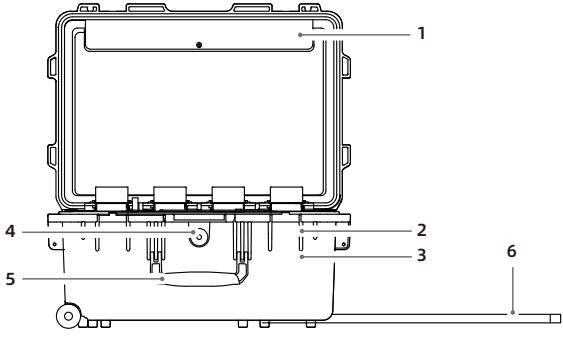
# Intelligent battery pack

The battery pack has several battery ports and can charge up to eight PD12 intelligent batteries. The battery pack has a rod, making it easy to carry the pack outside.

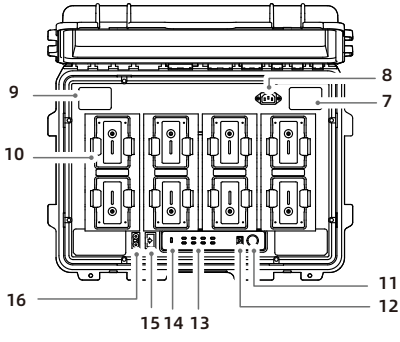
## Precautions for Use

1. Keep the battery pack dry. Avoid water, oil and any other liquids.
2. Do not close the battery pack for charging. Please keep it in an area that is well ventilated and cool.
3. The battery pack is only applicable for PD12 intelligent flight batteries, remote controller, and pad. Do not use the battery pack to charge batteries from other models.
4. During usage, please place the battery pack flat and avoid insulation and fire protection.
5. Do not touch metal terminals with your hands or other objects. If the metal terminal has any foreign matter, please wipe them with a cloth.
6. Be careful when opening and closing the battery pack and extension rod to avoid being pinched.
7. Place the battery in the proper direction.
8. In the event of long-term air transportation or ambient pressure changes, internal air pressure inside the battery pack may change. At this point, the pressure equalizing valve will automatically adjust to balance the internal and external air pressure without manual adjustment.
9. Please use a dust remover for dust inside the battery pack.

## Component description




1 Storage position of power cables
2 Padlock hole
3 Hasp
4 Pressure equalizing valve
5 Handle
6 Retractable rod

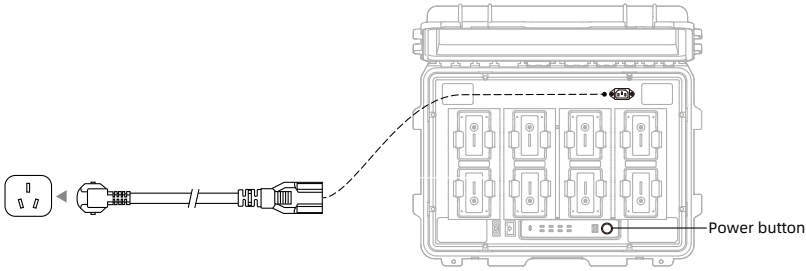



7 Air intake vent
8 AC 220V power interface
9 Air exhaust vent
10 PD12 battery interface
11 Power button
12 Firmware/software update interface
13 PD12 battery status indicator light
14 Alarm indicator light
15 USB charging interface
16 DC 12V charging interface

## Use

### Charging

Use an AC power cable to connect to the battery pack's power interface to an AC power (100-240Vac, 50-60Hz).




2.Press the power button to turn on the battery pack.

3. Insert a battery for charging.

It takes about 120 minutes to fully charge two PD12 intelligent batteries when using 100-240Vac power supply, and about 50 minutes to charge the batteries from 20% to 90%.

## Specifications

| | |
|---|---|
| Product model | ABP01 |
| Dimensions | 580mm* 420mm * 297mm |
| Empty box weight | 15±0.05kg |
| Items that can be accommo-dated | PD12 intelligent batteries×8 pcs<br>AC power cable, DC charging cable, USB charging cable |
| Input | 90-264VAC，47-58Hz |
| Output | PD12 intelligent battery port: 26.4V, 14A×2<br>DC charging port: 12V, 3A×2<br>USB charging port: 5V, 3A×2 |
| Output power | 800W |
| Charging time | Two PD12 intelligent batteries can be charged at the same time, which take 110 min to fully charge them, and about 50min to charge the batteries from 20% to 90%. |
| Charging hub | Intelligently detect the battery level, and charge the high-battery level batteries at first. |
| Operating temperature | 5℃~40℃ |
| Protection functions | Anti-back flow protection, short-circuit protection, over-voltage protection, over-current protection, and over-temperature protection |
| Battery status display | Battery not connected-red light is solid on<br>Battery connected but not charged-yellow light is solid on<br>The battery temperature is abnormal-yellow light blinks<br>Battery charging-green light blinks<br>Battery fully charged-green light is solid on |

## Battery Pack LED Description

### Buzzer prompt tone description

The buzzer prompt tone is mainly used for indicating an error:
When the alarm status indicator light is red, the buzzer beeps to prompt a battery pack hardware error.

| LED indicator lights | Description |
|---|---|
| Power button indicator light | |
| Green indicator light is solid on | The battery pack is powered on. |
| Battery status indicator light | |
| Green indicator light is solid on | The charging is finished |
| The indicator light blinks green | Charging |
| Yellow indicator light is solid on | Ready-to-charge status |
| The indicator light blinks yellow. | Low temperature/high temperature alarm (1. The battery has low temperature. Charge it after the temperature has risen; 2. The battery temperature is too high and is cool-ing. Charge the battery after it has cooled to the proper temperature.) |
| Red indicator light is solid on | Battery malfunction (1. The battery is inserted reversely; 2. The battery is not fully inserted; 3. There is a battery communication error. Please use another charging interface;) |
| | The charging interface is malfunctioning. Please replace it. |
| Alarm indicator light | |
| The indicator light blinks red | Battery pack malfunction (1. The battery pack has low power voltage; 2. There is a power module communication error or some other issue; 3. The main board/fan is malfunctioning;) |

⚠ • Please contact the after-sales or a local dealer.

