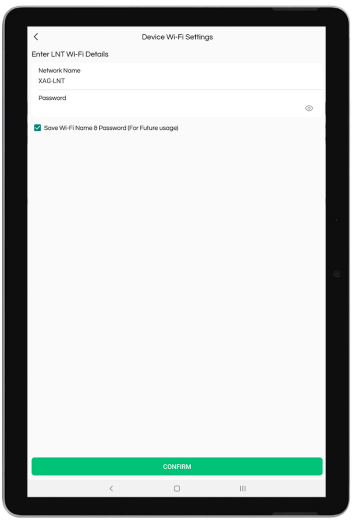
    Default ACS2G Password: 20070401





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

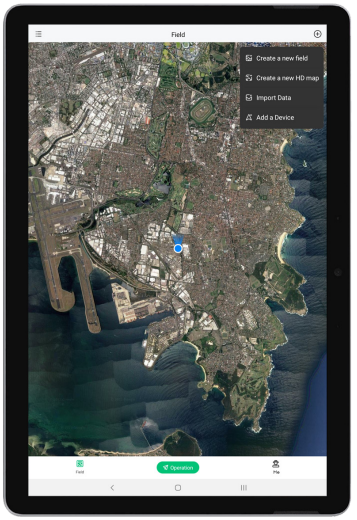
IMPORTANT

The device binding of ACS2G may take a few seconds, the Terminal Status Indicator on the ACS2G Remote Controller will become solid Green when the binding is successful.

Else, the Device binding is unsuccessful, and the user will need to restart the binding process.

⚠ Warning

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

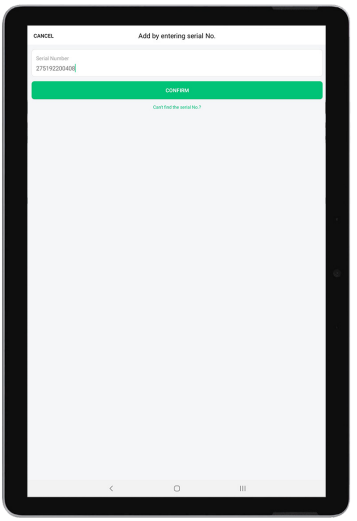


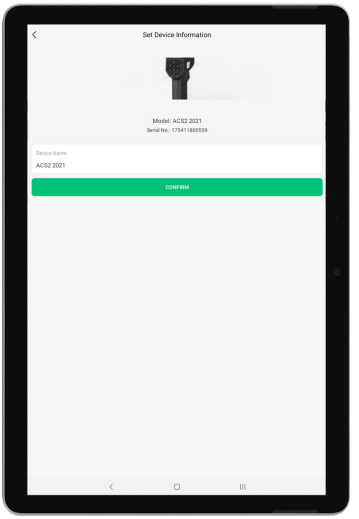
CHECK

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.

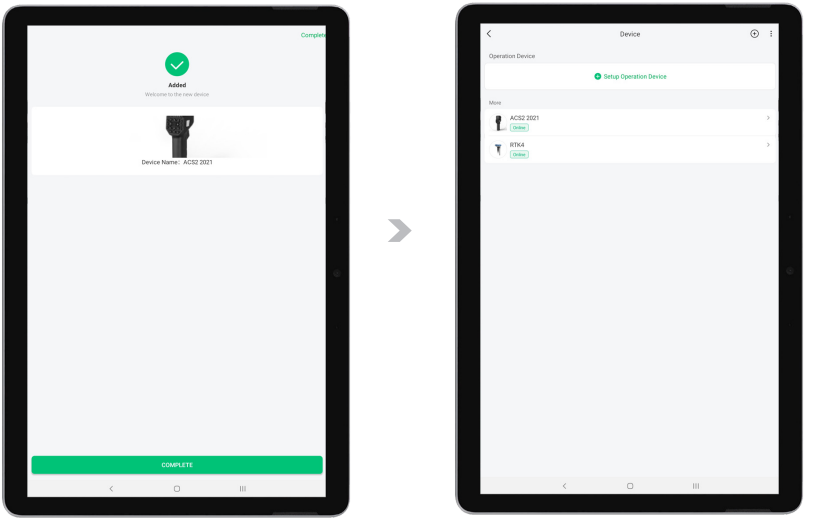
11. Return to the Main Page of the APP, Tap on the " ⊕ " and select "Add a Device".

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.



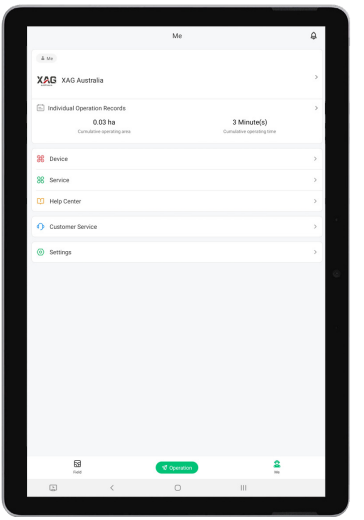


13. Add the Device by Scanning the QR Code on the Device or Enter the Device S/N Manually.
14. Rename the Remote Controller, and Tap "Complete" to Save.



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.

Device Binding – Aircraft



PREREQUISITE

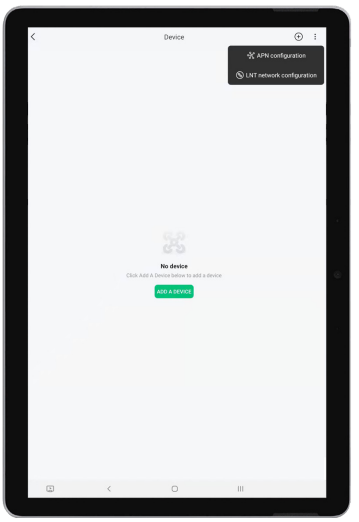
√ LNT (Local Network Terminal) Wi-Fi Network had been setup.

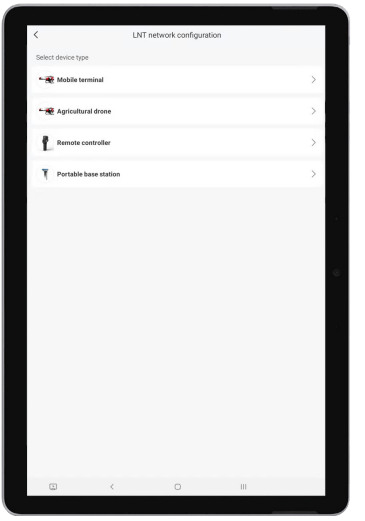
√ LNT (Local Network Terminal) Wi-Fi Network is Connected before logging into / Open APP.

IMPORTANT

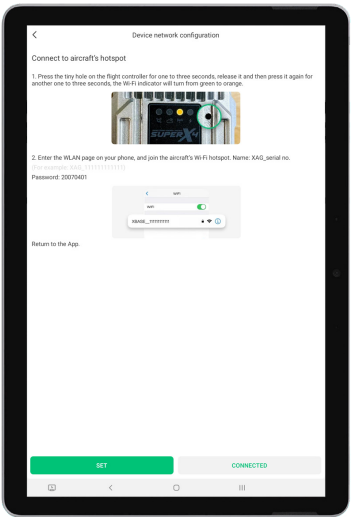
LNT (Local Network Terminal) must be connected to an external & internet available network indicated by the WAN indicator on the LNT. Device Binding can only be achieved once all the Indicators on LNT are ON.

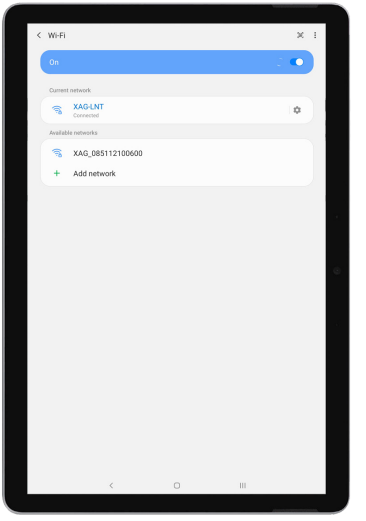
01. Turn ON the Aircraft & Open XAG One APP.
02. Tap on “Me” to access Account Menu.
03. Tap on “Device”.





04. Tap on " ⋮ " for more options, then Tap on " ⊘ " for Device Binding.
05. Tap on "Agricultural Drone" to start Binding.

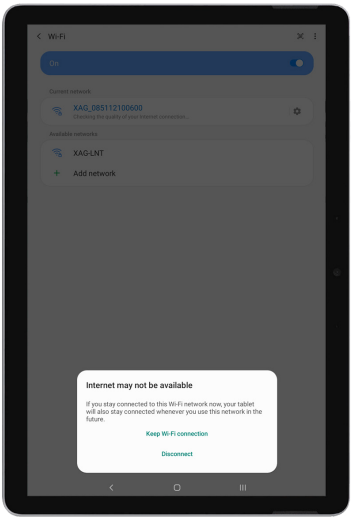


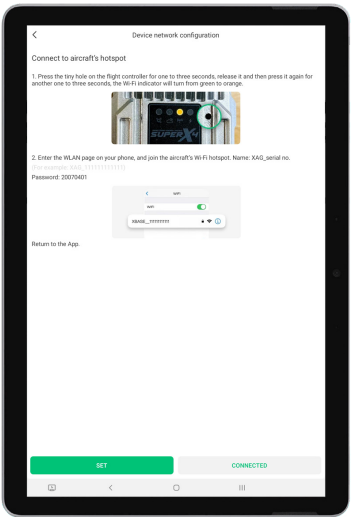


06. Locate the pinhole on the SuperX4 Flight Controller, use a pin to press & hold the pinhole for 2 seconds, then release it. Repeat the press & hold once more for 2 seconds, then release it again. The Wireless Communication indicator (3rd Indicator) will start flashing orange indicating the Aircraft is ready for binding.
07. Tap on "Settings" to bring up the Available Wi-Fi List.
08. Select the corresponding Aircraft Wi-Fi.

    Default Aircraft Wi-Fi Network: XAG_XXXXXXXXXXX (Aircraft S/N)

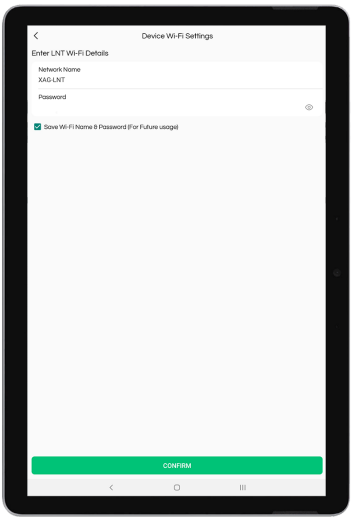
    Default Aircraft Password: 20070401





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

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:

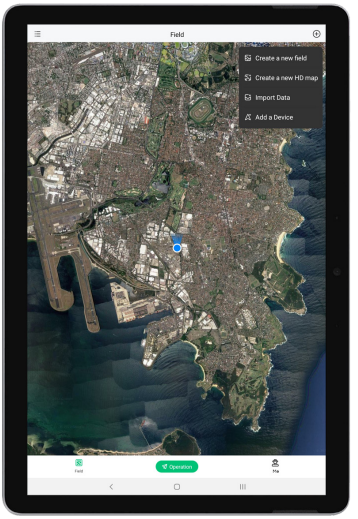
    XAG-XXXX

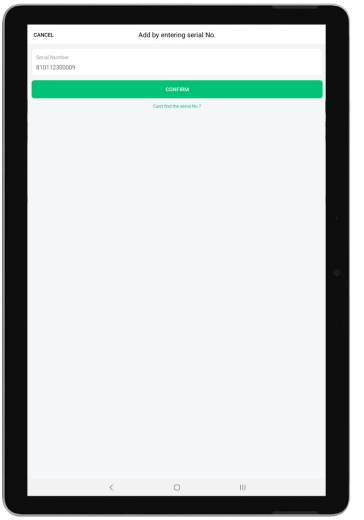
    Default LNT Password:

    20070401

⚠ Warning

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



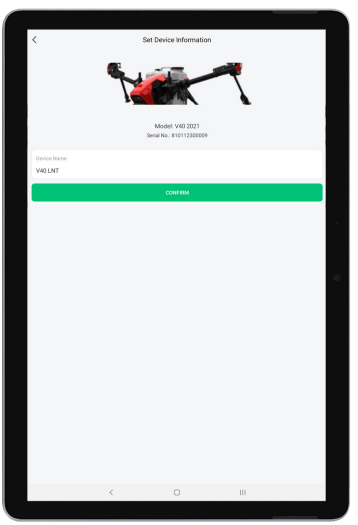


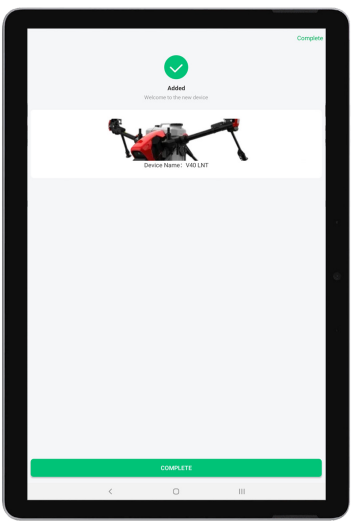
CHECK

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.

