TAITEN User Manual

ACSL

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1. Package contents

1. Controller main unit × 1
2. Antenna × 2
3. Charger × 1
4. USB-C to USB-C charging cable × 1

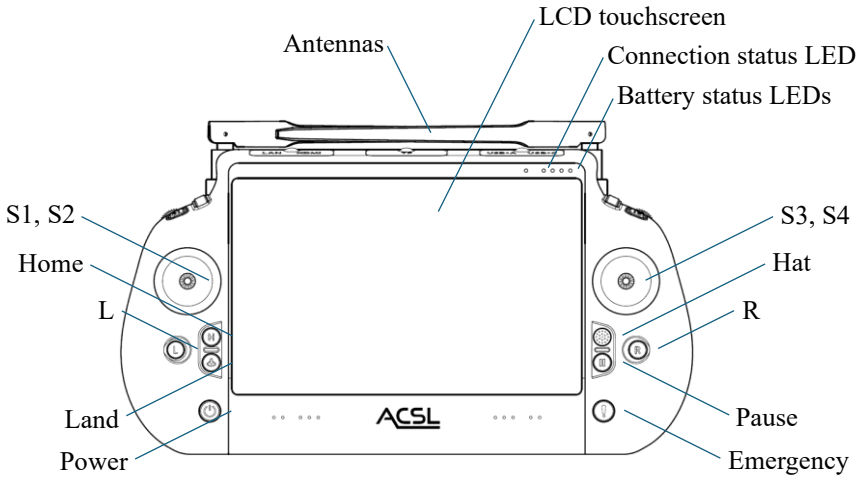
2. Performance specifications

Item		Specification
Dimensions	-	291×155×83 mm (11.5×6.10×3.27 inches)
Weight	-	1450 g (3.20 lbs)
Display	Size	7 inches
	Resolution	1200 x 1920
	Brightness	1500nits
Physical interfaces	-	Power button 2-axis control stick × 2 3-state mode switch (AUT/POS/MAN) Go Home button Land button Pause/resume button Emergency button Customizable control wheel × 2 Customizable button × 8 Customizable 3-state switch 5-way hat
Indicators	-	Speaker Vibration motor Connection indication LED Battery level indicator LED
Sensors	-	Temperature sensor Microphone GNSS receiver
Battery	Type	Li-ion
	Capacity	13,200mAh
	Rated voltage	7.2V
Working time	Typ.	8 hours
Charging time	-	3.5 hours wtih 60W charger
Communication radio	Frequency	2.4 GHz + 5.8 GHz bands

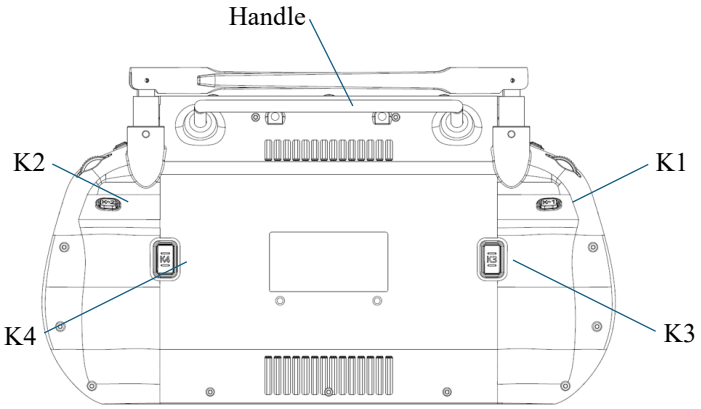
	Max. communication range	4 km (MIC), 8 km (5 mi) (FCC)
Network radios	-	2.4/5.8 GHz Wi-Fi Bluetooth 4.1 LE/4.2/5.0 LE
OS	-	Android 13
Operation temperature range	-	-20℃ to +60℃
Storage temperature range	-	-20℃ to +50℃
Charging temperature	-	0℃ to +45℃
IP Ingress protection rating	-	IP54
Interfaces	-	Ethernet HDMI TFMicroSD USB-C USB-A 2.0
Included accessories	-	Charger and cable

3. Controller parts

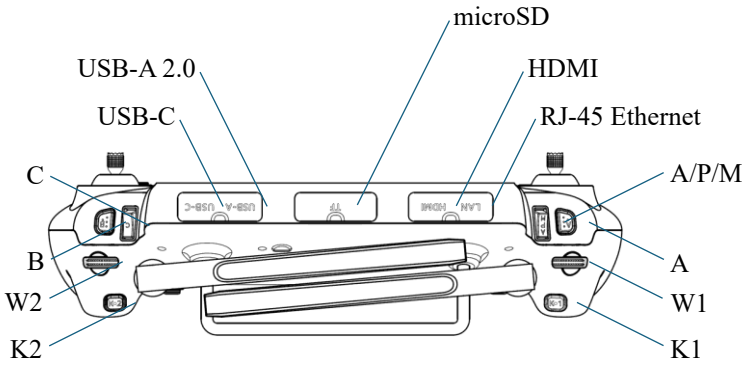
Front view



Back view



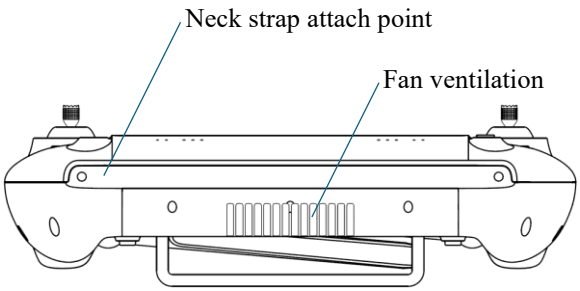
Top view



Name	Function	Positions	Remarks

S1	Longitudinal/vertical attitude/position control	Continuous	Modes 1 & 3: longitudinal control Modes 2 & 4: vertical control
S2	Heading/lateral attitude/position control	Continuous	Modes 1 & 2: heading control Modes 3 & 4: lateral control
S3	Vertical/longitudinal attitude/position control	Continuous	Modes 1 & 3: vertical control Modes 2 & 4: longitudinal control
S4	Lateral/heading attitude/position control	Continuous	Modes 1 & 2: lateral control Modes 3 & 4: heading control
HOME	Go home	2	Automatic return to and land at the takeoff point
L	Back button	2	Back to previous page
Land	Automatic landing	2	Automatic landing at the current location
Hat	Reserved for future use	5	
Pasue	Pause/resume	2	Push to pause autonomous flight; push again to resume
R	Reserved for future use	2	
Emergency	Emergency button	2	Forcibly stops the motors
A/P/M	Switch flight modes	3	Forward: AUT (auto) Middle: POS (position) Back: MAN (manual)
C	Collision avoidance	3	Forward: ON Middle: ON Back: OFF
A	Customizable	2	Default: gimbal forward
B	Customizable	2	Default: interval photo start/stop
W1	Customizable	Continuous	Default: gimbal tilt
W2	Customizable	Continuous	Default: gimbal pan
K1	Customizable	2	Default: gimbal down
K2	Customizable	2	Default: video recording start/stop
K3	Reserved for future use	2	
K4	Reserved for future use	2	

Bottom view

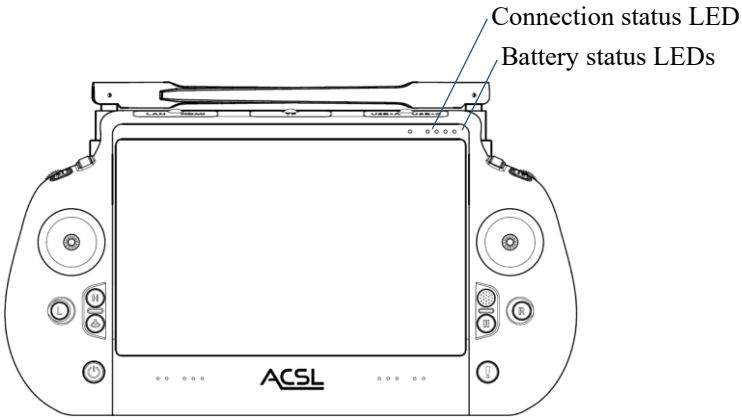


Name	**Intended application**
RJ-45 Ethernet	Connect to a wired Ethernet network
HDMI	Display the contents of the screen on an external monitor
microSD	Used to update firmware, transfer flight plans, retrieve logs, etc.
USB-A 2.0	Used to transfer flight plans, retrieve logs, etc.
USB-C	Charging, etc.

Note:

The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

4. Indicators



4.1. Power indicator (battery status LEDs)

The power indicator uses four green LEDs to show the battery's state of charge.

- Discharging (normal use): The LEDs illuminate solidly in 25% increments.

Battery level indication				
●	○	○	○	0%—25%
●	●	○	○	25%—50%
●	●	●	○	50%—75%
●	●	●	●	75%—100%

●On ○Off

Charging: The LEDs display the charge level with one blinking LED to indicate progress:

Power indication during charging				
Blinking	○	○	○	0%–25%
●	Blinking	○	○	25%–50%
●	●	Blinking	○	50%–75%
●	●	●	Blinking	75%–99%
●	●	●	●	100%

●On ○Off

4.2. Connection indicator LED

- If TAITEN has no connection with SOTEN, the indicator will be solid red.
- If TAITEN is connected with pilot authority, the indicator will be solid green.
- If TAITEN is connected as an observer, the indicator will be blinking in green.

5. Charging

How to charge the battery:

1. Connect the included USB-C to USB-C cable to the included charger.
2. Open the waterproof cover on the top of TAITEN controller and insert the charger cable into the USB-C port.
3. Plug the charger into an electrical outlet.

Additional notes:

- Charging stops automatically when the battery is full.
- When the controller is charging while powered off, briefly push the power button to display the level of charge.

Warning

- Do not use the controller or battery charger while they are wet, or with wet hands. Doing so may result in electric shock.

6. Startup and shutdown

To turn the controller on or off, press and release the power button once, then press and hold it for three seconds.

