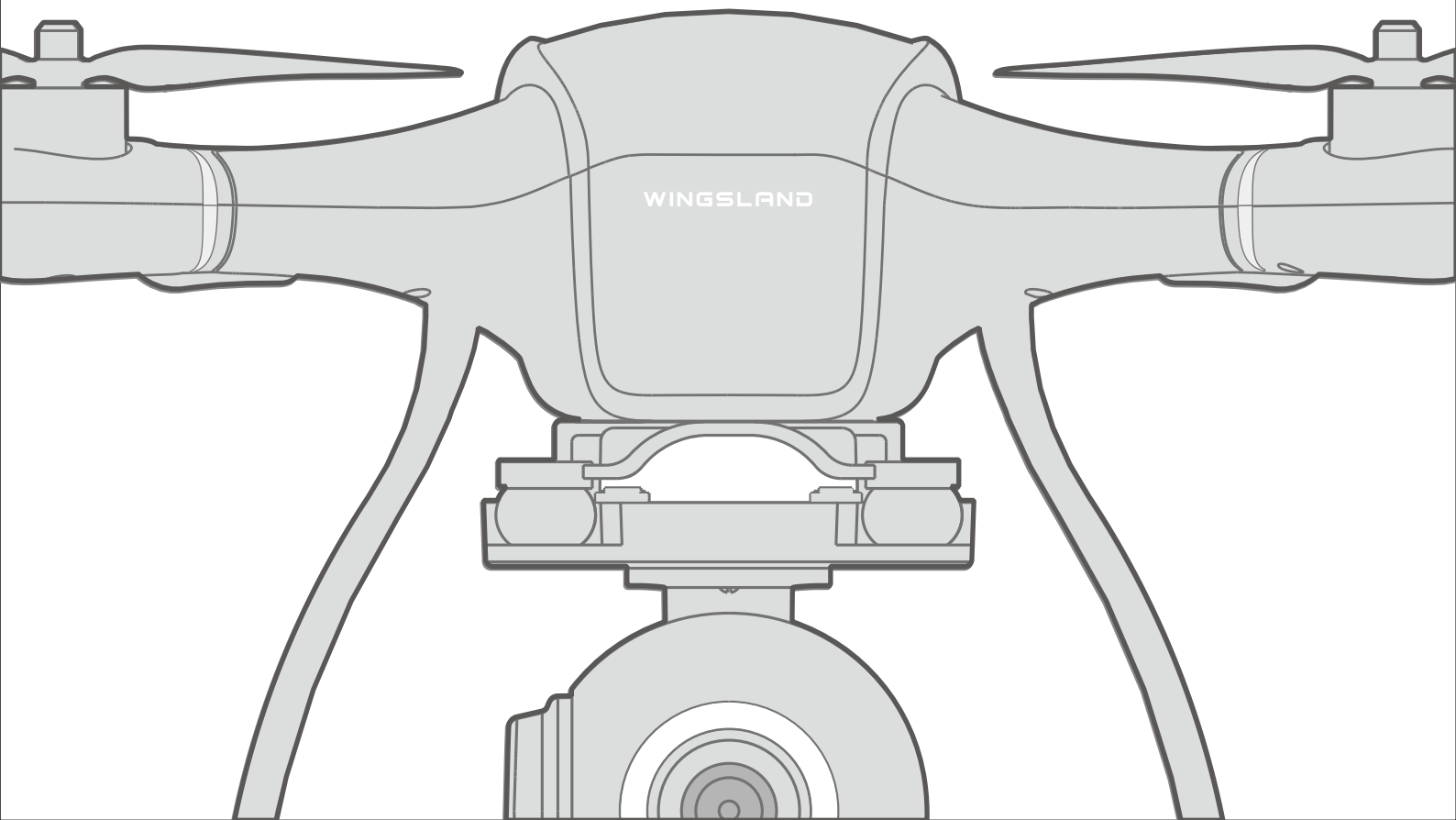
Minivet III

USER MANUAL

VERSION 1.0

Height Changes Your Aesthetic View



INTRODUCTION

Support & Service

Thank you for your purchasing Wingsland Minivet multi-rotor aircraft, you hereby agree with and accept the terms of this disclaimer and is believed that you have read it thoroughly.

If you have any questions or concerns during your operating, please don't hesitate to contact Wingsland Customer service or Wingsland authorized dealer by email or telephone.

Wingsland Customer Service	**Email Address: service@szsungreen.com** **Tel: 0086-0755-23123452**

CAUTION The possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly.

WARNING Incorrect/improper operation may cause casualties/physical damage.

DANGEROUS Incorrect/improper operation may cause death/serous injury.

Disclaimer & Warning

Please read this disclaimer and warning carefully before using this Wingsland product. Once you have begun to use Wingsland product, you hereby agree to this disclaimer and signify that you have read them fully.

1.Please make sure you are familiar with the features/operations of this product before operating. The possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly. Incorrect or failure to operate this product in a responsible attitude may cause injury and physical damage.

2.This product is not designed or suitable for people under age of 18.

3.The product built-in autopilot system causes danger even if we have made its operation as safe as possible. Good practice before your flight with removing all propellers is recommended. Please fly in an open area/outdoor and far away from any obstacles and passengers. Please make you sure of that you areresponsible for your any flight conduct and content, or any consequence caused by your flight while using this product.

4.You agree to use this product in accordance with local regulations, terms and any applicable polices and guidelines.

5.Ensure using this product only for the purposes that are proper.

6.Any part of this disclaimer is subject to change without notice, please visit www.szsungreen.com for the latest versionfor your reference.

7.This disclaimer is made in various language versions. In the event of divergence among different versions, the Chinese version shall prevail in China domestic areas, the English version shall prevail in other countries and areas.

Instructions & Cautions

1.Ensure using with genuine Wingsland accessories to get most efficiently flight experience.

2.Please uninstall all propellers before your calibration on parameters setting.

3.Ensure that you are familiar with your local laws, administrative rules and social habits and agree that you are solely responsible for your own conduct and content while you flying.

4.Ensure to check all connections (Check the propellers and motors are installed properly and firmly) and every part of product is in normal condition before each flight.

5.Stay away from obstacles, passengers, crowds, high-voltage lines, other possible sources of electromagnetic interference and fragile goods. And stay away from any fragile goods.

6.Check that the position of switches of Remote Controller is correctly set. Ensure the installation of propellers is correct.

7.Check that the Remote Controller Battery, Intelligent Flight Battery, Display Screen Battery is fully charged.

8.Do not fly near the areas existed magnetic or radio interference. For example, radio and TV power, high -voltage lines, communication base station, radar instruments, etc.

Battery Usage Notes

1.Please keep the battery storage in out of the reach of children.

2.Do not put the battery into the fire or store in high-temperature environment.

3.Battery charging uses the genuine Charger supplied by Wingsland is demanded. Never charge batteries unattended. Check the battery condition during your charging.

4.Attention please to the battery positive and negative. To avoid that the battery storage in contact with any conductor.

5.Do not drop or strike battery. Do not use a swollen, leaky or damaged battery.

6.If found the battery leakage, do not contact with skin and eyes. If you do contact, immediately rinse with plenty of water and seek medical help.

7.The battery level will be affected when using in a low temperature or a high temperature.

8.Please do not arbitrarily discard battery, to dispose of the battery in accordance with the local regulations when the battery is no longer in use. Discarding battery arbitrarily would cause a fire hazard, and may pollute the environment.