# Intelligent batteries

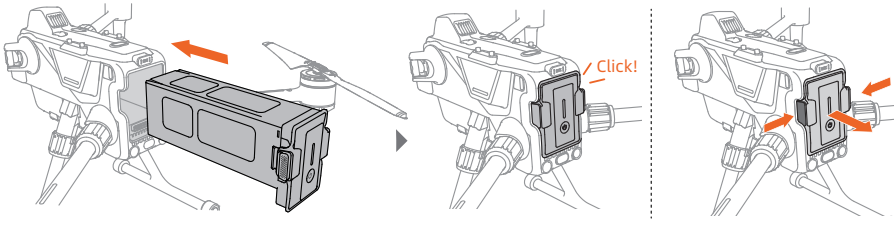
## Introduction to intelligent batteries

The PD12 intelligent flight battery comes with a high-capacity cell and an advanced battery management system to power the aircraft. The intelligent battery must be charged with the special charger provided by GDU. Before its first use, be sure to charge the intelligent battery fully.

## Intelligent flight battery function

1. Short circuit protection: When a short circuit is detected, the battery will automatically cut off output for protection.
2. Balanced protection function: Automatically balance the voltage of the internal cell to protect the battery. The battery has a static equalization and charging equalization function.
3. Overcharging protection: Overcharging will seriously damage the battery. When the battery is fully charged, it will stop charging.
4. Charging temperature protection: The battery will not begin charging at temperatures below 5°C or above 50°C because charging under such conditions will damage the battery.
5. Charging over-current protection: Current surges will seriously damage the battery. The battery will stop charging when the charging current is too high.
6. Overdischarging protection: Overdischarging will seriously damage the battery. When the battery is not operating during a flight, the battery will cut off output if the cell is discharged to 3.2V; when the battery is operating during a flight, overdischarge protection will not engage to ensure flight safety. When the battery is in flight discharge status the battery will turn off overdischarge protection to maintain continuous battery output, maximizing flight time in order to give the operator more time to land. Once this occurs, cell voltage is likely to be less than 2.5V due to overdischarging. Recharging an over-discharged battery may result in a serious fire risks. Therefore, when the voltage of a single cell is below 2.5V, the battery will be locked, prohibiting recharging. The battery can no longer be used. Therefore, please take careful note not to deliberately overdischarge the battery. In doing so the user takes the risk of severe battery damage. When the battery is overdischarged and locked, the battery level indicator lights will flash quickly after pressing the battery button.

## Battery installation/removal

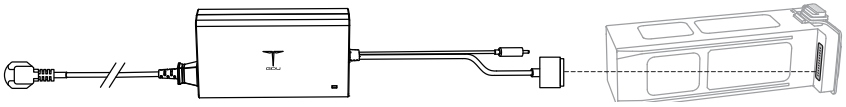



Battery installation

Battery removal

## Charging

1. Remove the aircraft battery.
2. Input voltage: 26.4V
3. Charging time: 14000mAh battery ≤110 minutes

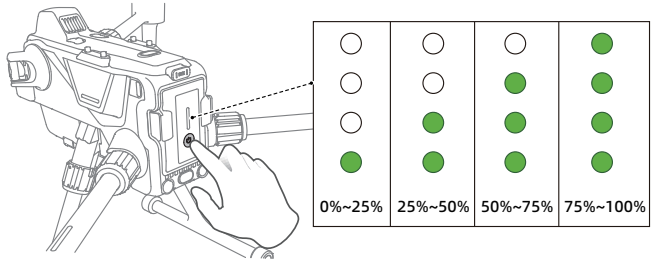


⚠ • Using this device in a residential environment may cause wireless interference.

## Turn on/off the battery (with diagram changed)

Turn on the battery: When the battery is turned off, press the battery power button once, and the battery level LED indicator light blinks alternately. Press and hold the power button for 2 seconds to turn on the battery. When the battery is turned on, the battery level LED indicator lights light on from bottom to top in succession. The battery level LED indicator light displays the current battery level.

Turn off the battery: When the battery is turned on, press the battery power button once, and the battery level LED indicator light blinks alternately. Press and hold the power button for 2 seconds to turn off the battery. When the battery is turned off, the battery level LED indicator lights turn off from top to bottom in succession until all indicator lights are off.



## ADS-B

The manned aircraft carrying an ADS-B emitter with broadcast automatic correlation monitoring will actively broadcast its own flight information. The GDU aircraft with ADS-B can receive flight information transmitted by the ADS-B emitter in compliance with 1090ES or UAT standards . Through the received flight information, ADS-B can analyze and obtain the position of manned aircraft, altitude, course, speed, and other information, and compare with the current position, altitude, course, speed information of the GDU aircraft for real-time calculation of the rough risk level of manned aircraft. Based on different risk levels, ADS-B sends different warning information to the user via the GDU Flight II App.