7. Pilot and observer modes

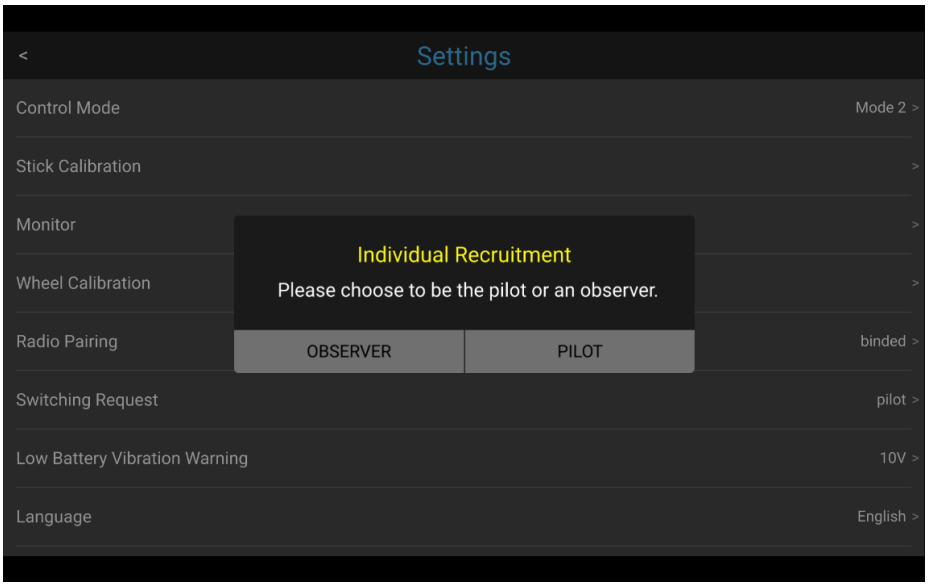
- Pilot mode: Full control and monitoring of the aircraft
- Observer mode: Monitoring only; no commands can be sent

When only one controller is bound to an aircraft, it automatically receives pilot authority. If multiple controllers are bound (up to three total), only one will be assigned pilot authority while the others default to observer mode.

7.1. Pilot recruitment pop-up

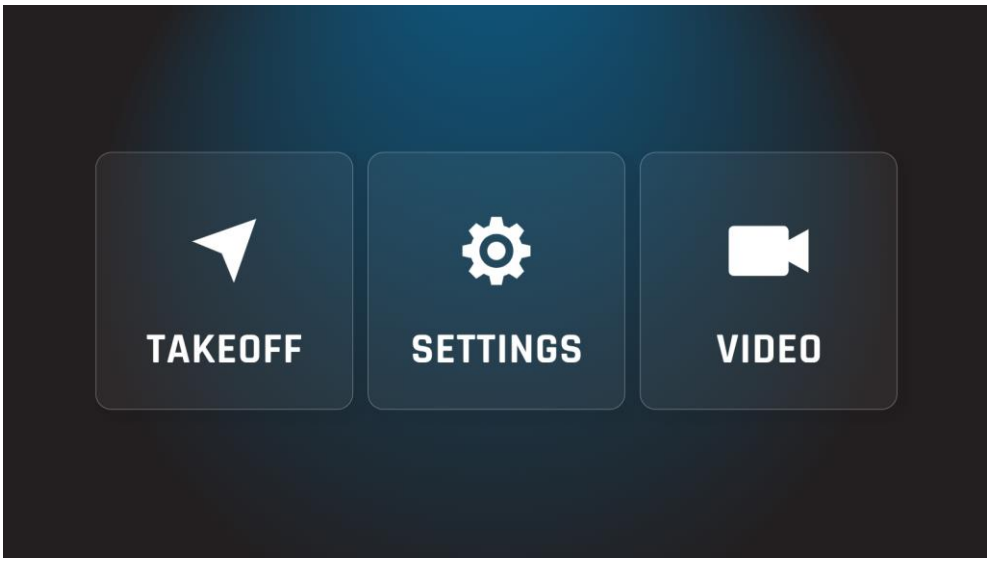
The pilot recruitment pop-up window may appear in the following cases:

- After binding TAITEN to an aircraft
- When communication is first established (e.g., after powering on the aircraft and controller)
- After initiating a Switching Request from the settings menu (available only to the current pilot)



If no controller accepts pilot authority, the recruitment pop-up will remain displayed. Once authority is assigned, a confirmation message appears: “Switched to pilot” or “Switched to observer.”

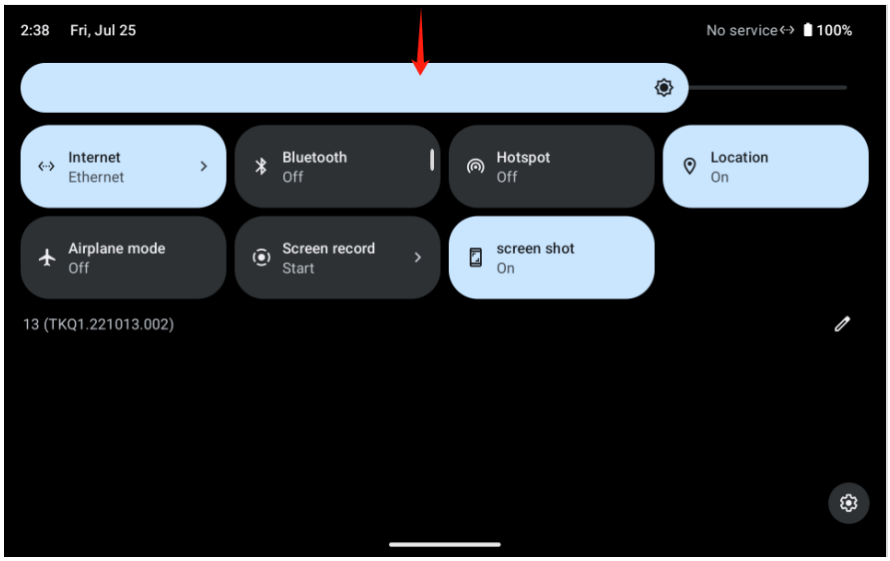
8. Home screen



There are 3 icons on the home screen. Tap an icon to launch the associated function.

8.1. Android status bar and notification

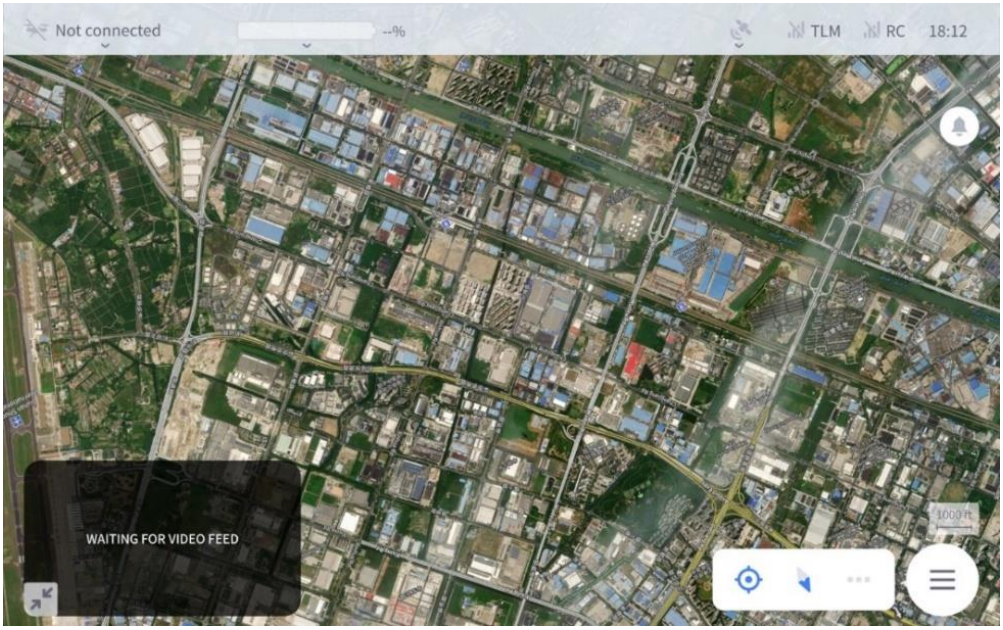
Swipe down from the top of the screen to display the notification and status bar. Swipe down again to extend the bar.



Swipe up and hold from the bottom of the screen to display the currently open applications.

9. ACSL TAKEOFF ground control application

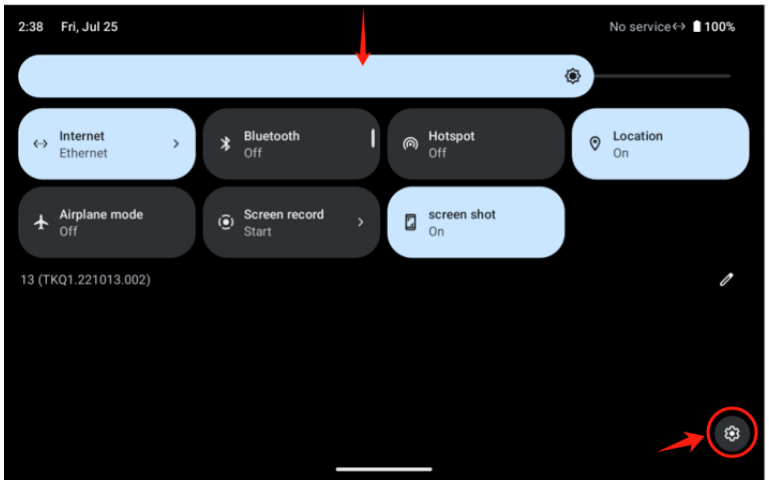
From the home screen, tap the TAKEOFF icon to open the ACSL TAKEOFF ground control application. Below is the home interface of the TAKEOFF ground control application.



9.1 TAKEOFF installation

To install the ACSL TAKEOFF ground control application, copy the desired .apk file onto a USB memory stick or SD card and insert it into the controller's USB or SD card port.

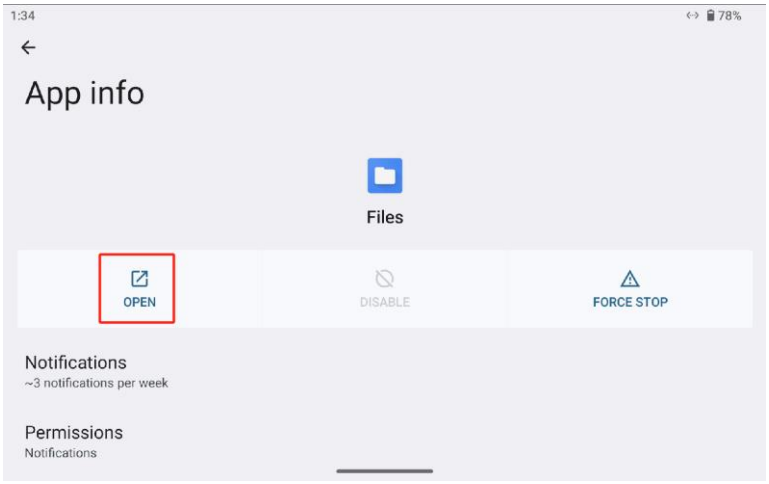
Swipe down from the top of the screen to display the notification and status bar. Swipe down again to extend the bar. Tap on the gear icon on the bottom right of the screen.



