---

💡 Tip

- The aircraft has built-in 128 GB storage space, with approximately 64 GB available due to storage of system firmware upgrade.
- It is recommended that you prioritize using an external microSD card for storing the image data collected during flight to avoid running out of internal storage space, which will affect the flight safety of the aircraft.
- If you plan to shoot high-definition videos, we recommend using a Class 10, UHS-3, or higher microSD card.

⚠ Warning

- To prevent data loss, please turn off the aircraft before removing the microSD card.
- After installing the microSD card, close the rubber protective cover over the interface area promptly to avoid affecting the protective performance of the product.

3.11 Connecting to PC/MAC

To transfer photos and videos to a PC, MAC, or other devices, please use a data cable to connect to the device through the USB-C interface of the aircraft.
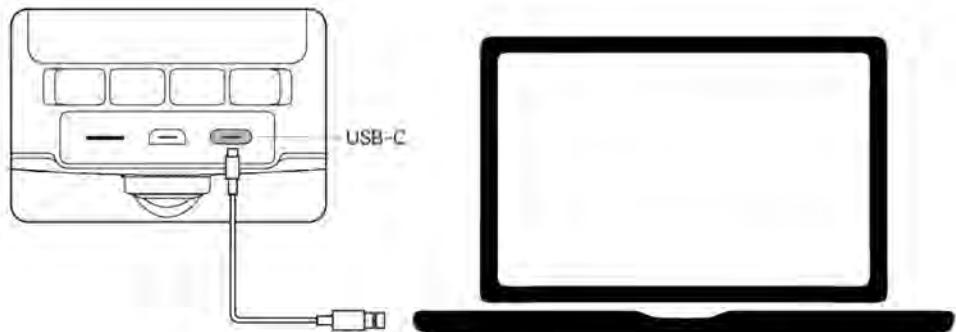
Fig 3-16   Connect to PC/MAC via Aircraft USB-C interface

3.12 Extension Interface

The aircraft has a PSDK extension interface at its top, which uses the USB-C interface standard. The interface allows for additional functional mounts such as the RTK module and speaker and spotlight system.

❗ Important

- Mounts for the aircraft are sold separately. If you need a mount, contact Autel Robotics or third parties that have passed safety and compatibility certification test.
- Do not plug a device that uses other USB-C interface standards into the PSDK extension interface, as it may damage the aircraft.

● Before flight, make sure that the mount is securely connected to the aircraft and the fixing screws on both sides are tightened.
● Pay attention to the battery level of the aircraft during flight. Functional mount consumes the battery power of the aircraft, which will reduce the flight time of the aircraft.
● After removing a mount from the aircraft, be sure to close the rubber protective cover over the interface area. Otherwise, the protective performance of the aircraft will be affected.

Table 3-12   Compatible Mount List

Mount Information	XRT-2301X RTK Module	DU4 Speaker and Spotlight System
Part Number (EAN)	6924991127222	6924991124795
Part Number (UPC)	889520207225	889520204798
Manufacturer	Autel Robotics	JZ Technology
Maximum Mount Dimension	72×48×45 mm	145×117×83 mm
Maximum Mount Weight	29 g	195 g
Functional Compatibility Requirements	Aircraft firmware version: V1.5.0.75 Remote controller version: V1.4.0.55 Flight application version: V1.2.18	Aircraft firmware version: V1.8.2.237 Remote controller version: V1.8.2.237 Flight application version: V2.1.119

☀ Tip

● Before using the above mount in the aircraft, make sure that the aircraft, the remote controller, and the flight application meet the functional compatibility requirements. If you use versions below those specified in the above requirements, the related functions cannot be enabled.
● When the aircraft is fully charged and is equipped with the RTK module, the hovering time will be extended to 37 minutes, and other aspects are not affected.

3.13 Protection Rating

Under controlled laboratory conditions, the aircraft (with smart batteries installed) can achieve an IP43 protection rating following IEC 60529 standards. The protection rating is not permanent and may degrade due to long-term wear and tear.
● It is not recommended to fly in rainy days or sandstorm days. In case of rain or sandstorm during the flight, abort the flight and return to a safe location promptly.

● Before flight, make sure that battery connector, battery compartment interface, battery surface, and battery compartment surface are dry and water-free before inserting the battery into the aircraft fuselage.
● After completing the flight, wipe off the rainwater on the aircraft fuselage before folding and storing the aircraft to prevent water from entering the aircraft and affecting its protective performance.
● Make sure that the battery connector and surface are dry and water-free before charging the battery.
● Damage caused by immersion in liquid is not covered by the warranty.
The aircraft does not have an IP43 protection rating in the following conditions:
● The aircraft is not installed with a battery or the battery is not properly installed.
● The gimbal is not installed on the aircraft.
● The rubber protective cover at the interface of the fuselage is not properly installed.
● There is other possible damage on the fuselage, such as shell cracks or waterproof adhesive failure.

✍ Note

● Please strictly comply with the usage environment restrictions of the aircraft. Using the aircraft beyond specified conditions may lead to aircraft damage or safety incidents.
● The IP43 protection rating is not a universal feature of the aircraft and may require user customization.

3.14 Noise Description

The aircraft will generate a certain level of noise during operation. You should understand local noise pollution prevention regulations in advance and set an appropriate flight altitude or safe distance to ensure that it does not disturb other individuals, groups, or organizations.

■ A-weighted sound power level

The aircraft has passed sound power test conducted by relevant third-party testing organizations with qualification. The results comply with the regulations concerning unmanned aerial vehicles in the European Union.

Fig 3-17   A-weighted sound power level of the aircraft

■ **A-weighted sound pressure level**

Measurement results for the aircraft, in accordance with the requirements of GB 42590-2023 in Chinese mainland, are provided below:

Table 3-13   Noise Measurements Results (normalized to 1 m from the aircraft)

Observation Points	Hover	Fly (1 m/s)
Ground Measure Point (Below)	71.5dB	75.8dB
Side Measure Point (Horizontal Plane)	73.7dB	71.7dB
Note: The measurement environment is an outdoor cement ground.		

🔆 **Tip**

● Before flight, please make sure to verify the noise restrictions in the flying area in advance to avoid any violation of local regulations regarding aircraft noise.

3.15 Aircraft Communication Frequency Bands

The aircraft is equipped with Autel SkyLink 3.0 image transmission technology and has 4 image transmission antennas, with 2 channels of transmitting signals and 4 channels of receiving signals, so that the communication distance between the aircraft and the ground control station can reach up to 15 kilometers.

● It supports adaptive frequency hopping transmission of multiple frequency bands, selects the optimal channel according to the electromagnetic interference situation, and has strong anti-interference ability.
● The quality of real-time transmission reaches 1080p/30fps, and it has a high transmission bit rate of 64Mbps and low-latency transmission characteristics.
● Both data link path transmission and data storage adopt the AES-256 encryption method to ensure the communication data security between end-to-end.

📝 **Note**

● The transmission data is based on the ground control station and comes from test data, and the test environment and conditions are different, and the data may be different.
● The transmission range is for reference only. During use, please pay close attention to the quality of the image transmission signal. When the image transmission signal is weak, reduce the flight radius in a timely manner. For more information, see "6.3 Status Notification Bar" in Chapter 6.

🔆 **Tip**

● In actual use, after the aircraft and the remote controller is turned on and matched in

frequency, the flight application in the remote controller will automatically determine and select the radio communication frequency band that complies with local regulations for the specific country or region based on the GNSS information received by the aircraft.
● Before flight, please ensure that the aircraft receives a strong GNSS signal after being powered on. This allows the flight application to receive the proper communication frequency band.
● When the aircraft does not obtain GNSS positioning information after being turned on (for example, the aircraft enters visual positioning mode or attitude mode right after being turned on), the radio communication frequency band between the RC and the aircraft adopts 2.4G frequency band by default; when the aircraft enters the visual positioning mode or attitude mode from GNSS mode, its communication frequency band remains the same.

■ Information of Image Transmission Frequency Bands for Aircraft

The image transmission frequency bands of the aircraft comply with regulatory requirements worldwide. The relevant used frequency bands are listed in the table below.

☀ Tip

● Users can select legal image transmission frequency bands in the flight application. For details, please refer to "6.5 "Settings" Interface" in chapter 6.

Table 3-14   Aircraft Global Frequency Bands Used (Image Transmission)

Operating Frequency	Details	Countries and Regions
900M	902-928MHz	■ USA (FCC) ■ Canada (ISED)
2.4G	2400–2476MHz	■ Chinese Mainland (SRRC)
2.4G	2400–2483.5MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)
5.2G	5150-5250MHz	■ USA (FCC) ■ EU (Except Germany, CE) ■ UK (UKCA)
5.2G	5170-5250MHz	■ Germany (CE)
5.8G	5725-5829MHz	■ Chinese Mainland (SRRC)
5.8G	5725-5850MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)

■ Information of Wi-Fi Frequency Bands for Aircraft

The aircraft supports the Wi-Fi Super Download feature. After the aircraft lands, it will automatically activate Wi-Fi. Other mobile devices can quickly transfer and download photos and video files captured by the aircraft by connecting to the aircraft's Wi-Fi.

📝 Note

- The aircraft is equipped with the hardware at the factory for the Wi-Fi Super Download feature. This feature will be available in future firmware upgrade. Please upgrade accordingly when the feature is available.

The Wi-Fi frequency bands of the aircraft comply with regulatory requirements worldwide. The relevant used frequency bands are listed in the table below.