This module only sends warning information regarding the approach of a certain manned aircraft under specific circumstances and cannot actively control the GDU aircraft to avoid the approaching manned aircraft. The user should always fly the aircraft within their range of visibility and ensure flight safety. This module has the following restrictions:

1. This module can only receive information transmitted by manned aircraft with an ADS-B out in compliance with 1090ES (RTCA DO-260) or UAT (RTCA D0-282). For manned aircraft not equipped with an ADS-B out or the manned aircraft that have been equipped with an ADS-B out but fails to work, this module cannot receive related broadcast information and send warning information.
2. This module functions based on wireless frequency. If there are any obstructions between the GDU aircraft and the manned aircraft, this module will be unable to effectively receive the broadcast information and send warning information.
3. Due to the change and interference of the surrounding environment, this module is likely to delay the transmission of warning information. As such, please fly with caution and keep an eye on surrounding environments.
4. When the GDU aircraft cannot effectively obtain its position, there may be an error with the warning information sent by this module.
5. When this module is powered off or does not work, it will be unable to receive the broadcast information sent from the manned aircraft, and therefore cannot send any warning information. When the ADS-B system determines that there are any risks, it will send 3 levels of alerts based on the distance between the UAV and manned aircraft. When the user receives an alert, please land the aircraft immediately or avoid the obstacles through other methods.
   a) Level 1 alert: All flights searched by the UAV will be displayed in the app (Up to 10 flights can be displayed at the same time). Please pay attention to flight safety;
   b) Level 2 alert: There may be a manned aircraft passing by within the 2km range of the UAV. Please pay attention and avoid the aircraft;
   c) Level 3 alert: There may be a manned aircraft passing by within the 1km range of the UAV. Please pay attention to avoiding;

When a Level 1, Level 2, and Level 3 alert is given, a blue, yellow, and red aircraft icon will appear on the map page respectively.

Blue: Level 1 alert



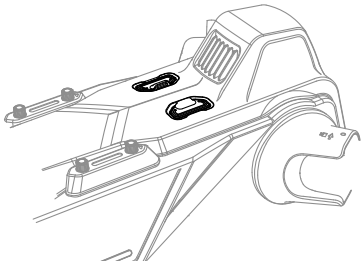
Yellow: Level 2 alert

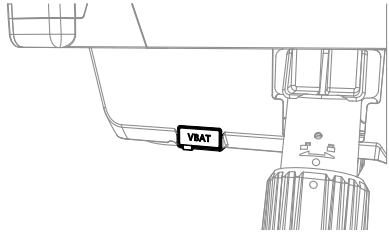
Red: Level 3 alert

⚠ • ADS-B function is only available when the ADS-B module is added.

## Multiple expansion devices

The aircraft has several SDK extension interfaces and can support a variety of expansion devices. The list of expansion devices is as follows: Night navigation light, rear RTK, FPV single upward gimbal component, LTE backup video transmission, and downward multi-payload component.






⚠ • Either a night navigation light or a parachute can be selected, as well as an FPV or a downward multi-payload component.

## IP45 description

1. DO NOT fly the aircraft when the precipitation level is higher than 100mm/24h.
2. DO NOT fold the arms when it is raining.
3. Before a flight, please check that the battery port, battery compartment port, battery surface, and battery compartment surface are dry, and then insert the battery into the aircraft;
4. Make sure that the battery port and surface are dry before charging.
5. Please wipe the aircraft's surface, and ensure that there are no droplets before putting it into the package.
6. Damage caused by liquid influx is not covered by the warranty.

### IP45 is not applicable to the following circumstances:

1. The arms are folded;
2. The port protective cover is not mounted properly;
3. The upper cover's dust-proof rubber falls off;
4. The aircraft has other possible damages, such as a cracked shell, waterproof glue failure, etc.

# Remote Controller

This chapter introduces the various functions of the remote controller, including its set-up and aircraft controls.

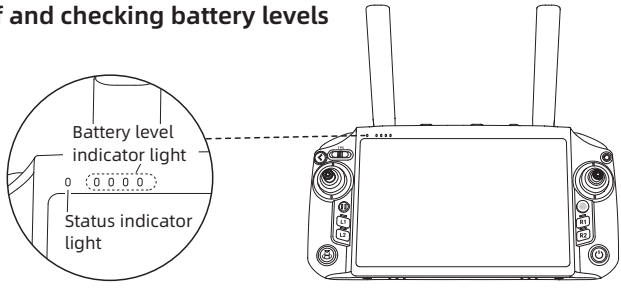
# Remote Controller

## Remote controller overview

GDU RC SEE is a highly-integrated remote controller with a highlight screen. The product comes with an Android 9.0 or above platform system and is capable of local storage and data analysis. It is an intelligent remote controller with a remote networking data link that integrates mobile public network access, GPS positioning and local LAN connection. The product's interaction interface has a humanized design and rich extension interfaces; it is capable of video post-processing and the local and external output of videos; it also supports secondary development and can quickly achieve the professional Application of UAV products.

## Preparation of the remote controller

### Powering on/off and checking battery levels




### 1.Status indicator light

For specific meanings, please refer to the table below:

| Status indicator light | Description |
|---|---|
| Red indicator light is solid on | The remote controller is powered on and the aircraft is not connected. |
| The indicator light blinks red | Slow blink: excessive temperature of remote controller |
| The indicator light blinks red | Quick blink: aircraft low battery alert |
| Green indicator light is solid on | The aircraft is connected. |
| The indicator light blinks blue. | The remote controller and aircraft are being paired. |
| Yellow indicator light is solid on | Firmware update fails. |
| The indicator light blinks yellow. | Low battery alert of remote controller |
| The indicator light blinks cyan. | The remote controller's control stick is not re-centered. |

### 2.Battery level indicator light

The battery level indicator light indicates the aircraft's battery level.
For specific meanings, please refer to the text below:

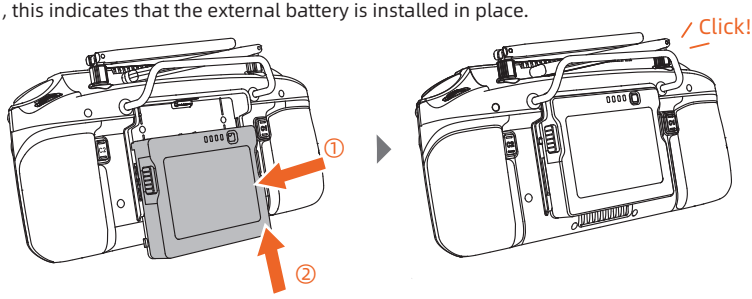
1. When the four indicator lights are all on, this indicates that the battery level is full as fed back by the aircraft. The indicator lights turn off in succession based on battery level consumption;
2. When the aircraft's battery level is lower than 20%, the last indicator light blinks 3s once; when the battery level is lower than 5%, the indicator light blinks 1s once.
3. When the remote controller battery is being charged, the battery level indicator lights blink alternately to indicate that the remote controller is being charged. The battery level indicator lights are continually lit after discharging ends, and blink once together with an interval of 3s.

| Blinking method | Remaining battery |
|---|---|
| ● ● ● ● | 75%~100% |
| ● ● ● ○ | 50%~75% |
| ● ● ○ ○ | 25%~50% |
| ● ○ ○ ○ | 0%~25% |

## Installing an external intelligent battery

If an external battery for the remote controller is to be purchased separately, please refer to the steps below for installation.

Insert the external battery into the battery compartment and push it to the top. When a "click" sound is heard, this indicates that the external battery is installed in place.




⚠ • To remove the external battery, press the battery's unlock button and push it downwards.

## Installing a strap support kit

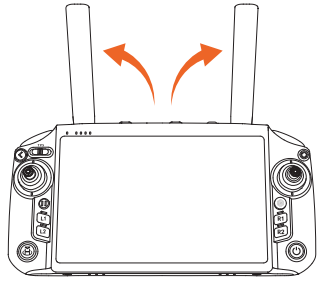
1. Install the two triangular ring screws on the remote controller.
2. After the strap is attached, pass the two ends through the triangular rings for installation.

⚠ • After use, hold the remote controller with one hand first, release it with the other hand and take off the strap.

## Adjusting the antenna

Unfold the remote controller antenna and adjust it to an Appropriate position. The strength of the received signal varies across different antenna positions.
Based on the relative position between the remote controller and the aircraft, adjust the orientation of the external antenna of the remote controller and align the antenna plane against the aircraft's direction to achieve the optimal status of the remote controller and aircraft signal quality.

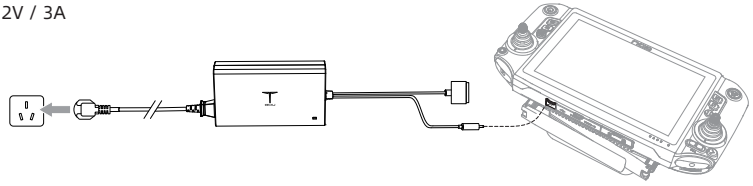
⚠ • When the antenna is adjusted to the limit, do not use great force to avoid antenna damage. Damaged remote controller antennas may affect the product's performance and safety. Please contact the GDU technical support in time.
• Do not use another communication device in the same frequency band (2.4 GHz or 5.8 GHz) during flight as this may interfere with the remote controller's signal. For example: turning on your mobile phone's Wi-Fi.



# Charging the remote controller and checking the battery level

When charging the remote controller, the user can determine whether the battery is fully charged based on the remote controller's indicator light color. When the white indicator lights blink in succession, this indicates that the battery is being charged; when the white indicator lights are continually lit, this indicates that the battery is fully charged.

It takes Approximate 2.2 h to fully charge the internal battery of the remote controller using the official DC charger (7000 mAh@7.2 V) when the remote controller is powered off at normal temperature. Input: 12V / 3A



⚠
- Be sure to use an original charger to charge the original battery and remote controller. Alternatively, use a charger provided by GDU to charge the battery. GDU takes no responsibility for any product fault or damage caused by using non-original accessories.
- To maintain the optimal remote controller battery status, please fully charge the remote controller every 3 months.

## Charging description

There are two charging methods for the internal battery:

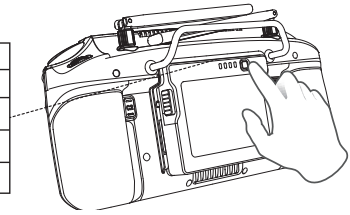
1. Fast charging 1: DC port, 12V / 3A,0~90% battery level: 1.5 h, 0~100%full battery level: 2.2 h;
2. Fast charging 2: USB-C port 12V / 3A, 90% battery level: 1.8 h, 0~100%full battery level: 2.5 h (the adapter must support the 12 V fast charging port and QC protocol, and the output power level must be > 45 W).

It takes 3.5 h to charge two batteries at the same time from 0% to 100% when an external battery charging base (DC fast charging) is connected.

## Checking the power level of the internal battery

Press the external battery button for the battery level to be presented in the form of an LED indicator light.

| Blinking method | Remaining battery |
|---|---|
| ● ● ● ● | 75%~100% |
| ● ● ● ○ | 50%~75% |
| ● ● ○ ○ | 25%~50% |
| ● ○ ○ ○ | 0%~25% |



## Low battery alert

| | |
|---|---|
| Low battery alert of remote controller: a single beep | |
| The battery level is lower than 15%. | The beeper sounds once for 10 s. |
| The battery level is lower than 5%. | The beeper sounds once for 3 s. |
| The battery level is lower than 2%. | The beeper alarms once for 1 s. |
| Low battery alert of the aircraft: two beeps | |
| The battery level is lower than 20%. | The beeper sounds once for 10 s. |
| The battery level is lower than 5%. | The beeper sounds once for 3 s. |
| The battery level is lower than 2%. | The beeper alarms once for 1 s. |

## Remote controller pairing

When the aircraft is powered on, the pairing ways are as follows:

1. Power on the remote controller and connect it to the App. On the flight interface of the App, click "Settings" - "Remote Controller Settings" - "Remote Controller Pairing" to enter the pairing interface;
2. Power on the aircraft and make sure that the original battery is installed. Press the aircraft's power button (about 8 times) until the rear arm indicator light turns white, indicating that the aircraft has entered pairing mode.
3. At this point, click the pair button in the App again. When the App feeds back that the pairing is successful, the green indicator light on the aircraft will be continually lit. The remote controller status indicators will.