9.Ensure that the usage of the battery strictly abide by Wingsland User Manual.

Limitation of Liability

Wingsland accept no liability for damage(s), injuries or any legal responsibilities incurred directly or indirectly from the use of this product in the following conditions and this limitation of liability applies to Wingsland suppliers, dealers and service providers:

1.Any more paid in amount for this product than the actual purchase price.

2.Any costs and expenses with access to alternative goods, services or rights.

3.Costs, expenses increased, loss caused by the data loss, data corruption or data interruption.

4.Any loss caused by the violation of the provisions of local laws and regulations or the civil aviation administration laws.

5.Any loss caused by the usage of product without abiding by the User Manual.

6.Any loss caused by the age, physical and mental condition of the operator who is not in the proper condition.

7.Damage(s)，injuries or any legal responsibilities caused by using the third part alteration products or fake Wingsland products.

8.Any loss caused by improper use in a strong magnetic field or in the bad environmental conditions (Such as in the temperature higher than 40 degrees or below 0 degrees Celsius, and in the wind over force 4, ect).

9.Any loss caused by Force Majeure.

Contents

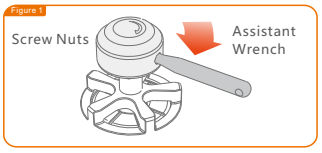
1 Product Profile

1-1Aircraft Assembly

1 Install Propellers

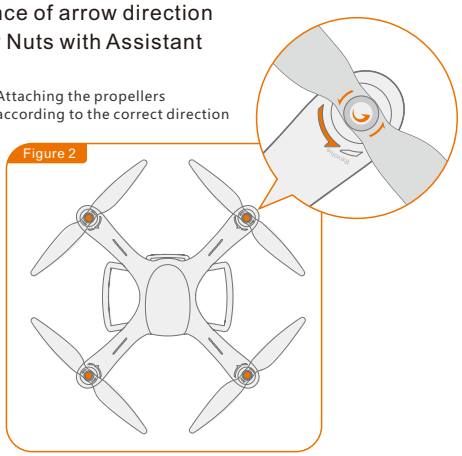
Spin Propellers and Screw Nuts in the direction with consistence of arrow direction marked on the aircraft arms (Figure 2).Spin and Fasten Screw Nuts with Assistant Wrench (Figure 1).

Figure 1



Attaching the propellers according to the correct direction

Figure 2

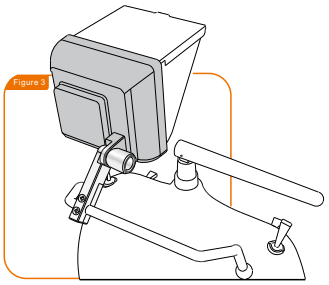


Warning	Damaged propellers shall be replaced by Wingsland new ones.
Warning	Please use original Wingsland propellers only.
Warning	Please use Assistant Wrench to Spin and Fasten Screw Nuts.
Warning	Ensure that all propellers are installed correctly before every flight.

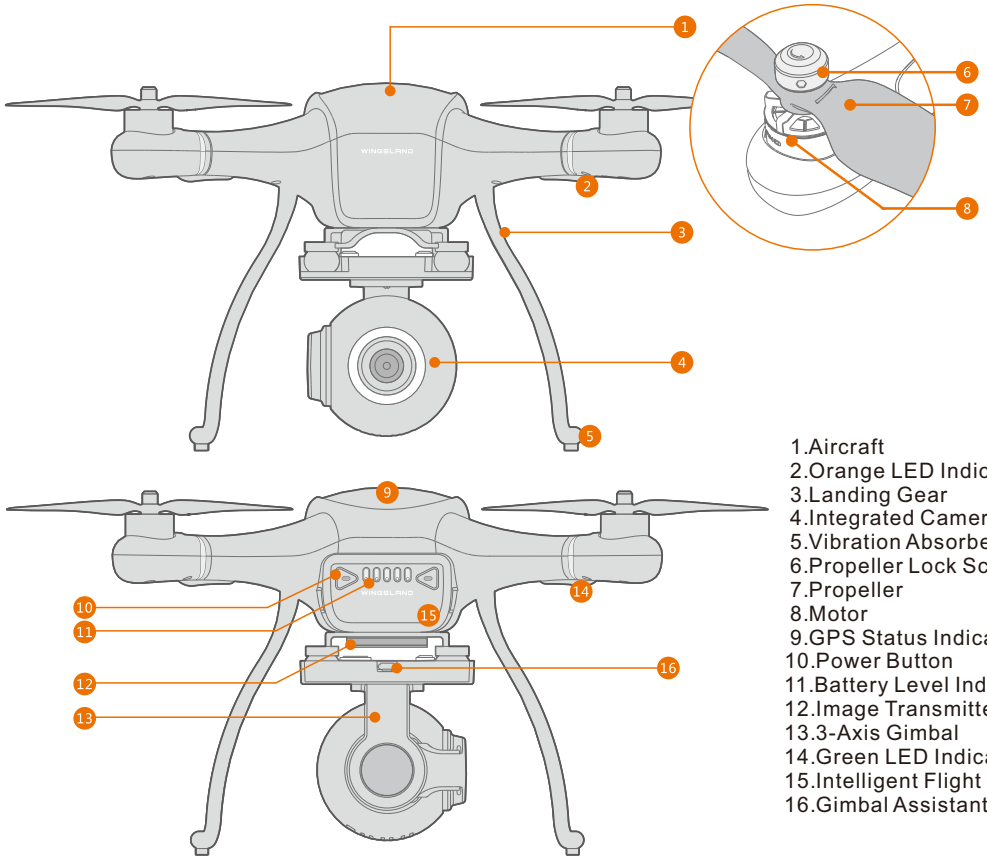
2 Install Display Screen

Install the Display Screen and Bracket onto the Remote Controller Handle through fastening Screen Lock-Screw. (Figure 3).