Table 3-15   Global Frequency Bands Used (Wi-Fi)

Operating Frequency	Details	Countries & Regions
2.4G (2400–2476MHz)	802.11b/g/n/ax	■ Chinese Mainland (SRRC)
2.4G (2400–2483.5MHz)	802.11b/g/n/ax	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)
5.2G (5150–5250MHz)	802.11a/n/ax/ac	■ USA (FCC) ■ EU (Except Germany, CE) ■ UK (UKCA)
5.2G (5170-5250MHz)	802.11a/n/ax	■ Germany (CE)
5.8G (5725–5829MHz)	802.11a/n/ax	■ Chinese Mainland (SRRC)
5.8G (5725–5850MHz)	802.11a/n/ax / ac	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)

📝 Note

- Some countries and regions have strict restrictions on the use of radio communication frequency bands. It is crucial to use them legally, and any modification of communication modules is strictly prohibited.
- In Germany there's specific requirements for the 5.2G frequency band. Unmanned aerial systems are only allowed to use the frequency within the range of 5170MHz to 5250MHz.
- If flying in any countries not listed in the above table, please consult the local

> communication management authorities to ensure that the aircraft communication frequency bands comply with local regulatory requirements.
> ● The aircraft will automatically match the legal frequency band based on GNSS positioning, so users can use it with confidence.

■ RC Devices

In addition to the remote controller, the aircraft also supports matching with the EVO Nest for remote communication control over the aircraft.

Table 3-16   Remote Control Device Support List

Control Device Information	Autel Smart Controller V3	EVO Nest
Part Number (EAN)	6924991129011	6924991124474
Part Number (UPC)	889520209014	889520204477
Manufacturer	Autel Robotics	Autel Robotics
Control Software	Autel Enterprise	Autel Integrated Command System
Software Version Requirement	V1.0.0.0 or higher	V1.0.0.0 or higher
Supplementary Information	Standard configuration	Nest Kit

> ### 💡 Tip
>
> ● The remote controller is a standard accessory in the aircraft package, and Autel Robotics also provide retail package to choose separately.
> ● When using the above devices to remotely control the aircraft, make sure that the software version meets the above requirements.

Chapter 4 Remote Controller

4.1 Introduction

The remote controller is installed with the flight application Autel Enterprise by default, allowing you to operate and set the aircraft and the gimbal camera and transmit high-definition videos from the gimbal camera in real time. It offers a maximum communication distance of 15 kilometers.

| ☑ Note |
| --- |
| ● The maximum communication distance of the remote controller is measured under unblocked and interference-free conditions and is for references only.
● It supports adaptive frequency hopping transmission, selects the optimal channel according to the electromagnetic interference situation, and has strong anti-interference ability.
● Both data link path transmission and data storage between the aircraft and the remote controller adopt the AES-256 encryption method to ensure the communication data security between end-to-end. |

4.1.1 Remote Controller Components
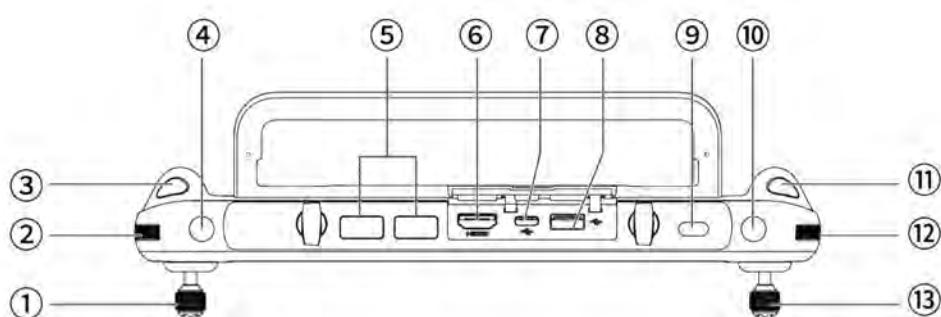
Fig 4-1   Remote Controller Top-Down View

Table 4-1   Remote Controller Top-Down View Details

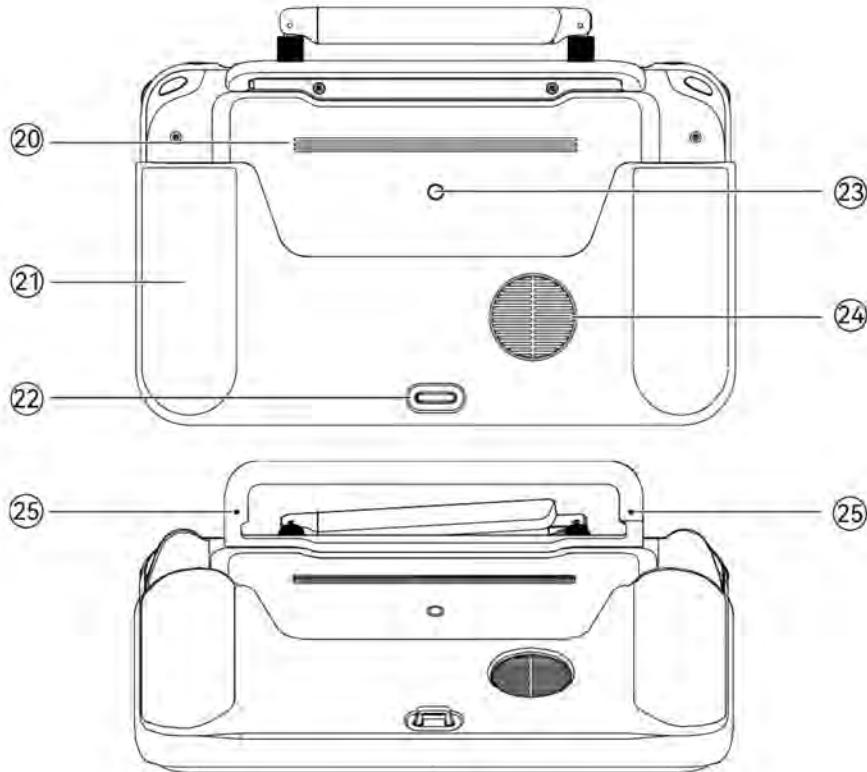| No.	Name	Description
1	Left Command Stick	Controls the state of motion of the aircraft. The default stick mode is Mode 2. In this mode, you can use the stick to control the ascent, descent, and heading of the aircraft. You can set the stick mode in the flight application. For more information, see "6.5 "Settings" Interface" in Chapter 6.
2	Left Dial Wheel	Turn the dial wheel to adjust the gimbal pitch.

3	Video Recording Button	Press the button to start recording video and press it again to end recording video.
4	Key C1	Customize the key function in the flight application. For more information, see "6.5 "Settings" Interface" in Chapter 6.
5	Air Outlet	For heat dissipation of the remote controller. When using it, please pay attention to whether there are foreign objects blocking the air outlet.
6	HDMI Interface	Outputs the live view of the remote controller to a supported display device.
7	USB-C Interface	Used for remote controller charging or device debugging.
8	USB-A Interface	Connects to an expandable 4G/5G module or external USB device for data transmission.
9	Power Button	When the remote controller is off, press this button for 1 second to display the remaining battery level of the RC and press this button for 3 seconds to turn it on. When the remote controller is on, press this button quickly to switch between Screen On and Screen Off and press and hold it for 6 seconds to force shut the RC down.
10	Key C2	Customize the key function in the flight application. For more information, see "6.5 "Settings" Interface" in Chapter 6.
11	Shooting Button	Press the button to take a photo.
12	Right Dial Wheel	Turn the dial wheel to adjust the zoom factor of the camera.
13	Right Stick	Controls the state of motion of the aircraft. The default stick mode is Mode 2. In this mode, you can use the stick to control the translation of the aircraft in four directions: front/back/left/right. You can set the stick mode in the flight application. For more information, see "6.5 "Settings" Interface" in Chapter 6.
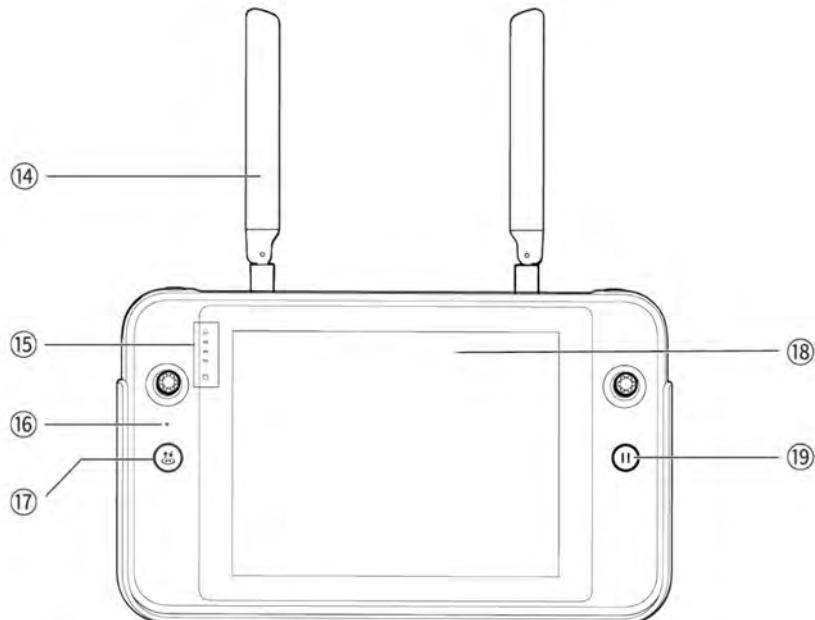
Fig 4-2   Remote Controller Front View

Table 4-2   Remote Controller Front View Details

No.	Name	Description
14	Antenna	Transmits the control signals of the remote controller to the aircraft and receives the image transmission information from the aircraft.
15	Battery Level Indicator	Displays the remaining battery level of the remote controller.
16	Audio Input	Receives information from an external audio source near the remote controller.
17	Take-off/Return-to-Home Button	When the aircraft is turned on but not taking off, press and hold the button for 2 seconds, and the aircraft will take off and hover at an altitude of 1.2 meters above the ground. When the aircraft is flying, press and hold the button for 2 seconds, and the aircraft will automatically begin the return-to-home process. For details, please refer to "4.11.2 Take-off/Return-to-Home Button and Pause Button" in this chapter.
18	Display	Displays real-time image transmission views. with 2048×1536 resolution. Touch operation is supported.
19	Pause Button	When the aircraft is in autonomous flight mode, short press this button to control the aircraft to suspend autonomous flight and hover in place and press the button again to resume flight; press and hold this button for 2 seconds to control the aircraft to exit the mission flight.

