

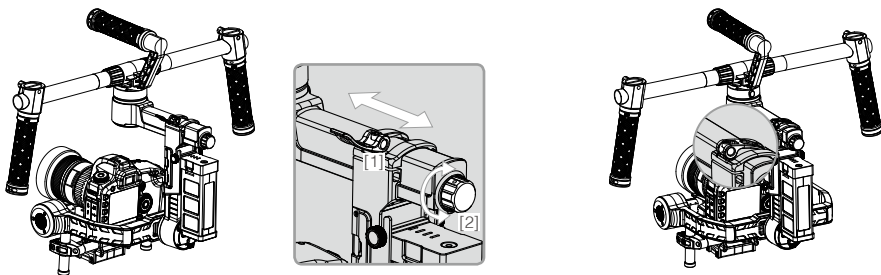
1. Loosen the camera base's side clamp to allow the camera and mounting plate to slide forwards and backwards. Slide the camera forwards or backwards until the Tilt Axis remains level. It takes very small adjustments to get the balance right.
2. Tighten the side clamp to lock the camera and mounting plate in position. If properly balanced, the camera should be able to remain steady in any given tilt angle.



Step 4: Balancing the Pan Axis

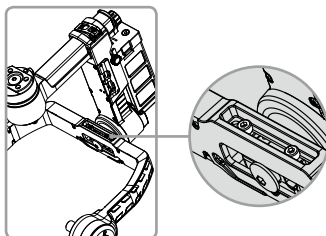
The entire mass below the pan motor must be balanced on the central axis line of the pan motor. To achieve this balance, you must slide the pan axis slider.

1. Open the clamp [1] on the pan axis and turn the knob [2] to slide the assembly. Identify if the Ronin-M is front heavy or rear heavy.
2. While the Ronin-M is resting on the tuning stand, try rotating the Ronin-M along the pan axis by lifting one side of the handle bar. If the camera does not swing, the pan axis is properly balanced. Tighten the clamp after balancing is completed.



Advanced Roll Adjustment

If additional roll adjustment is needed in cases where the camera itself is too light in comparison to the tilt motor assembly, advanced roll adjustment can be achieved by loosening the indicated screws and pushing the assembly to the right or left.



DJI Ronin-M Assistant App Tuning

After finishing the balancing, you can adjust software parameters through the DJI Assistant App.

Download and Install

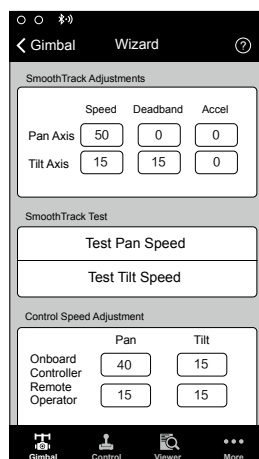
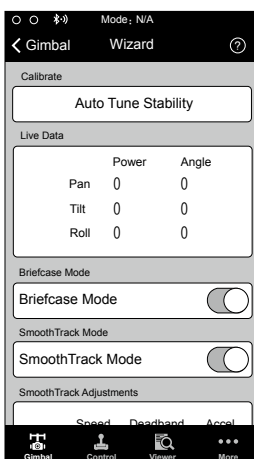
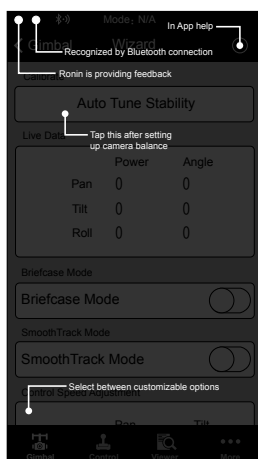
1. Download the DJI Assistant App:
Search "DJI Assistant" on the App Store then follow instructions for the iOS version.
Search "DJI Ronin" on the Google Play then follow instructions for the Android version.
2. Be sure Bluetooth is switched to the on position on your mobile device. Position the camera in the standard operating position. Power on your Ronin-M and then open the app to connect to the Ronin-M via Bluetooth.
3. Register your e-mail address when you use the app for the first time.
4. Connect to your Ronin-M according to the tips in the app. After connecting to the main controller of the gimbal, you will see the Wizard menu. When the green light at the top in the app is steady and the blue light is blinking, the connection is complete. The green LED light on the Ronin-M will light up.