Figure 3



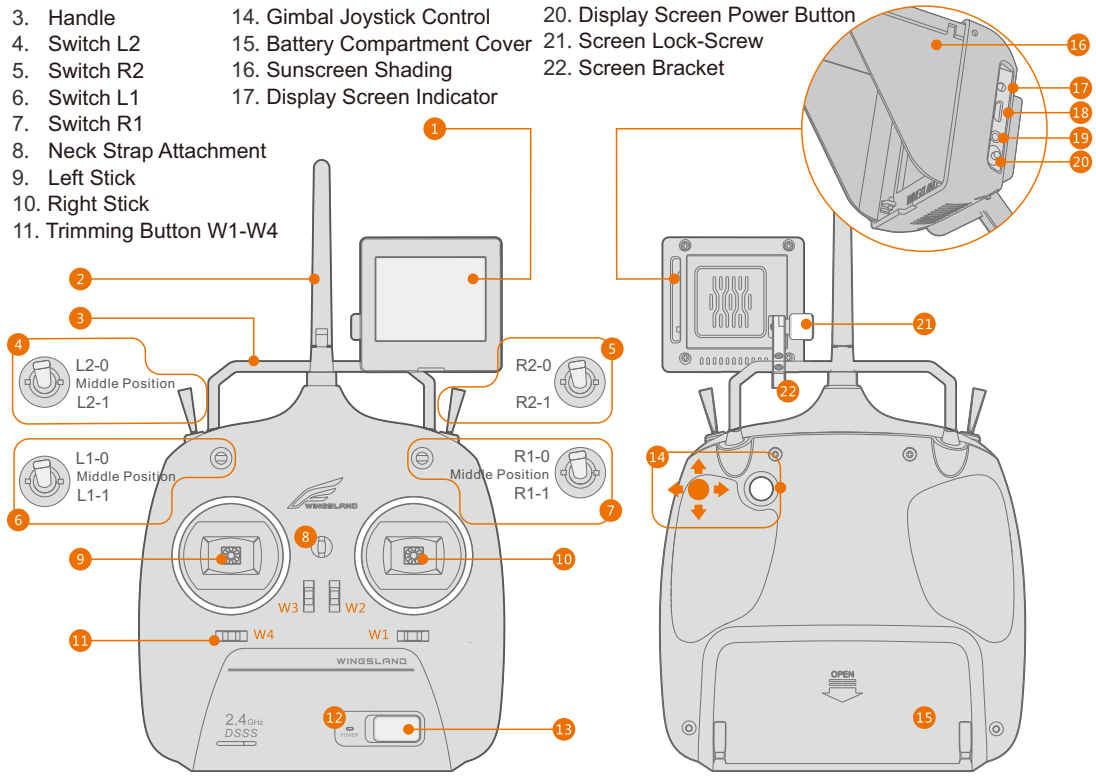
1-2 Components of Aircraft



1.Aircraft
2.Orange LED Indicator
3.Landing Gear
4.Integrated Camera
5.Vibration Absorber Sponge
6.Propeller Lock Screw
7.Propeller
8.Motor
9.GPS Status Indicator
10.Power Button
11.Battery Level Indicator
12.Image Transmitter
13.3-Axis Gimbal
14.Green LED Indicator
15.Intelligent Flight Battery
16.Gimbal Assistant port

1-3 Components of Remote Controller

1. Display Screen
2. Antenna
3. Handle
4. Switch L2
5. Switch R2
6. Switch L1
7. Switch R1
8. Neck Strap Attachment
9. Left Stick
10. Right Stick
11. Trimming Button W1-W4
12. Power Indicator
13. Power Switch
14. Gimbal Joystick Control
15. Battery Compartment Cover
16. Sunscreen Shading
17. Display Screen Indicator
18. Charging port
19. Video Output
20. Display Screen Power Button
21. Screen Lock-Screw
22. Screen Bracket



2 Aircraft

2-1 Aircraft Status Indicator

Solid Orange + Solid Green + Solid Blue
GPS Initialization completed
(GPS satellites number ≥5)
GPS Stabilized Smooth Mode is available

Solid Orange + Solid Green + Blue
Flashing Alternatively
GPS initialization uncompleted
(GPS satellites number <5)
Only Normal Stabilization Mode is available

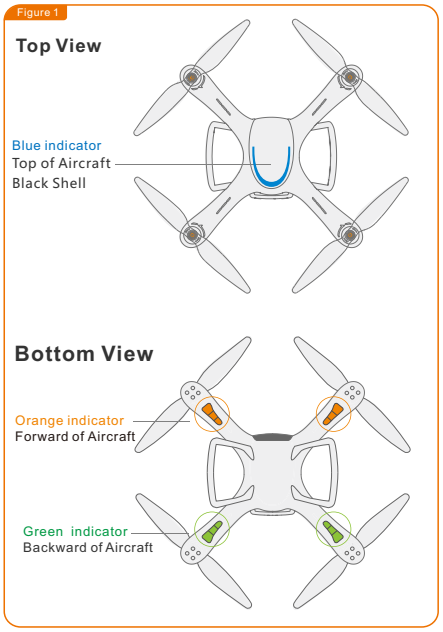
Orange Flashing Alternatively + Solid Green
Low Voltage Alert, landing immediately is recommended

Solid Orange+ Green Flashing Slowly
Forward Direction Lock Mode

Solid Orange+ Green Flashing Quickly
Point of Interest Mode

Orange Flashing Slowly+ Green Flashing Slowly
Compass Calibration mode has been initiated

Figure 1



Warning Fast Orange Flashing +Fast Green Flashing, take off prohibited.

2-2 Flight Mode

(1) Standard Ready to Fly Mode (L1 to the middle position, L2 to the middle position)

Use barometric altimeter and GPS module to lock the aircraft in a stable hover.
Based on the GPS satellites signal, there are two types:

- **Stabilized Smooth GPS Mode** (GPS satellites number ≥5): the aircraft will keep position and altitude.
- **Normal Stabilized Mode** (GPS satellites number<5): keep the aircraft height position and stabilized except for horizontal position.

(2) Forward Direction Lock Mode (L1 to the middle position, L2 to L2-1 position)

Toggle the switch L2 to L2-1 position when flying far from distinguishing nose direction of aircraft. To activate Forward Direction Lock Mode to make flight direction control easily. The nose direction will remain the forward direction regardless of how the orientation and position of the aircraft changes.

(3) Manual Operation Mode (L1 to L1- 0 position, L2 to the middle position)

Under Manual Operation Mode, aircraft system only provide stabilized state, can't keep a stable altitude and position. Throttle Stick controls motors speed instead of the altitude.

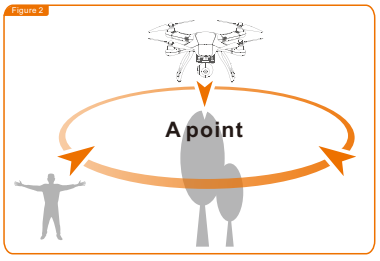
Caution The default forward direction will be reset automatically after powering on the aircraft each time.

Warning Beginners do not try Manual Operation Mode.

(4) POI Mode (Point of Interest)

(L1 to the middle position, L2 to L2- 0 position)
Aircraft hovers over A point, toggle switch L2 to L2-o potion, start POI Mode. A point would be recorded as Point of Interest. Move the stick to fly away a distance from A point, then return all sticks to central po -sition. The aircraft can circle around A point with 3m/s speed and the nose direction would always points to the POI.

Figure 2

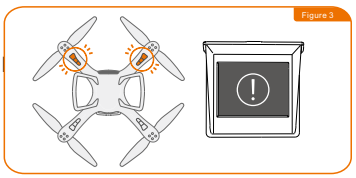


(5) Automatic Return-To-Home Mode (L1 to L1-1 position, L2 to the middle position)

After entering in the Automatic Return-To-Home Mode, the aircraft will return to home point automatically which will be set to the location from which the aircraft was launched and finished GPS initialization (GPS satellites ≥5). Aircraft would be Return-To-Home with maintaining the same flight height when the flight height altitude is beyond 20M.Aircraft would be flying higher to 20M before returning to the home point if the flight altitude is below 20M.

(6) Low Battery Level Protection Mode

When aircraft battery voltage drops blow 11V, the aircraft will enter in Low Battery Level Protection Mode. The Flight Orange Indicator will flas slowly. Meanwhile exclamation mark will appear on the Display Screen, which shows low battery level warning.