Fig 4-3   Remote Controller Rear View

Table 4-3   Remote Controller Rear View Details

No.	Name	Description
20	Speaker	Plays sound to indicate the status of the device.
21	Protective Cover	Used to prevent external damage such as collision and abrasion to the remote controller.
22	Lower Hook	Used to connect and fix the remote controller strap.
23	Standard 1/4 interface	Used for attaching tripods.
24	Air Inlet	Used for heat dissipation of the remote controller. Please pay attention to whether there are foreign objects blocking the air inlet when using it.
25	Stick Storage Slot	Used to store left and right sticks.

4.1.2 Communication Frequency Bands

The image transmission frequency bands of the remote controller comply with regulatory requirements worldwide. Please refer to the table below for the relevant used frequency bands.

☀ Tip

- In actual use, after the aircraft and the remote controller is turned on and matched in frequency, the flight application in the remote controller will automatically determine and select the radio communication frequency band that complies with local regulations for the specific country or region based on the GNSS information received by the aircraft.
- Users can select legal image transmission frequency bands. For details, please refer to "6.5 "Settings" Interface" in chapter 6.
- Before flight, please ensure that the aircraft receives a strong GNSS signal after being powered on. This allows the flight application to receive the proper communication frequency band.
- When the aircraft does not obtain GNSS positioning information after being turned on (for example, the aircraft enters visual positioning mode or attitude mode right after being turned on), the radio communication frequency band between the RC and the aircraft adopts 2.4G frequency band by default; when the aircraft enters the visual positioning mode or attitude mode from GNSS mode, its communication frequency band remains the same.

Table 4-4   Global Frequency Bands Used (Image Transmission)

Operating Frequency	Details	Countries & Regions
900M	902-928MHz	■ USA (FCC) ■ Canada (ISED)
2.4G	2400-2476MHz	■ Chinese Mainland (SRRC)
2.4G	2400-2483.5MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)
5.8G	5725-5829MHz	■ Chinese Mainland (SRRC)
5.8G	5725-5850MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)

Table 4-5   Global Frequency Bands Used (Wi-Fi)

Operating Frequency	Details	Countries & Regions
2.4G (2400-2476MHz)	802.11b/g/n	■ Chinese Mainland (SRRC)
2.4G (2400-2483.5MHz)	802.11b/g/n	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)

5.8G (5725-5829MHz)	802.11a/n/ac	■ Chinese Mainland (SRRC)
5.8G (5725-5850MHz)	802.11a/n/ac	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA)

✎ Note

- Some countries and regions have strict restrictions on the use of radio communication frequency bands. It is crucial to use them legally, and any modification of communication modules is strictly prohibited.
- If flying in any countries not listed in the above table, please consult the local communication management authorities to ensure that the aircraft communication frequency bands comply with local regulatory requirements.
- The aircraft will automatically match the legal frequency band based on GNSS positioning, so users can use it with confidence.

4.2 Installing the Remote Controller Lanyard

💡 Tip

- The remote controller lanyard is an optional accessory. You can choose whether to install it as required.
- When holding the remote controller for a long time during flight operations, we recommend that you install the remote controller lanyard to effectively reduce the pressure on your hands.

■ **Steps**

1. Clip the two metal clips on the lanyard to the narrow positions on both sides of the metal handle at the back of the controller.
2. Open the metal button of the lanyard, bypass the lower hook at the bottom of the back of the controller, and then fasten the metal button.
3. Wear the lanyard around your neck, as shown in the figure below, and adjust it to a suitable length.
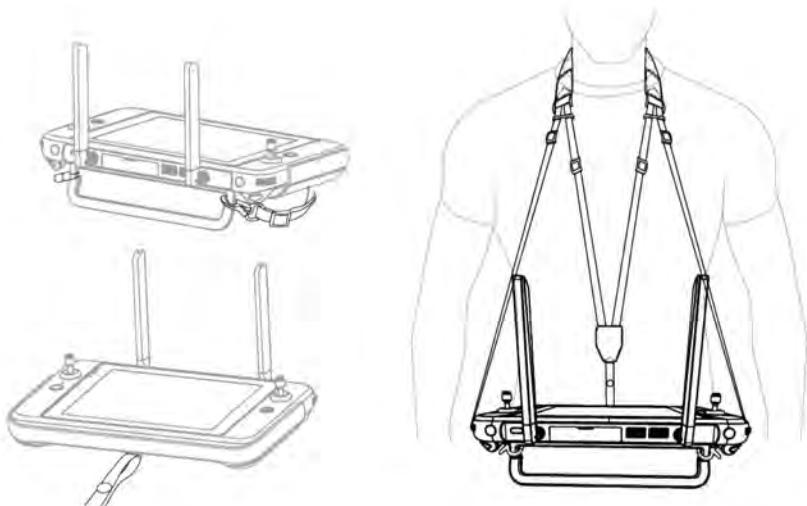
Fig 4-4   Install the Remote Controller Lanyard (As Required)

4.3 Installing/Storing Sticks

The remote controller features removable sticks, which effectively reduce storage space and enable easy carrying and transportation.

■ Installing sticks

There are stick storage slots above the mental handle at the back of the controller. Rotate counterclockwise to remove the two sticks and then rotate them clockwise to install them separately on the remote controller.
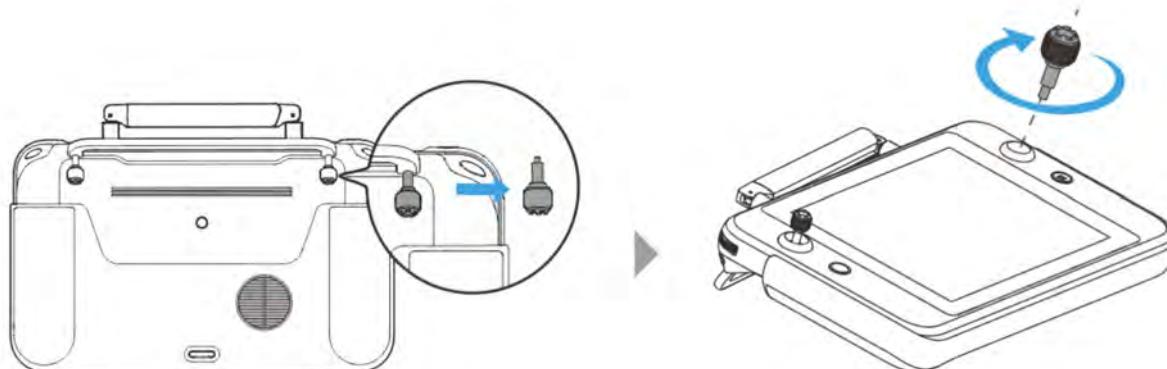

Fig 4-5   Installing sticks

■ Storing Sticks

Simply follow the reverse steps of the above operation.

💡 Tip
● When the sticks are not in use (such as during transportation and temporary aircraft standby), we recommend that you remove and store them on the metal handle. This can prevent you from accidentally touching the sticks, causing damage to the sticks or

> unintended startup of the aircraft.

4.4 Turning the Remote Controller On/Off

■ Turning the Remote Controller On

Press and hold the power button at the top of the remote controller for 3 seconds until the controller emits a "beep" sound to turn it on.
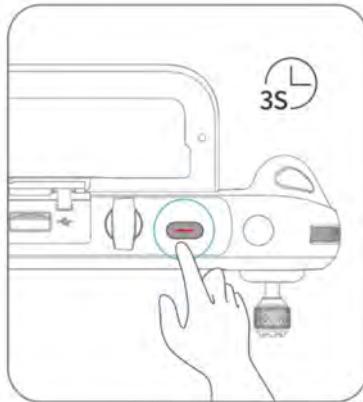

Fig 4-6   Turning the Remote Controller On

> **💡 Tip**
>
> ● When using a brand-new remote controller for the first time, please follow the on-screen instructions to complete the relevant setup.

■ Turning the Remote Controller Off

When the remote controller is on, press and hold the power button at the top of the remote controller until the "Off" or "Restart" icon appears at the top of the controller's screen. Tapping the "Off" icon will turn off the remote controller. Tapping the "Restart" icon will restart the remote controller.
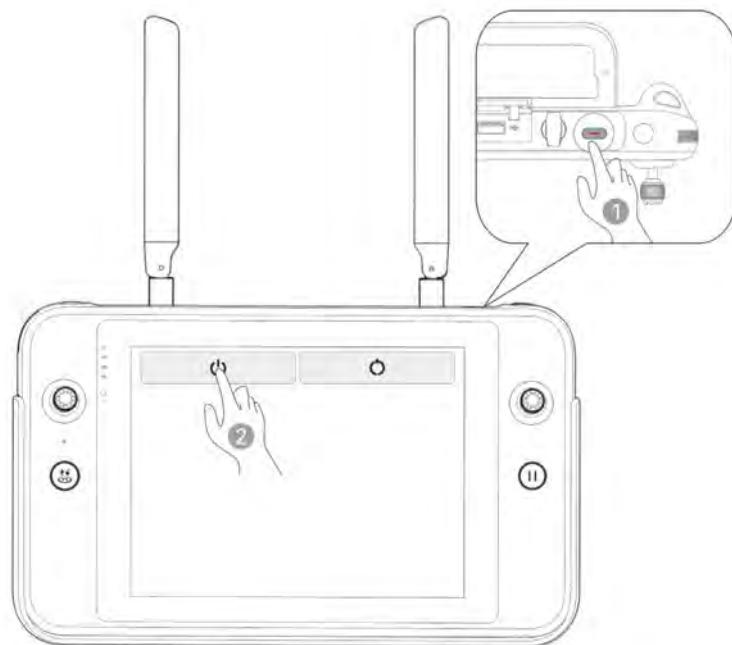
Fig 4-7 Turning the Remote Controller Off

🔆 **Tip**

- When the remote controller is on, you can press and hold the power button at the top of the remote controller for 6 seconds to forcibly turn it off.