Tap Apps.

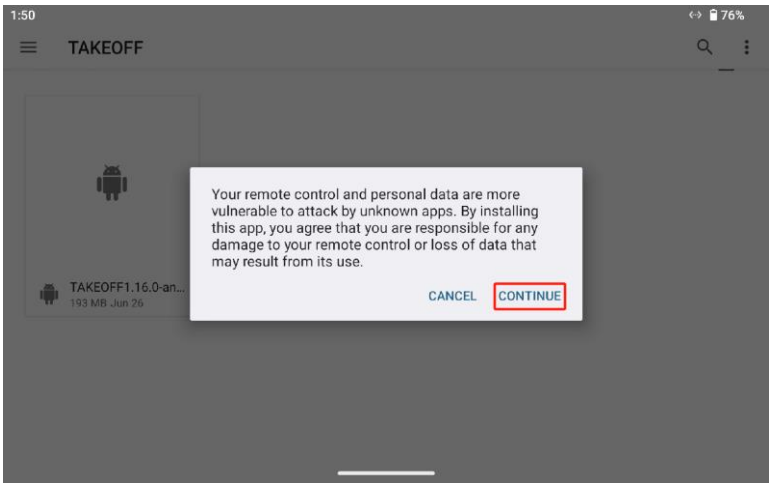
Tap Files.

Tap OPEN.

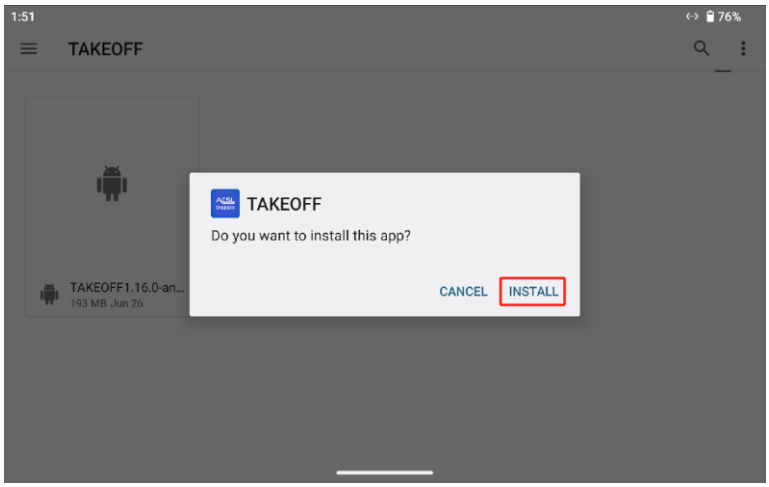


Navigate to and then tap on the desired .apk file.

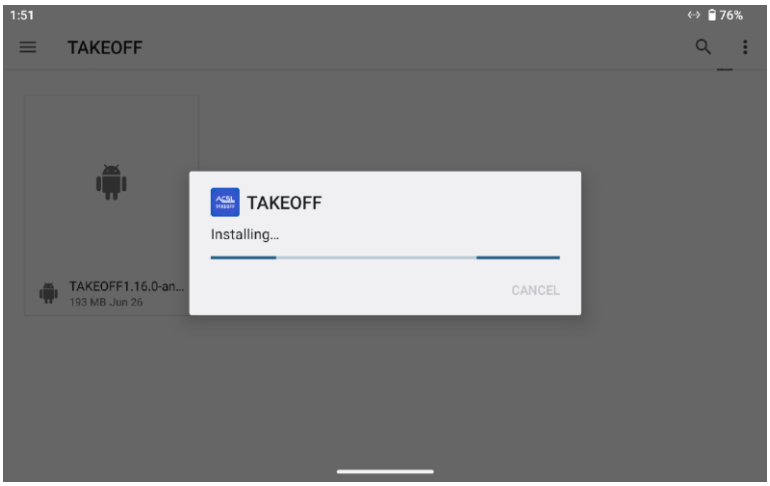
Tap CONTINUE.



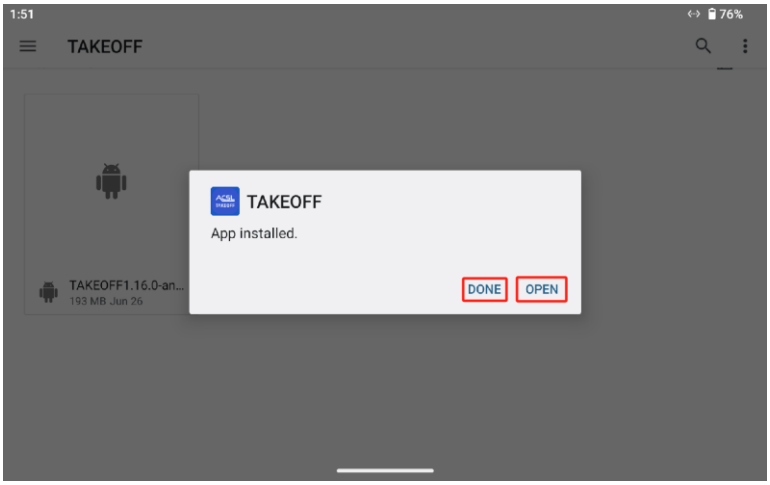
Tap INSTALL.



Wait for the installation to complete.

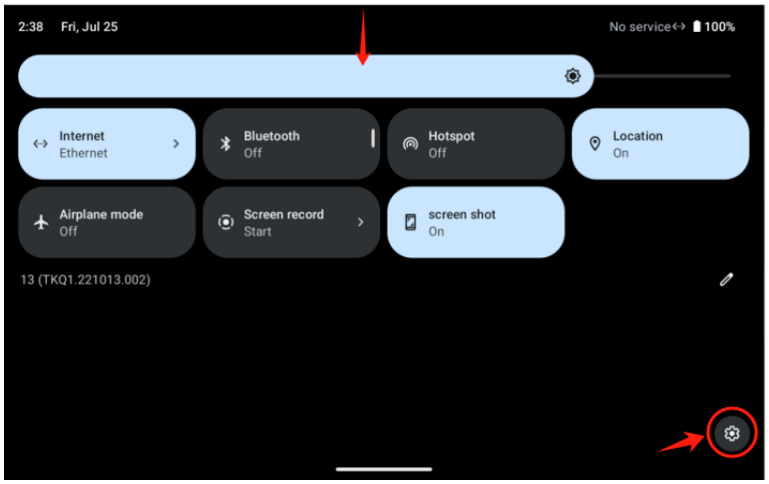


Tap DONE to dismiss the completion notification or OPEN to open the TAKEOFF application.

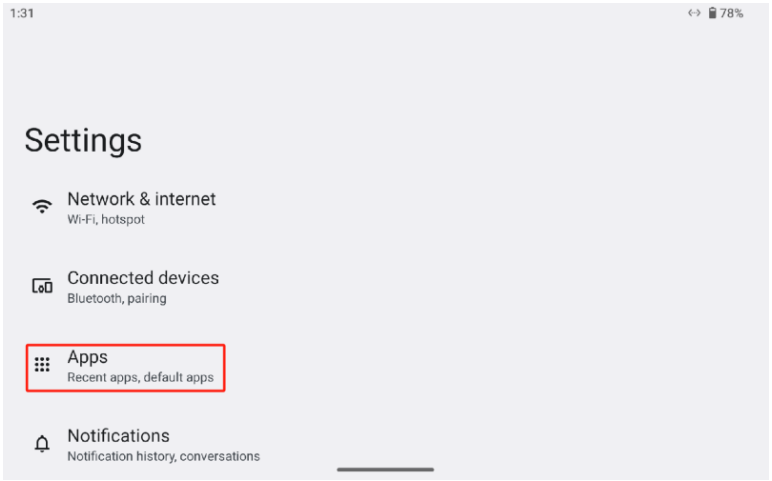


9.2 Uninstalling TAKEOFF

To uninstall the TAKEOFF application, swipe down from the top of the screen to display the notification and status bar. Swipe down again to extend the bar. Tap the gear icon on the bottom right of the screen.

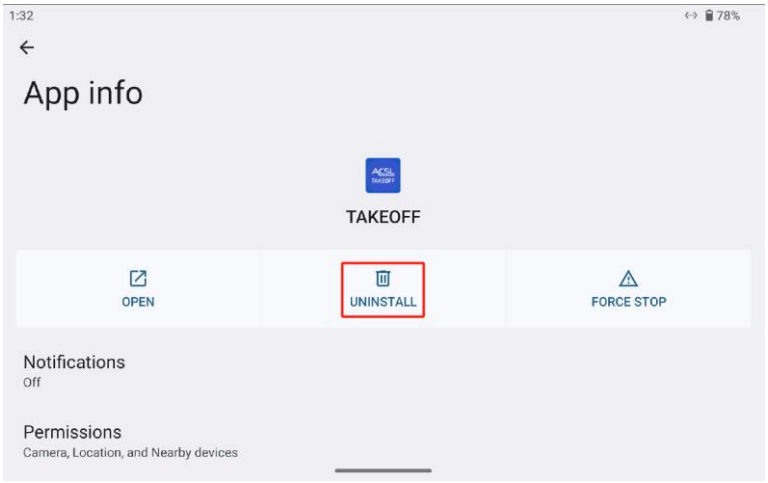


Tap Apps.

