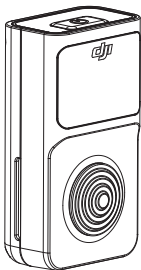


Thumb Controller

User Manual

V1.0 2015.4



Disclaimers and Warnings

Congratulations on purchasing your new DJI product. Carefully read the manual and all disclaimers before using this product. By using this product, you hereby agree to this disclaimer and signify that you have read it in its entirety. You agree that you are responsible for your own conduct, for all content that is created using this product, and for any consequences that may arise from either. You agree to use this product only for purposes that are proper and in accordance with local regulations, stated terms, and all applicable policies and guidelines.

By reading this disclaimer, you also agree that:

1. Any part of this disclaimer is subject to change without prior notice. Refer to www.dji.com for the latest version.
2. DJI reserves the right of final interpretation of this disclaimer.

As DJI has no control over use, setup, final assembly, modification, or misuse of its products, no liability shall be assumed or accepted for any resulting damage or injury. By using, setting up, or assembling the product, the user accepts all resulting liability. DJI assumes no liability for damages or injuries incurred directly or indirectly from the use of this product.

DJI is a registered trademark. All names of products, brands, etc. appearing in this manual are trademarks or registered trademarks of their respective owner companies. This product and manual are copyrighted by DJI, with all rights reserved. No part of this product or manual shall be reproduced in any form without the prior written consent or authorization of DJI. No patent liability is assumed with respect to the use of the product or information contained herein.

Content

Disclaimers and Warnings	2
In the Box	4
Introduction	5
Thumb Controller	5
External Receiver (For Ronin Only)	6
Installation	7
Installing the Thumb Controller	7
Installing the External Receiver (For Ronin Only)	8
Connecting the Thumb Controller to the Gimbal	9
Connecting the Thumb Controller to the Ronin-M	9
Connecting the Thumb Controller to the Ronin	9
Indicator Status	11
Using the Thumb Controller	12
Mode	12
Function	13
Gimbal Settings	13
Device Settings	14
DJI Assistant App Tuning	16
DJI PC/MAC Assistant Tuning	17
Settings	17
Updating the Thumb Controller and the Receiver	18
Specifications	20

In the Box

Check to ensure that all of the following items are included in the package. If any items are missing, contact DJI or your local dealer.

The following items are included with the Thumb Controller for the Ronin-M:



Thumb Controller×1



Quick Release Accessory Mount×1



USB Cable×1



Rubber Ring×1

The following items are included with the Thumb Controller for the Ronin:



Thumb Controller×1



Quick Release Accessory Mount ×1



USB Cable×1



Receiver×1



4-Pin Cable×1



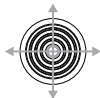
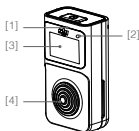
Adhesive Tape×1

Introduction

The Thumb Controller is designed specifically for DJI Ronin series handheld gimbals. It provides a simple, intuitive interface for controlling the gimbal's pan, tilt, and roll motion. The pressure-sensitive stick and the easy-to-read OLED display give Ronin users more control than ever before.

The Thumb Controller communicates with the Ronin-M via a preinstalled internal receiver. An external receiver is needed when the Thumb Controller is used with the Ronin.

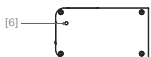
Thumb Controller



- [1] **Power Button**
Press and hold the power button to turn on/off the Thumb Controller
- [2] **Status Indicator**
Indicates the status of the Thumb Controller
- [3] **OLED Display**
Displays the menu of the Thumb Controller
- [4] **Pressure-Sensitive Stick**
Transmits the user's input to the force sensor

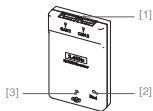


- [5] Micro-USB Port**
For charging the Thumb Controller and upgrading its firmware



- [6] Override Button**
Allow the Thumb Controller to be reactivated and updated following a failure update process

External Receiver (For Ronin Only)