4.5 Checking the Battery Level of the Remote Controller

When the remote controller is off, short press the power button of the remote controller for 1 second, and the battery level indicator will display the battery level of the remote controller.
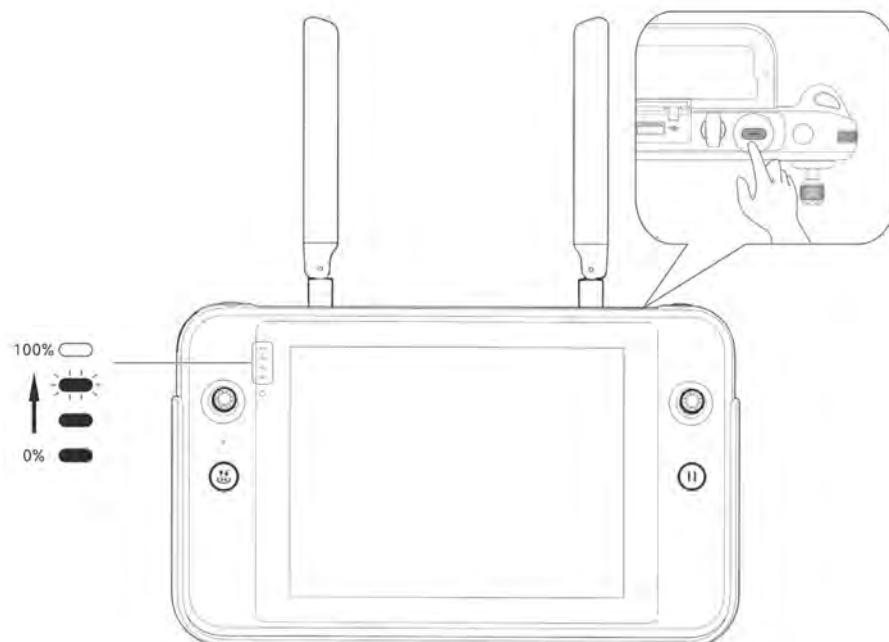

Fig 4-8 Checking the Battery Level of the Remote Controller

Table 4-6   Battery Remaining

| Power Display	Definition	Power Display	Definition
	1 light always on: 0%-25% power		2 lights always on: 25%-50% power
	3 lights always on: 50%-75% power		4 lights always on: 75%-100% power

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☀ Tip

When the remote controller is on, you can check the current battery level of the remote controller in the following ways:
● Check it on the top status notification bar of the flight application.
● Check it on the system status notification bar of the remote controller. In this case, you need to enable "Battery Percentage" in the "Battery" of the system settings in advance.
● Go to the system settings of the remote controller and check the current battery level of the controller in "Battery".

4.6 Charging the Remote Controller

Connect the output end of the official remote controller charger to the USB-C interface of the remote controller by using a USB-C to USB-A (USB-C to USB-C) data cable and connect the plug of the charger to an AC power supply (100-240 V~ 50/60 Hz).

100-240V~ 50/60Hz
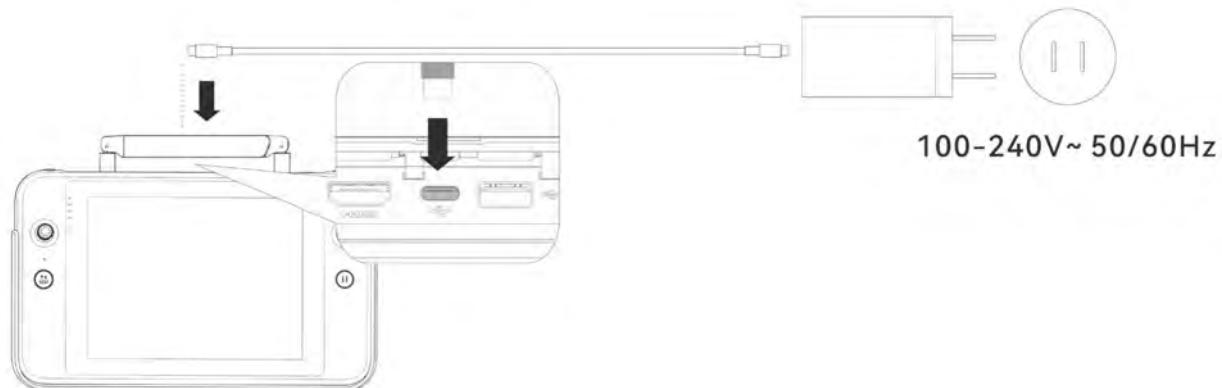
Fig 4-9   Use the remote controller charger to charge the remote controller

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⚠ Warning

● Please use the official charger provided by Autel Robotics to charge the remote controller. Using third-party chargers may damage the battery of the remote controller.

- After charging is complete, please disconnect the remote controller from the charger promptly.

📝 Note

- It is recommended to fully charge the remote controller battery before the aircraft takes off.
- Generally, it takes about 120 minutes to fully charge the aircraft battery, but the charging time is related to the remaining battery level.

💡 Tips

- If the remote controller is not used for a long time, please charge it every 3 months to prevent long-term low power from affecting battery life or damaging the battery.

4.7 Adjusting the Antenna Position of the Remote Controller

During flight, please extend the antenna of the remote controller and adjust it to an appropriate position. The strength of the signal received by the antenna varies depending on its position.
When the angle between the antenna and the back of the remote controller is 180° or 270°, and the plane of the antenna faces the aircraft, the signal quality between the remote controller and the aircraft can reach its best state.

❗ Important

- When you operate the aircraft, make sure that the aircraft is in the place for the best communications.
- Do not use other communication devices of the same frequency band at the same time to prevent interference with the signals of the remote controller.
- During flight, if there is a poor image transmission signal between the aircraft and the remote controller, the remote controller will provide a prompt. Please adjust the antenna orientation according to the prompt to ensure that the aircraft is in the optimal data transmission range.
- Please make sure that the antenna of the remote controller is securely fastened. If the antenna becomes loose, please rotate the antenna clockwise until it is firmly fastened.
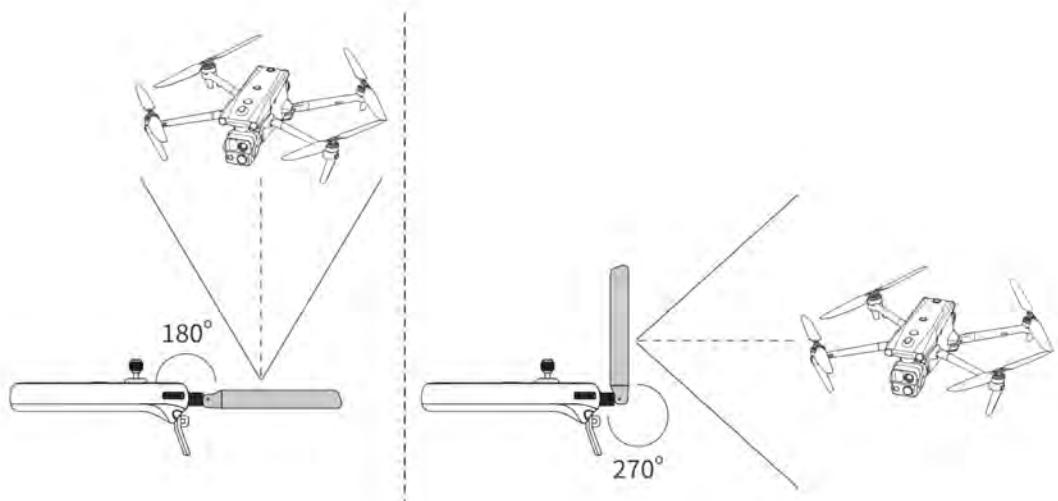
Fig 4-10   Extend the antenna

4.8 Remote Controller System Interfaces

4.8.1 Remote Controller Main Interface

After the remote controller is turned on, it enters the main interface of the flight application by default.