Warning	**Enter in Low Battery Level Protection Mode after 60 seconds, the aircraft is descending to land auto -matically as soon as possible. All stick commands are available except the Throttle Stick command during the descent and landing process. The landing point is at the location where aircraft landed the first time but not take off point.**

Warning	**Automatic Return-To-Home function does not work after the aircraft begin to descend automatically caused by low voltage.**

(7) Failsafe Mode (Signal Losing)

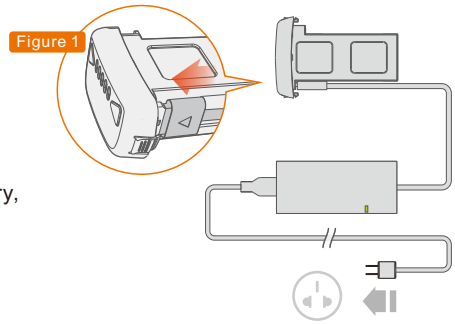
When the aircraft fail to receive a signal from the Remote Controller, the aircraft will enter in Failsafe Mode. The Aircraft will automatically return will automatically control the aircraft to return to recorded home point. The home point will be set to the location from which the aircraft was launched and finished GPS initialization (GPS satellites number≥5).

2-3 Intelligent Flight Battery

The Minivet Battery is specially designed for multi-copter aircraft, built-in battery level indicators which can display current capacity level.

Main Parameters:

Battery Capacity: 3S, 5200mAh
Battery Voltage: 12.6V (fully charged)
Battery Storage Voltage: 11.4V



Battery Level Display:

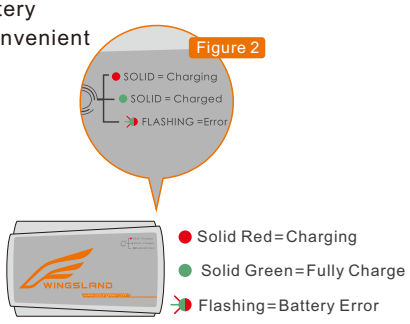
When the battery is powered off, press any button of the battery, the green LED will light and indicate the current battery level. This mode is convenient for user to check the battery level.

Setup of Battery Level Display:

Press two triangular power buttons with holding for 3 seconds till battery powering on and the Green/Red indicator lightening. This mode is convenient for user to view the battery level when flying.

Charging the Intelligent Flight Battery:

Battery charging uses the genuine Charger supplied by Wingsland is demanded.Connect battery to wall socket (100~240V), using the plug set if necessary. Connect battery to the battery joint. (Figure 1) Battery Level Indicators display current capacity level during the battery charging. (Figure 2)



Notice	**The battery temperature may be too high after flight. Do not charge the battery immediately .Please charge the battery until it cools down to near room temperature.**

Notice	**The battery should be charged in an ideal charging temperature ranges 0~40°.**

Discharge the Intelligent Flight Battery:

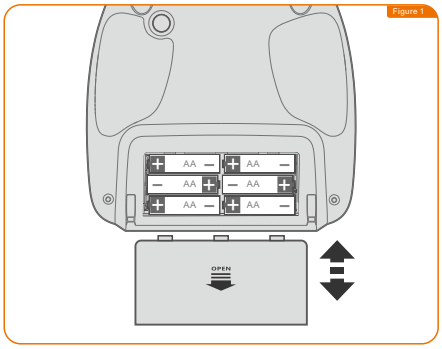
The battery life will be shortened in fully storage status. Please use following method to discharge the battery to low level if it will not be used for a long time.
Fly in an open field and keep hovering state, landing the aircraft when indicator show that there are only remaining 2 battery level. Power off the Aircraft and take the Battery out.

3 Remote Controller

Minivet Remote Controller can operate the Aircraft, as well as controlling the Gimbal and Camera. The Remote Controller system operate at 2.4 GHz and has 10 Control Channel Number of Transmitter.

3-1 Install Battery

The Remote Controller is powered by 6pcs AA Alkaline Battery. Open the battery compartment cover (on the back), install the battery, then close the battery compartment cover (Figure 1).



Warning Pay attention to the positive and negative.

Warning Using the same brand battery.

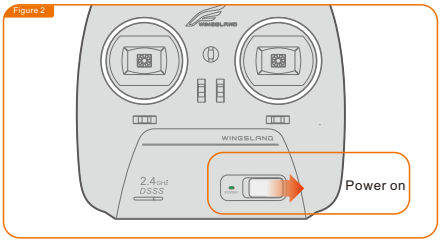
Warning Do not using the used and unused battery together.

3-2 Remote Controller Operation

(1) Power ON/OFF Remote Controller.

Push the Power switch to the right to Power on the Remote controller. The Red LED indicator will light.

Push the Power switch to the left to Power off the Remote controller. The Red LED indicator will light off.



Warning Please check and be sure each sticks & switches are on correct positions before powering on the Remote Controller.

Warning If a continuous beeps from the Remote Controller when powering on, it indicates low voltage warning. Battery should be replaced immediately.

Warning When starting a flight, powering on the Remote Controller before turning on the aircraft. After every flight, make sure to remove the aircraft battery firstly, then power off the Remoter Controller.

(2) L1 Mode Control Switch (3-position switch)

L1-Middle Position: Stabilized Smooth GPS Mode. This mode has A/B type:

A. Stabilized Smooth GPS Mode: Outdoor and strong GPS signal (GPS satellites ≥5).

B. Normal Stabilized Mode: Indoor or Outdoor but weak GPS signal (GPS satellites <5).

L1-1 Position: Automatic Return-to-Home Mode
L1-0 Position: Manual Operation Mode

⚠ Warning **Beginners do not try Manual Operation Mode.**

(3) L2 Mode Control Switch (3-position switch)

L2-Middle Position: Standard Ready to Fly Mode
L2-1 Position: Forward Direction Lock Mode
L2-0 Position: POI Mode (Record a Point of interest)

(4) R1 Camera Mode Function Switch(3-position switch)

R1-Middle: Camera Setting Mode
R1-1 Position: Capture Mode
R1-0 Position: Record Mode

(5) R2 Camera Operation Switch(Reset switch)

Toggle R1 switch to R1-1 Position, flip R2 switch once and then take a single capture.
Toggle R1 switch to R1-0 Position, flip R2 switch once to begin recording. Flip R2 switch once again to stop recording. Cyclic operation toggle between begin to stop mode.
Toggle R1 switch to R1-Middle Position: R2 Switch works as a Confirm Button. Refer to Camera Settings for more details.

(6) Gimbal Joystick

The Gimbal Joystick controls the pitch of the Integrated Camera. The position of the Joystick determines the angel relative to the horizontal level.

(7) Trimming Button

The Trimming Buttons are used for calibration of the stick neutral. Generally, no need to calibrate the stick neutral after corrected via the Minivet RC Assistant Software. But when the neutral position deviated and PC is not available, can use the Trimming Button to calibrate the stick neutral.

Under Stabilized Smooth GPS Mode, the aircraft is deviated from the hovering point when hovering, the Trimming Button can calibrate until the aircraft hold a stable horizontal and height position.

For example:
If the nose direction deviates from the intended direction, the front and back position needs to be calibrated via Trimming Button.

Trimming Maximum Range: each channel monitor has a Maximum. There will be two fast beeps from Remote Controller when reach Maximum.

Trimming Neutral Point: there will be two slow beeps when located on central position which has no effect on the stick channel monitor. Trimming Button should be on central position, when calibrating the neutral point of Remote Controller via PC.

Mode 1: W1 (Left & Right), W2 (Altitude & Elevation), W3 (Front &Back), W4 (Rudder).

Mode 2: W1 (Left & Right), W2 (Front &Back), W3 (Altitude & Elevation), W4 (Rudder).