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

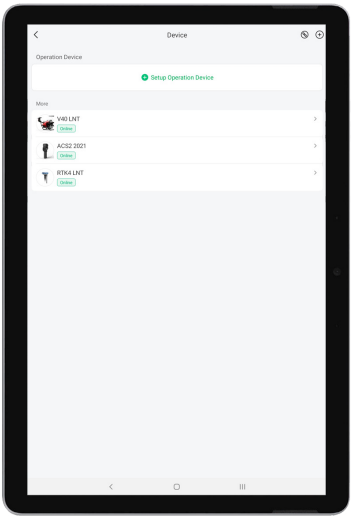
13. Add the Device by Scanning the QR Code on the Device or Enter the Device S/N Manually..





14. Rename the Aircraft, and Tap "Confirm" to Save.

15. If the APP display " ✓ ", the Device has been added successfully.

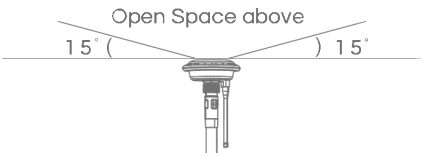


16. Return to the Device menu and check if the Device is displayed in your list of Devices.
17. Please restart the APP once the binding is completed.

Preparing the GNSS XRTK4 Mobile Station

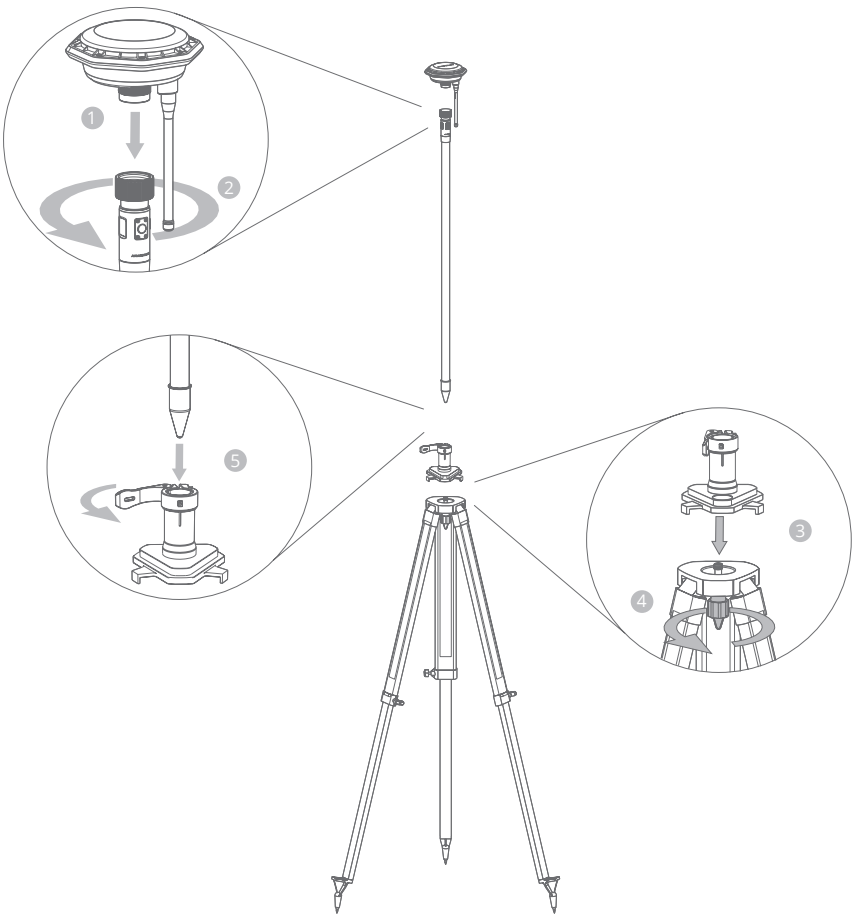
Station Location selection

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.

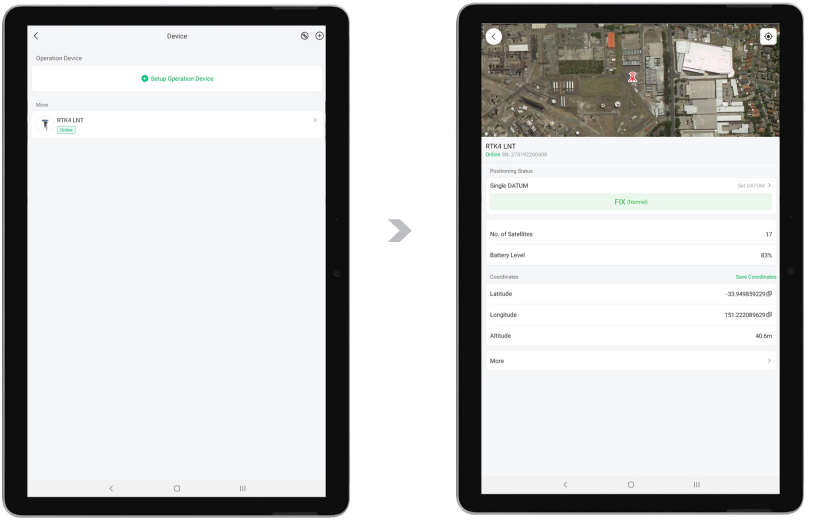
DATUM SETUP

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.



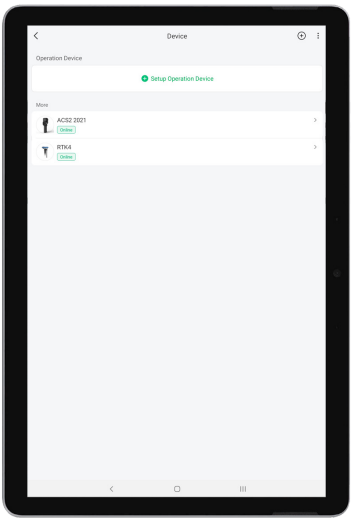
CHECK

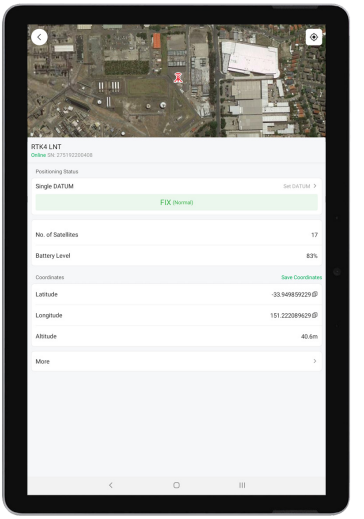
√ Check & Ensure the Positioning Status of the RTK Module Console is in FIX Mode (Triple Flashes).
√ Check & Ensure the Positioning Status on the APP is now displaying as FIX (Normal).

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.

Preparing the ACS2G Remote Controller





PREREQUISITE

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

√ Device binding of XRTK4 Mobile Station had been setup

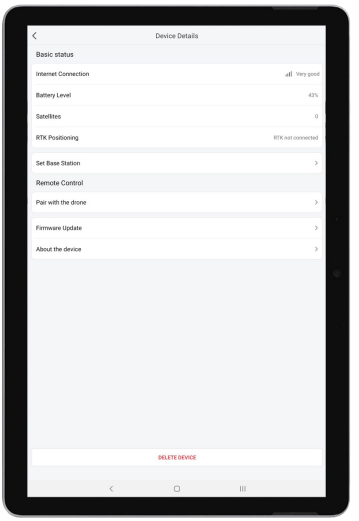
√ ACS2 RTK Module had been attached

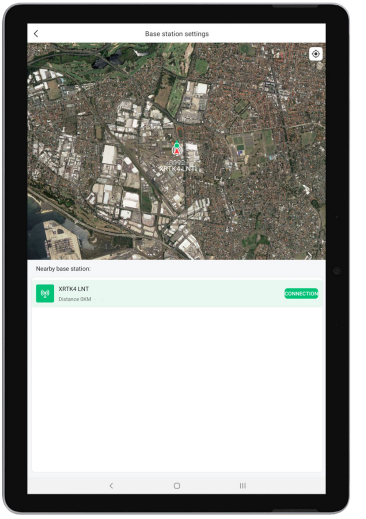
01. Power ON GNSS RTK Mobile Station and ACS2G Remote Controller.
02. Tap on “Me” to access Account Menu.
03. Tap on “Device” and wait for the Remote Controller & Mobile Station is Online.

IMPORTANT

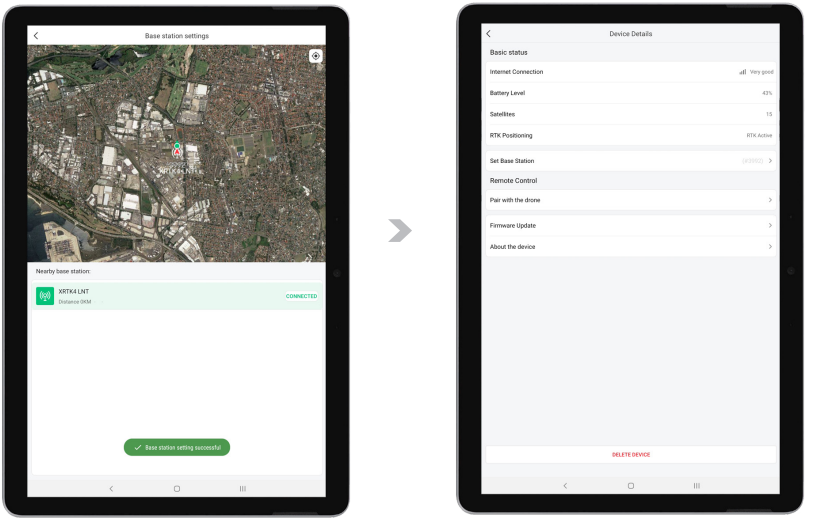
Please be patient, the devices may take up to several minutes before coming ONLINE.

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”.

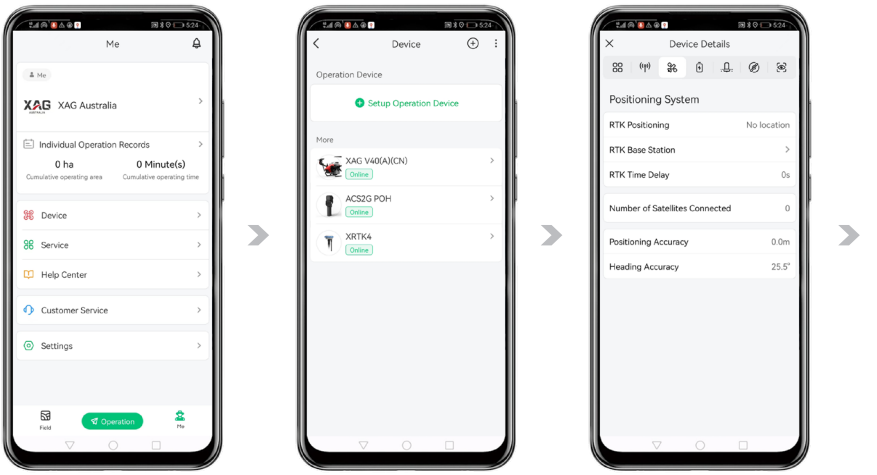


09. If the Remote Controller is successfully connected to the Mobile Station, a notification will be displayed.

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.