In the main interface of the flight application, slide down from the top of the touch screen or slide up from the bottom of the touch screen to display the system status notification bar and navigation keys, and tap the "Home" button or the "Back" button to enter the "Remote Controller Main Interface". Swipe left and right on the "Remote Controller Main Interface" to switch between different screens, and enter other applications as needed.
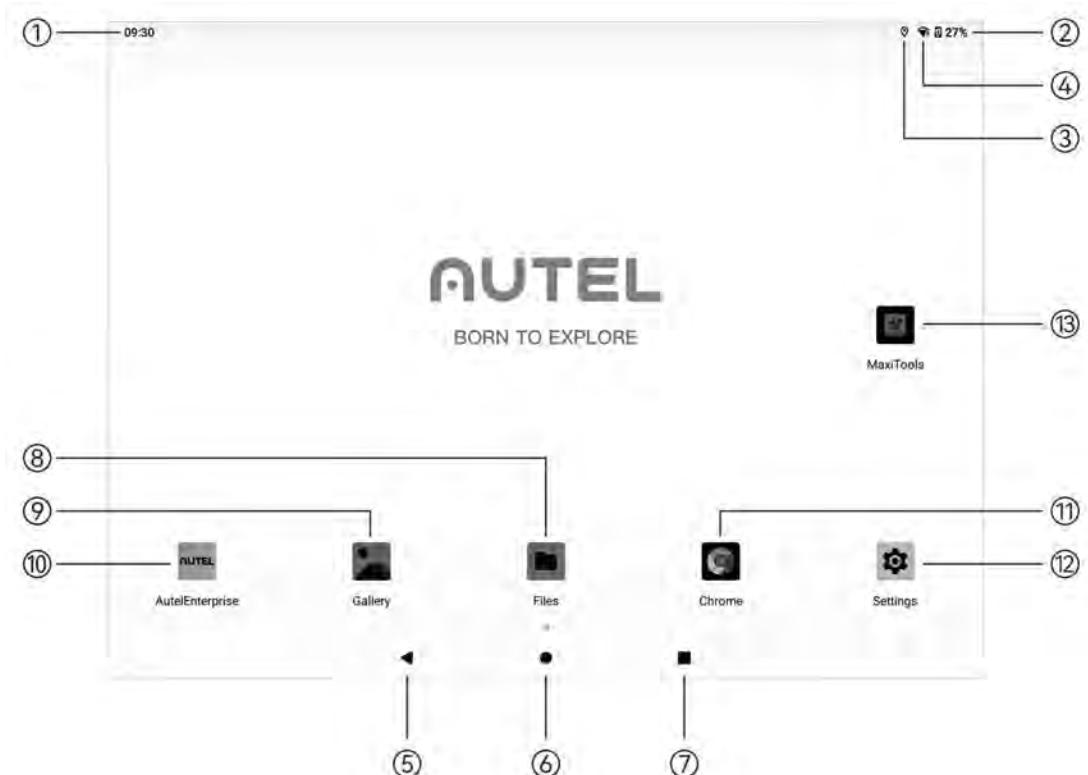
Fig 4-11   Remote Controller Main Interface

Table 4-7   Remote Controller Main Interface Details

No.	Name	Description
1	Time	Indicates the current system time.
2	Battery Status	Indicates the current battery status of the remote controller.
3	Location Info	Indicates that location information is currently enabled. If not enabled, the icon is not displayed. You can tap "Settings" to enter the "Location Information" interface to quickly turn on or off location information.
4	Wi-Fi Status	Indicates that Wi-Fi is currently connected. If not connected, the icon is not displayed. You can quickly turn on or off the connection to Wi-Fi by sliding down from anywhere on the "Remote Controller Interface" to enter the "Pull-Down Shortcut Menu".
5	Back Button	Tap the button to return to the previous page.
6	Home Button	Tap the button to jump to the "Remote Controller Main Interface".
7	"Recent apps" Button	Tap the button to view all background programs currently running and take screenshots. Press and hold the application to be closed and slide up to

		close the application. Select the interface where you want to take a screenshot, and tap the "Screenshot" button to print, transfer via Bluetooth, or edit the screenshot.
8	Files	The app is installed in the system by default. Tap it to manage the files saved in the current system.
9	Gallery	The app is installed in the system by default. Tap it to view the images saved by the current system.
10	Autel Enterprise	Flight software. The flight application starts by default when the remote controller is turned on. For more information, see "Chapter 6 Flight Application".
11	Chrome	Google Chrome. The app is installed in the system by default. When the remote controller is connected to the Internet, you can use it to browse web pages and access Internet resources.
12	Settings	The system settings app of the remote controller. Tap it to enter the settings function, and you can set the network, Bluetooth, applications and notifications, battery, display, sound, storage, location information, security, language, gestures, date and time, device Name, etc.
13	Maxitools	It supports the log function and can restore factory settings.

☀ Tip

- The remote controller supports the installation of third-party Android apps, but you need to obtain the installation packages on your own.
- The remote controller has a screen aspect ratio of 4:3, and some third-party app interfaces may encounter compatibility issues.

Table 4-8   List of Pre-installed Apps on the Remote Controller

No.	Pre-installed App	Device Compatibility	Software Version	Operating System Version
1	Files	√	11	Android 11
2	Gallery	√	1.1.40030	Android 11
3	Autel Enterprise	√	V2.1.119	Android 11
4	Chrome	√	68.0.3440.70	Android 11
5	Settings	√	11	Android 11

6	Maxitools	√	2.45	Android 11
7	Google Pinyin Input	√	4.5.2.193126728-arm64-v8a	Android 11
8	Android Keyboard (AOSP)	√	11	Android 11

💡 Tip
● Please be aware that the factory version of the flight application may vary depending on subsequent function upgrades.

4.8.2 Pull-Down Shortcut Menu

Slide down from anywhere on the "Remote Controller Interface", or slide down from the top of the screen in any app to display the system status notification bar, and then slide down again to bring up the "Pull-Down Shortcut Menu".

In the "Pull-Down Shortcut Menu", you can quickly set Wi-Fi, Bluetooth, screenshot, screen recording, airplane mode, screen brightness, and remote controller sound.
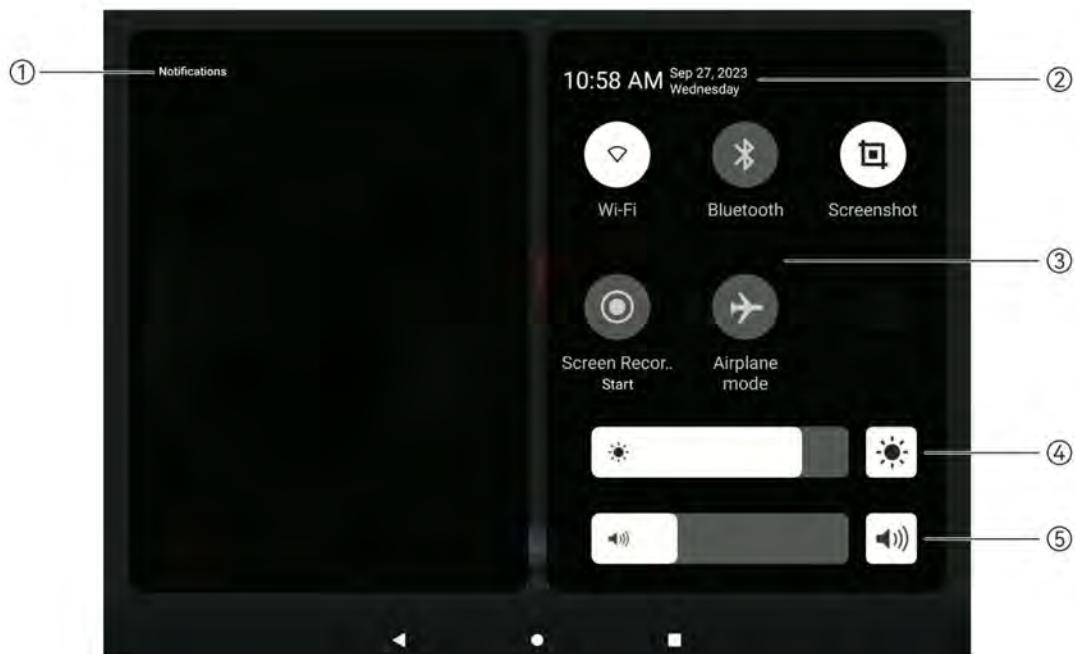

Fig 4-12   Pull-Down Shortcut Menu

Table 4-9   Pull-Down Shortcut Menu Details

No.	name	Description
1	Notification Center	Displays system or app notifications.
2	Time and Date	Displays the current system time, date, and week of the

remote controller.

3	Wi-Fi	Tap the " " icon to enable or disable the Wi-Fi function. Press and hold it to enter WLAN settings and select the wireless network to be connected.
	Bluetooth	Tap the " " icon to enable or disable the Bluetooth function. Press and hold it to enter the Bluetooth settings and select the Bluetooth to be connected.
	Screenshot	Tap the " " icon to use the screenshot function, which will capture the current screen (hide the Pull-Down Shortcut Menu to take a screenshot).
	Screen Recor.. Start	After tapping on the " " icon, a dialog box will pop up, where you can choose whether to enable the functions of recording audio and displaying the touch screen position, and then tap the "Start" button, wait for 3 seconds, and start screen recording. Tap the icon again or tap "Screen Recorder" to turn off screen recording.
	Airplane mode	Tap the " " icon to turn on or off the airplane mode, that is, to turn on or turn off the Wi-Fi and Bluetooth functions at the same time.
4	Screen Brightness Adjustment	Drag the slider to adjust the screen brightness.
5	Volume Adjustment	Drag the slider to adjust the media volume.

4.9 Frequency Matching Between the Aircraft and the Remote Controller

Only after the remote controller and the aircraft are matched in frequency can users operate the aircraft using the remote controller.
The remote controller and the aircraft support two modes of matching: Single Link and A-Mesh Link. They differ in following aspects:
● Single Link: 1 RC matches with 1 aircraft in frequency.
● A-Mesh Link: It supports frequency matching between up to 2 RCs and 2 aircrafts, which comprise a team.

✎ Note
● The aircraft included in the aircraft kit has already been matched in frequency with the remote controller provided in the kit at the factory by using the Single Link. No matching

> is required after the aircraft is powered on. Normally, after completing the aircraft activation process, users can directly use the remote controller to operate the aircraft.
> ● If the aircraft and the remote controller become unmatched due to other reasons, please follow the above steps to match the aircraft with the remote controller in frequency again.

■ One RC Matches with One Aircraft when the RC is On

1. Turn on the RC and the aircraft.

2. After entering the main interface of the flight application, tap "⊞" and then "⊡" to enter the Single Link. At this time, the aircraft battery indicator enters the sync flashing status.

3. Double press the power button of the aircraft, and then the arm lights of the aircraft will turn green and flash quickly, waiting for the RC to complete auto matching.

4. After the aircraft is matched with the RC, the battery indicator and rear arm lights will stop flashing and the image transmission picture of the gimbal camera appears in the RC.