- [1] CAN Port**
Connects the receiver to the Ronin

- [2] Bind Button**
Connects the Thumb Controller to the Ronin

- [3] LED Indicator**
Indicates the status of the receiver

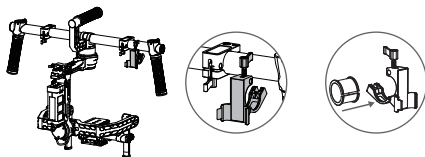


- [4] Micro-USB Port**
For upgrading the firmware

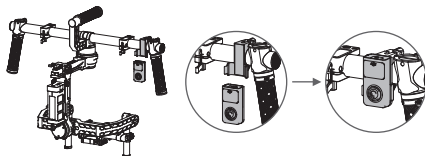
Installation

Installing the Thumb Controller

1. Install the quick-release accessory mount by clamping it around the handlebar of the Ronin and tightening the screw. Remember to place the rubber ring on the on the handlebar and clamp the accessory mount around it when installing the unit on the Ronin-M.

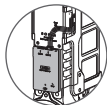
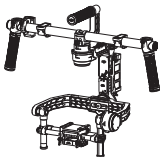


2. Insert the Thumb Controller into the quick-release accessory mount and ensure that it is secure.



Installing the External Receiver (For Ronin Only)

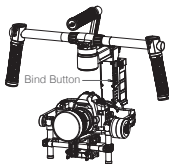
1. Use the 4-pin cable to connect the CAN port on the Ronin to the CAN 1 or Can 2 port on the receiver.
2. Use the adhesive tape to secure the receiver on the Ronin.



Connecting the Thumb Controller to the Gimbal

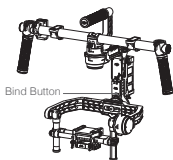
Connecting the Thumb Controller to the Ronin-M

1. Turn on the Ronin-M.
2. Press the Ronin-M's Bind Button (shown below) one time. The LED indicator on the Ronin-M will rapidly blink green.
3. Turn on the Thumb Controller. If the LED indicator on the Ronin-M and the LED indicator on the Thumb Controller both glow solid green, they have been successfully connected.



Connecting the Thumb Controller to the Ronin

1. Turn on the Ronin.
2. Press the Bind Button on the receiver one time. The LED indicator on the receiver will rapidly blink green.
3. Turn on the Thumb Controller. If the LED indicator on the receiver and the LED indicator on the Thumb Controller both glow solid green, they have been successfully connected.



The binding process only needs to be completed one time, unless the bind button is pressed or the Ronin/Ronin-M needs to be connected to another Thumb Controller.

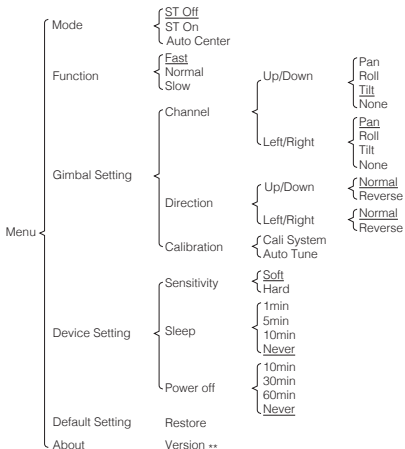
Indicator Status

Thumb Controller LED Indicator Status	Description
 — Solid Red	The Thumb Controller is being updated
 Blinking Red	The Thumb Controller is not connected to the receiver
 — Solid Green	The Thumb Controller is connected to the receiver
 Blinking Green	The update process is complete
 — Solid Yellow	The Thumb Controller is fully charged

External Receiver LED Indicator Status	Description
 — Solid Red	The receiver is being updated
 Blinking Red	The Thumb Controller is not connected to the receiver
 — Solid Green	The Thumb Controller is connected to the receiver
 Blinking Green	The update process is complete
 Blinking Green Quickly	Binding

Using the Thumb Controller

To enter the Main Menu, press and hold the center of the pressure-sensitive stick.



The Main Menu contains six tabs: Mode, Function, Gimbal Setting, Device Setting, Default Setting, and About.

Press up/down on the pressure-sensitive stick to select an item. Press right to view and select options and press left to return to the Main Menu.



Mode

ST Off

SmoothTrack is off. The Thumb Controller is free to control the pan axis. The gimbal will stop and hold the last position determined by the pan axis control stick, without applying SmoothTrack.