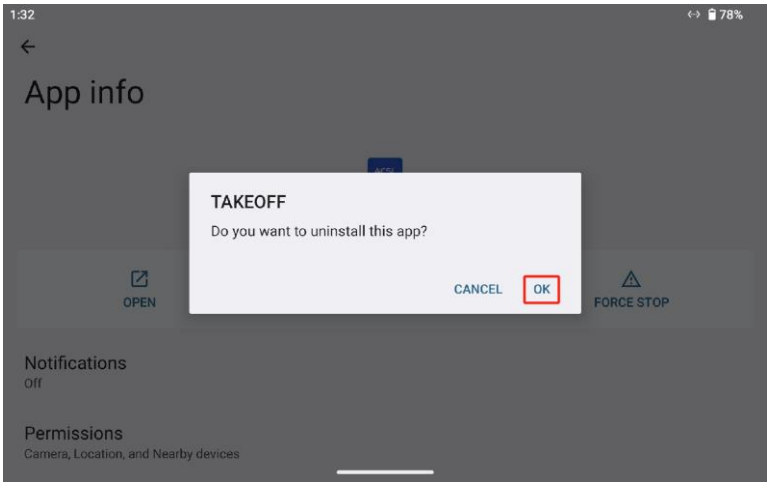


Tap TAKEOFF.

Tap UNINSTALL.



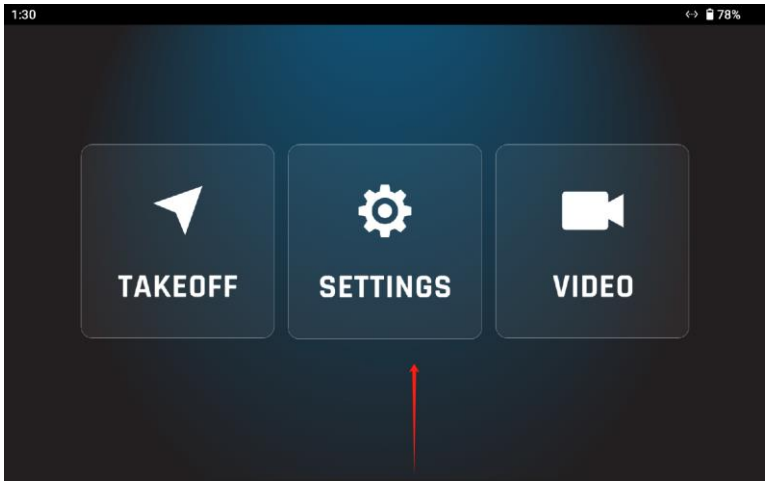
Tap OK.



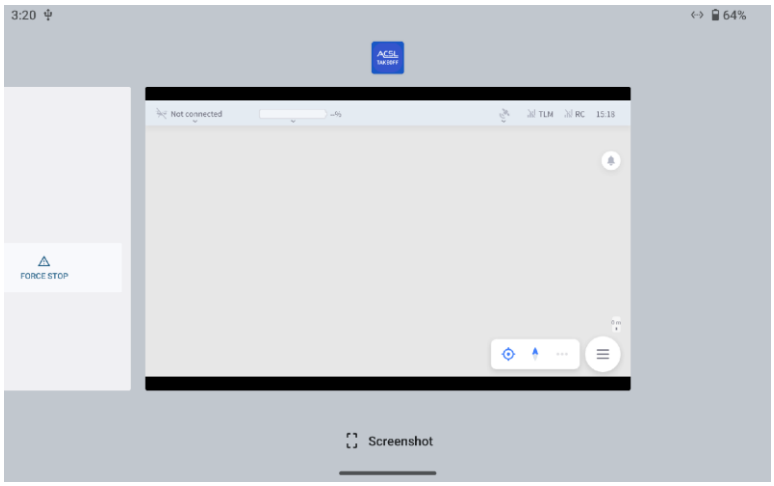
Uninstalled completed

9.3 Close the TAKEOFF application:

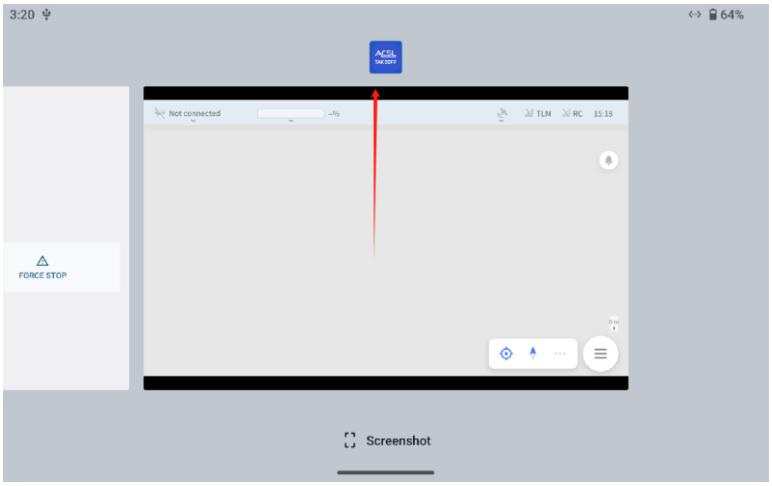
To close the TAKEOFF application, swipe up and hold from the bottom of the screen to show the currently open applications.



Currently open applications.



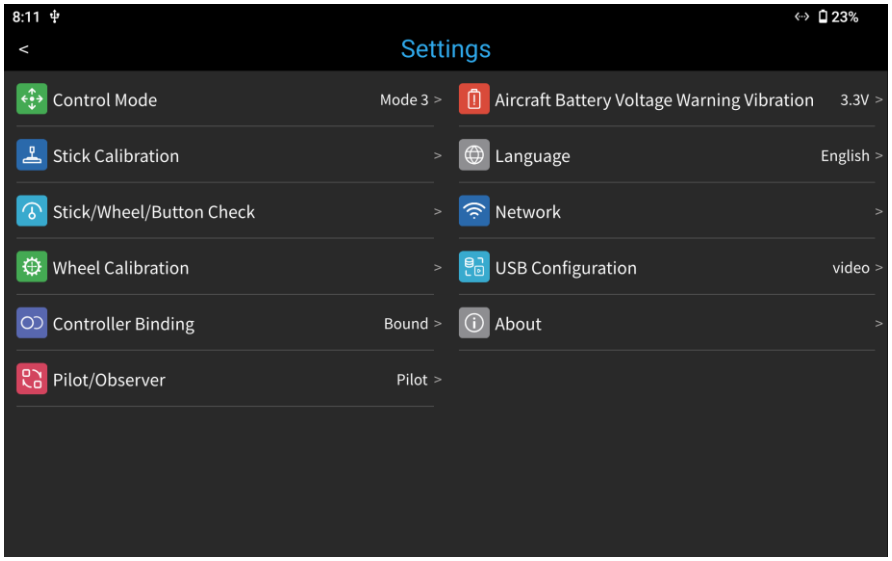
Drag the TAKEOFF application upward to close it.



10. Settings

Tap the settings icon from the home screen to enter the controller settings menu.

Tap a menu item to adjust its settings.



10.1. Control mode

Use this menu item to select the function (mode) of the control sticks.

AIL: Aileron – lateral (roll/left and right) movement

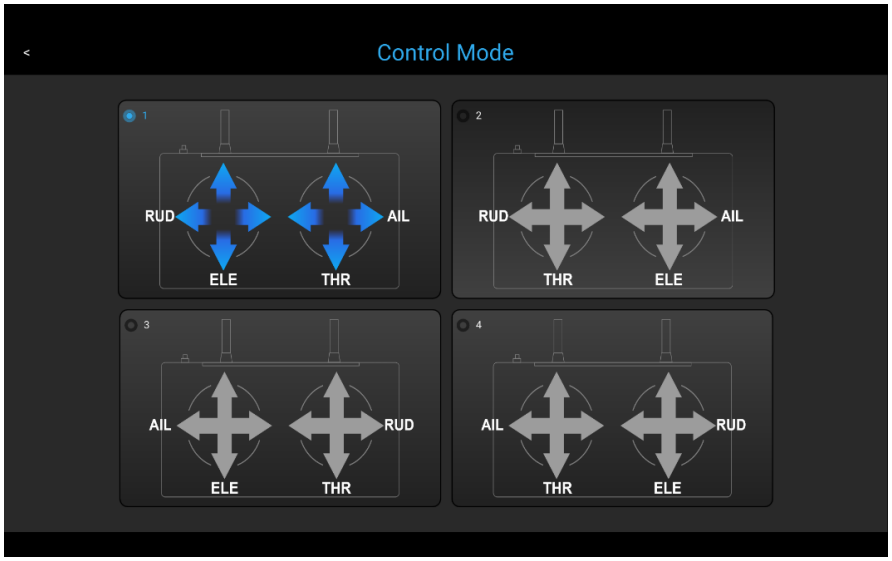
ELE: Elevator – longitudinal (pitch/forward and backward) movement

THR: Throttle – vertical (ascent and descent) movement

RUD: Rudder – heading (yaw) movement

Select your preferred mode.

When finished, press the L button or tap “<” in the upper left corner to return to the previous page.



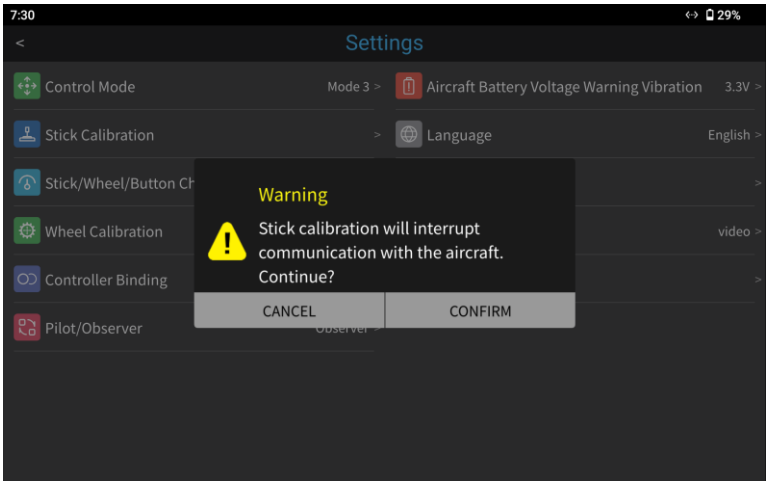
10.2. Stick calibration

Improperly calibrated sticks may result in:

- Aircraft drift when the sticks are centered
- Failure to arm the motors
- Inability to issue full stick commands

Calibrating the sticks can resolve these issues.