⚠ Warning	**Landing the aircraft when ready Trimming operation. After finishing it, take off the aircraft to check the consequence. Repeat above-mentioned operation to get an ideal result.**

⚠ Warning	**Lock the Trimming Button when finished the Trimming neutral point setup operation to avoid touching it.**

⚠ Warning	**It is recommended that calibrate Trimming Neutral Point via PC operation. Under non emergency condition, do not use the Trimming Button to calibrate the trimming neut -ral point.**

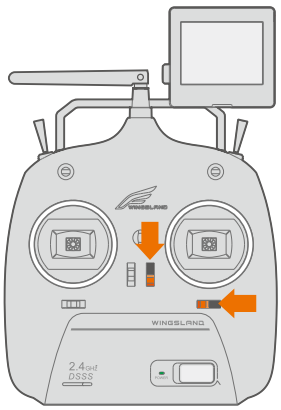
Unlock Trimming Button Mode:

To avoid of improper operation, the default factory is lock mode.
Unlock procedures are as follows:

1. Be sure the Aircraft is powered off.
2. Power off the Remote Controller.
3. Press W1 down and W2 left simultaneously and hold (Figure1).
4. Power on the Remote Controller.
5. Two beeps indicates that unlock has been successfully finished.

Lock Trimming Button Method: Repeat the operation above.

Figure 1

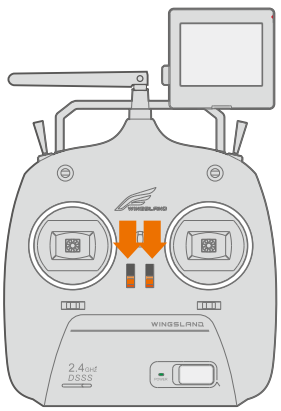


(8) Link between the Remote Controller and Receiver

The link between Remote Controller and aircraft has already established so you can initially skip this procedure. If you ever replace the Remote Controller, re-establishing the link is required. Link procedures are as follows:

1. Be sure the Aircraft is powered off.
2. Power off the Remote Controller.
3. Press down W2 and W3 simultaneously and hold (Figure2).
4. Power on the Remote Controller.
5. Release two switches until the Remote Controller indicator blinks.
6. Power on the Aircraft.
7. Remote Controller indicator stops flash and keep solid lighting. This indicates that the link has been successfully established.

Figure 2

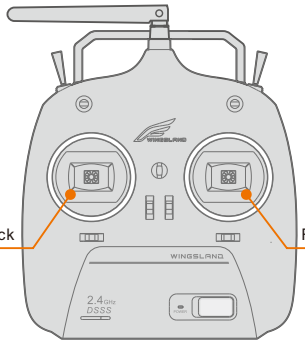


Warning **Remove the propellers when re-establishing the link.**

(9) How to Operate Remote Controller

The Mode 1 and Mode 2 of the Remote Controller can be changed through Trimming Button.

- By default, the remote controller is set to mode 2 when out of the factory. (The left Stick serves as Throttle).
- Basic Flight Operation see below:(Figure 1),(Figure 2),(Figure 3),(Figure 4).
- Toggle switch L2 to L2-1 position when flying far from distinguishing nose direction of aircraft, to activate Forward Direction Lock Mode to make flight direction control easily.
- Toggle switch L1 to L1-1 position to activate the Return-To-Home Mode for aircraft return safely, when you fail operate or under other difficulties.



Model 2

Figure 1

Left Stick

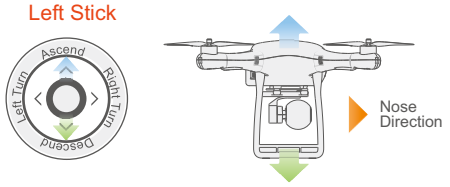


Figure 2

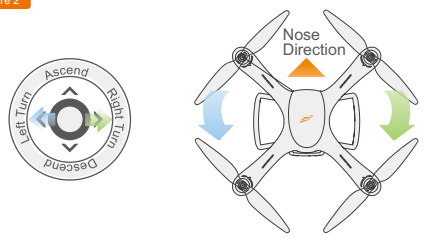


Figure 3

Right Stick

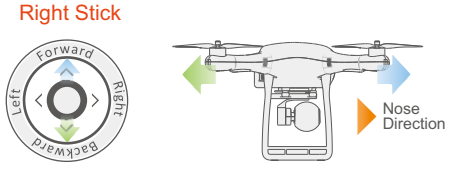
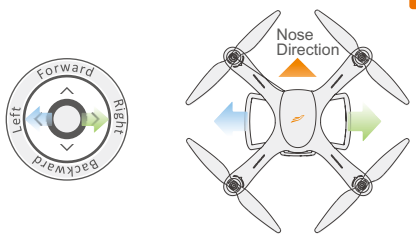


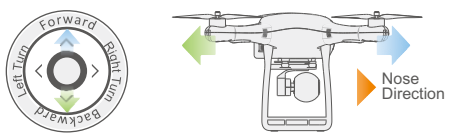
Figure 4



Model 1

Figure 1

Left Stick



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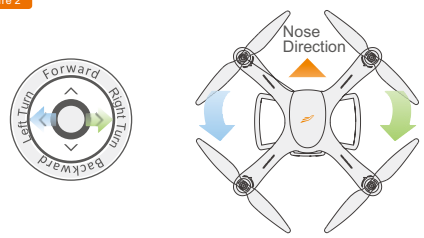


Figure 3

Right Stick

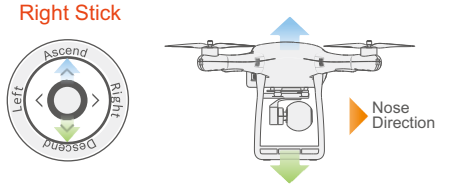
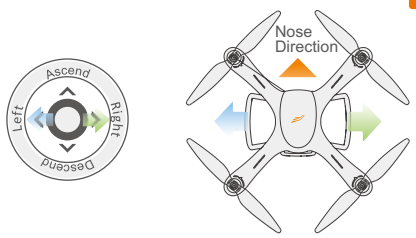


Figure 4



Caution When hovering, the aircraft is deviated from the hovering point. The Remote Controller Neutral point recalibration is needed.

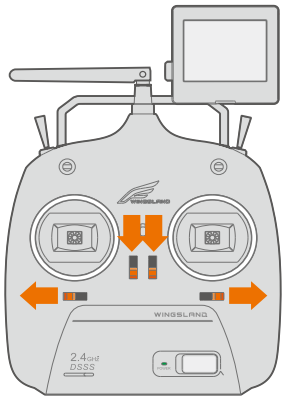
Caution The aircraft would not be controlled by the operator after activation the Return-To-Home Mode, so ensure no obstacles or passenger along the way home.

(10) Switches between Mode 1 and Mode 2

Change the control mode with Trimming Button.
Procedures are as follows:

1. Be sure the Aircraft is powered off.
2. Power on Remoter Controller.
2. Trimming Mode should be in lock state.
3. Press 4 Trimming Buttons simultaneously as Figure 1 shows.
4. The Mode Switches have been calibrated successfully when hear sound of beep. One beep indicates Model 1. Two beeps indicate Mode 2.

Figure 1



Notice **Use the PC to calibrate the Throttle Neutral Point after this Mode Switches.**

(11) Remoter Controller Indicator Information

Power LED Indicator .....

Working Mode: Solid Lighting
Remote Controller Link Calibration Mode: Fast Flashing

Figure 3
Power Indicator Position

Sound Indicator

Power on the Remote Controller: there will be **one indicator beep** when the Remote Controller is powered on.
Continuous beep indicates low voltage level warning, replace the battery immediately.
Unlock Trimming Mode successfully: **one beep.**
Lock Trimming Mode successfully: **one beep.**
Switch between Mode 1 and Mode 2: **One beep** indicates Model 1.**Two beep** indicate Mode 2.