ST On

SmoothTrack is on. The Thumb Controller is free to control the pan axis. The gimbal will stop and hold the last position determined by the pan axis control stick, while applying SmoothTrack.

Auto Center

SmoothTrack is on. The gimbal will apply SmoothTrack when reorienting and resetting the pan angle to the forward-facing direction after the pan axis control stick is released.

Function

The Function tab allows you to select the SmoothTrack speed. There are 3 possible speeds: Fast, Normal, and Slow. The value of each speed can be adjusted in the DJI Assistant app or the PC/MAC Assistant.

Gimbal Settings

Channel

Allows you to assign control of the pan, tilt, or roll motion of the gimbal to the up/down input on the pressure-sensitive stick.

Allows you to assign control of the pan, tilt, or roll motion of the gimbal to the left/right input on the pressure-sensitive stick.

Selecting 'None' means that the corresponding input axis from the pressure-sensitive stick will not affect the movement of the gimbal.



- By default, the up/down input on the pressure-sensitive stick controls the tilt axis movement of the gimbal and the left/right input on the pressure-sensitive stick controls the pan axis movement of the gimbal.
 - If you reassign the control input of either axis, only the most recent assignment will be valid.
-

Direction

By default, the "Normal" direction orientation scheme indicates that the up movement of the stick moves the tilt axis up and the down movement of the stick moves the tilt axis down, while the left movement of the stick rotates the pan axis to the left and the right movement of the stick rotates the pan axis to the right.

When the “Reverse” orientation is selected, the up/down and left/right controls are switched.

Calibration

“Cali System” should be used if there is perceptible drift on any axis. The calibration procedure should take approximately 90 seconds to complete.

Selecting “Auto Tune” will automatically adjustment each motor’s stiffness settings to achieve an optimal balance. This process should take approximately 20 seconds to complete.

The gimbal cannot be controlled by the Thumb Controller or the remote controller during calibration. Do not touch or move the gimbal during either process.

Device Settings

Sensitivity

There are two sensitivity settings for the Thumb Controller: Soft/Hard.

Sleep

If the Thumb Controller has been idle for longer than the specified amount of time, the OLED display will be turned off.

Power Off

If the Thumb Controller has been idle for longer than the specified amount of time, it will be turned off.

Default Settings

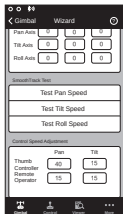
Restores all settings to the factory defaults.

About

Displays the firmware version that is currently installed on the Thumb Controller.

DJI Assistant App Tuning

You can adjust various parameters in the DJI Assistant app. Turn on the Thumb Controller and the gimbal, then launch the DJI Assistant app. You can adjust the control speeds in the Wizard menu. To meet your specific requirements, you can also access advanced functions through the Assistant app. In the Control Menu, you can adjust the Deadband, Maximum Speed, Smoothing, and Controller Priority.



Controller Priority: If both the Thumb Controller and a remote controller simultaneously send control signals to the gimbal, the input from the selected controller will take priority will control the device.

Refer to the Ronin/Ronin-M User Manual for more details.

DJI PC/MAC Assistant Tuning

The DJI PC/MAC Assistant allows you to tune the Thumb Controller and update its firmware.

The tuning procedures offered through the DJI Assistant App are the same as those offered through the DJI PC/MAC Assistant. There is no need to adjust the settings in both.

The DJI Assistant app and the PC/MAC Assistant program cannot be connected to the Thumb Controller at the same time. If you are running the Assistant app on your mobile device, be sure to disconnect the Micro-USB cable before using the Assistant on a PC/MAC.

Settings



In the Control Menu, you can adjust the Deadband, Maximum Speed, Smoothing, and Controller Priority.

Updating the Thumb Controller and the Receiver



You can find the latest firmware version information on this page and update the firmware by following the steps below:

1. Use the Micro-USB cable to connect the Thumb Controller to your computer, then wait until the indicator in the Assistant blinks blue.
2. Click "Update."
3. Wait for the download to finish.
4. Click "Update" again and then click "Confirm."
5. After the update is complete, turn the Thumb Controller off and then on again.
6. Repeat this process with the Ronin-M or the Ronin External Receiver, depending on your model.