Pairing Aircraft with GNSS XRTK4 Mobile Station



1 2 3

PREREQUISITE

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

√ Device binding of GNSS XRTK4 Mobile Station had been set up & Connected

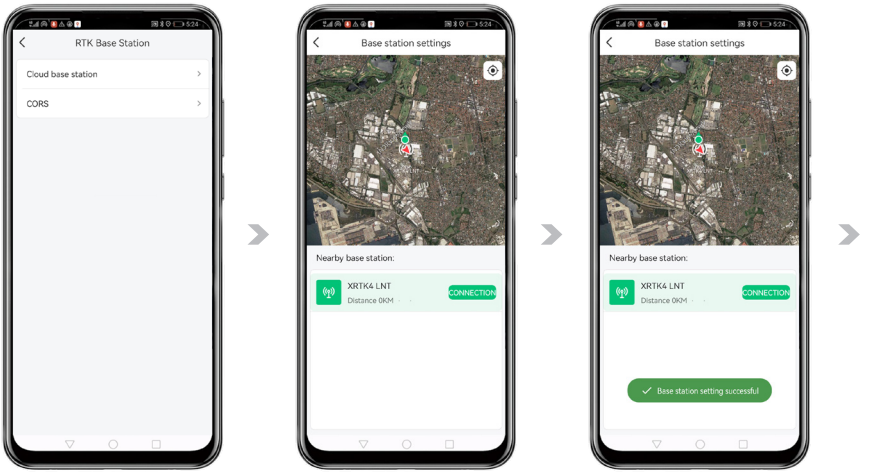
√ Device binding of Aircraft had been set up & Connected

√ Devices are ON and displaying as Online in Device Menu

01. On Accounts Menu, tap on “Device” to access the Device Menu.

02. Then tap on the corresponding Aircraft for Device Detail.

03. Tap on the “ ” for Positioning System, then taps on “RTK Base Station”.



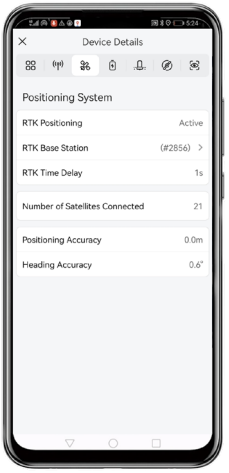
4 5 6

04. Select & Tap on the “Cloud base station” to bring up the list of nearby available stations.
05. The APP will automatically search for the available & nearby GNSS RTK Station, select the corresponding Station from the list and tap “CONNECTION” to connect

⚠ Warning

APP searches for nearby station based on the positioning of the Aircraft. If the Aircraft is placed indoor or area where it can’t be positioned, the APP may not be able to search for Nearby Station.

06. When the Connection is successful, it will display “Base Station setting successful”.

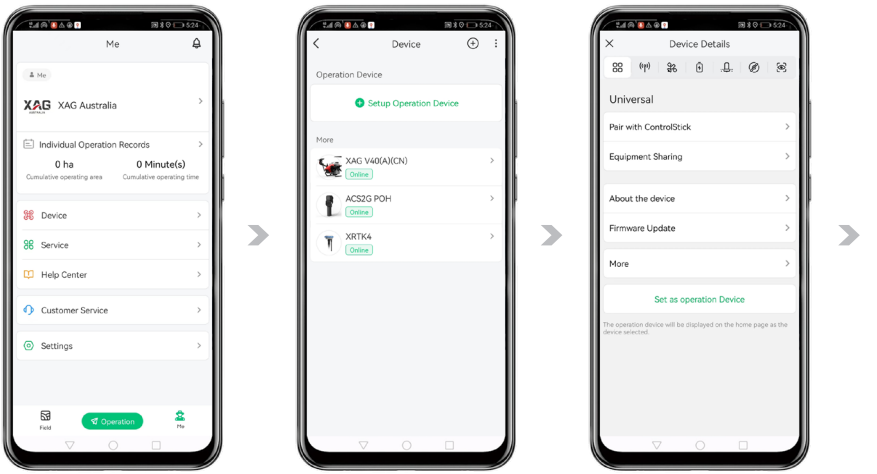


7

07. Return to the Device Detail and confirm:

- RTK Positioning is now Active
- RTK Base Station is now displaying Station ID (Similar to #XXXX)
- Number of Satellites Connected > 16
- Heading Accuracy < 2°

Pairing Aircraft with ACS2G Remote Controller



1 2 3

PREREQUISITE

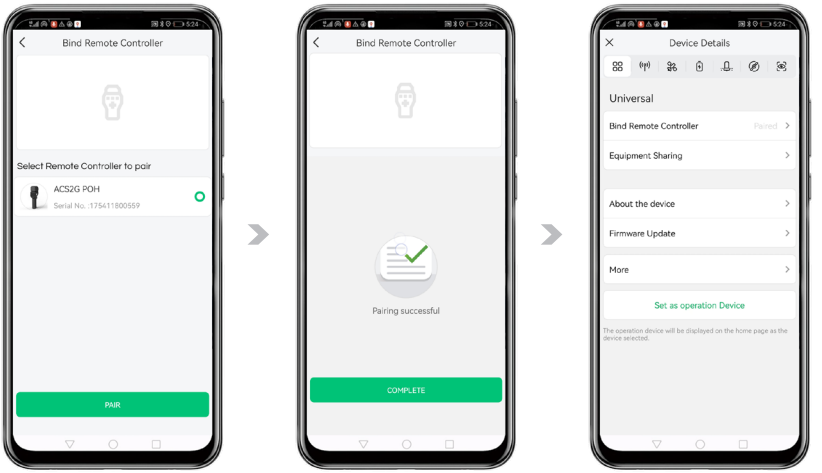
√ LNT (Local Network Terminal) Wi-Fi Network had been set up & Connected

√ Device binding of ACS2G Remote Controller had been set up & Connected

√ Device binding of Aircraft had been set up & Connected

√ Devices are ON and displaying as Online in Device Menu

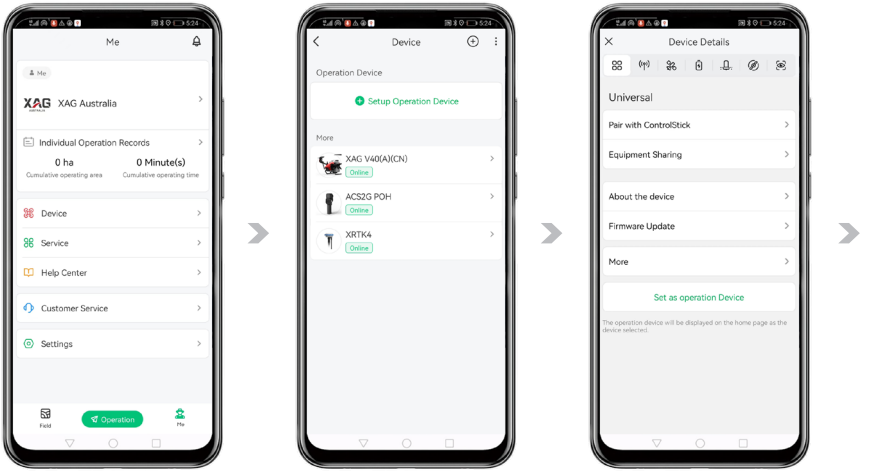
01. On Accounts Menu, tap on “Device” to access the Device Menu.
02. Then tap on the corresponding Aircraft for Device Detail.
03. On the “Universal” Information Tab, Tap on “Pair with ControlStick”.



4 5 6

04. Select the corresponding Remote Controller, and then tap on “Pair” for Pairing.
05. When the Pairing is completed, it will display “Pairing Successful”.
06. Return to the Device Menu and check the status of Bind Remote Controller is now “Paired”.

Set as operation Device



1 2 3

PREREQUISITE

Aircraft are required to be set as operation devices before they can be used for Aerial Survey, Spraying, or Spreading.

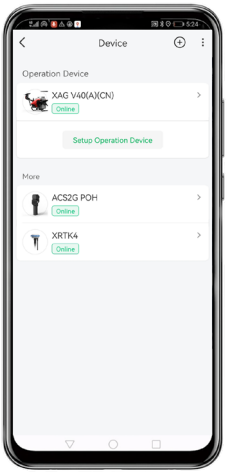
√ LNT (Local Network Terminal) Wi-Fi Network had been set up & Connected

√ Device binding of GNSS XRTK4 Mobile Station had been set up & Connected

√ Device binding of Aircraft had been set up & Connected

√ Devices are ON and displaying as Online in Device Menu

01. On Accounts Menu, tap on “Device” to access the Device Menu.
02. Then tap on the corresponding Aircraft for Device Detail.
03. On the “Universal” Information Tab, tap on “Set as Operation Device”.



4

04. The corresponding aircraft is now set as an operation device and is available for operation.

Notes

Maximum of 2 Aircraft can be set and used for operation simultaneously.

Field Planning

XAG One APP supports multiple methods in Field Planning.

Create a new field

Import Data

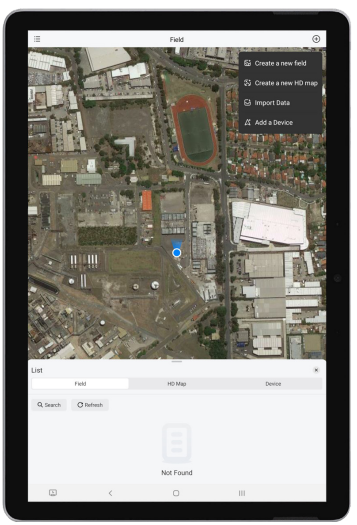
This Section will provide step by step instructions on how to Import a Field/ HD Map and create a new field for Aerial Survey & Aerial Operations

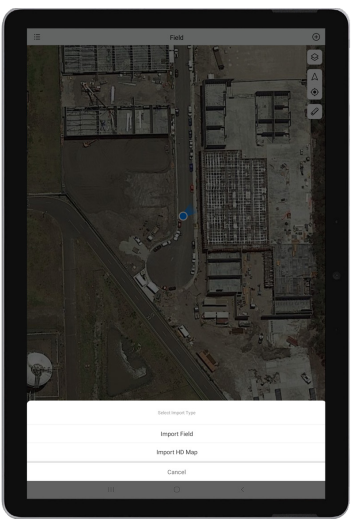
Import Field / HD Map

This section is primarily for previous XAG Pilots to access Fields that had been previously planned and Maps that XAG's related survey equipment had surveyed.

Notes

Imported Data may only be available on the specific Smart Device that had imported the data.





PREREQUISITE

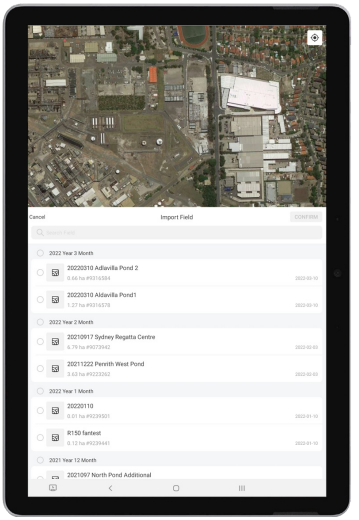
√ Internet Access to Cloud for Data Retrieval.

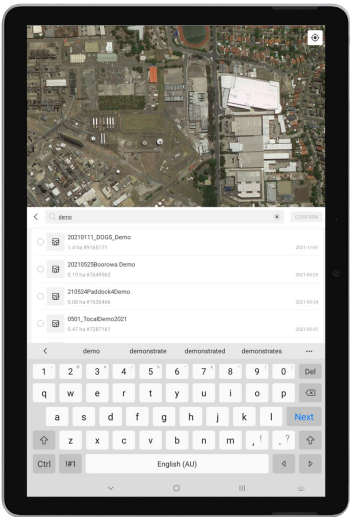
√ Using the same XAG Account.

01. Open XAG One APP.

02. Tap on " ⊕ " to expand the Options menu, then Tap on " " Import Data.

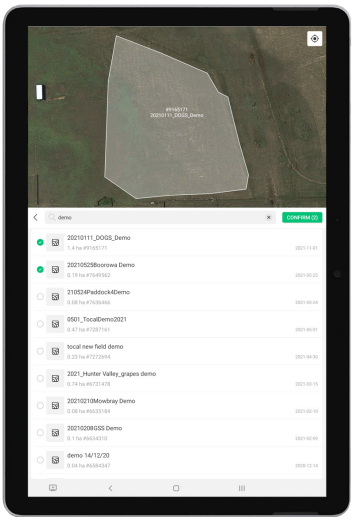
03. Select to Import Field or HD Map (This Manual will be using Importing Field as an example).