Trimming Buttons Indicator

Adjustments of Trimming Button: one beep.
Trimming Maximum: two fast beeps.
Trimming Neutral Point: two slow beeps.

3-3 Display Screen

The Display Screen is equipped with 5.8G image receiver and built-in charge/discharge battery.
The Display Screen can display the view of the camera and flight data in the meantime.

(1)Display Screen Diagram **(Figure 1),(Figure 2)**

Figure 1

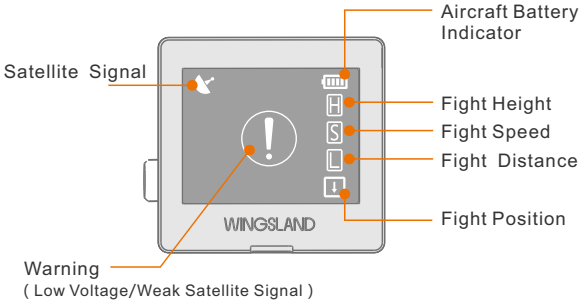
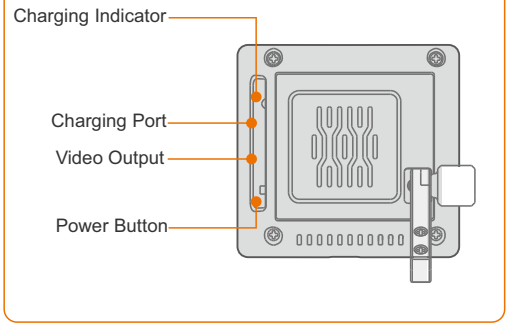
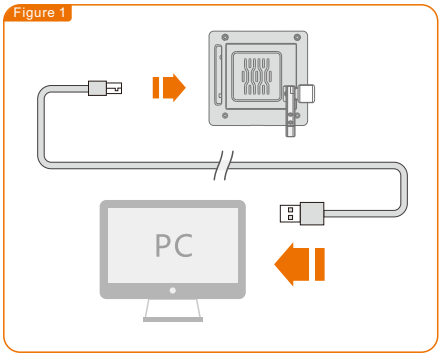


Figure 2



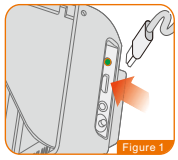
(2)Charge the Display Screen

- The Display Screen built-in Battery can be charged with PC or Smart Phone and connect to the charging port (Figure 1). The Display Screen Indicator LED displays RED to tell the charging status.The battery is fully charged after LED turns Green.



(3)Display Screen Switch

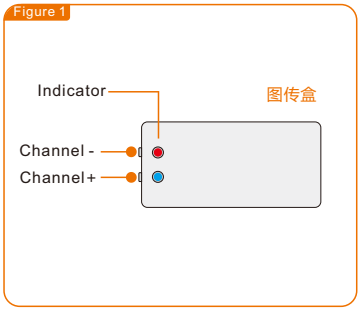
- Press Power Button for 3 seconds to power on the Display Screen.
- Press Power Button again for 3 seconds to power off the Display Screen



(4)Switch Channel

- When Display Screen is interfered, the operator can press Display Screen Button rapidly once to switch Display Screen channels. A total of eight channels for choice. Change procedure are as shown below:

1. Power on Display Screen.
2. Press Power Button once to switch its channel. The screen will display the channel number.
3. Power on aircraft.
4. Pressing down the button to change the channel, until high definition image appears.
5. Power off aircraft. Turn off Display Screen, switch is finished.



Channel 1 is the factory default setting. The blue indicator keeps on when the Display Screen is powered on. Pressing down the button can switch the channel with blue indicator flashes once.

4 Gimbal and Camera Introduction

Minivet 3-axis Gimbal is equipped with high-definition camera, can provide a steady platform for the camera. Use Remote Controller to control all functions and settings.

4-1 Gimbal and Camera Operation

(1)Camera Memory

Supported Micro-SD card with 64G.The camera would store high definition image. Micro-SD card with over-8G and Class 10 is recommended due to store high definition photos and videos.

(2)Gimbal Operation

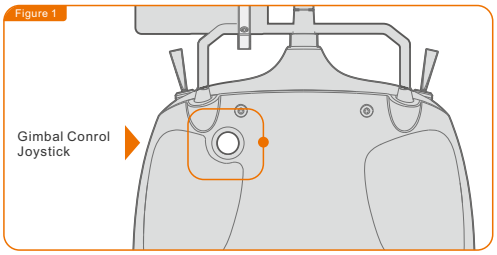
The Gimbal Joystick controls the pitch of the 3-Axis Gimbal (Figure 1).
The Gimbal can tilt the camera within a 90 degree range.

(3)Camera Operation

Toggle R1 switch to R1-1 Position, flip R2 switch once, takes a single capture.

Toggle R1 switch to R1-0 Position, flip R2 switch once to start recording video.

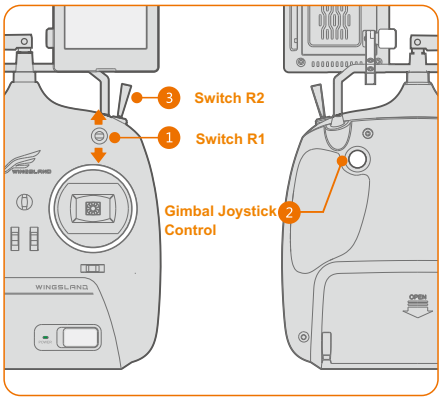
Then flip once again to stop recording. Cyclic operation between begin to stop mode.



4-2 Camera Setting

Set up the Photos and Videos parameter separately.

(1)Camera Setting via Remote Controller



Mode Switch

- R1-0 Position: Record Video Mode
- R1-1 Position: Capture Mode

Settings on Operate Interface

Select Submenu: move Gimbal Joystick up and down. 2
Enter/ playback menu: move Gimbal Joystick left and right. 2
Confirm Button (Confirm about Parameters and Setting), toggle R2 switch. 3

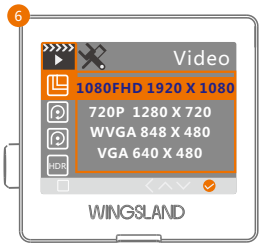
4

- Under record mode (Figure 7), move the Gimbal Joystick to left, operator can change to the Capture parameter setting.

5

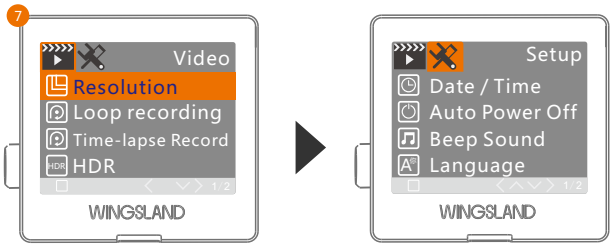
- Move the Gimbal Joystick to adjust secondary option menu setting such as Resolution, Circle Capture operate, HDR etc.

6



- Move the Gimbal Joystick to right to enter the selection of parameters. Toggle R2 switch to confirm. Move the Gimbal Joystick to left to return back to previous menu.

7



- Enter in Capture Parameters Setting Interface by moving Joystick to left

(2)Parameters Setting

Video Parameters Setting

- Enter in Record Mode Setting via toggling the R1 switch from R1-0 position to R1-middle position. Gimbal Joystick is used for choosing the menu and parameters while use R2 switch to confirm this.