⚠
- Turn green when pairing is completed.
- During pairing, keep the distance between the aircraft and remote controller within 50 cm.

## Switching among remote controller flight modes

Use the flight mode switch button on the remote controller to switch the aircraft's flight mode by pushing the switch to A mode (attitude), S mode (sport), or P mode (standard).

### 1.A mode (attitude)

The forward / backward obstacle sensing system, GPS positioning and downward visual positioning system are disabled; when the aircraft is not under navigation control, it will drift in a horizontal direction if the control stick is not pushed. Use of the control stick is required for real-time control.

### 2.S mode (sport)

The F mode is the enhanced mode under the P mode. The aircraft performance is enhanced, and the GPS and the downward vision positioning system is functioning. The aircraft's control sensitivity value is prompted, and the flight response is quick. Please fly with caution. In this mode, the obstacle avoidance system is disabled, and the aircraft is unable to avoid obstacles automatically.

### 3.P mode (standard)

If the GNSS signal is strong, the aircraft will be positioned through GNSS; if the GNSS signal is weak and the light conditions meet the needs of the intelligent visual positioning system, the intelligent visual positioning system will be used. If both the GNSS signal and visual assistance positioning fail, the aircraft will automatically switch to A mode to be controlled by a professional pilot.

⚠
- A mode (attitude) is a professional mode. Please do not switch to this mode unless the conditions demand it.

## Remote controller function button

| Channel | Definition |
|---|---|
| Power button | Press once to turn on / off the remote controller display screen. When the remote controller is powered off, press and hold the power button for 6 s to power it on; when the remote controller is powered on, press and hold the power button for 6 s and click the "Off" button displayed on the remote controller screen to power it off; when the remote controller is powered on, press and hold the power button for 8 s for forced shutdown. |
| Return button / system function button | Click to return to the previous interface, and double click to return to the system's homepage. For combination buttons using the return button and other buttons, refer to the "Remote Control Button Function" section for details. |
| Confirm button | Click to confirm the current operation. |
| 5D button | Up, down, left, right and re-center. |
| Intelligent return button | Press and hold to start intelligent return, and press once to cancel intelligent return. |
| E-stop button | Press once and the aircraft will carry out emergency braking and hover in place (when the GNSS or vision system is in effect). |
| Control stick | Switch flight modes in GDU Flight II. |
| Left dial wheel | Toggle to adjust the gimbal camera's pitch angle. |
| Right dial wheel | Toggle to adjust the gimbal camera's EV value. |
| Photograph button | Press to take photos. |
| Video button | Start or stop recording. |
| Flight mode switch | Switch flight modes. Includes A mode (Attitude), P mode (Standard) and S mode (Sport), which can be customized in the App. |
| C1 | Customizable function button |
| C2 | Customizable function button |
| L1 | Customizable function button |
| L2 | Customizable function button |
| R1 | Customizable function button |
| R2 | Customizable function button |

### Customizable function buttons

The controls corresponding to the customizable function buttons C1, C2, L1, L2, R1, and R2 of the remote controller can be set in the GDU Flight II App interface.

### Remote controller combination buttons

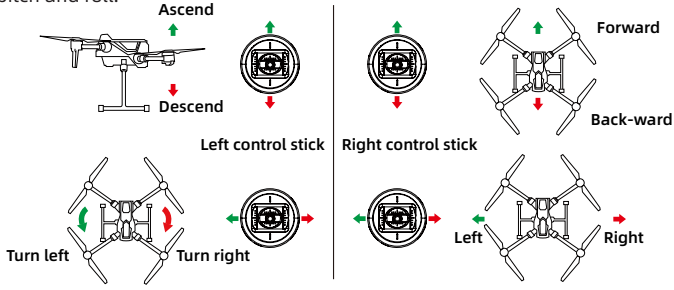
The default combination buttons on the remote controller cannot be modified. The table below lists all default combination buttons and their corresponding functions. During use, press the return button and operate another button synchronously to activate the functions in the list.

| Combination buttons | Function |
|---|---|
| Press and hold the return button + left dial wheel | Adjust screen brightness |
| Press and hold the return button + right dial wheel | Volume adjustment |
| Press and hold the return button + video button | Video recording |
| Press vand hold the return button + photograph button | Screenshot |
| Press and hold the return button + 5D button | Toggle the dial wheel upwards to enter the home page; downwards to enter the shortcut menu; to the left to enter multiple task management; and to the right to enter the App center. |

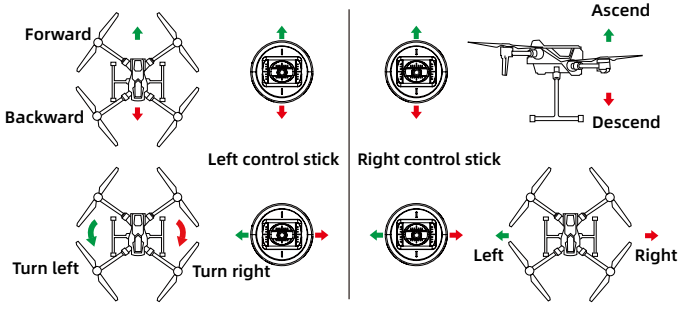
## Control of the aircraft

The remote controller supports three operation modes: American mode, Japanese mode, and Chinese mode. The control stick definitions in the three operation modes are as follows:

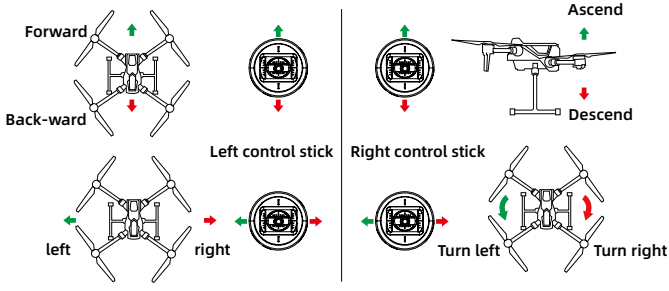
1. American mode: The left-hand stick controls the throttle and yaw, while the right-hand stick controls pitch and roll.




2. Japanese mode: The left-hand stick controls pitch and yaw, while the right-hand stick controls the throttle and roll.




3. Chinese mode: The left-hand stick controls pitch and roll, while the right-hand stick controls the throttle and yaw.

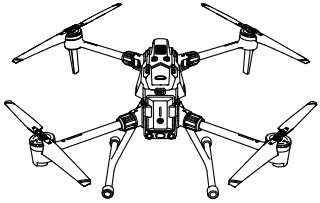


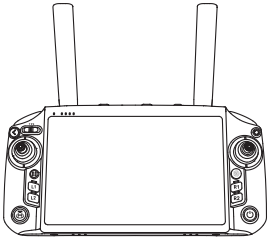

The default operation mode of the remote controller upon leaving the factory is American mode. You can enter the "Control Settings" interface in the GDU Flight II App or the remote controller debugging software to change the remote controller's operation mode.

## Communication range of the remote controller

When controlling the aircraft, the orientation and distance between the remote controller and the aircraft should be adjusted in time to ensure that the aircraft always remains in optimal communication range.

To obtain optimal communication range, the recommended corresponding position of the remote controller and the aircraft is shown in the figure; in addition, continuously face the antenna directly toward the aircraft to ensure optimal signal quality status between the remote controller and the aircraft.

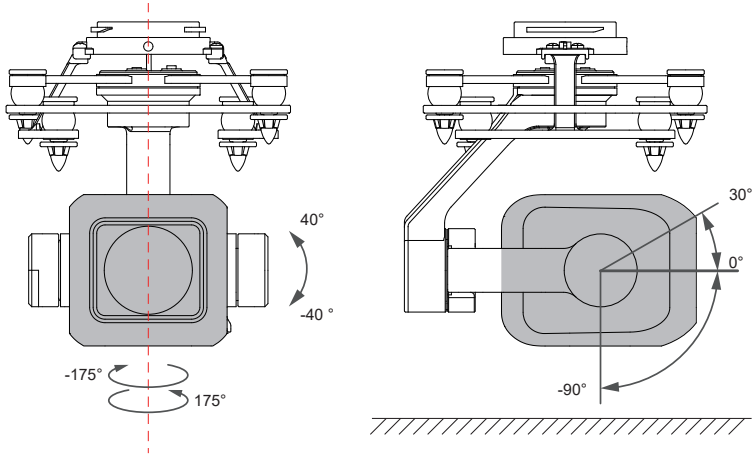




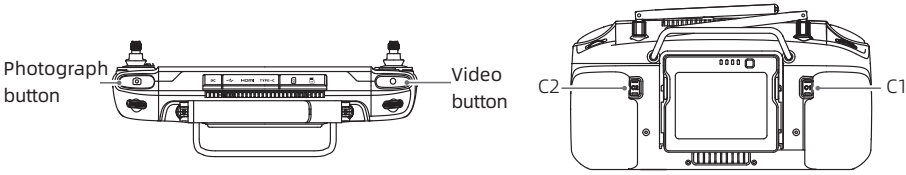
⚠
- Do not use another communication device in the same frequency band, this may interfere with the remote controller's signal.
- During actual operation, the GDU Flight II App will issue a prompt when the video transmission signal is weak. Please adjust the antenna position based on the prompt to ensure that the aircraft is in the optimal communication range.

## Control of the gimbal camera

The user can remotely operate the gimbal and camera in real time through the photograph button, video button and dial wheel on the remote controller to execute the various functions.
The left dial wheel of the remote controller controls the pitch angle of the gimbal, and the right dial wheel adjusts the EV of the camera (left "-" and right "+").




The photograph button, video button and recentering button at the bottom are all one-click operation buttons; C1 and C2 buttons can be customized in the GDU Flight II App according to your requirements.




⚠ • The gimbal camera models shown in the figure are for illustration purposes only. The mounted gimbal camera configuration will vary based on the actual products used.

## IP rating

1. The product can reach the IP54 rating stated in the IEC 60529 standards when tested under controlled lab conditions. The IP rating is not permanent and may be degraded due to wear and tear caused by long-term use.
   a. Do not use the product under conditions of rainfall greater than 50 mm / 24 h.
   b. Do not open any protective cover in the rain, such as the external interface cover, remote control rear cover, network card cover, air exhaust vent or air exhaust vent protective covers. Do not disassemble or assemble the control stick or antenna in the rain. Please move the remote controller to an indoor environment or shelter. Wipe the rain from the remote controller body before opening / closing each cover and assembling / disassembling the antenna.
   c. When using the product in the rain, make sure that the external interface cover, remote control rear cover, network card cover, air exhaust vent and air exhaust vent protective covers are closed and snapped tightly, and that the control stick is tightened in place.

d. When using the external interface, it is normal for there to be water stains around the interface after opening the cover. Wipe the water stains away before using the external interface normally.
e. Damage caused by liquid influx is not covered by the warranty.