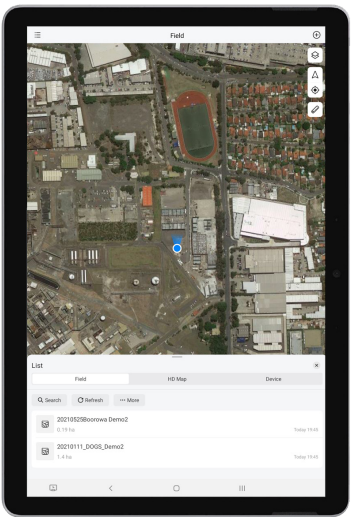




04. Previous records of Field that is available for import will be displayed.

05. Alternatively, the user may choose to search for the fields as well.





06. Select 1 or Several fields, then confirm to start importing the field to this Smart Device.

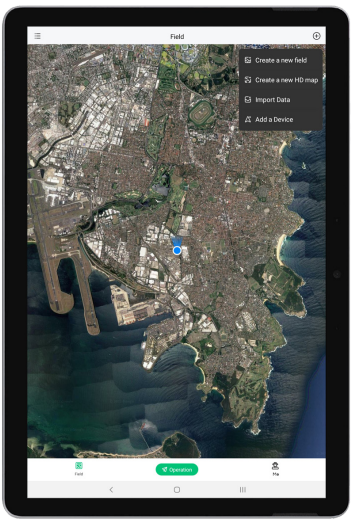
07. After the field is imported, please refresh the List and find the imported field is now available.

Create a new field

IMPORTANT

Maximum acreage for each field is 333.33 ha.

Planning via Satellite / HD Map

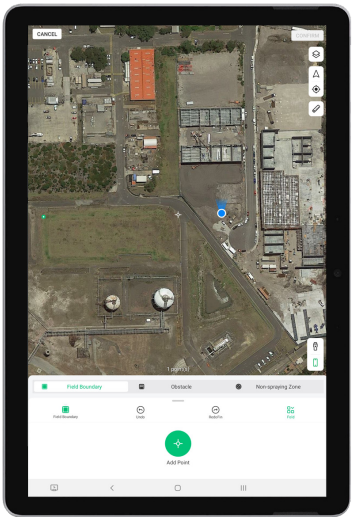


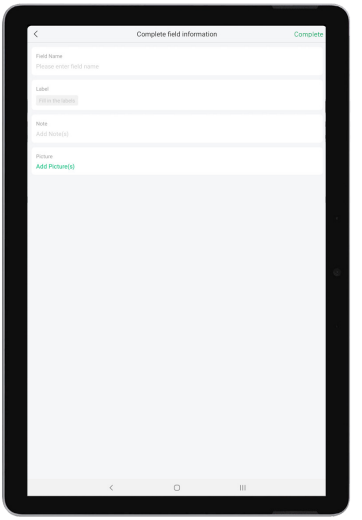
Notes

This planning option is only suited for experienced pilots familiar with the field or pilots who have surveyed the area for an HD Map. Satellite map accuracy varies and is not recommended for a new or inexperienced pilot unfamiliar with the field or the Aircraft. The pilot should be cautious with the possible deviation between the satellite map and the RTK Position based aircraft.

01. Open XAG One APP.

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





03. Then, tap on" " to position the map to your current location.

    Or

    Drag & Scroll through the map and find the desired location.

04. Field Boundary, Obstacles and Restricted Zone can be added via the APP directly

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
Restricted Zone	Restricted Zone are individual points that form an area that the RPA may fly over but will be restricted from application

05. Tap on one of these " ", " ", " " to expand the menu for alternate options.

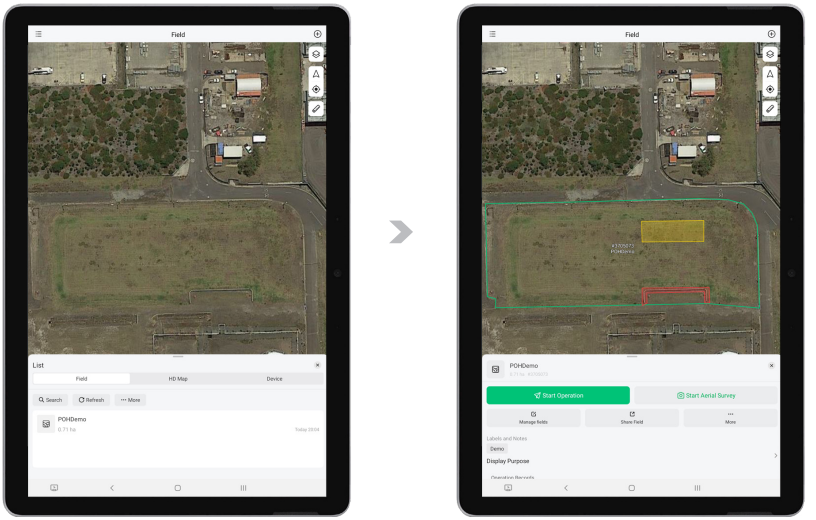
06. Tap on the desired location on the map to Add points;

07. Alternatively, the User can use the crosshair to add boundary, obstacles, and Restricted Zone.

Adding Point via APP:	Press " " on APP
Removing Point via APP:	Press " " on APP

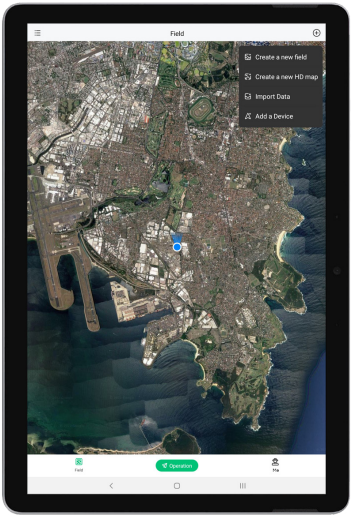
08. Review the Map and the points added, then Tap "Confirm".

09. Enter & Insert Field Information, then Tap "Complete" to Save.



10. The field has now been created.
11. Tap on " ☰ " to review the List of Field / HD Map / Device. The field is now available for Route Planning.

Planning via Rover Mode



PREREQUISITE

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

√ Device binding of XRTK4 Mobile Station had been setup & Connected

√ Device binding of ACS2G Remote Controller had been set up & Connected

√ Devices are ON and displaying as Online in Device Menu

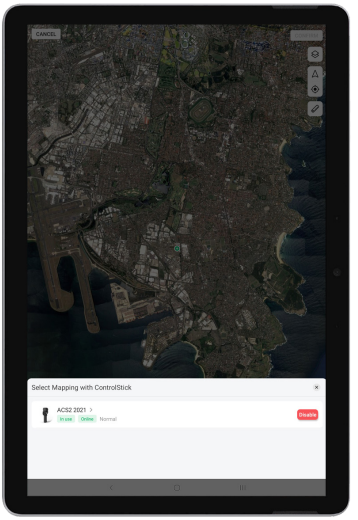
√ ACS2 RTK Module had been attached & Online

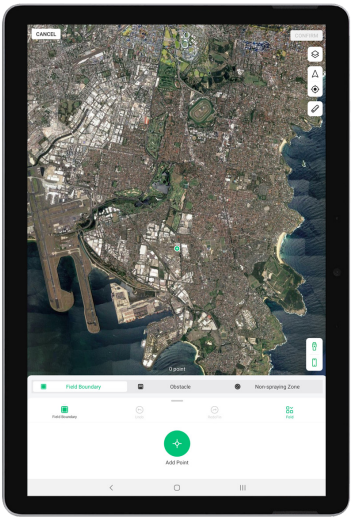
√ ACS2G & XRTK Mobile Station Number of Satellites Connected > 16

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

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

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



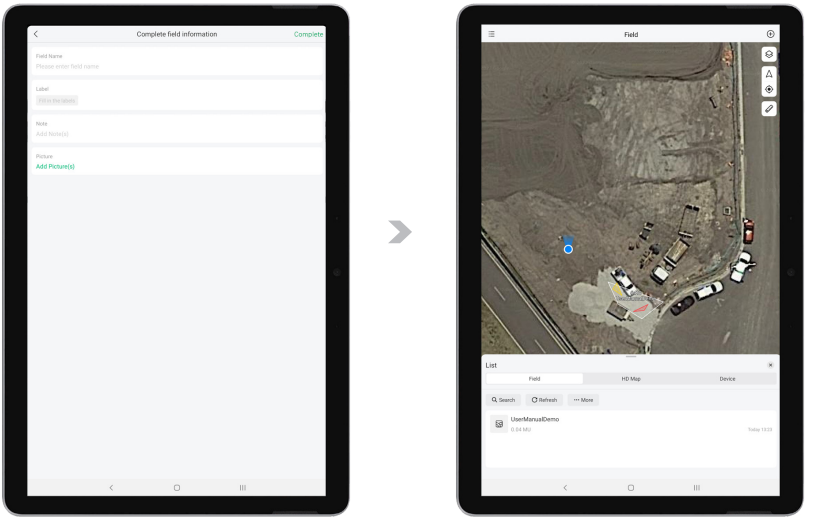


04. With ACS2 RTK Module attached, long press " " on the remote controller to enable Mapping Mode.

05. 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 Restricted 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.
Restricted Zone	Restricted Zone are individual points that form an area that the RPA may fly over but will be restricted from application.

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

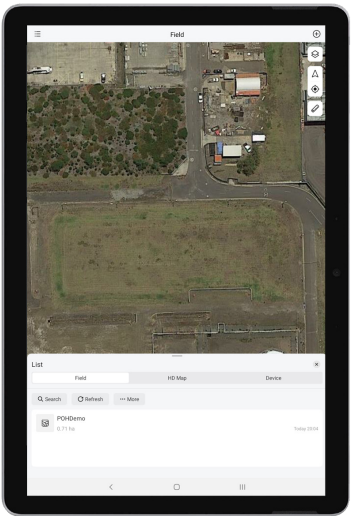


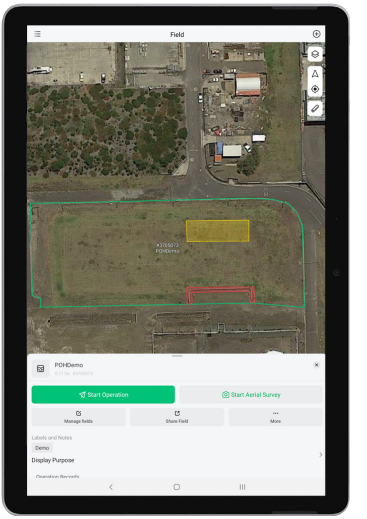
07. Enter & Insert Field Information, then Tap “Complete” to Save.

08. The field has now been created.

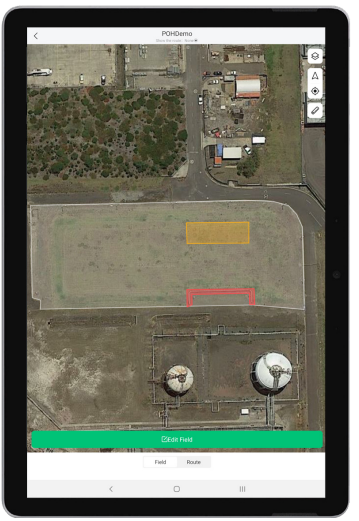
09. Tap on “ ☰ ” to review the List of Field / HD Map / Device, the field is now available for Route Planning.

Manage Fields





01. Open XAG One APP, and tap on the " " for the Listing.
02. Within the List of Fields, find and tap on the corresponding fields for additional options.
03. Additional options include Aerial Flight, Aerial Survey, Manage fields, Share Field and more...
04. Proceed to "Manage Fields" to edit or pre-plan the fields.



05. At the bottom of the screen, there are two available options.

Field:	Modify field information
Route:	Route Pre-Planning with Basic Flight Parameters

Edit Fields

Select "  " Edit Field, and then Tap on one of the Boundary Icons to switch options between Field Boundary, Obstacles, or Restricted Zone. Points are highlighted in respect of their Boundary Type colours. Users have the options to Add, Move, or Delete the points to edit the field in preparation for the Aerial Flight.