Photo Parameters Setting

- Enter in Capture Mode Setting via toggling the R1 switch from R1-1 position to R1-middle position. Gimbal Joystick is used for choosing menu and parameters while toggle R2 switch to confirm this.

(3)Read the Video and Photo

1. Insert Micro-SD card to SD card reader, then connect with the computer via USB cable.
2. A new magnetic Disk will appear, click and open it.
3. Two folders in the new magnetic Disk: named [MOVIE] stores Videos files, while named [PHOTO] stores Photos files.

5 Flight

5-1 Fight Notes

(1)Flight Environment Requirements

- Only fly in open areas without tall buildings surrounded. Metal and steel structures will affect GPS system and reduce stabilization of aircraft.
- Do not use aircraft in severe weather conditions. This includes wind speed exceeding 10m/s, snow, rain and fog.
- Avoid high voltage power lines, where will affect compass.
- Avoid base station, which will affect control of aircraft.
- Be careful when flying at altitudes greater than 5000m above sea level, motor system will be affected.
- Within visual distance, and fly far from crowds.

(2)Flight Limits and No-Fly Zones

- Every nation and region have their own regulations for using aircraft, learn more and abide details of local laws before flying.
- Do not use aircraft in airport and dense crowds.
- Control aircraft within 120m altitude and 250m level.

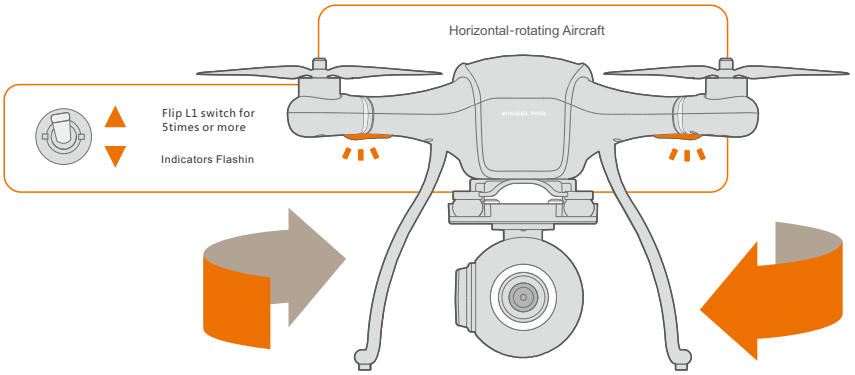
5-2 Check and Calibrate the Compass

(1)Preflight Checklist

- The transmitter battery and flight battery are fully charged
- Each switch of Remote controller to be on correct position.
- Trimming Propellers and Screw Nuts in the right direction with consistence of arrow direction . Be sure fasten Screw Nuts with assistant wrench.
- Micro-SD card are inserted correctly.
- Gimbal and Camera working normally after powering on.
- Motors can work normally after powering on.
- Display Screen can show high quality image. Flight data is all right.

(2)Calibrating the Compass

- Calibrate the compass when you fly for the first time at a new location
- After powering on the controller and aircraft, rapidly flip the L1 switch from the fully up to the fully down position for at least 5 times until the 4 LED indicators beneath the arms of aircraft turns slowly flashing for the compass calibration mode being initiated.
- Horizontally clockwise rotate aircraft for 4 circles or more, until the 4 LED indicators beneath the arms of aircraft stop flashing for the complete of compass calibration.

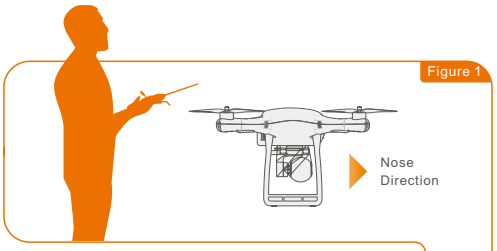


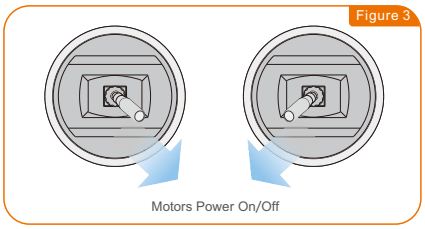
5-3 Flight Operation

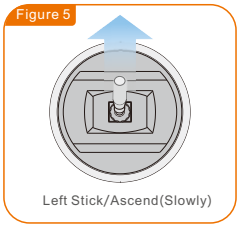
(1) Take off

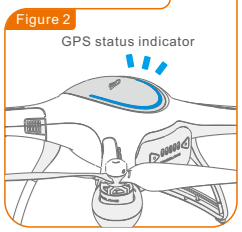
In an open area and strong GPS Signal

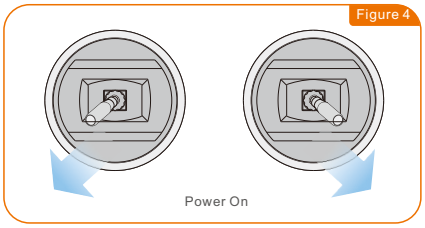
- Place the aircraft on flat ground in an open area, with Rear Battery LED indicators facing operator (Figure 1). Make sure no obstacles or passengers.
- Adjust Display Screen channel (Press Display Screen Power Button rapidly once to switch Display Screen channels),ensure the image displayed on the Display Screen is in high quality (if image transmission interfered, please switch onto aircraft transmit Channel firstly ,then match the Display Screen channels.).
- Waiting for 1 minute or more when flying in a new place at first time, till the upper side of aircraft GPS Status Indicator Blue LED (Figure 2) stop flashing.
- Toggle left stick and right stick simultaneously to powering on/off motors (Figure 3 or Figure 4).Restore the stick to the central position after powering on.
- Drive left throttle stick (Figure 5) up slowly for aircraft ascending (For beginner, the fight height controlled within 5-10M is recommended.).
- When the aircraft hovering, please ensure the battery level indicator always facing operator.









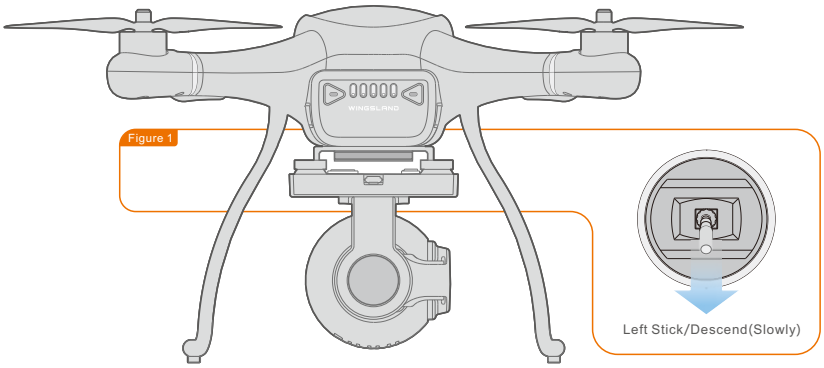


Warning **Manual Operation Mode, do not move the Throttle Stick to the central position after powering on. Otherwise the aircraft would take off suddenly.**

(2) Landing (Outdoor)

Operate in the outdoor and make sure GPS signal is sufficient.