■ One RC Matches with One Aircraft when the RC is off (Force Match)

When the RC is off, users can force match the RC with the aircraft. The procedures are as follows:

1. Press and hold the power button and the take-off/return-to-home button of the remote controller at the same time until the battery level indicators of the remote controller blink quickly, which indicates that the remote controller has entered the forced frequency pairing state.

2. Make sure that the aircraft is turned on. Double-click the power button of the aircraft, and the front and rear arm lights of the aircraft will turn green and blink quickly.

3. When the rear arm lights of the aircraft and the battery level indicator of the remote controller stop blinking, it indicates that the frequency matching is successfully done.

■ A-Mesh Link

1. Choose one of those RCs and turn it on, and enter the main interface of its flight application, tap "⊞" and then "⊡" to enter "Multi-aircraft frequency" interface, tap "Add device" button to enter A-Mesh Link mode. At this time the RC battery indicator blinks quickly.

2. Select one of those aircrafts and turn it on, press its power button quickly and press and hold the button until the arm lights of the aircraft blink quickly (among which the rear arm lights turn yellow and blink quickly), which indicates that the aircraft enters the A-Mesh Link mode, waiting for the RC to complete auto frequency matching.

3. After the RC and the aircraft are matched in frequency successfully, the RC's battery level indicators blink quickly but the rear arm lights of the aircraft stop flashing, in "My team" interface RCs and aircrafts in the team are displayed.

4. Users then can repeat the step 2 to add 1 more aircraft into the team; they can also choose another RC, enter the main interface of the flight application on the RC, tap "⊞" and then "⊡" to enter "Multi-Aircraft frequency" interface, tap "Join the team" button to enter A-Mesh Link mode and add the RC into the team.

5. After A-Mesh Link is completed, in the "My team" interface of the RC used in the step 1, tap "Finish" button to complete the building of the team.

💡 Tip

- The firmware of the smart battery should be V0.4.29.1 or later so that the multi-aircraft matching can be supported. Otherwise the matching cannot be triggered. When you use a smart battery with a version lower than that one, please connect the RC through Single Link, reboot the RC and the aircraft and upgrade them by following instructions in the interface. After the upgrade, please try the multi-aircraft matching again.

📝 Note

- In A-Mesh Link, the RC, which leads matching in the team, is the pilot role that has all control permissions over other aircrafts in the team while the RC, which joins the team later, is the observer role that can only use pinpoint sharing operation and view screens of different lens of aircrafts' gimbal cameras.
- In A-Mesh Link, the first aircraft that joins the team is the relay machine by default.
- After a team is built, in "My team" interface, the RC that has pilot role can dissolve the team or add device. The RC that has observer role can exit from the team.

⊘ Important

- When matching, please keep the remote controller and the aircraft close together, at most 1 meter apart.
- In frequency matching, please turn off Wi-Fi and Bluetooth of devices nearby which share same frequency bands. In this way, matching interference can be avoided.
- When matching multiple aircrafts, please assign marks to devices and match them with RCs one by one so as to distinguish the devices easily.

4.10 Selecting Stick Mode

4.10.1 Stick Modes

When using the remote controller to operate the aircraft, you need to know the current stick mode of the remote controller and fly with caution.

Three stick modes are available, that is, Mode 1, Mode 2 (default), and Mode 3. Users can set stick mode based on their own needs or preference. For details about how to set the stick mode, please refer to "6.5 "Settings" Interface" in chapter 6.
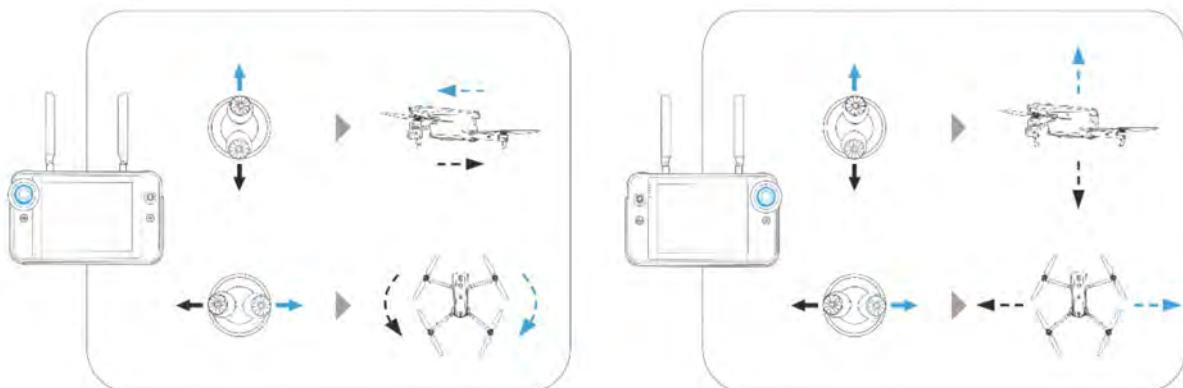
■ **Mode 1**

Fig 4-13   Mode 1

Table 4-10   Mode 1 Details

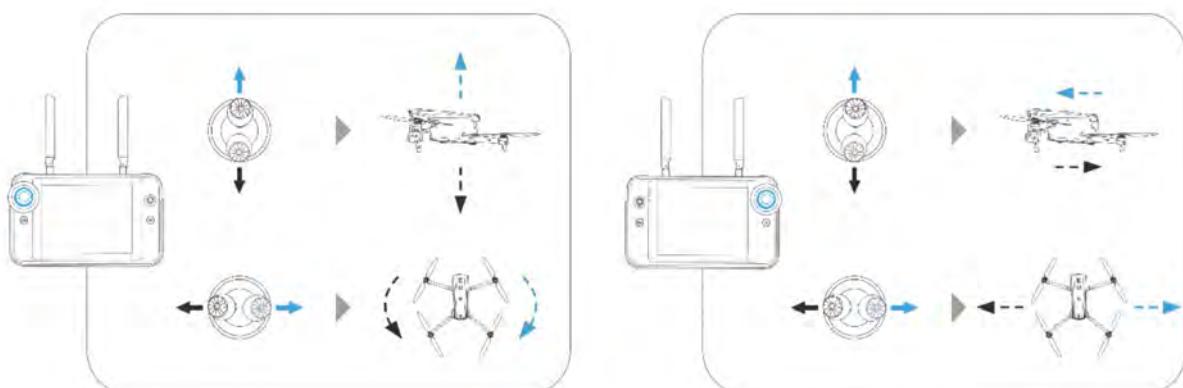| Stick	Move Up/Down	Move Left/Right
Left Stick	Controls the forward and backward movement of the aircraft	Controls the heading of the aircraft
Right Stick	Controls the ascent and descent of the aircraft	Controls the left or right movement of the aircraft

■ **Mode 2**

Fig 4-14   Mode 2

Table 4-11   Mode 2 Details

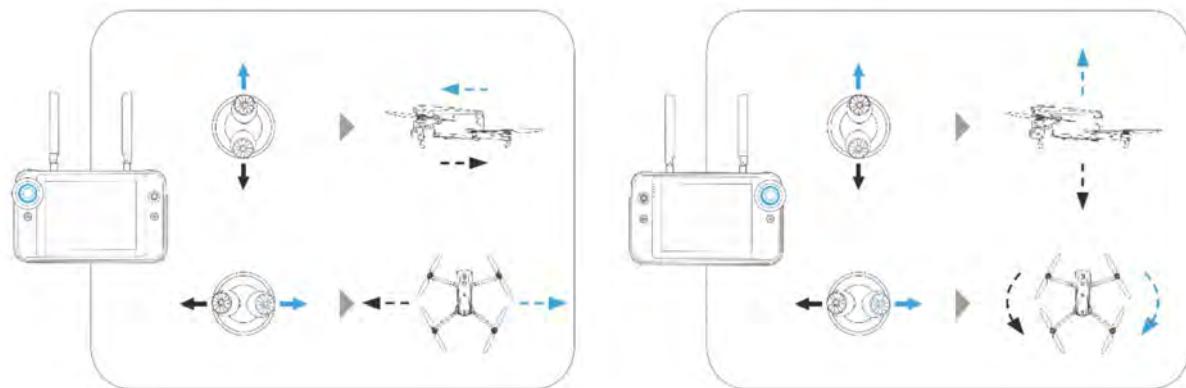| Stick	Move Up/Down	Move Left/Right
Left Stick	Controls the ascent and descent of the aircraft	Controls the heading of the aircraft
Right Stick	Controls the forward and backward movement of the aircraft	Controls the left or right movement of the aircraft

■ **Mode 3**

Fig 4-15   Mode 3

Table 4-12   Mode 3 Details

Stick	Move Up/Down	Move Left/Right
Left Stick	Controls the forward and backward movement of the aircraft	Controls the left or right movement of the aircraft
Right Stick	Controls the ascent and descent of the aircraft	Controls the heading of the aircraft

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⚠ **Warning**

- Do not hand over the remote controller to people who have not learned how to use the remote controller.
- If you are operating the aircraft for the first time, please keep the force gentle when moving the sticks until you are familiar with the operation.
- The flight speed of the aircraft is proportional to the degree of the stick movement. When there are people or obstacles near the aircraft, please do not move the stick excessively.

4.10.2 Setting Stick Mode

The default stick mode of the remote controller is "Mode 2". The detailed setting instructions are as follows. You can also refer to following steps to set other stick mode of the RC.