2. The IP54 protection rating is not available in the following statuses:
   a. The cover of the external interface is not snapped properly;
   b. The remote controller rear cover is not snapped properly;
   c. The air exhaust vent and air exhaust vent protective covers are not snapped properly;
   d. The network card cover is not snapped properly;
   e. The control stick is not tightened properly;
   f. The antenna is not tightened properly;
   g. The aircraft has other possible damages, such as a cracked shell, waterproof glue failure, etc.

## Description of the remote controller display screen

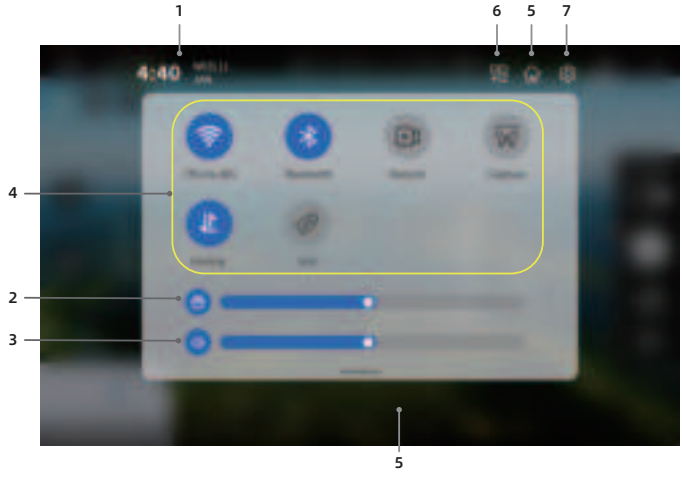
### Homepage

Turn on the remote controller to enter the home page.


1. GDU Flight II App entry
   Click "Start" to enter the GDU Flight II App. Click to log in with the GDU account to directly enter the GDU Flight II App homepage.
2. Album
   Click to enter the album and check the photos and videos stored in the settings.
3. App information
   Click to check all Apps in the remote controller.

## Shortcut panel interface

Swipe downward from the top of the screen on any interface to enter the shortcut panel.




1. Time / date
   Current time / date on remote controller.
2. Screen brightness adjustment
   Drag the slider to adjust screen brightness.
3. Volume adjustment
   Drag the slider to adjust voice volume.
4. Shortcut
   WIFI: Click to turn on / off Wi-Fi network. Press and hold to select or set the Wi-Fi network.

   Bluetooth: Click to turn on / off Bluetooth connection. Press and hold to set Bluetooth connection.

   Screenshot: Click to start video recording. During video recording, the remote controller interface will display the recording time.Click "" to end video recording.

   Screenshot: Click once to return to the current interface to take a screenshot.

   Mobile data: Click to turn on / off mobile data connection. Press and hold to check traffic usage.

   USB: Click to turn on / off USB connection. Connect the remote controller to a computer for data import / export.
5. Homepage
   Click to return to the remote controller's homepage interface.
6. Recent tasks
   Click to check recent tasks.
7. Settings
   Click to enter system settings.

# GDU Flight II App

This section describes the interfaces and functions of the GDU Flight II App.

# GDU Flight II App

The GDU Flight II App is a software application which integrates a variety of professional functions to make manual flight simple and efficient. During a mission flight, the flight routes can be set through the flight planning function to control the autonomous operation of the UAV, thus simplifying the work process and improving work efficiency.

⚠ • This App is only suitable for mobile devices using Android 7.0 or above.

## Homepage

Turn on the remote controller and connect to the App to enter the home page.


1. Return to main interface
   Click to return to main interface.
2. Status bar
   Displays the connection status between the aircraft and payload, and payload model. During first use, activate the UAV first.
3. Health management
   Click to check IMU, GPS, barometer, magnetometer, vision system, gimbal system, aircraft storage and battery system, UAV connection display, firmware version, log management, abnormal records and other statuses.
4. UAV status inspection
   Click to check UAV status. For details, refer to “UAV status inspection”.
5. Album
   Click to check the photos and videos taken during the flight mission.
6. Manual flight function entry
7. Mission flight function entry
8. Settings
   Click to check the flight records, find your plane, about us, offline map, settings, etc.

⚠ • The App interface and function will be updated continuously. Please refer to the latest version.
• The main interface shown varies slightly depending on the payloads.
• Turn on the aircraft. When the App displays that the aircraft has been connected, upgrade the firmware as prompted. During one-button upgrade, ensure that the mobile device has been connected to the Internet.

## UAV status inspection

Before entering the flight interface, the system will check and confirm the aircraft status and important settings to ensure flight safety.

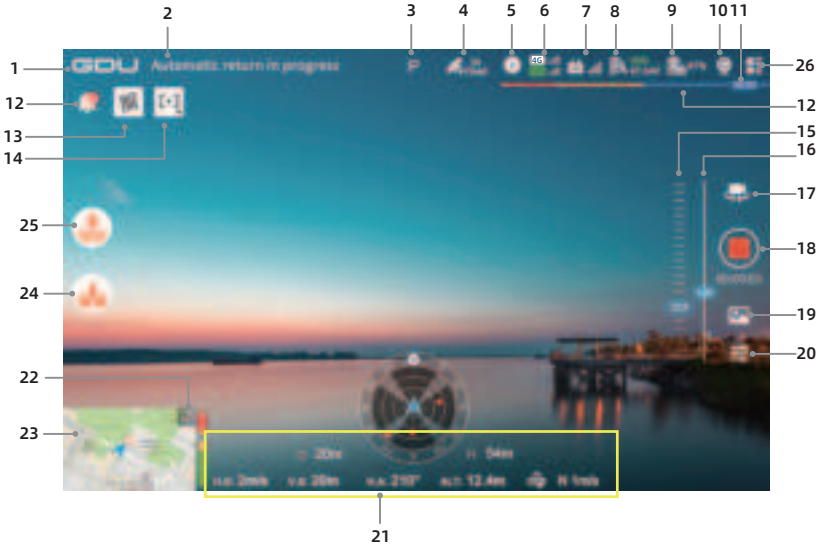

1. Aircraft system inspection: before takeoff, conduct a self-check for the aircraft system, including IMU, GPS, barometer, magnetometer, visual system, gimbal system, aircraft storage and battery system.
2. Alarm prompts.
3. Aircraft status display.
4. Flight return altitude, HOME point, low battery alert, vision sensing, 4-direction obstacle avoidance, upward obstacle avoidance and other quick settings.