Field Boundary

Add Points:	Tap anywhere between the segments to add Points
Move Points:	Drag the points to the appropriate location
Delete Points:	Tap on the points, then select "Delete Point"

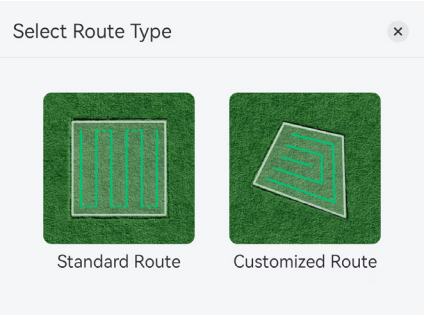
Obstacle

Add Points:	Tap once between the segments and drag the "  " to add Points
Move Points:	Drag the points to the appropriate location
Delete Points:	Tap on the points, then select "Delete Point"

Restricted Zone

Add Points:	Tap once between the segments and drag the "  " to add Points
Move Points:	Drag the points to the appropriate location
Delete Points:	Tap on the points, then select "Delete Point"

Route Pre-Planning



Route Type

 Standard Route:	Zig-Zag Route based on the planned field Boundary.
 Custom Route:	Custom Route based on the points that the user had added.

Parameters

Route Direction	The Direction of each Flight Route
Route Spacing	The Spacing Distance between each Flight Route
Boundary Safety Distance	The Safety Distance from the Boundary
Obstacle Safety Distance	The Safety Distance from the Obstacles

Aerial Flights

Safety Guidelines

IMPORTANT

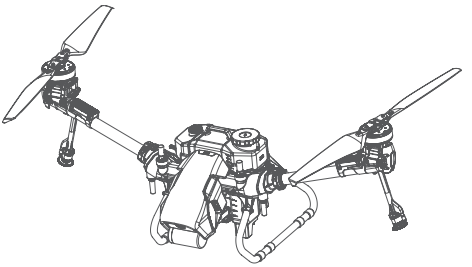
- √ Make sure you have been sufficiently trained and have contingency plans for emergency situations or for when accidents occur.
- √ Land the aircraft on flat terrain to avoid damaging the Aircraft from uneven terrain or raised objects.
- √ Land immediately when there is any abnormality in flights. (Including but not limited to the Aircraft NOT flying in a straight line, NOT maintaining the correct altitude, and etc...)
- √ In the event of any flight abnormality, crash or collision, make sure to thoroughly inspect every part of the aircraft and make any necessary repairs and replacements before your next flight.
- √ The radar module enables the aircraft to maintain a fixed distance from vegetation only within its working range. Observe the aircraft's distance from vegetation at all times.
- √ Operate with extra caution when flying over inclined terrains. Recommended maximum inclination at different aircraft speeds:
  - 10° > at 3m/s
  - 6° > at 5m/s
  - 3° > at 7m/s
- √ RTH will not work if there is a weak or no GNSS Signal.
- √ Tall objects may adversely affect RTH. Therefore, it is important to set an appropriate failsafe altitude before each flight. Adjust the aircraft location, altitude, and speed while returning home to avoid obstacles when there is a strong remote controller signal.
- √ Make sure to operate the aircraft within the transmission range of the Remote Controller and RTK Station.
- √ Make sure you understand the nature of your flight operation and have obtained corresponding approval and clearance from the land owners, and related government agencies before flight. Consult with your local regulators for comprehensive definitions and specific requirements
- √ Make sure to keep your aircraft within VLOS, and use an observer to assist if needed.
- √ The maximum flight distance is 800m by default. Fly with Caution and ensure there are sufficient battery for the aircraft to return to Home Point.

If you have any problems or question, contact your local supplier or an XAG authorized dealer.

XAG Australia Support Hotline: +61 2 9167 6665 (Australia Only)

XAG Australia Support Email: Support@xagaustralia.com.au

Pre-Flight Checklist



01 Inspect and ensure the integrity of the Airframe. (Only use genuine parts in good condition)

02 Inspect and ensure the propellers are Clean and in good condition (DO NOT use aged, chipped, damaged or stained propellers), and the correct Propeller are installed on each Arm.
Right Arm – CCW Propeller Left Arm – CW Propeller

03 Inspect and ensure there are no foreign objects inside of the aircraft or its components, such as water, oil, soil, or sand.

04 Inspect and ensure the batteries, liquid tank, and the Motor is properly secured.

05 Check & ensure Firmware & APP is up-to-date.

06 Check and ensure there are sufficient battery for the operation (Including Aircraft Batteries, LNT, Remote Controller and RTK Station Battery).

07 Check and ensure all aircraft are paired with Remote Controller, and ready to operate the aircraft and manually avoid obstacles promptly or during an emergency.

08 Check and ensure the Communication is Normal
- √ RPA enters RTK Mode
- √ RPA Heading Accuracy < 2°
- √ Number of Satellites > 16

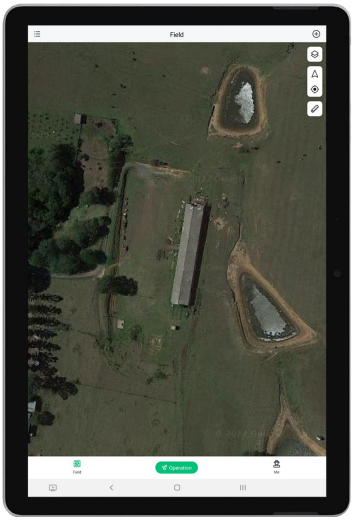
09 Check and ensure Tilt Servo Calibration is Calibrated and balanced.

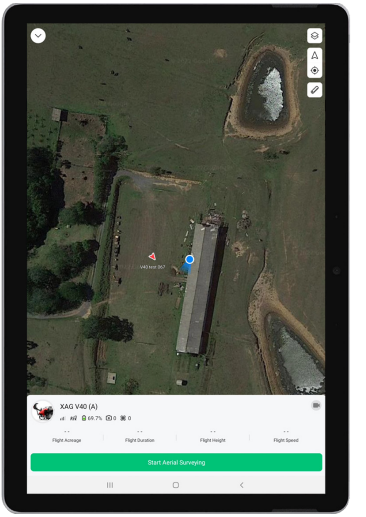
10 Check and ensure the Dynamic Radar, PSL Camera and Terrain Sensor are Clean and in good Condition (Not cracked, chipped, sunken, misshapen, or obstructed).

11 Perform System Calibration of RevoSpray / RevoCast System.

12 Perform Motor Test to ensure it is operating normally (Idle Test & In-Situ Flight Test).

Aerial Survey – Real Terra





PREREQUISITE

√ Completed Device Binding & Pairing of LNT (LNT Mode).

√ Completed Device Binding & Pairing of RTK, Remote Controller, and Aircraft.

√ Completed Pre-Flight Checklist.

√ Completed Setting Aircraft as Operation Device.

√ Real Terra Module had been attached & Online.

√ Ensure there are Sufficient Battery for the Flight.

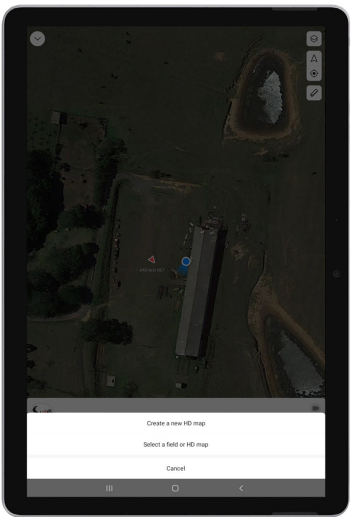
IMPORTANT

Maximum acreage for RealTerra aerial survey is 6.66 ha.

01. Open XAG One APP, and tap on the Operation.

02. The interface displays the status and the available aircraft for the Task.

03. Tap on “Start Aerial Surveying”.



04. Select “Create a new HD Map” to create a new field for Survey.

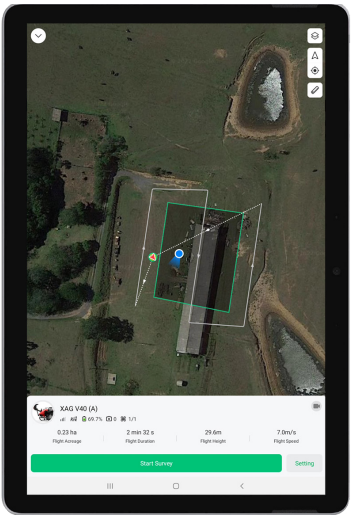
05. Tap on the desired location on the map to Add Points to form the Flight Zone.

IMPORTANT

√ Ensure the Survey Area consist of the Take-Off Area and the Route for Entry / Exit Route.

√ Ensure the Survey Area are larger than the Operation Area with margins at each boundary.

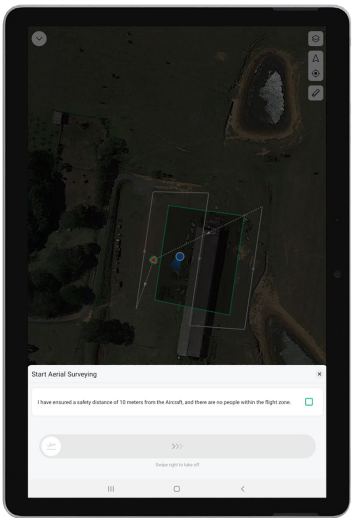
06. Review the Map and the points added, then Tap “Next”.

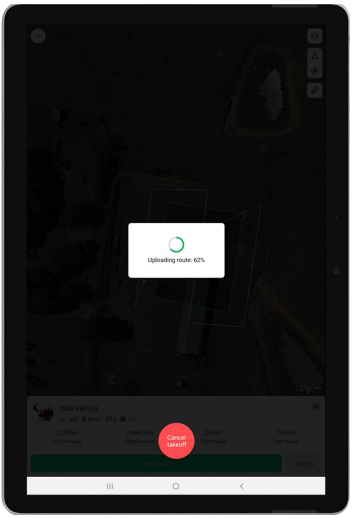


07. Enter & Insert Field Information, then Tap “OK” to Save.

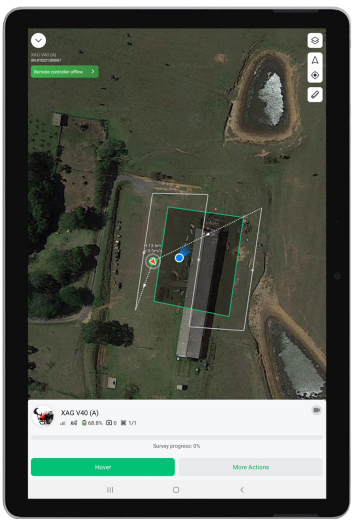
08. Tap on “Setting” to review & Adjust the Settings.

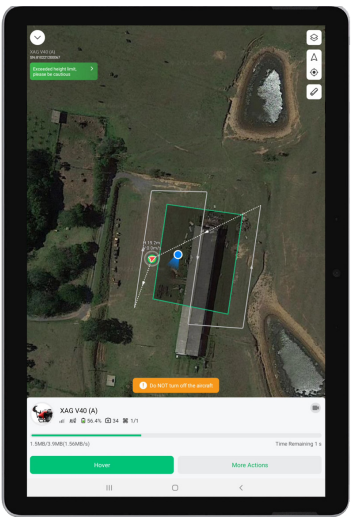
Field type	Flat: Terrain with Minimal terrain fluctuations. Mountain: Terrain with large terrain fluctuations.
Automatic Obstacle Avoidance	Enable / Disable Obstacle Avoidance. IMPORTANT Effectiveness of the Obstacle radar is dependent on the obstacle’s material, location, shape, size, etc. Maintain visual line of sight and pay attention to its flight, and prepare to operate the aircraft and manually avoid obstacles promptly or during an emergency.
Follow the Terrain	Enable: The RPA will follow the terrain based on the UAV Terrain sensor, remaining relative height above the terrain. Disable: The RPA will NOT follow the terrain, remaining relative height above the terrain based on the RTK Height.





09. Complete the Start Aerial Surveying checklist, then swipe “start” to begin.
10. The APP is now uploading the route to the Aircraft and the Aircraft is completing Self-check. Upon completion, the aircraft will take off in 5 seconds.