The following warning is displayed when Stick Calibration is tapped:

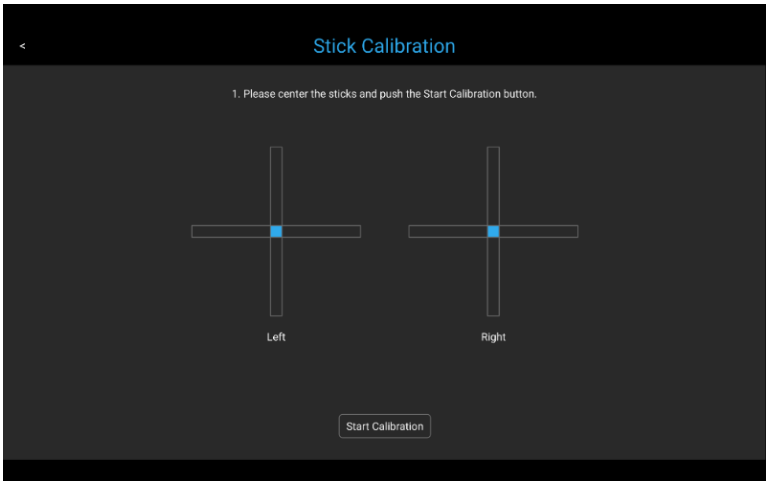


Communication with the aircraft will be interrupted, so ensure a safe condition before tapping “CONFIRM”. Tapping “CANCEL” will return to the settings menu.

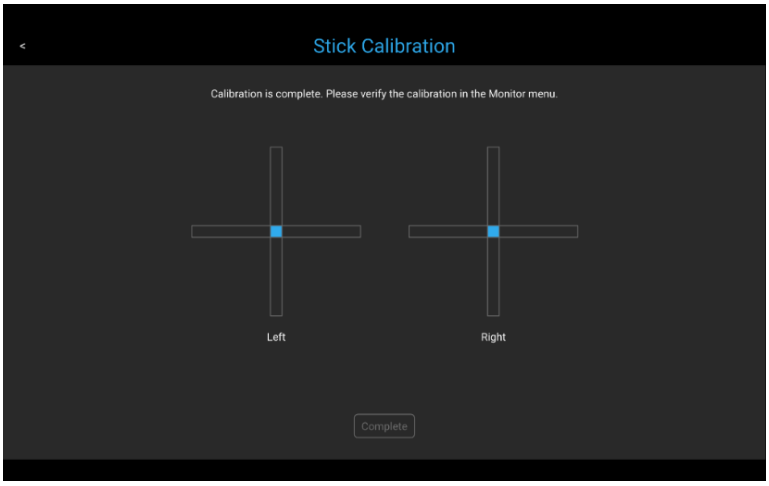
WARNING

- Do not perform stick calibration during flight.
- Communication with the aircraft will be interrupted, and no commands can be sent.
- Always ensure the aircraft is in a safe condition before tapping CONFIRM.
- Tap CANCEL to return to the settings menu.

If proceeding with the calibration, follow the on-screen instructions to complete calibration.



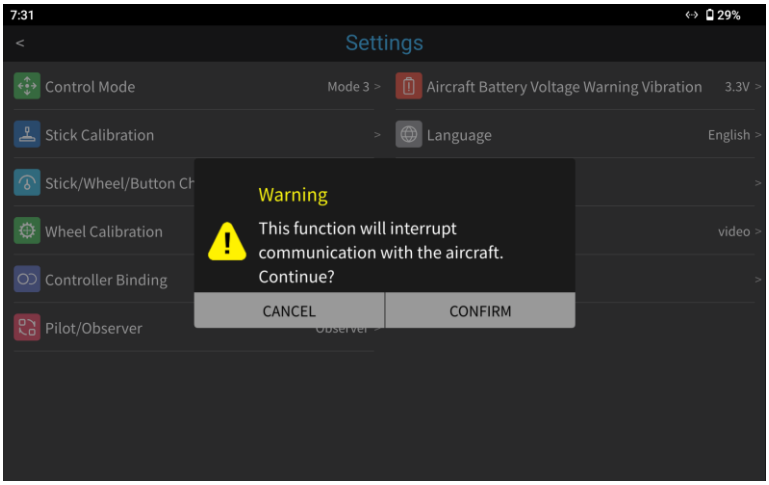
When finished, press the L button or tap “<” in the upper left corner to return to the previous page.



10.3. MonitorStick/Wheel/Button Check

The operation of each stick, button, and wheel can be checked using the Monitor feature.

The following warning is displayed when Monitor is tapped:

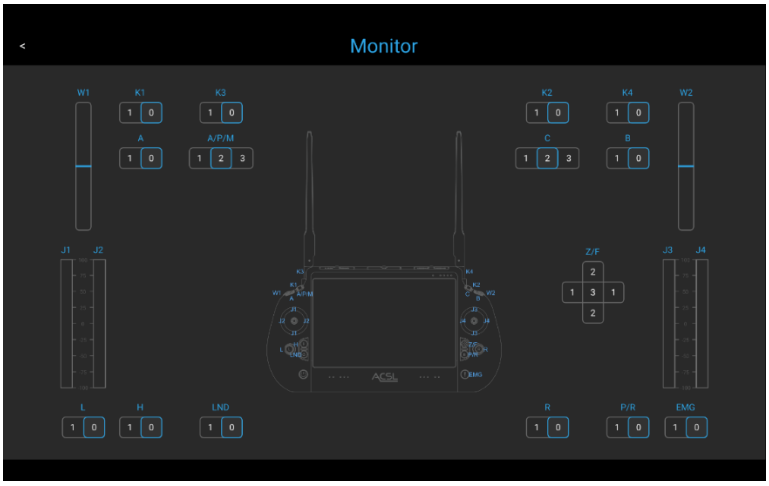


Communication with the aircraft will be interrupted, so ensure a safe condition before tapping “CONFIRM”. Tapping “CANCEL” will return to the settings menu.

WARNING

- Do not perform stick/wheel/button check during flight.
- Communication with the aircraft will be interrupted, and no commands can be sent.
- Always ensure the aircraft is in a safe condition before tapping CONFIRM.
- Tap CANCEL to return to the settings menu.

The following is an example of the Monitor display:



When finished, press the L button or tap “<” in the upper left corner to return to the previous page.

10.4. Wheel calibration

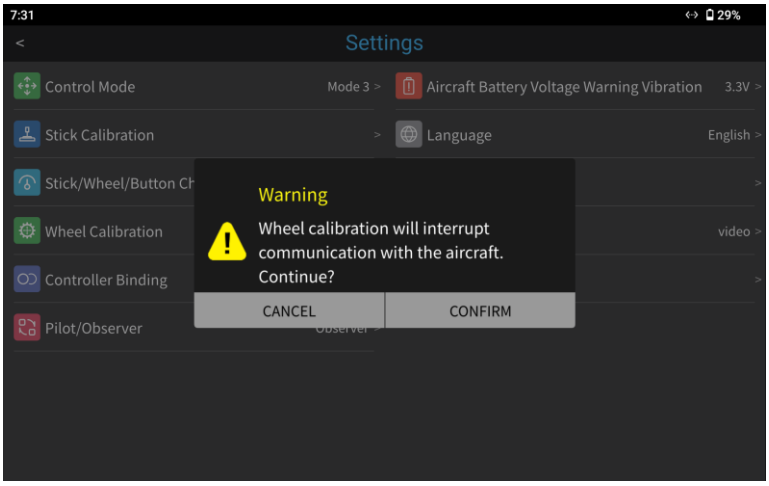
If the wheels are not properly calibrated, you may experience:

- Gimbal angle drift when the wheels are centered

- Difficulty controlling the gimbal angle or other assigned functions

Calibrating the wheels can resolve these issues.

The following warning is displayed when Wheel Calibration is tapped:

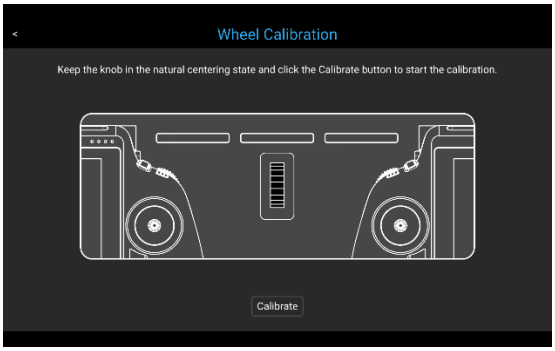


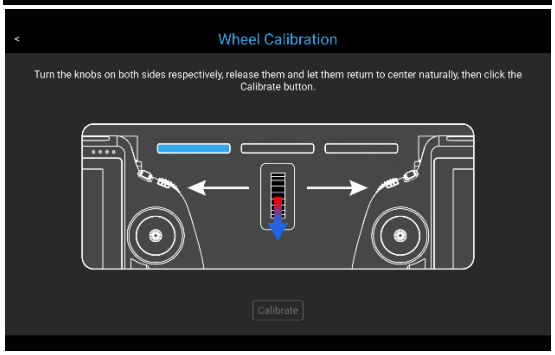
Communication with the aircraft will be interrupted, so ensure a safe condition before tapping “CONFIRM”. Tapping “CANCEL” will return to the settings menu.

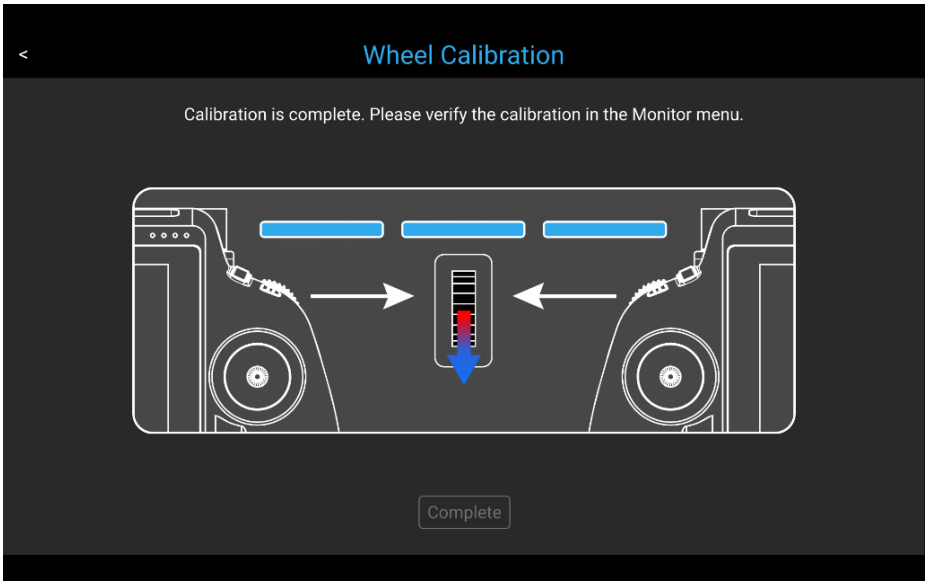
WARNING

- Do not perform wheel calibration during flight.
- Communication with the aircraft will be interrupted, and no commands can be sent.
- Always ensure the aircraft is in a safe condition before tapping CONFIRM.
- Tap CANCEL to return to the settings menu.