# Manual flight

## Camera interface description

Click "Manual Flight" to enter the flight interface.

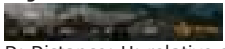
The text below uses the 8K gimbal camera as an example for illustration. The interface display may vary in the actual operation depending on the mounted gimbal camera.




1. **Return to main interface**
   Click to return to the main interface of the App.
2. **Flight status alert**
   Display the aircraft connection status and various warning messages. Click to enter the flight inspection interface.
3. **Flight mode**
   Ⓟ Display the aircraft's current flight mode.
4. **GNSS status**
   31 Fixed Display the GNSS status. After the RTK is connected, display the RTK's status information. The signals from strong to weak include Fixed, Float, 3D, and 2D.
5. **Working status of obstacle avoidance system**
   Display whether the current obstacle avoidance system works or not.

   When the obstacle avoidance system works, green is displayed; and otherwise, white is displayed. When all status are displayed green, it indicates that the obstacle avoidance system works; and when all status are displayed white, it indicates that the obstacle avoidance system does not work now. Please fly with caution.
6. **Aircraft video transmission**
   5G HD Display the strength of aircraft signals. GNSS is in use when the icon is green, and not in use when the icon is white.
7. **Remote controller video transmission**
   HD 4G Display the strength of remote controller signals.

8. UAV battery level
   Display the UAV's remaining battery level and voltage.
9. Remote controller battery level
   Display the remote controller's remaining battery level.
10. Livestream switch
    Transmit the gimbal view to the backend platform in a real-time manner.
11. Intelligent battery level icon
    The remaining battery level and flight time of the current aircraft intelligent battery are displayed in real time. Different colors on the battery level progress bar indicate different battery level statuses. When the battery level is lower than the alert threshold, the battery icon becomes red to remind the user to land the aircraft and replace the battery as soon as possible.
12. Message box
    Click to read all error information.
13. Object tracking
    Click to enable object tracking and intelligent tracking to automatically identify the vehicles and personnel in the screen. After all objects are identified, the aiming icon will be marked and the icon will be refreshed in real time as the object moves. When the user clicks to confirm an object, the screen will lock and track the selected object, and place it right in the center of the screen. The gimbal orientation and focal length will be automatically adjusted to ensure the clarity of the object. If there is no object on the screen that can be automatically identified, objects can be manually selected and tracked.
14. Accompanying flight / encircling
    Click to set accompanying flight / encircling functions.
15. Variable power adjustment of variable power camera
    Click to adjust the variable power of the variable power camera.
16. Gimbal angle
    Display the current gimbal pitch angle.
17. Photo / video switch button
    Photo / video : Click to switch between photo / video.
18. Photograph / video button
    / Click to trigger photo taking or to start / stop video recording. Press the photograph / video button on the remote controller to take photos / record videos.
19. Media preview
    Click to quickly preview the photos / videos taken by the camera (non-camera's original photos / videos).
20. Camera settings
    Click the button to set camera parameters and control the gimbal.
21. Flight data



    D: Distance; H: relative altitude; H.S: Horizontal speed; V.S: Vertical speed; H.A: Aircraft course angle; ALT: Altitude;

    Wind direction / speed display; (for example: E4.0m/s: East wind, wind speed 4.0m/s)
22. Map / attitude indicator switch
    Click to switch the picture-in-picture window to map / attitude indicator.
23. Real-time map
    The area displays the real-time position of the UAV and the user on the map. Click to switch to the map page.

24. One-button return
    Click to automatically return and land the UAV.
25. One-button takeoff / vertical landing
    / Before takeoff, display the one-button takeoff button; and after takeoff, display the vertical landing button.
26. Settings
    Click to enter the Settings menu where you can set various module parameters.

    Flight settings: Includes altitude limit switch, altitude limit, distance limit switch, return altitude, return speed and lost communication. It is permitted to switch the flight mode, advanced settings, sensor status, etc.

    Intelligent batteries: Includes battery voltage difference, temperature, voltage, current, battery level and number of cycles, as well as setting the low battery alert value and emergency low battery alert value.

    Video transmission settings: Includes video transmission mode, current server address, HDMI view screen output, channel mode, modulation bandwidth and noise.

    RTK settings: Includes service type and corresponding parameter settings and status display, and RTK single-point assistance.

    Remote controller settings: Includes control stick mode, remote controller customizable button, remote controller pairing and advanced networking mode.

    Sensor settings: Includes vision sensing, obstacle avoidance strategy and corresponding parameter setting and status display, display radar chart, auxiliary light, enabling of landing protection, obstacle avoidance switch during return and upper TOF switch.

    Gimbal settings: Includes video size, photo resolution, gimbal mode, gimbal drift calibration, storage capacity and gimbal rotation speed.

    Slow starting / stopping of pitch and slow starting / stopping of yaw.

    General settings: Includes display grids, sound prompts, attitude prompts, parameter units, video livestream, ADS-B switch, ESC beep, aircraft information and mounting payload.