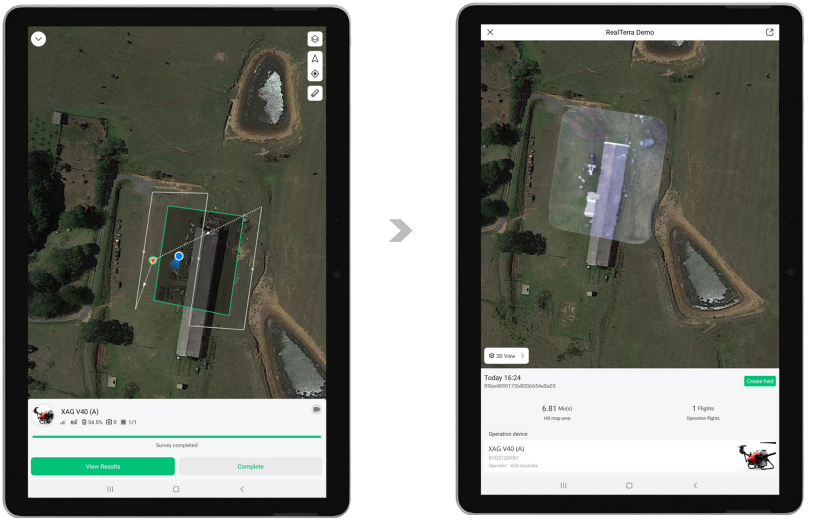




11. If there is an Emergency, Tap on “Hover” or “More Actions” for Emergency Control
12. The System will automatically upload and begin the data processing, and the Aircraft will return and land once the flight is completed.

IMPORTANT

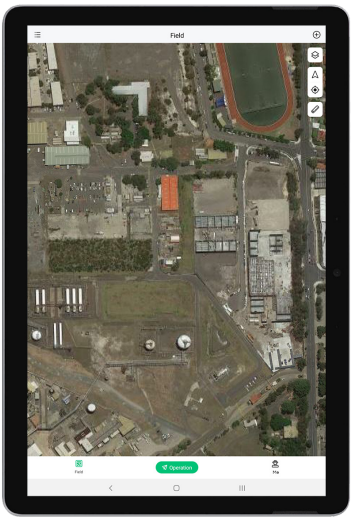
Do NOT turn off the aircraft during this process.

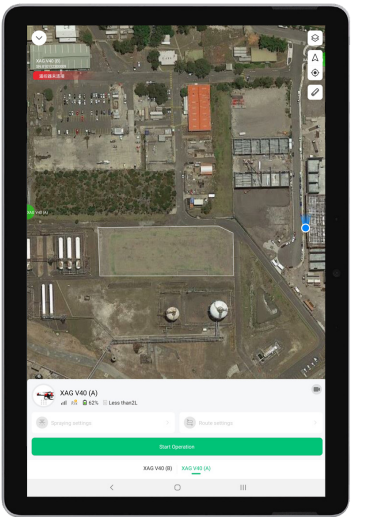


13. When the Task is completed, it will displays “Survey Completed”, indicating the processing is completed and the data is now ready for review.
14. Tap on “View Results” to review the HD map.

HD Map:	HD Map are automatically generated and loaded
3D View:	3D Point Cloud
Create Field:	Creating a Field for Operation based on the HD Map generated by Real Terra (Refer to Planning via Satellite / HD Map)

Aerial Spraying





PREREQUISITE

√ Completed Device Binding & Pairing of LNT, RTK, Remote Controller, and Aircraft.

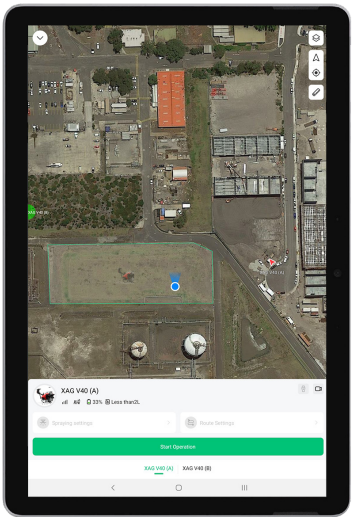
√ Completed Setting Aircraft as Operation Device.

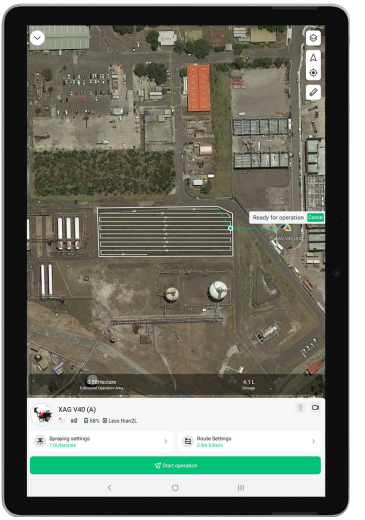
√ Completed Pre-Flight Checklist.

√ Completed Field Planning.

01. Open XAG One APP, and tap on the Operation.

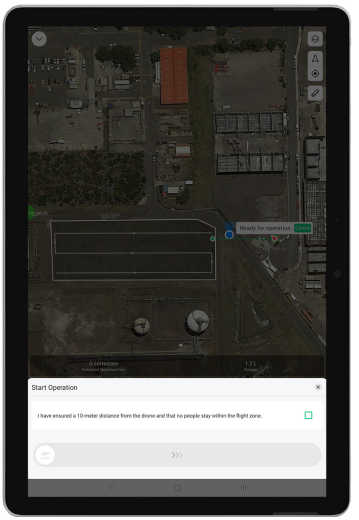
02. The interface displays the status and the available aircraft for the Task.

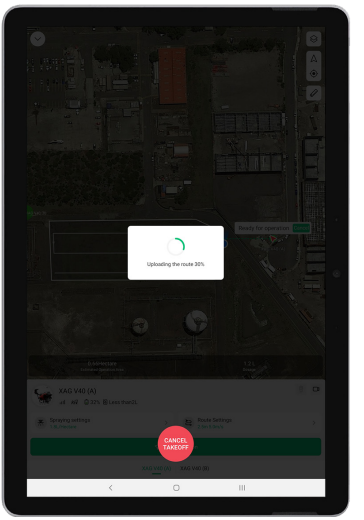




03. Press & Hold the Aircraft Icon for approximately 1 second until you feel a vibration, and the RPA Identification " " will appear, then drag the aircraft to the Field.

04. Dragging the aircraft into the field will assigned the aircraft for the operation of this field, Spray Settings & Route Settings is now available for setting. Review & adjust the settings (Refer to Page 115-116 for Spray Settings & Route Settings), then tap on Start Operation.





05. Complete the Start Operation checklist, then swipe "start" to begin.

06. The APP is now uploading route to the Aircraft & completing Self-check, upon completion, the aircraft will take-off in 5 seconds.

Spray Settings

Spraying Amount	Dosage Volume of the RPA for Task Area.
Atomized Droplet	Droplet Size Atomization of the RPA for Task Area.
Variable Dosage map Operation	Beta Function (Coming Soon).
Spray along another segment	Nozzle Selection during lane changes.

Route Settings

- Entry & Exit Routes

Flight Height	Flight Height Setting the RPA from Take-off Point to Task Area.
Flight Speed	Flight Speed Setting the RPA from Take-off Point to Task Area.
Adopt Safe Point Planning	Enabled: This function will allow Pilots to add Guide Point to guide the flight route of the RPA from Take-off point to the Task Area. Disabled: Disabling this function will enable the options for “Set Guide Point for Return”.
Set Guide Point for Return	Enabled: This function will allow Pilots to add Guide Point to guide the flight route of the RPA from Entering and Exiting Routes. Disabled: APP will automatically create a yellow zone based on the current setting based on Spray & Route Settings, where there should not have any person or obstacles as it is the possible flight path.

• Operating Route

Flight Height	Flight Height Settings of the RPA during its Autonomous Task.
Flight Speed	Flight Speed Settings of the RPA during its Autonomous Task. IMPORTANT Optimal flight speed of Obstacles avoidance is 6m/s.
Route Direction	Flight Direction Settings of the RPA during its Autonomous Task.
Route Interval	Distance Settings between each lane.
Boundary Safety Distance	Safety Distance from the Boundary.
Obstacle Safety Distance	Safety Distance from the Obstacle.

• Advance Settings

Operation Area	Operation Route & Type Settings.
Follow Terrain	Terrain Following Settings.
Obstacle Avoidance	Dynamic Radar Settings for Obstacles Avoidance. IMPORTANT Effectiveness of the Obstacle radar is dependent on the obstacle's material, location, shape, size, etc. Maintain visual line of sight and pay attention to its flight, and prepare to operate the aircraft and manually avoid obstacles promptly or during an emergency.
Automatic route optimization	Break-point is the location where the autonomous task was interrupted by either Manual take-over via APP or Remote Controller, empty liquid tank, or Low Voltage battery. Enable: The RPA will automatically optimize and travel to the Break-point and resume its flight from the breakpoint. Disable: Aircraft will operate based on the operation area and restart the tasks anew.

Emergency Control

Emergency Control via APP

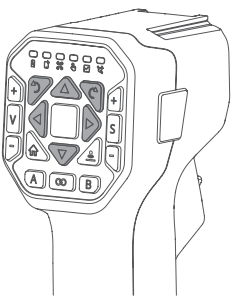
Hover:	Command the RPA to Hover.

These following Control could be found in “MORE”

Land:	Command RPA to force Land at its current location.
Return:	Command RPA to Return and Land.
Tap & Go:	Command RPA to move to location specified by Pilot.

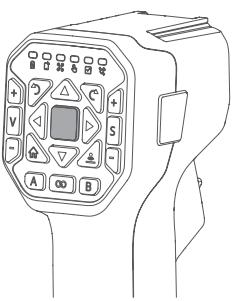
Emergency Control via ACS2G Remote Controller

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)

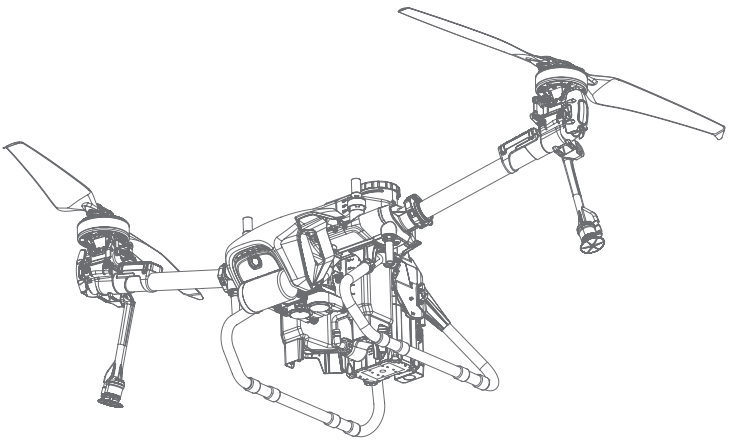
Hover / Switch Mode



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

After-Flight Maintenance

Pesticides are corrosive which may cause erosion within the equipment and shorten equipment lifespan, it is recommended to thoroughly clean the aircraft after each operation.



01 Refill the Liquid Tank with soap water or soap powder water, and engage all nozzles to drain and clean out remaining residues within the spray system.

02 Refill the Liquid Tank with clean water, and engage all nozzles to drain and clean out the remaining soap water within the spray system.

03 Place an empty Liquid Tank, and engage all nozzle to drain and clean out remaining residues within the spray system to avoid residue leakage during transportation and possibly damaging other items.

04 Wringing a wet rag, then wipe and clean the exterior of the aircraft and batteries to remove any stains and foreign objects.

05 Inspect and ensure the radar modules are Clean and in good Condition (Not cracked, chipped, sunken, misshapen, or obstructed). Otherwise obstacle avoidance or terrain following may result in serious injury to yourself and/or others, and damage to your Products and/or other objects in the vicinity.

⚠ Warning

- Liquids and residues must be drained from the aircraft prior to transportation, liquids or residues remaining within the spray system during transportation may cause damage to the critical module.
- Batteries must be removed from the Aircraft prior to any Transportation.
- Damages or Hardware failure causes by incorrect transportation method will be the user's sole responsibility.

Operation with Multiple Aircraft

XAG V40 / P40 / P100 Agricultural RPA features Multiple aircraft control functions, which can coordinate the operation of up to two aircraft simultaneously, enabling pilots to enhance their efficiency for multi-field or broad acreage.

Swarm Operation Mode

01. Set aircraft as Operation device (up to two).
02. Rename and ensure each RPA have its unique identification.
03. After setting the corresponding aircraft as an operation device, close the device menu and confirm the aircrafts are listed on the footer of the App.

Switch Control

Tap on the status box of the corresponding aircraft at the footer of the APP to switch between the aircraft. After switching the Aircraft, the APP will display the selected Aircraft Name at the Aircraft status Bar.

IMPORTANT

√ Inspect and ensure the Take-off and Landing Location must be chosen separately for each RPA so there will be no conflict for the aircraft during the flight.

√ Inspect and ensure the Outbound, and RTH height should have a minimum of 1m separation.