If proceeding with the calibration, follow the on-screen instructions to complete calibration.





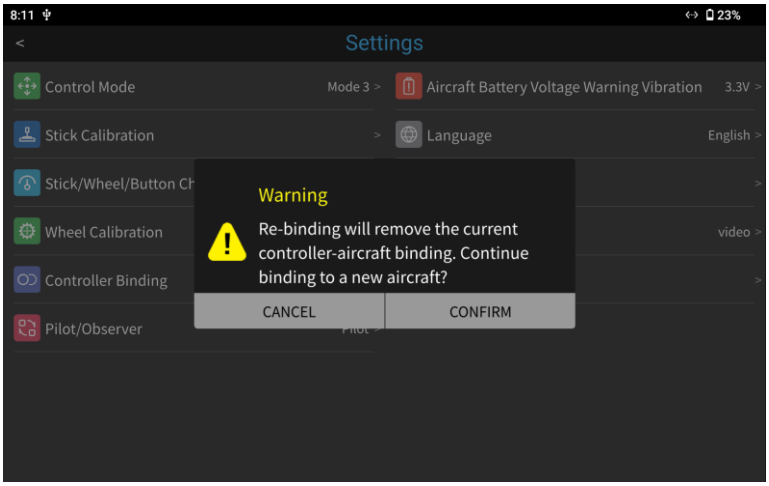


When finished, press the L button or tap “<” in the upper left corner to return to the previous page.

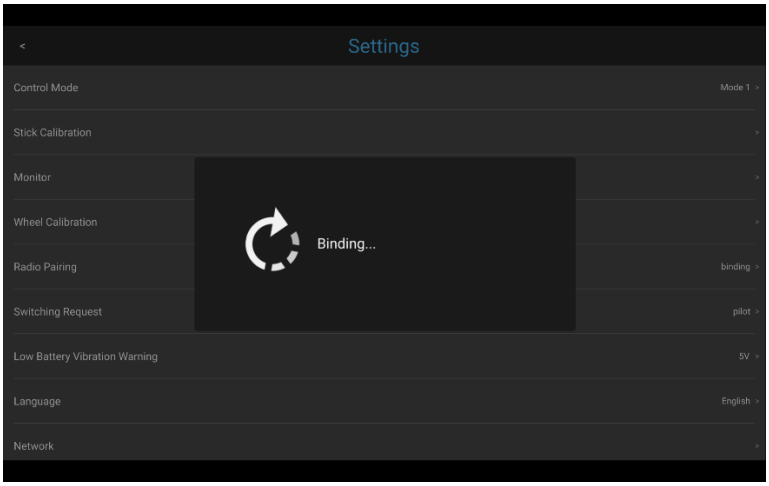
10.5. Radio Pairing

Follow these steps to bind the controller and aircraft:

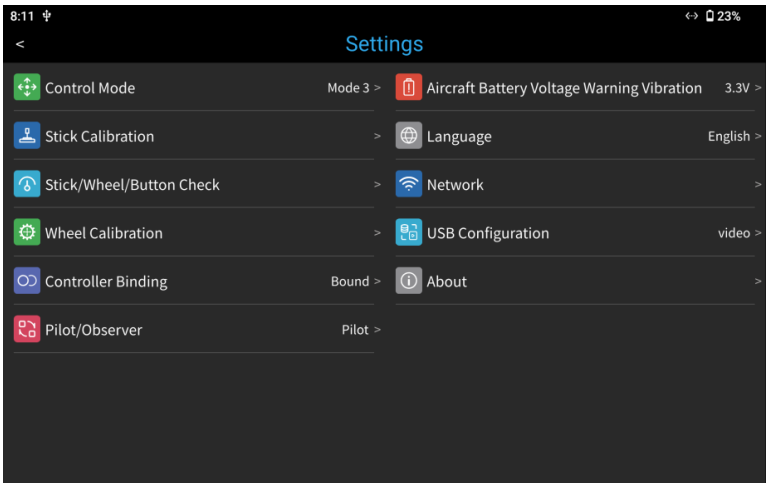
1. Power on the aircraft and the remote controller. Ensure the antennas are installed before powering on.
2. On the aircraft, press and hold the Bind button until the rear arm lights begin flashing. This puts the aircraft into binding mode.
3. On the controller, tap Radio Pairing to start the binding process.
4. When a confirmation warning appears, tap CONFIRM to proceed.



5. The binding process will begin, as shown on screen.



6. Once binding is successful, the status of Radio Pairing will display as “Bound”, as shown below.



10.6. Switching Request

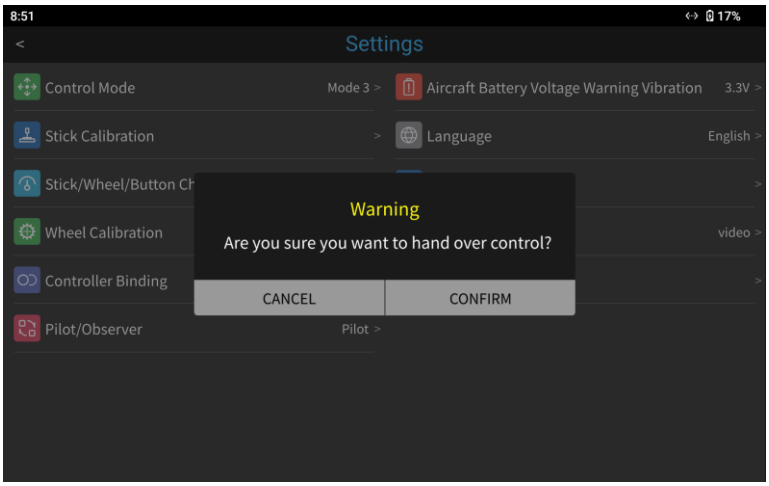
TAITEN supports two modes:

- Pilot mode – Full control and monitoring of the aircraft.
- Observer mode – Monitoring only; no operational commands can be sent.

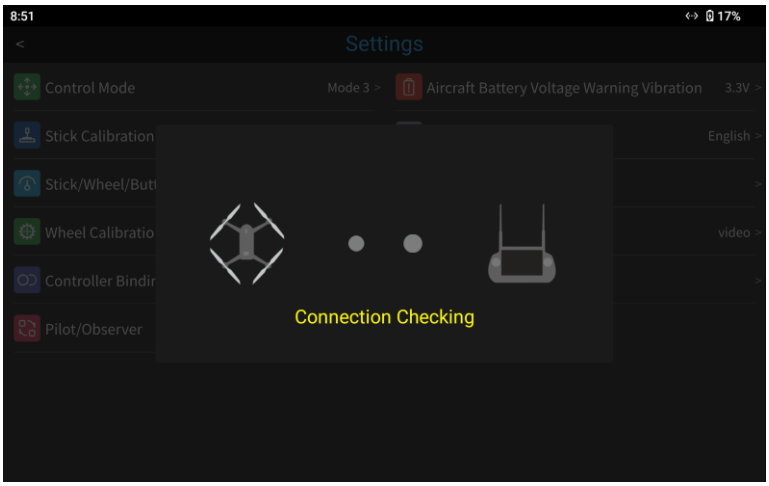
Important: It is not possible to switch directly from Observer mode to Pilot mode. Pilot authority can only be reassigned when the aircraft is recruiting a pilot.

The Switching Request function is used to hand over pilot authority from the current pilot to another controller bound to the same aircraft.

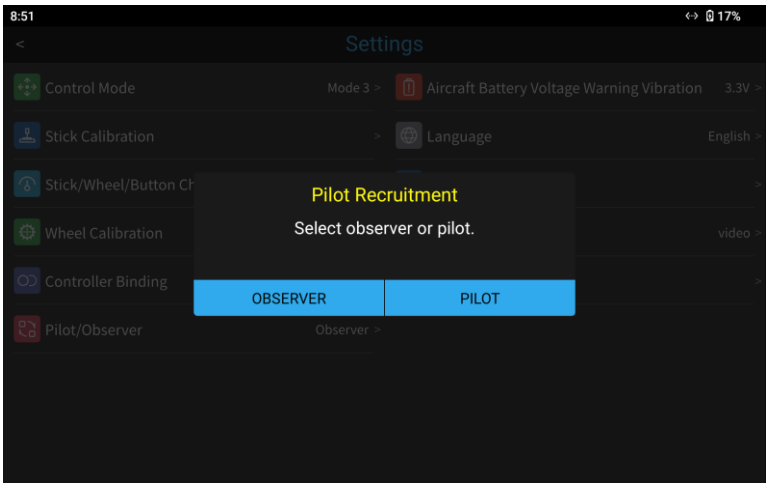
When Switching Request is tapped while in Pilot mode, a warning message is displayed.



1. Tap CONFIRM to release pilot authority. The aircraft will then enter pilot recruitment mode.

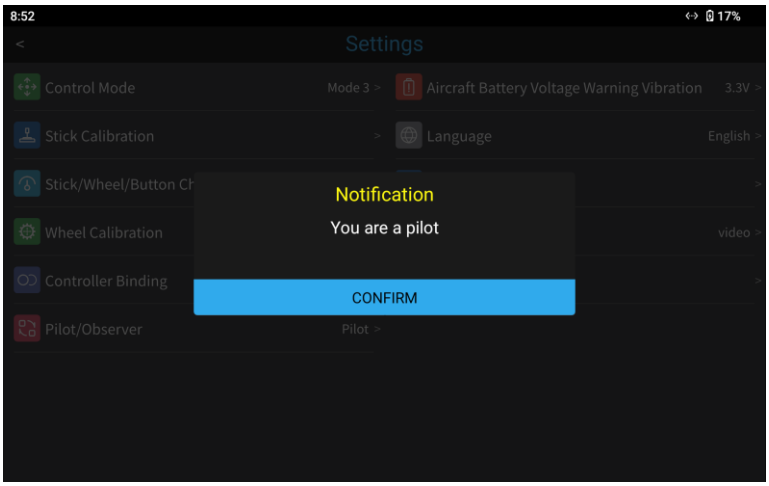


2. At this point, all other bound controllers will display the pilot recruitment screen.



3. If another controller selects PILOT within 40 seconds, that controller gains pilot authority, and the original controller automatically switches to Observer mode with the notification “You are an observer.”