- After switching on Bluetooth on your mobile device, go back to the Assistant App to connect to the Ronin-M. The Ronin-M will not show up in the settings menu of your mobile device. It can only be connected to via the app.
- There are two device types, choose "Ronin" to enter the gimbal assistant page. Choosing "A2" will enter the DJI flight controller assistant page.
- The function of the iOS and Android app are the same, below is taking the iOS version for example.

Basic Settings

The functionality in the Wizard are the most basic functions you may want to adjust upon receiving your Ronin-M. These options are also the most used functions during standard operation of the Ronin-M. You can complete all these settings in the Wizard menu.



1. Calibrate

Auto Tune Stability provides an easy one-touch button for automatic configuration of each axis. Trajectory, speed, power and stiffness of motors are automatically tuned for the camera configuration that's mounted.

Auto Tune Stability should be tapped whenever there is a new camera configuration mounted such as a lens change or accessories change. This will offer the best stability and the most optimal settings.

2. Live Data

This monitors the feedback from each motor axis. If a particular motor axis indicates a power greater than 10, this often means the mechanical balancing of the camera hasn't been properly adjusted. A properly balanced camera rig will have each axis indicating close to 0 power. Don't worry if these settings are not always 0. The Angle indicates the current angle at which each axis is in relation to center.

3. Briefcase Mode

When Briefcase Mode is switched on, the Ronin will be able to seamlessly transform into this operation mode. With Briefcase Mode turned off, the Ronin will allow the Roll axis to follow if the Ronin is tilted past the standard roll axis travel.

4. SmoothTrack Mode

When SmoothTrack Mode is enabled, the Ronin will can be "steered" by the camera operator's movements in the Pan and Tilt axis. This steering/translation speed can be adjusted for each axis independently. When the Ronin's top bar is rotated left or right, the camera will smoothly pan and slow down to a stop. Under the SmoothTrack options, the Pan Axis and the Tilt Axis can be independently adjusted.

Pan Axis speed will determine how fast the camera will travel while translating a pan movement. Pan deadband will determine how much movement the gimbal will tolerate prior to translating the camera's pan. Tilt Axis speed will determine how fast the camera will travel while translating a tilt movement. Tilt deadband will determine how much movement the gimbal will tolerate prior to translating the camera's tilt.

The Pan and Tilt SmoothTrack speed can be tested. Ensure there is no obstruction of the camera when tapping these Test buttons.

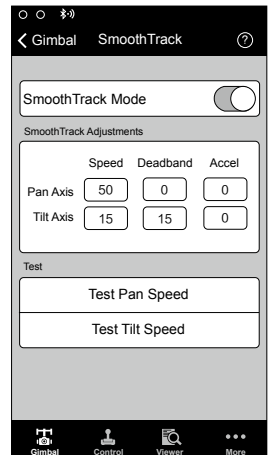
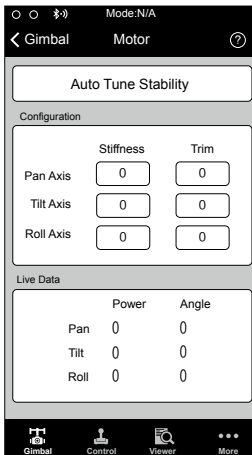
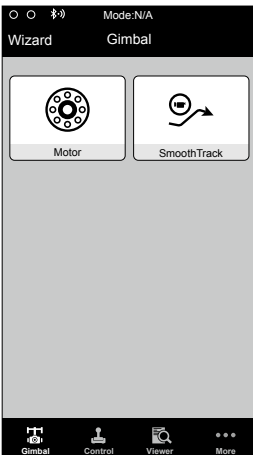
5. Control Speed Adjustment

Remote control speed can be adjusted here. The adjustment represents the maximum speed of gimbal control in the Pan and Tilt axis when the control sticks are pushed to their endpoints.

Advanced Settings

There are more advanced functions you can adjust through the Assistant to meet your requirement.

Gimbal Menu



1. Motor Adjustment

The Auto Tune Stability button allows for automatic adjustment of each motor's stiffness settings (as relayed from the sensors and how the Ronin-M sees each axis's interaction) to accomplish an optimized setting. Besides tuning stiffness, there are other electronic settings being tuned. It is highly recommended that the Auto Tune Stability button be tapped whenever there is a new camera configuration mounted, including a lens change or accessories change. This will offer the best stability and the most optimal settings.