Table 4-13 Default Control Mode (Mode 2)

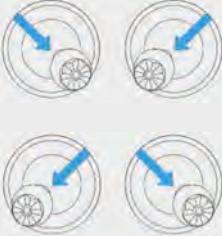| Mode 2	Aircraft Flight Status	Control Method
Left Command Stick Move Up or Down		1. The up-and-down direction of the left stick is the throttle stick, which is used to control the vertical lift of the aircraft. 2. Push the stick up, and the aircraft will rise vertically; pull the stick down, and the aircraft will descend vertically. 3. When the stick is returned to the center, the altitude of the aircraft remains unchanged. 4. When the aircraft takes off, please push the stick up to above the center, and the aircraft can lift off the ground.
Left Command Stick Move Left or Right		1. The left-and-right direction of the left stick is the yaw stick, which is used to control the heading of the aircraft. 2. Push the stick to the left, and the aircraft will rotate counterclockwise; push the stick to the right, and the aircraft will rotate clockwise. 3. When the stick is returned to the center, the rotational angular velocity of the aircraft is zero, and the aircraft does not rotate at this time. 4. The larger the degree of the stick movement, the greater the rotational angular velocity of the aircraft.
Right Stick Move Up or Down		1. The up-and-down direction of the right stick is the pitch stick, which is used to control the flight of the aircraft in the forward and backward directions. 2. Push the stick up, and the aircraft will tilt forward and fly towards the front of the nose; pull the stick down, and the aircraft will tilt backward and fly towards the tail of the aircraft. 3. When the stick is returned to the center, the aircraft remains horizontal in the forward and backward directions. 4. The larger the degree of the stick movement, the faster the flight speed of the aircraft, and the larger the tilt angle of the aircraft.

Right Stick
Move Left or
Right
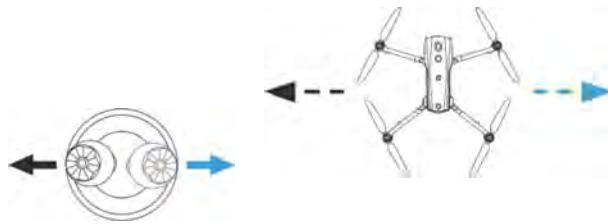
1. The left-and-right direction of the right stick is the roll stick, which is used to control the flight of the aircraft in the left and right directions.
2. Push the stick to the left, and the aircraft will tilt to the left and fly to the left of the nose; pull the stick to the right, and the aircraft will tilt to the right and fly to the right of the nose.
3. When the stick is returned to the center, the aircraft remains horizontal in the left and -right directions.
4. The larger the degree of the stick movement, the faster the flight speed of the aircraft, and the larger the tilt angle of the aircraft.


📝 Note

- When controlling the aircraft for landing, pull the throttle stick down to its lowest position. In this case, the aircraft will descend to an altitude of 1.2 meter above the ground, and then it will perform an assisted landing and automatically descend slowly.

4.10.3 Starting/Stopping the Aircraft Motor

Table 4-14   Start/Stop the Aircraft Motor

Process	Stick Operation	Description
Start the aircraft motor when the aircraft is powered on		Power on the aircraft, and the aircraft will automatically perform a self-check (for about 30 seconds). Then simultaneously pull the left and right sticks inward or outward for 2 seconds, as shown in the figure, to start the aircraft power motor.
Stop the aircraft motor when the aircraft is landing		When the aircraft is in landing state, pull the throttle stick down to its lowest position, as shown in the figure, and wait for the aircraft to land until the power motor stops.
		When the aircraft is in touch down state, simultaneously move the left and right
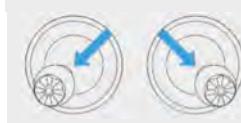
	sticks inward or outward, as shown in the figure, until the power motor stops.

⚠ Warning

- When the aircraft is taking off and landing, keep it away from people, vehicles, and other moving objects.
- In flight, the aircraft will initiate a forced landing in case of sensor anomalies or critically low battery level.

4.11 Remote Controller Keys

4.11.1 Custom Keys C1 and C2

You can customize the functions of the C1 and C2 custom keys according to your preferences. For detailed setting instructions, see "6.5 'Settings" Interface" in Chapter 6.
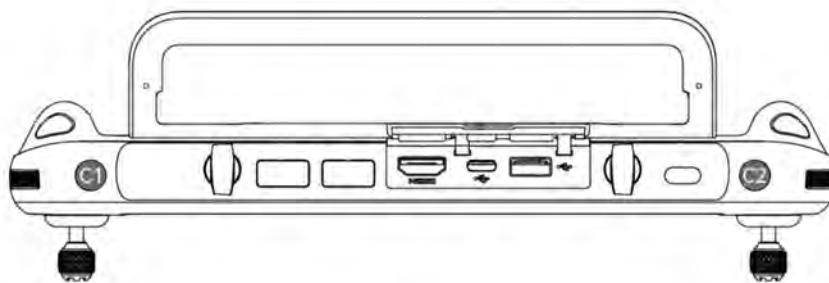

Fig 4-16   Custom Keys C1 and C2

Table 4-15   C1 and C2 Customizable Settings

No.	Function	Description
1	Visual Obstacle Avoidance On/Off	Press to trigger: turn on/off the visual obstacle avoidance sensing system. When this function is enabled, the aircraft will automatically hover when it detects obstacles in the field of view.
2	Gimbal Pitch Recenter/45°/Down	Press to trigger: switch the gimbal angle. ➢ Gimbal Pitch Recenter: The heading angle of the gimbal returns from the current position to be consistent with the heading of the aircraft nose, and the gimbal pitch angle returns to 0° direction from the current angle; ➢ Gimbal Pitch 45°: The heading angle of the gimbal returns from the current position to be consistent with the heading of the aircraft nose, and the gimbal pitch angle returns to 45° direction from the current angle;

> ➢ Gimbal Pitch Down: The heading angle of the gimbal returns from the current position to be consistent with the heading of the aircraft nose, and the gimbal pitch angle rotates to 90° direction from the current angle.

3	Map/Image Transmission	Press to trigger: switch between the map full screen display and camera full screen display.
4	Speed Mode	Press to trigger: switch the flight mode of the aircraft. For more information, see "3.9.2 Flight Modes" in Chapter 3.

⚠ **Warning**

● When the speed mode of the aircraft is switched to "Ludicrous", the visual obstacle avoidance system cannot be turned on.
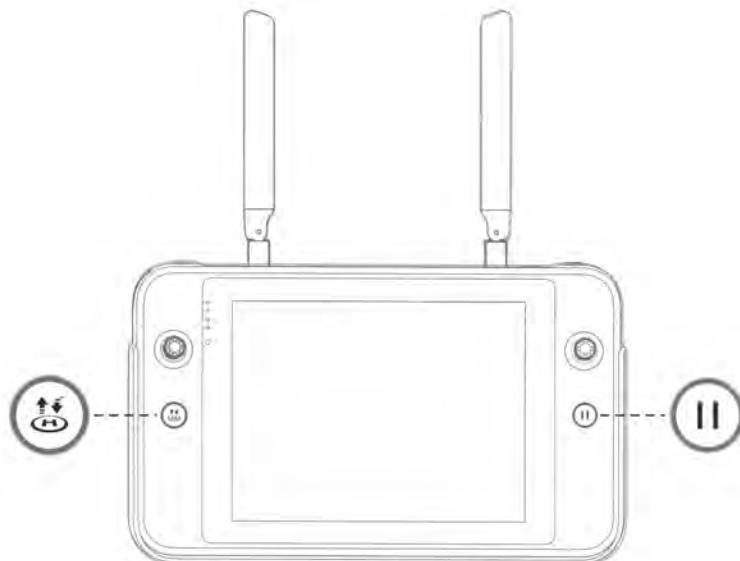

4.11.2 Take-off/Return-to-Home Button and Pause Button

⚠ **Warning**

● The auto-return function will only be enabled when the aircraft is in GNSS mode.
● If the obstacle avoidance system is disabled during a return flight, the aircraft will not be able to automatically avoid obstacles.
● Before using the auto-return function, you need to set the home point in advance in the flight application. For more information, see "6.5 'Settings' Interface" in Chapter 6. If the home point is not set, the aircraft will take the take-off point as the home point by default.

To manually activate the auto-return function, press and hold the take-off/return-to-home button " " on the remote controller for 2 seconds until the remote controller emits a "beep" sound. Upon receiving the command, the aircraft will automatically return and land at the preset home point.

When the aircraft is in the auto-return state, the remote controller will be disabled. You can short press the pause button " " until the remote controller emits a "beep" sound to pause the auto-return, or press and hold the pause button " " for 2 seconds until the remote controller emits a "beep" sound to exit the auto-return. After pausing or exiting the auto-return, you can reactivate the remote controller for controlling the aircraft.

Fig 4-17   Take-off/Return-to-Home Button and Pause Button

💡 **Tip**

● When the aircraft pauses an auto-return, it will hover in place. To resume the auto-return, press the pause button " ⏸ " again until the remote controller emits a "beep" sound.

⚠ **Warning**

● If the auto-return home point is not suitable for the aircraft to land (such as uneven ground and crowds), please exit the auto-return before the aircraft reaches the home point, and then manually resume control to land.

4.12 Turning On/Off the Remote Controller Prompt Sound

In some scenarios, the remote controller will send a prompt sound, such as the screen lock sound, power-on sound and aircraft alert notification sound.

💡 **Tip**

● You can access the system settings app from the main interface of the remote controller, and then drag the volume slider in "Sound" to adjust the media volume and notification volume separately.

4.13 Calibrating the Remote Controller Compass

If the flight application prompts "Compass calibration required for remote controller.", please calibrate the compass of the RC as follows:

1. Make sure the aircraft is powered on.

2. In the main interface of the flight application, tap "⊡" >"⚙">"📷"->"Compass calibration of remote controller", and enter the calibration interface.