√ Ensure the obstacle avoidance is enabled to assist the aircraft in maximising the safety of the Aircrafts.

√ DO NOT overlap the Take-off, Landing location, inbound, outbound and flight route.

√ Plan and prepare actions in the event of abnormal or emergencies.

√ Plan and allow for time separation between Take-offs.

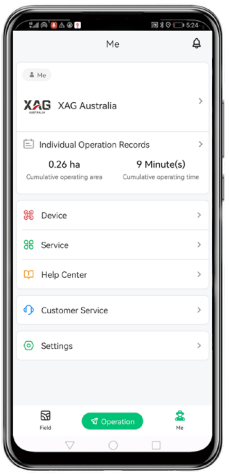
√ Maintain a minimum safe distance of 10m between Aircraft in operations.

√ Sensitivity of the radar module may be reduced when operating multiple aircraft within a short distance.

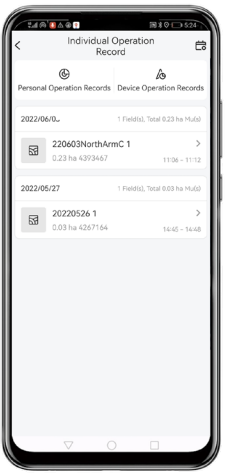
Operation Records & Sharing

IMPORTANT

Operation Records are not shareable between 4G Mode and Local Network Terminal. Operation Records are accessible and reviewable depended on which mode did the user operate.



1



2

01. Tap on “Me” to access Account Menu.
02. Tap on “Individual Operation Records” to review Operation Records.
03. Individual Operation records consist of 3 Options for review.

Personal Operation Records

Personal Operation Records displays the total statistics of this user account:

- Total Operation Area
- Total Operation Time
- Total Operation Field

Device Operation Records

Operation Records consists of the records based on the device the user currently have in its account, and the task that had been conducted with that device ONLY.

Task Operation Records

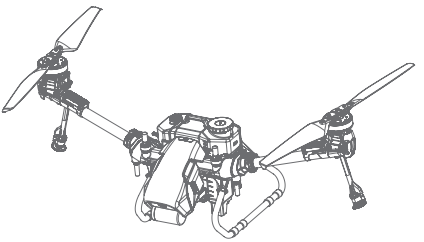
Task Operation Records consist of the tasks that the user had conducted with RevoSpray & RevoCast. User will be able to review the summary of the Task, playback and share the task via WeChat or a Weblink.

Maintenance Guide

During the life cycle of the equipment, there will be wear and tear, and cases of malfunction. Regular and properly conducted maintenance can ensure that equipment is kept in the best optimal conditions for future operation, reducing failures and improving efficiency. (Every 100 Flights or after flying for over 20 hours)

Failure to conduct regular maintenance may result in serious injury to yourself and/or others, damage to your Products and/or other objects in the vicinity, and voiding the Manufacturer Warranty.

The proper maintenance of the equipment is specified as follows:

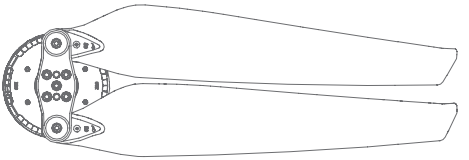


Airframe Structure

01. Check and ensure there are no loose or missing screws on the Airframe Structure.
02. Check and ensure all components is conducted according to the manufacturer torque settings requirement.
03. Check and ensure the Landing skid, Airframe Structure, Airframe Arm, Antenna, Motor are firmly secured.
04. Check and ensure the electrical connection plug of all components are firmly secured and there are no signs of oxidation.
05. Check and ensure the equipment power socket and battery socket are clean and dry, and the sockets are not damaged or deformed.
06. Inspect and ensure the fuselage, Liquid tank and its components have no damages, cracks or deformities.
07. Inspect and ensure there are no deformation or damages on the beam structure of the side beam, and all the connection fasteners between the Arm and the motor are firmly secured.
08. Inspect and ensure there are no damages or deformation on the Airframe Arms, and ensure there are no abnormal angel of the sticker on the Airframe Arm to the Airframe Arm.
09. Check and ensure the radar modules are Clean and in good Condition (Not cracked, chipped, sunken, misshapen, or obstructed). Otherwise, obstacle avoidance or terrain following may result in serious injury to yourself and/or others, and damage to your Products and/or other objects in the vicinity.
10. Conduct regular Deep cleaning of the Aircraft, particularly the areas that are difficult to clean during the routine cleaning after flight operation. E.g., Interface of the Liquid Tank, or the Battery socket of the Equipment.

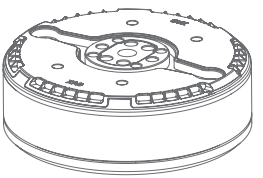
Propulsion

- Propeller



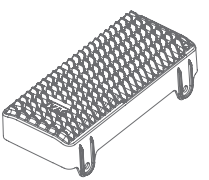
01. Inspect and ensure the Propeller Spinner have no damages, cracks or deformation.
02. Check and ensure the Propeller is not loose, softened, damaged or deformed.
03. Check and ensure the Propeller and the Propeller Spinner are properly tightened.
04. Check and ensure there are no missing or loose screws between the Propeller Spinner and the Motor. All fixing screws should be accounted and firmly secured.
05. Wringing a wet rag, then clean and remove any stains or foreign objects on the Propeller.

- Motor



01. Remove the Propeller and Motor housing, then clean the Motor with a Compressed Air Duster.
02. Rotate the Motor to check the motor bearing for any abnormality, vibration or abnormal noise.
03. Inspect the Motor enamelled wire and ensure there are no damage or fracture.
04. Sway the Motor and ensure the Motor and Motor mount are firmly secured.
05. Check and ensure the wiring connector between the Motor and the ESC are firmly secured.

- ESC



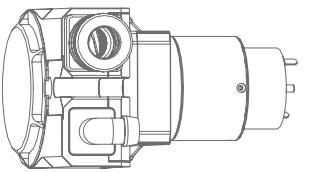
01. Check and ensure the ESC are firmly secured, and there are no loose or missing screws.
02. Check and ensure there are no pesticides or other foreign objects attached on the ESC's heat dissipation.

Spray System

Spray system calibration (with clean water) should be conducted on a regular basis as the use of corrosive liquid and viscous liquid during the daily operation or replacement of peristaltic pump may lead to excessive deviation.

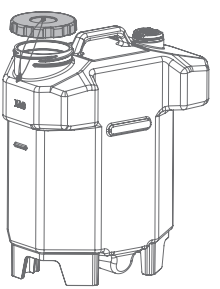
After the calibration is completed, Inspect and ensure the health index is normal (1.2-1.4). If the health index remains abnormal after calibration, check and ensure the Peristaltic pump tubes and Spray Tubes are not shrivelled, deformed or lost its elasticity. Replace tubing if any of the above symptoms are found.

- Pump



01. Disassemble the Peristaltic pump and check the lubrication between the Peristaltic pump tube and the synchronizing plate. Apply Vaseline if the lubrication is poor.
02. Check and ensure the cable connectors on the Pump Controller Board are firmly secured, and there is no oxidation, and etc.

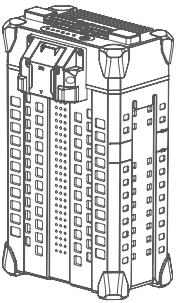
- Liquid Tank



01. Inspect and check the Liquid tank nozzle's sealing ring and the elasticity of the spring.
02. Unscrew the Liquid Tank cap, inspect and ensure the internal tubing is normal.
03. Unscrew the Liquid Tank filter, clean and remove any foreign object to prevent blockage.

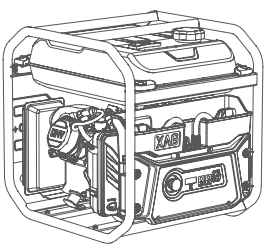
Power System

- Battery



01. Handle the Battery with care
02. Wringing a wet rag, then wipe and clean the exterior of the batteries to remove any stains and foreign objects.
03. If the batteries are less than 10% (1 Green Flash), batteries must be recharged before storage. The battery may be damaged and not useable in the future if it is not charged before storage.
04. DO NOT charge the batteries in humid or wet environment.
05. DO NOT leave the battery in excessive heat or cold environments as it can reduce battery life, overheating the battery may lead to fire or an explosion.
06. DO NOT use the battery if the battery is leaking, bulged, deformed or damaged in appearance.
07. DO NOT disassemble the Battery without XAG's authorization.
08. DO NOT insert or remove the battery while the battery is turned on, otherwise the equipment's power socket and the battery socket may be damaged.
09. Batteries must to be charged every 2 months to 40%~60% for long-term storage.

- Power Socket



Dust, liquid, or other foreign objects adhere to the power socket may lead to short circuiting or sparks and damage the equipment (Battery, Charger, Internal Circuit, Power Socket and etc..). During the use of the equipment, user should systematically check and clean the power sockets of all equipment, and ensure the sockets are kept clean, dry, free of foreign objects and no deformation.

Equipment Storage

Liquids and residues must be drained from the aircraft prior to storage, residues remaining within the spray system may cause liquid damage to the critical module.

Equipment should be stored in a dry environment within the temperature range of 10°C to 30°C.

Equipment should NOT be stored in a moist environment or where there is water leakage.

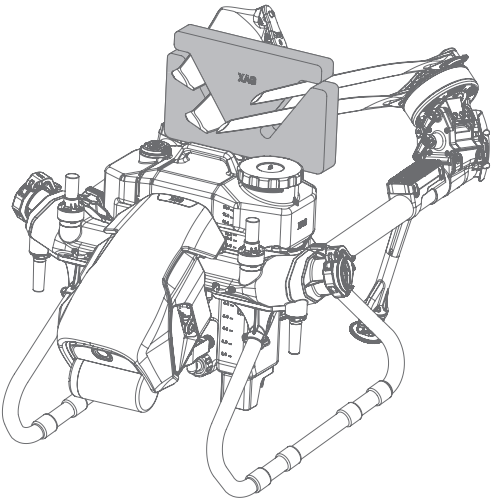

Moist environment


Water leakage

Equipment with Lithium Battery

In addition to smart batteries, any equipment containing lithium batteries, such as ACS2 smart remote control, RTK Battery Extension Rod, and other equipment must to be charged every 2 months to 40%~60% for storage when not in use for a long time.

Transportation Management



01. When transporting the Aircraft via vehicle, the Airframe arms needs to be folded and the propellers are folded and fixed with the Propeller Holder.

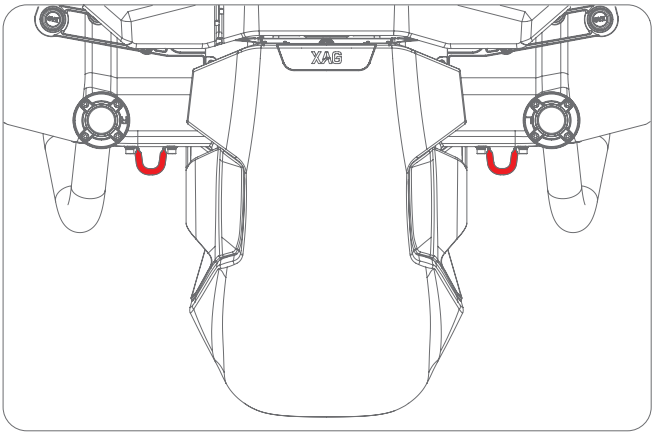
IMPORTANT

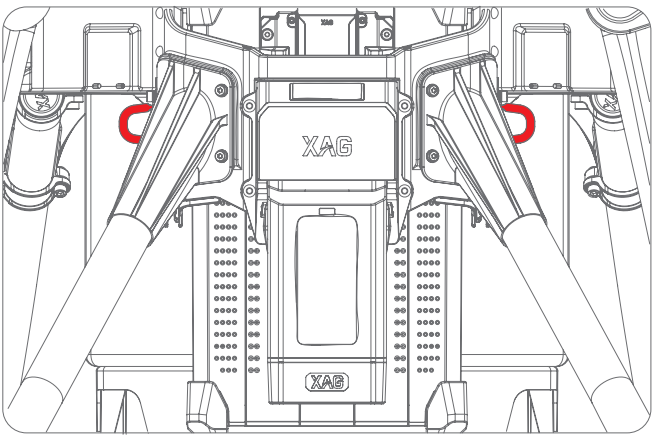
Liquids and residues must be drained from the aircraft prior to transportation, liquids or residues remaining within the spray system during transportation may cause damage to the critical module.