Each axis has its own stiffness and trim adjustment. The motor stiffness adjustment allows fine tuning of the amount of power applied to the motors as they react to the balancing of weight on each axis. The higher you can adjust the stiffness settings without having any vibrations or oscillations from the gimbal, the better. A majority of the time, the Auto Tuned settings will be suitable.

The Trim adjustment controls the preset amount of trim applied to each axis off center. The default setting of 0 degrees represents center.

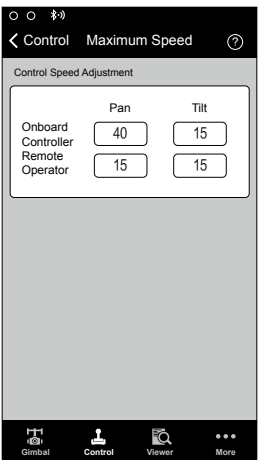
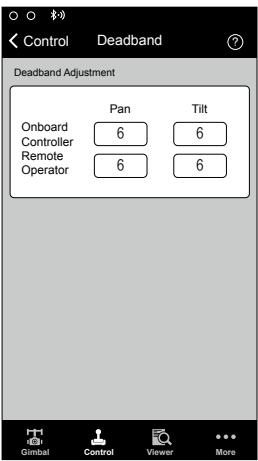
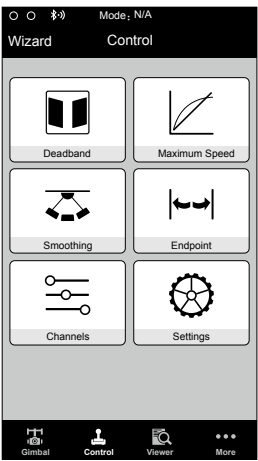
2. SmoothTrack Mode

Refer to the Basic Settings for the details of SmoothTrack Mode.

Control Menu

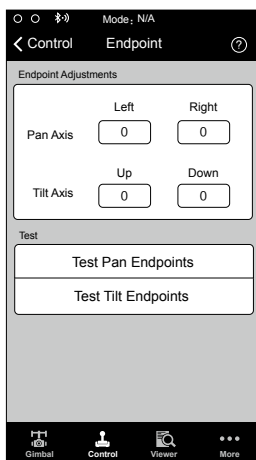
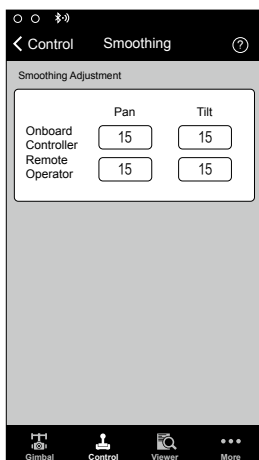
1. Deadband

Onboard controller and the remote operator controller can have independent pan and tilt deadbands of movement. The larger the deadband, the more stick movement required prior to the input being translated to actual movement of the gimbal.



2. Maximum Speed

Maximum Speed is a function that allows the controlled stick response from being a linear response to what is known as an increasing response curve. This means the amount of gimbal travel in the Pan or Tilt is not directly proportional to control stick travel. Control response can be adjusted to be milder below the initial first half of control stick travel and be increased to a higher speed towards the last half of control stick travel. This preset exponential curve is selected based off the input of maximum speed. The onboard controller and the remote operator control sticks can have maximum speeds set independently from each other.



3. Smoothing

When the control stick input is released, the smoothing of the translated movement will come to a smooth slow down if the smoothing is increased. If the smoothing is 0, the slowdown will appear as an abrupt stop. The onboard controller and remote operator control sticks can be set independently. Pan and tilt smoothing can also be set independently.

4. Controller Endpoints Adjustment

Pan Axis endpoints can be adjusted independently for left and right movement when used with a remote control or the onboard controller. Pan Axis endpoints setting means during controller input, the maximum point in which the gimbal will rotate left or right.

Tilt Axis endpoints can be adjusted independently for up and down movement when used with a remote control or the onboard controller. Tilt Axis endpoints settings control the maximum point at which the gimbal can rotate up or down.

The Pan and Tilt endpoints can be tested. Ensure the camera is unobstructed when tapping the Test buttons.

If the requirement to rotate 360 degrees on the Pan axis is needed, simply adjust the endpoints for pan to 0. If endpoints are set to 0 for 360 degree Pan ability, then "Test Pan Endpoint" will not move the pan axis.