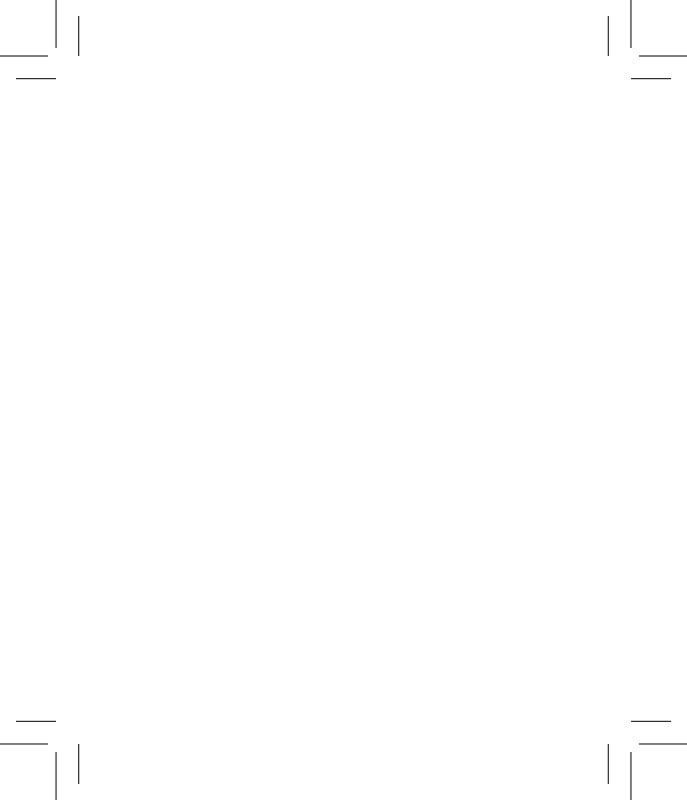
- Ensure that your computer is connected to the internet
 - Close all antivirus programs and network firewalls
 - Ensure that the device is turned on before beginning the update process
 - Do not disconnect the USB cable until the update is complete
-

If the Thumb Controller fails to update, follow the steps below:

1. Press and hold the override button.
2. Use the USB cable to connect the Thumb Controller to the computer.
3. Now, release the override button and wait for the connection to be established.
4. Click the "Update" button after the Thumb Controller has been successfully connected to the Assistant. The Thumb Controller will be operate normally after the update is complete.

Specifications

Type	RONIN TC1
Support Device	Ronin, Ronin-M
Operating Frequency	2.415GHz-2.473GHz
Working Current	<100mA @ 3.3V
Communication Distance	60m
Battery Life	18h
Standby Life	20h
Operating Temperature	-20°C~50°C
Battery Type	LiPo
Battery Voltage	3.7V
Battery Capacity	1150mAh
Charge Time	2h
Weight	50g
Size	2.7 × 1.4 × 0.9 in. (68 × 36 × 23 mm)
Mounting Bracket Diameter	1.0 in. or 1.2 in. (25 mm or 30 mm)
Display	White OLED, 0.96 inch, Dots: 128 × 64



The content is subject to change.

Download the latest version from
<http://www.dji.com/product/>



If you have any questions about this document, please contact DJI
by sending a message to **DocSupport@dji.com**.

© 2015 DJI. All Rights Reserved.

Due to the used enclosure material, the product shall only be connected to a USB Interface of version 2.0 or higher. The connection to so called power USB is prohibited.

CAUTION RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS



Hereby, SZ DJI TECHNOLOGY CO., LTD declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Power is so low that no RF exposure calculation is needed.

FCC statements:

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avec Industrie Canada RSS exemptes de licence standard(s).

Son fonctionnement est soumis aux deux conditions suivantes:

- (1) cet appareil ne peut pas provoquer d'interférences, et
- (2) cet appareil doit accepter toute interférence, y compris celles pouvant causer un mauvais fonctionnement de l'appareil.

RONIN RX could be powered DC 12V-16V (powered by RONIN through CAN port with a 4-Pin Cable) or DC 5V (powered by PC through USB port)

RONIN is powered by intelligent battery, the battery capacity is 3400mAh, voltage is 14.8VDC, charge the intelligent battery only with DJI approved chargers with the battery moving off from ronion.