- Gently pull the Left Throttle Stick (Mode 2) down to lower the aircraft (Figure 1).
- When the aircraft is touching the ground, pull the Left Throttle Stick (Mode 2) down to the lowest position rapidly. After the aircraft touching the ground, to maintain the Left Throttle Stick (Mode 2) on the lowest position for 3 seconds or more until the propellers stop rotation.
- Press the two triangular buttons on the battery compartment board simultaneously for 3 seconds or more until all the indicators on the battery compartment board turn off.
- Press the Display Screen Power Button for 3 seconds or more to power off the Display Screen.
- Power off the Remote Controller.



Notice **Make sure the Remote Controller Power off after Aircraft Power Off.**

Notice **When the aircraft topple and fall anytime, do not be closed to at once. The operator needs to maintain the Left Throttle Stick on the lowest position for 3 seconds or more until the aircraft motors locked, then move to Power off the aircraft.**

6 GCS Assistant Software Operation

6-1 GCS Assistant Software Download and Upgrade Operation

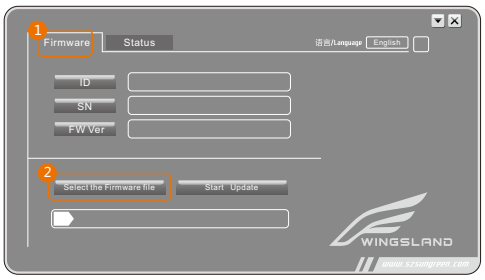
WINGSLAND_GCS Software has some very practical functionality, such as:
Firmware Upgrade, Neutral Point Calibration of Remote Controller, Flight Simulator Operation, etc.

(1) Prepare the Aircraft and Software

- Remove all propellers.
- Download GCS Assistant Software to PC from the Windgland website: www.szsungreeen.com.
- Unzip the zip file and run the WINGSLAND_GCS software.
- Connected the Aircraft USB port (close the Aircraft Battery) to PC via USB cable.
- Do not power on the aircraft, to avoid damaging the USB port of PC.
- Power on the Remote Controller.

(2) GCS Assistant Flight Firmware Upgrade

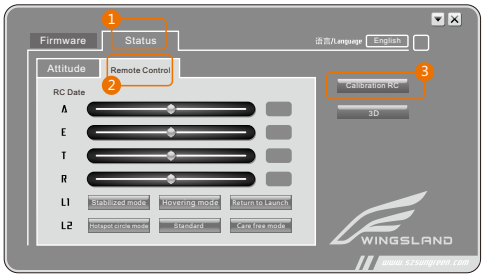
- Obtain the latest Firmware from Wingsland website: www. szsungreeen.com or Windsland authorized dealer, save to PC. Click the “Firmware Choice” icon on “Firmware” interf -ace to choose the latest Firmware file.
- Click the “Start Updating” icon to upgrade the latest Firmw -are. Do not disconnect until the upgrade is finished.



6-2 Setting and Using GCS Assistant Software

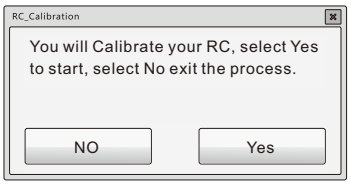
(1) Calibrate the Stick Neutral.

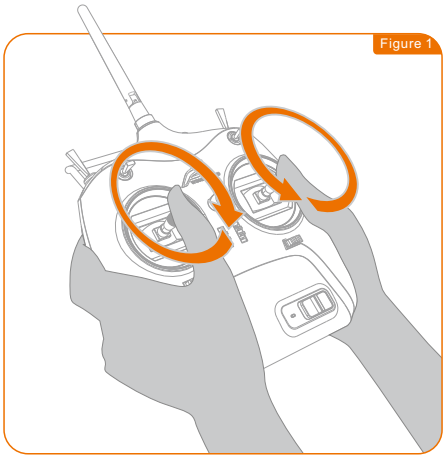
- Run GCS Assistant software. Choose the “Remoter Controller” icon on the “State” interface.
- Click the “Remote Controller Calibration” icon and P -rogram Calibration. Operate the Remote Controller according to the prompt, until Calibration finished.



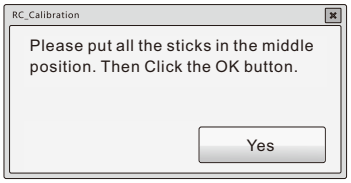
Remote Controller Calibration .....

- Click the “YES” icon to start calibration.

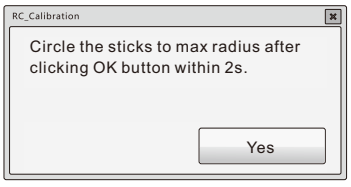




- Push Left and Right stick to the central position, then c -lick “YES” icon.

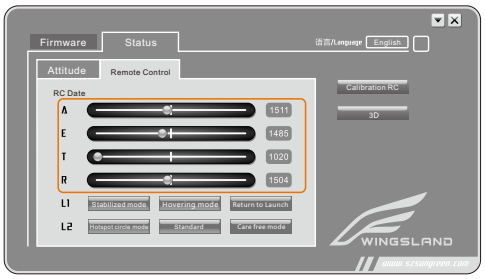


- After clicking “YES” icon, rota te Left and Right stick along th -e maximum radius(Figure 1) until the below window closes. If power on the motors during this process, maintain the Thr -ottle stick on the lowest posit -ion until the aircraft motors lo -cked.



(2) Calibration Result verification.

- **1.Calibration Result verification**
  A (Aircraft fly left and right)
  E (Aircraft fly forward and backward)
  T (the Throttle stick controls aircraft altitude, fly up and down)
  R (the stick controls the aircraft rudder, turn left or right)
  The ideal position Parameter for 4 above-mentioned sticks should be in the range of 1520±3.The maximum should be in range of 2050±5. The minimum should be in range of 1020±5.If the actual parameters are against the above situation, please calibrate Remote Controller again until the result meets the request.

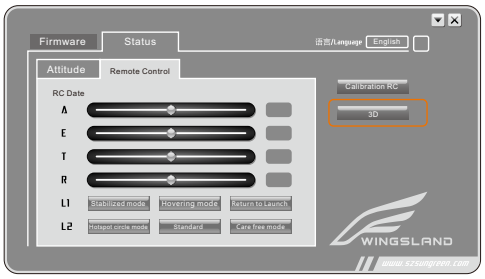


(3) Remote Controller Simulator

The operator can obtain the control skills more easily with the help of this Simulator.

- Click the “3D” icon on “Remote Controller” interface. It would popup the simulator window.(Figure 2)

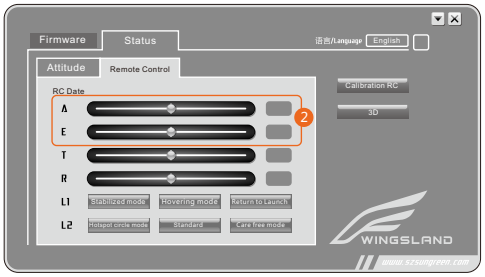
- The operator can observe the change of flying posture which controlled by the two sticks on Remote Controller, to have a better understanding of the Remote Controller operation.



(4) L1 and L2 switches Verification

- Click the “Remote Controller” icon to verify the functions related to the L1/L2 switch.

- Toggle the L1/L2 switch to verify the corresponding functions changing on the software interface.



Shenzhen WINGSLAND Technology Co., Ltd

Thanks for purchasing Windsland Minivet multi-copter aircraft and read this User Manual strictly.
If you have any questions or concerns in the process, please don't hesitate to email or call Wingsland Customer Service. We would try our best to serve you.

Welcome to visit our company website: www.szsungreeen.com to purchase latest product and accessories.