3. Tap "Start calibrating" button, hold the RC, and perform an 8-figure notion as shown in the picture on the interface until the RC emits calibration result sound. Then check the calibration result.
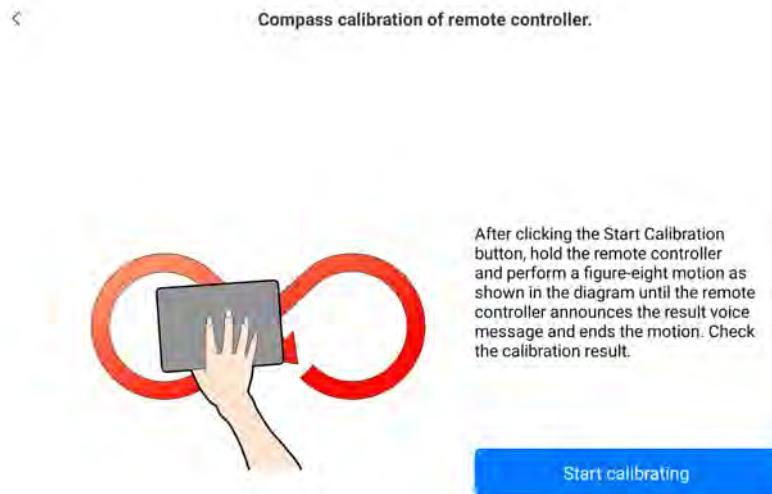
Compass calibration of remote controller.

After clicking the Start Calibration button, hold the remote controller and perform a figure-eight motion as shown in the diagram until the remote controller announces the result voice message and ends the motion. Check the calibration result.

Start calibrating

Fig 4-18   Calibrate the RC compass

4.14 Calibrating the Remote Controller

If the remote controller is abnormal, it is recommended to calibrate it, as shown below.

Table 4-16   Calibrating the Remote Controller

Step	Operation	Diagram
1	Turn on the remote controller. After entering the main interface of the flight application, tap "⊡" -> "⚙", -> "📷" -> C Calibration" -> "Start calibrating". Follow the on-screen instructions to calibrate the remote controller.	RC Calibration. Please do not touch the sticks before clicking the start button. Make sure to follow the instructions carefully during calibration, as failure to do so may result in a failed calibration. Start calibrating

| 2 | Calibration of the dials and command sticks: According to the instructions on the calibration interface, move the left and right dial wheels and the left and right sticks according to the directions shown in the figure and hold for 1 second. At this time, a beep will be heard, and the calibration direction icon will be changed from gray to dark blue, indicating that the orientation calibration was successful.

There is no order in which directions are calibrated, until all directions are calibrated, the remote controller calibration is done. | |

4.15 HDMI Screen Output

The remote controller is equipped with an HDMI interface. The interface allows you to output the real-time screen of the remote controller to supported digital devices such as display screens.

Chapter 5 Smart Battery

5.1 Battery Introduction

The aircraft comes standard with ABX40 or ABX41 smart battery (both hereafter referred to as smart battery) as the power battery. As power battery, they both are rechargeable lithium-ion polymer (LiPo) battery and feature high energy density and capacity. They can be charged with an MDX120W battery charger.

✍ Note

- The MDX_8070_1488 smart battery model has been changed to ABX40, and the original model has been discontinued.
- ABX40 and ABX41 smart batteries only differ in battery capacity and are the same in terms of other functions. If the aircraft is required to fly at altitude of more than 3000m, please use ABX40 smart battery. When purchasing aircraft kit, please refer to the battery configured in the actual purchase order.
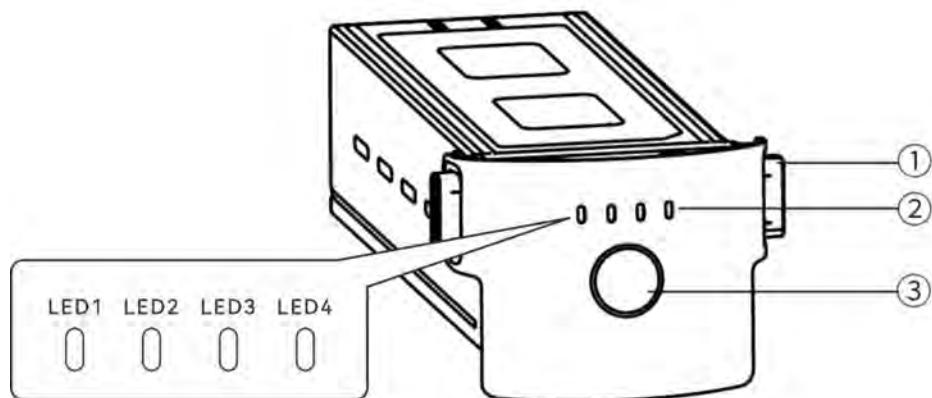- The battery charger is included as part of the aircraft kit. You do not need to purchase it separately.

Fig 5-1   Battery Appearance

Table 5-1   Battery Appearance Details

No.	Name	Description
1	Unlock Button	To remove the battery from the aircraft, press and hold the unlock buttons on both sides and pull out the battery.
2	Battery Level Indicator	Used to display the current battery level of the smart battery in normal situations.
3	Power Button	Press and hold the power button for 3s to turn on or turn off the battery.

5.2 Smart Battery Functions

The smart battery has the following functions:

■ **Battery Level Display**

The smart battery has a built-in battery level indicator, which shows the current battery level of the smart battery.

■ **Self-heating**

This function allows the smart battery to operate normally even in low-temperature environments, ensuring flight safety. For more information, see "5.3.4 Smart Battery Self-heating" in this chapter.

■ **Communication**

The aircraft can obtain real-time battery information, such as voltage, current, battery level, and battery temperature, through the communication interface on the smart battery.

■ **Power Saving Mode**

The smart battery will automatically shut down after 30 minutes of inactivity to reduce power consumption.

■ **Dust and Water Resistance**

When correctly installed in the aircraft, the battery has an IP43 protection rating.

■ **Ultra-low Power Mode**

When the smart battery is idle for 12 hours and the battery level is less than 8%, the battery BMS will enter the ultra-low power mode to reduce self-consumption. When entering ultra-low power mode, it needs to be activated by a charger before it can continue to use normally.

■ **Self-discharge Protection**

If the smart battery is stored in a high-temperature environment or not used for 6 days with a high battery level, the self-discharge protection will be activated. The smart battery will automatically discharge to a battery level of about 60% (by default) and the discharge process takes 2-3 days.

⛭ Tip

● Although the battery has no indication of a self-discharge cycle, you may notice that the battery is slightly warm, which is normal.

■ **Sleep Mode Protection**

If the smart battery has a low battery level, it will automatically enter sleep mode to prevent over-discharge. In this mode, the smart battery does not respond when the power button is pressed. To wake up the battery, you can connect it to a battery charger.

■ **Charge Temperature Protection**

The smart battery will stop charging when its temperature is lower than 5°C or higher than 45°C during charging, as charging the battery under such temperatures will damage the battery.

■ **Overcurrent Protection**

The smart battery will stop charging when the charging current is too high, as charging the battery with a high current can severely damage the battery.

■　**Overcharge Protection**

Charging will stop automatically when the smart battery is fully charged, as overcharging can severely damage the battery.

■　**Balance Protection**

The voltage of each battery cell in the smart battery is automatically kept balanced to protect the battery and maximize the performance of the battery.

■　**Short Circuit Protection**

Once a short circuit is detected, the power supply of the smart battery will be cut off to protect the battery.

⚠ **Warning**

● Before using the smart battery, please carefully read and strictly follow the requirements in this Manual, "Battery Safety Operation Guidelines", and "Disclaimer", and those on the battery's surface sticker. The user shall undertake all consequences if he/she fails to follow the usage requirements.

5.3 Smart Battery Usage

● Please use a smart battery within the appropriate temperature range (refer to the operating temperature of the aircraft). Using it in too high or low temperatures will affect the battery's safety and lifespan and may cause spontaneous battery combustion or permanent damage to the battery.
● Do not use the aircraft in a strong electrostatic (such as thunderstorms) or electromagnetic environment. Otherwise, some functions of the smart battery may fail (e.g., abnormal battery output and power failure), resulting in serious aircraft malfunctions.
● Do not use a smart battery that has ever been dropped from the aircraft or subjected to external impacts.
● Do not use a water-soaked smart battery or immerse a smart battery in water or other liquids. Water contact inside the battery may cause corrosion, resulting in spontaneous battery combustion and even an explosion.
● Do not use a smart battery that emits smoke, is bulged, leaks liquids, or has a damaged appearance.
● The liquid inside the smart battery is corrosive. If it leaks, please keep away from it. If it accidentally contacts your skin or eyes, rinse immediately with clean water for at least 15 minutes and seek medical attention.
● Do not disassemble, puncture, strike, crush, or burn a smart battery in any way. Otherwise, it may lead to battery combustion or even explosion.
● Do not short-circuit the positive and negative terminals of a smart battery.
● If the battery connector of a smart battery is dirty, use a dry cloth to clean it. Otherwise, it may cause poor contact, leading to energy loss or charging failure.
● Before replacing the smart battery of the aircraft, make sure that the battery connector, battery compartment interface, battery surface, and battery compartment surface are dry and free of water, and then insert the battery into the aircraft.

5.3.1 Installing/Removing the Smart Battery

Table 5-2   Install the Smart Battery

Step	Operation	Diagram
1	Turn off the smart battery before installing the battery.	
2	Slowly insert the smart battery into the battery compartment on the aircraft fuselage, and you will hear a clicking sound when the battery is in place.	

⚠ **Warning**

- If the smart battery is not installed properly, it may cause the battery to fall off during the flight, damage the aircraft, or even cause personal injury.
- Before installing the smart battery on the aircraft, make sure that the battery is turned off.

Table 5-3   Remove the Smart Battery

Step	Operation	Diagram
1	Turn off the smart battery before removing the battery.	
2	Press and hold the unlock buttons on both sides of the smart battery and slowly pull out the battery.	

❗ **Important**

- The unlock buttons of the smart battery are wearable parts. Please do not press them hard to avoid any possible damage to the internal structure of the battery.