If no controller accepts pilot authority within 40 seconds, the original controller will retain pilot authority.

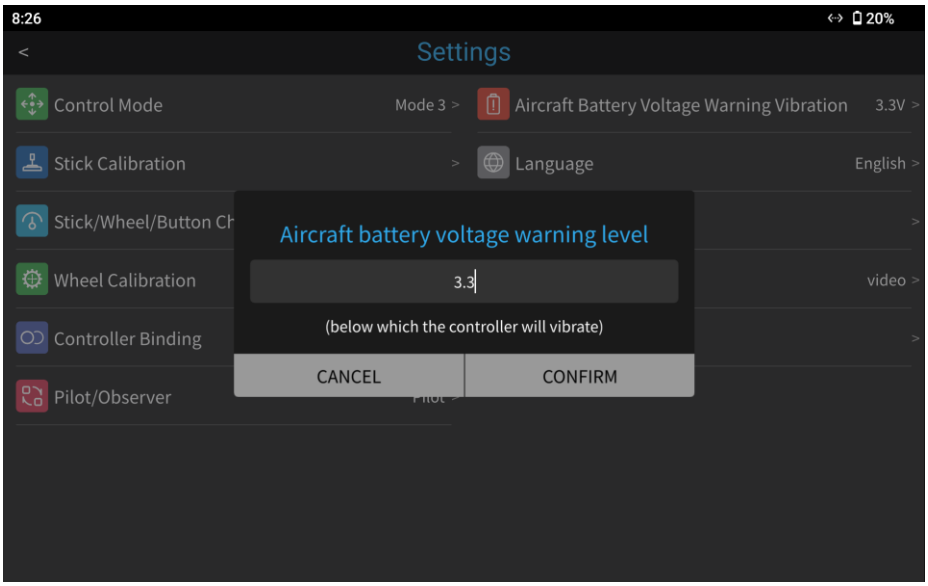


10.7. Low-Battery Vibration Warning

If the aircraft's battery voltage drops below the threshold set here, the controller will vibrate to warn you of a low battery.

The default value is 3.6 V per cell, which is suitable for Lithium-Ion and Lithium-Polymer batteries. These batteries typically measure about 4.2 V per cell when fully charged and 3.0 V per cell when empty.

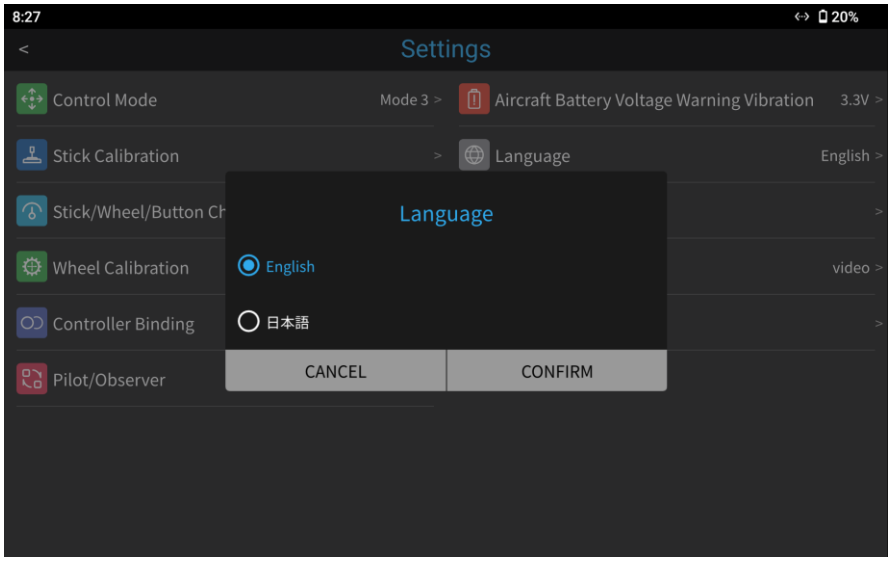
This threshold may be adjusted as needed.



10.8. Language

Select English or Japanese and tap CONFIRM to switch the display to the selected language.

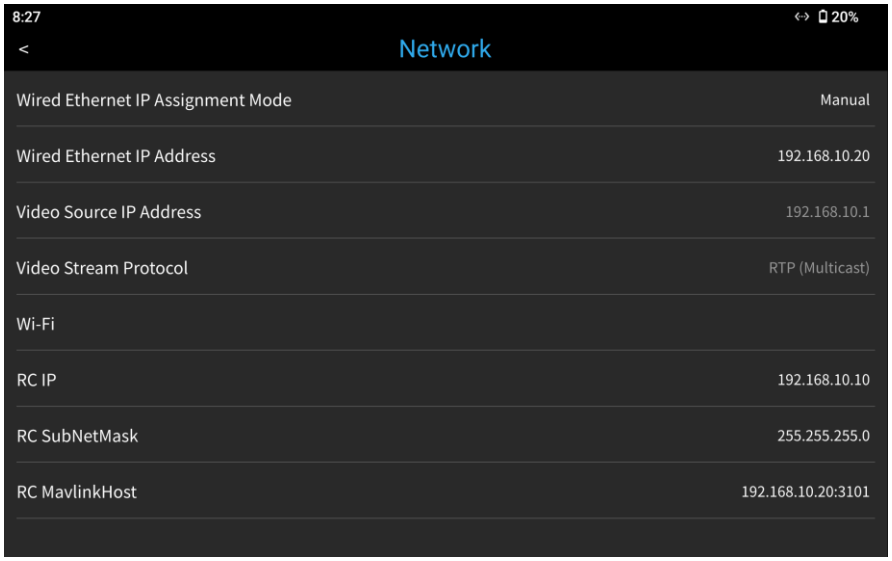
Tap CANCEL to return to the menu screen without changing the language.



10.9. Network

Configuration of network related settings.

- Ethernet IP Assignment Mode:
  Use this setting to connect the controller to a Local Area Network using the RJ-45 Ethernet port. Select “Auto (DHCP)” to have the device’s IP address assigned automatically by the network or select “Manual” to specify an IP address.
- Ethernet IP Address:
  If the External Ethernet IP Assignment Mode is set to Manual, enter an IP address here.
- Video Source IP Address:
  This item is for development purposes only. It is the IP address set for video transmission.
- Video Stream Protocol:
  This item is for development purposes only. It is the protocol set for each model RTSP or RTP(Multicast). Camera needs to multicast the video stream, TAITEN by default support multicasting. Do not change the setting.
- Wi-Fi Connection is discussed in the following section.
- RC IP & RC SubNetMask:
  This is the remote controller android IP address and subnet mask.
- RC MavlinkHost:
  This is the Mavlink host IP and UDP port.



When finished, press the L button or tap “<” in the upper left corner to return to the previous page.

Wi-Fi

TAITEN can be connected to a Wi-Fi network, primarily for the TAKEOFF ground control application to retrieve map data.

1. Tap Wi-Fi to open the Wi-Fi settings screen.
2. Toggle the Wi-Fi switch on to scan for available access points.
3. Select the desired access point and enter the password to establish a connection.

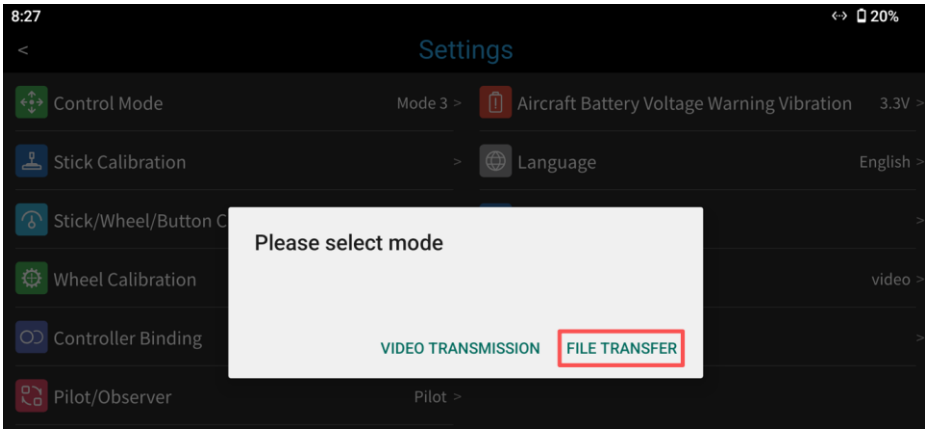
When finished, press the L button or tap “<” in the upper left corner to return to the previous page.

10.10. USBConfig

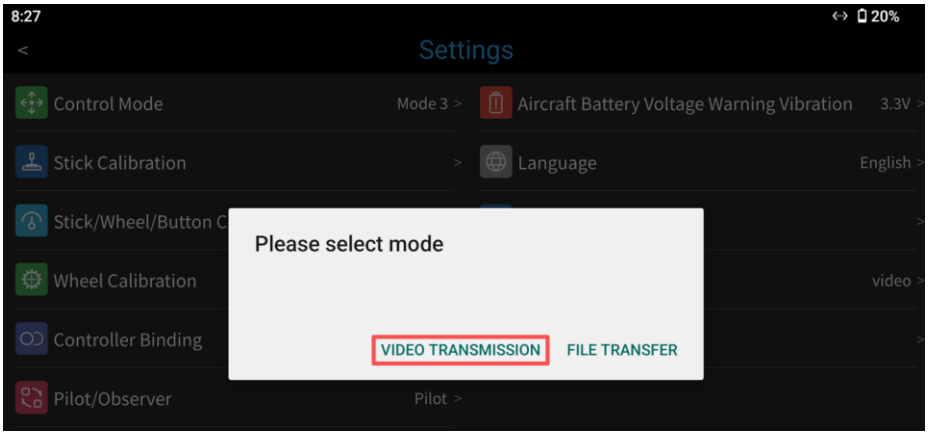
By default, the USB-C port is set to Video mode, which is required for receiving the aircraft's camera feed.