Batteries must be removed from the Aircraft prior to any Transportation.

Damages or Hardware failure causes by incorrect transportation method will be the user's sole responsibility.

02. Then firmly secure the aircraft with the four-fixing mount on the Aircraft





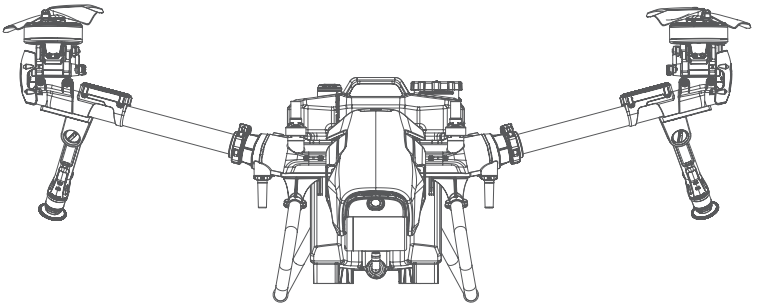
⚠ Warning

Do not drive fatigued, and the equipment should be kept and stored away from the occupant.

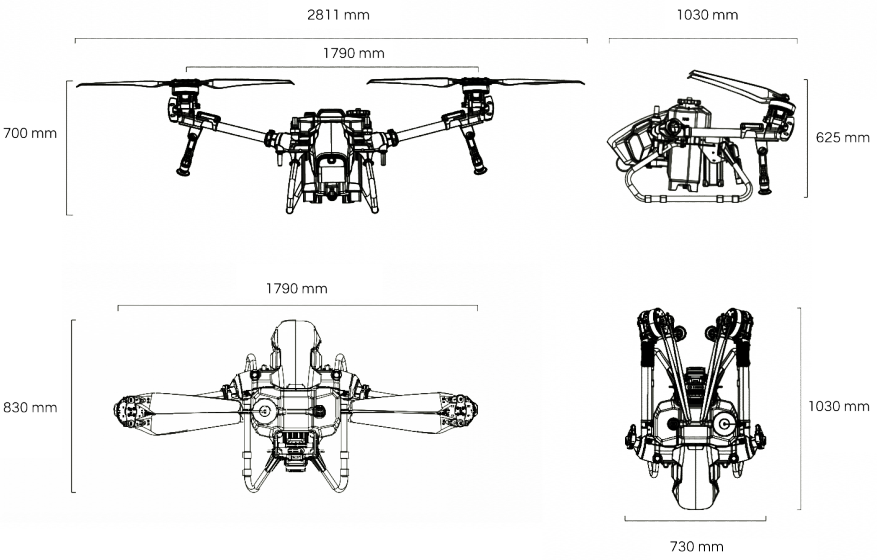
Maintain air circulation and avoid pesticides inhalation.

Technical Specifications

V40 Agricultural RPA



V40 Agricultural RPA	
Product Model	3WWDZ-15.2AH
Flight Control System	SuperX4
IP Rating	IP67
Airframe	
Max Diagonal Wheelbase	1600mm
Arm Material	Carbon glass fibre



Propulsion System

Motors	
Model	A40
Stator Size	136mm x 24mm
Max Power	3000W / Motor
Max Tension	42KG / Motor
KV Value	75RPM / V
ESCs	
Model	VC13180
Max Working Current (Continuous)	180A
Max Operating Voltage	56.6V
Foldable Propellers	
Model	P4718
Diameter x Pitch	47 x 18 inch
Weight	280g per Blade
Gross Weight	760g
Tilt Servo	
Rate Voltage	DC50V
Operating Voltage	DC25V – 55V
Rate Torque	150KG CM@50V
Rated Current	0.5A@50V
No Load Speed	400° / Second

RevoSpray System

Liquid Tank	
Volume	16L
Sensor	Liquid Level Sensor
Nozzle	
Quantity	2
Rotational speed of spray disc	1000~16000RPM
Atomizing Size	60-400μm
Spray Width	5~10m
Peristaltic Pump	
Quantity	2
Voltage	50V
Maximum System Flow Rate	10L/min

XAG RealTerra™ System

Image Sensor	1 / 2.3inch 12M CMOS Sensor
Lens	FOV112O 2.7mm / 16.8mm (35 Equivalent)
Mechanical Shuttle	1/200 – 1/2000s
Image Format	JPG
Power	10W
Optimal Operating Temperature	10° C to 40° C

Obstacle Sensor & Avoidance System

Front Dynamic Radar [1]	
Model	RD2426
Operating Frequency	24 GHz
Voltage	24V – 60V
Power Consumption	6W
Sensing Range	1.5m ~ 40m
Sensing Mode	Millimetre-wave Imaging, MIMO
Sensing Parameters	Obstacle's Position, Distance
Field of View (FOV)	Horizontal: ±40° Vertical: 45°
Safety Limit Distance	2.5m (Distance between the propeller tip and the obstacles after braking and hover)
Working Conditions	Relative Height: ≥1.5m Relative Speed: ≤6m/s

Terrain Sensor	
Model	TR24S100
Voltage	5.8V
Power	1.5W
Sensing Mode	Millimeter-wave
Operating Frequency	24GHz
Altitude detection range	0.5~100m
Max. Gradient	45° (Flight Speed ≤ 2m/s)
IP Rating	IP67

PSL Camera

Dimensions	50mm x 36.7mm x 29mm
Resolutions	720P / 1080P
Frame Rate	30fps
Coding Format	H.264
Focal Length	2.75mm
Image Sensor	1/2.95inch 2M CMOS Sensor

Flight Parameters

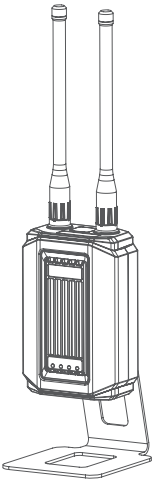
Total Weight (Empty Container)	29.80 Kg
Max Take-off Weight	48.00 Kg
Max. Thrust-Weight Ratio	1.8
Load Ratio	0.4
Hovering Accuracy Range (With Strong GNSS Signal)	RTK Enabled: ±10cm (Horizontal) ±10cm (Vertical) RTK Disabled: ±0.6m (Horizontal) ±0.3m (Vertical) (Radar Enabled±0.1m)
RTK/GNSS Operating Frequency	2.4000GHz – 2.4835GHz
Continuous Navigation without Signal	≤600s
Hovering Time [2]	13.5min (Take-0ff weight of 29.8kg @20000mAh) 6.8min (Take-0ff weight of 45.8kg @20000mAh)
Max. Operating Speed	8m/s (With Good GNSS Signal)
Max. Flying Height	30m
Max. Flying Distance	2000m
Max Service Ceiling Above See Level [3]	4000m
Recommended Operating Temperature	-10° C to 40° C
Wind Force Recommended	≤ 3.4~5.4m/s

[1] Effectiveness of the Obstacle radar is dependent on the obstacle's material, location, distance, shape, size, relative velocity, etc.

[2] Hovering time acquired at sea level with wind speeds lower than 3m/s

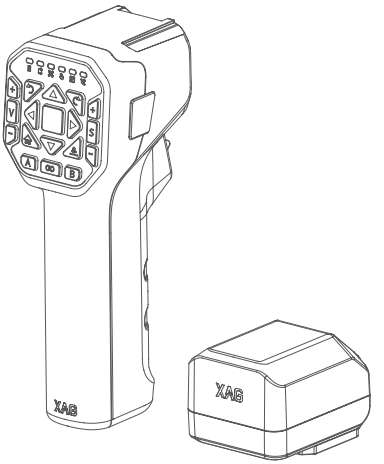
[3] Maximum load needs to be reduced by 12% for each additional 1,000 m in altitude

Local Network Terminal



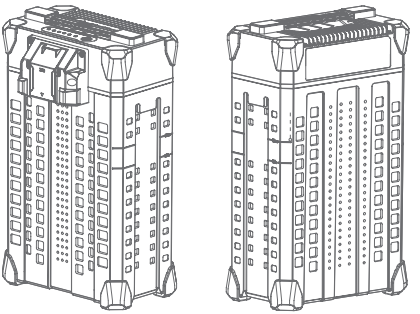
Local Network Terminal	
Model	13LNT-1
Dimensions	93mm x 54mm x 332mm
Weight	Approx. 760g
Power Input	DC 12V/3A
Operating Temperature	0° C to 50° C
IP Rating	IP54
Communication Protocol	Wi-Fi
Operating Frequency	2400 – 2483.5 MHz
Antenna	TNC Port, 2dBi
Warranty Details	12 Months
Power Adapter	
Dimensions	101mm x 86mm x 37mm
Weight	Approx. 335g
Power Input	DC 40 ~ 54V (B13960S Battery Adaptor)
Power Output	DC 12V/3A
Power	36W
Operating Temperature	0° C to 50° C
IP Rating	IP54

Remote Controller



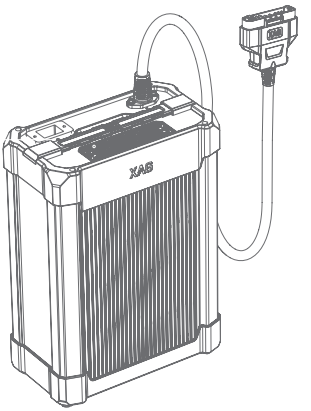
Model	ACS2G	
Dimensions	76mm x 60mm x 177mm	
IP Rating	IP54	
Operating Frequency	2.4GHz / 5.8GHz	
Transmitting Power (EIRP)	2.4GHz 5.8GHz	SRRC ≤ 20dBm; SRRC ≤ 26dBm;
Supported Operating System	Android, IOS	
Build-in Battery	5000mAh / 37Wh	
Charging Temperature	0° C to 45° C	
Operating Temperature	-20° C to 55° C	
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	

Smart Battery



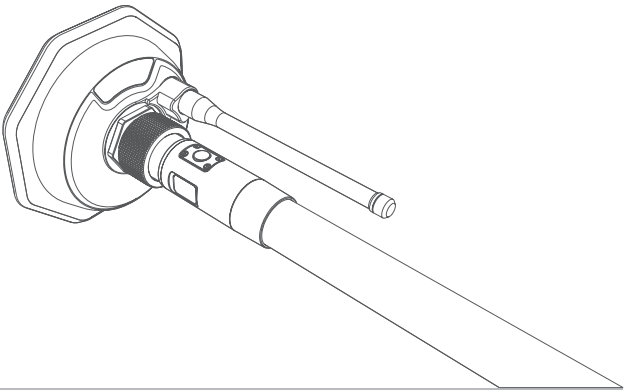
Model	B13960S
Dimensions	189mm x 139mm x 317mm
Weight	Approx. 6.7 kg
Battery Type	Lithium Polymer
Capacity	20000 m/Ah
Energy	962 Wh
Rated Output	48.1V / 120A
Operating Temperature	10° C to 45° C
Charging Temperature	10° C to 40° C
Storage Temperature	10° C to 30° C
IP Rating	IP65
Compatible Aircraft	XAG V40 2021 XAG P40 2021 XAG P100 2022
Compatible Chargers	CM12500P GC4000+
Charging Voltage	56.55V
Battery Charging Time	
Warranty Details	6 Months

Battery Charger



Model	CM12500P
Compatible Battery	B13960S B13860S (With Plug A1 Adapter)
Dimensions	242mm x 137mm x 337mm
Weight	Approx. 9.0 kg
Operating Temperature	-10° C to 45° C
Storage Temperature	-20° C to 55° C
Cooling Mode	Outer Air Cooling
Operating Altitude	≤ 3000m
Input	AC 90-165V ~ 50/60Hz 23A (Max) AC 180-260V ~ 50/60Hz 23A (Max)
Output	DC 50-60V/25A (Max) / 1250W (AC 90-165V ~ 50/60Hz) DC 50-60V/50A (Max) / 2550W (AC 180-260V ~ 50/60Hz)
Warranty Details	12 Months

GNSS XRTK4 Mobile Station



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 × 3, Positioning Indicator × 1 Networking Indicator × 1, Power Indicator × 1
IP Rating	IP65
Operating Temperature	-20° C to 60° C
Storage Temperature	-20° C to 60° 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° C to 45° C
Port/Panel	Power Button × 1, Type-C Port × 1, Battery Level/Status Display Panel × 1
Warranty Details	6 Months