To transfer files between TAITEN and a PC:

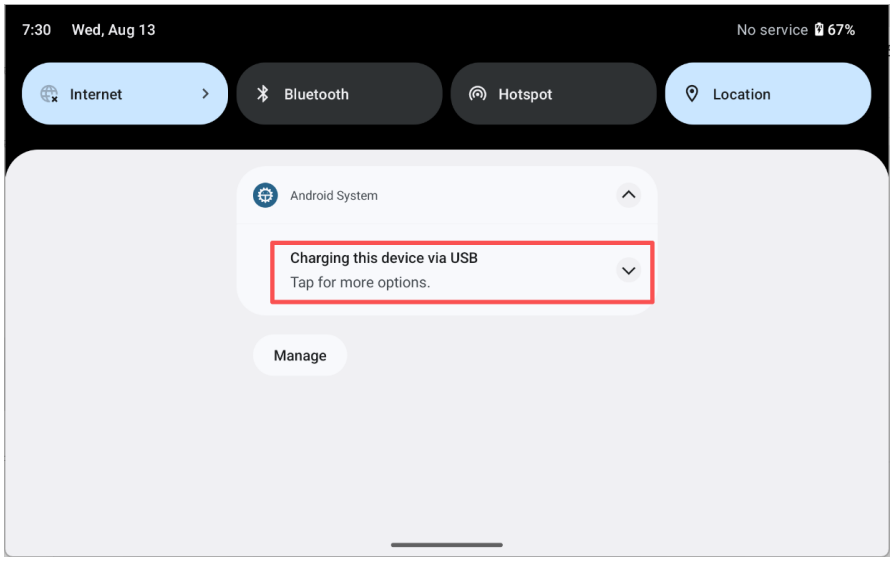
1. In the TAITEN Settings application, change the USB configuration to File Transfer Mode.



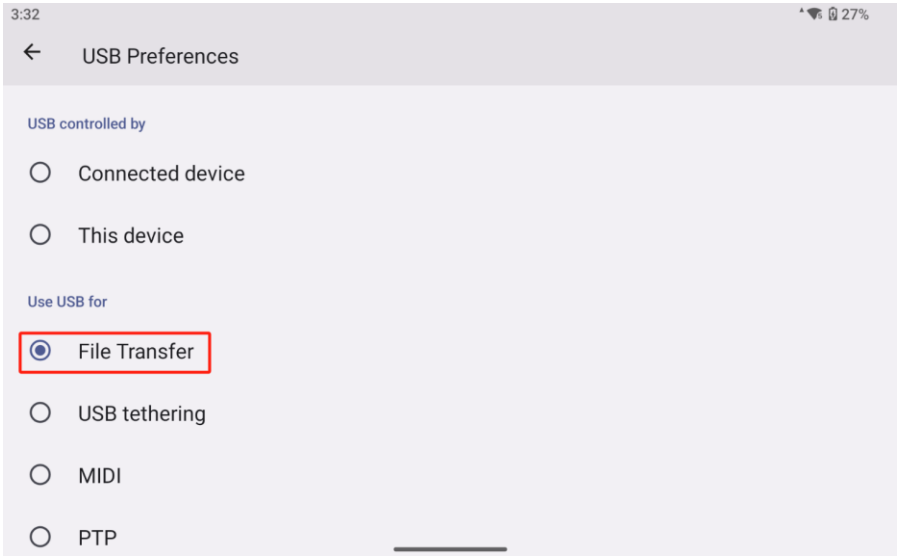
2. After completing the transfer, change the USB configuration back to Video mode to restore the aircraft video feed.



3. In the TAITEN Settings application, change the USB configuration to File Transfer Mode.

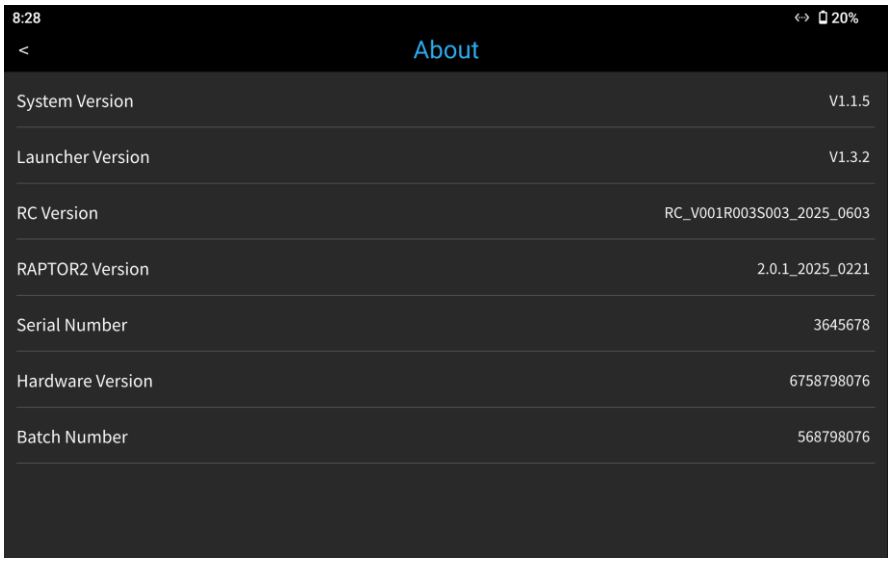


4. After completing the transfer, change the USB configuration back to Video mode to restore the aircraft video feed.



10.11. About

This feature shows the software and firmware versions as well as the device's serial number.



* Immediately after startup, the MCU Version may be displayed as unknown until the microcontroller unit (MCU) has fully started up.

When finished, press the L button or tap "<" in the upper left corner to return to the previous page.

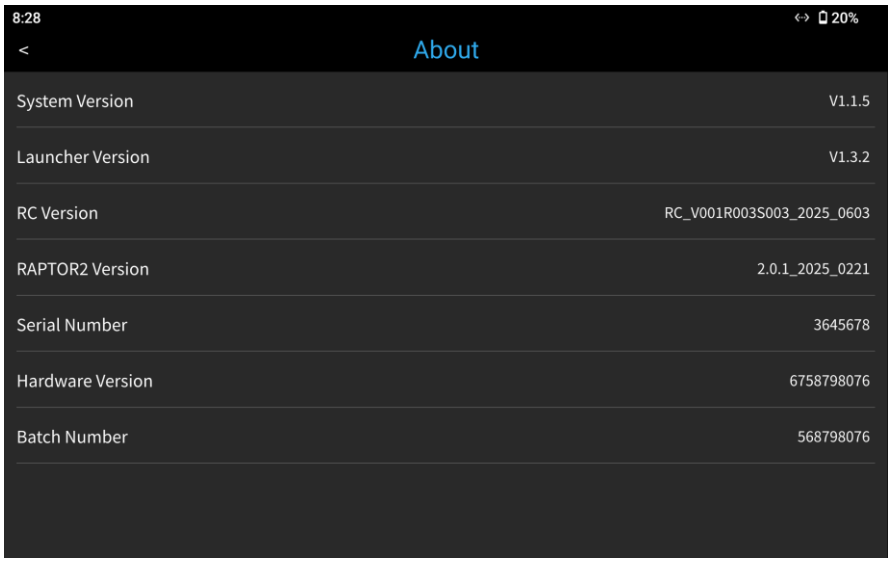
11. Video

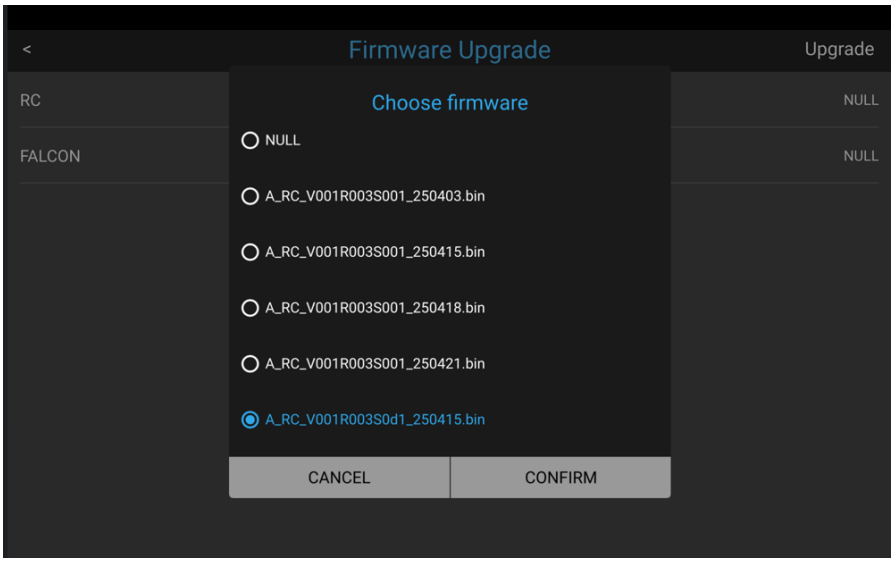
The video function shows the real-time video stream from the aircraft without any other UI elements.

When finished, press the L button or tap “<” in the upper left corner to return to the previous page.

12. Firmware update

To update the firmware of RC MCU and/or Raptor ground unit, copy the upgrade file into root directory of a USB / MicroSD card, insert the USB / MicroSD into the controller's USB-A / MicroSD port, tap on the RC Version or Raptor Version 8 times in a row to bring up the upgrade window.





When finished, press the L button or tap "<" in the upper left corner to return to the previous page.

13. Troubleshooting

Trouble	**Solution**
The power does not turn on.	The battery may be dead. Charge the battery.
When the charger is connected, "Charging abnormal! Please check the connection of USB adapter!" is displayed.	This error message may be displayed when the connection is unstable, such as when the charging cable is not connected properly to the adapter. Make sure that the charging cable is securely connected.
Moving a control stick to the maximum position does not give the maximum value.	Perform stick calibration.
Turning a wheel to the maximum position does not give the maximum value.	Perform wheel calibration.

Revision history

August 29, 2025 1st Edition

Distributor

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