5. Channels

This is a channel indicator to provide feedback during remote operator configuration. Pan, Tilt, and Roll can be re-assigned to either of the remote control sticks. The controlled axis can also be reversed.

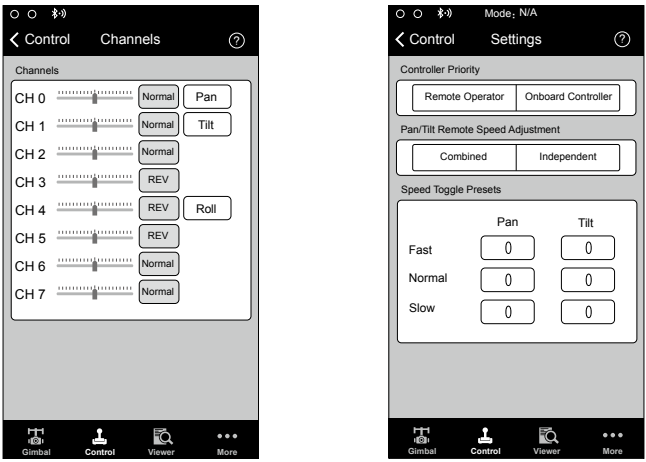
6. Settings

Controller Priority: If both input devices send control signals to the gimbal, the selected controller priority will be the only device to send a signal at that given time.

Pan/Tilt remote speed adjustments can be pre-configured to be selectable on the 2nd operator remote controller. The control speed settings for pan and tilt can be set independently from each other.

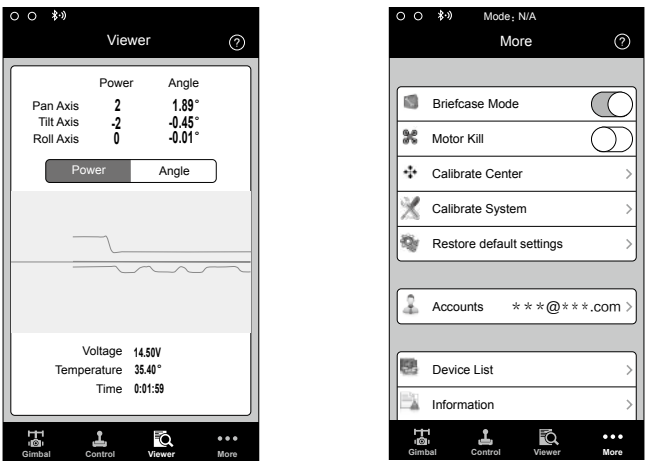
Setting Speed Toggle Presets, you are setting the Function switch (left switch) on the Ronin-M remote controller. These presets will allow you to change the SmoothTrack speed remotely. If the remote

controller is turned on, the Speed Toggle Presets for SmoothTrack will take precedence over the App settings. Once the remote controller is turned off, the SmoothTrack settings in the App will take over.



Viewer Menu

The viewer provides all the essential live data for monitoring the gimbals electronics as well as feedback from the motors. Power is indicated for each axis. The current angle of each axis is also indicated. The voltage of the battery, temperature of the main electronics, and also current uptime can also be monitored via this menu.



More Menu

Briefcase Mode

When Briefcase Mode is switched on, the Ronin-M will be able to seamlessly transform into this operational mode. With Briefcase Mode turned off, the Ronin-M will allow the Roll axis to follow.

Motor Kill Switch

When activated, the Ronin-M is still powered on, but the motors will be powered off. This will allow an adjustment to the gimbal or camera without having to turn off the gimbal. Prior to turning off the kill switch, make sure the gimbal is positioned in the standard operating position. The motor kill switch can also be used in case the gimbal operator runs into an issue, or you need to make a quick mechanical adjustment to the gimbal or camera setup.

Calibrate Center

If the Ronin-M's Pan Axis is off center, you can recalibrate the true center of the Ronin-M using this switch. Using a remote control, position the pan axis at dead center, then tap the Calibrate Center. Tap "Center" again in the pop-up to confirm. Power cycle after calibrating center.

Calibrate System

Calibrate System is only used if you notice any kind of drift in any of the axes. To calibrate the system, place the Ronin-M on the tuning stand and make sure it is completely steady. Then tap the Calibrate System button and let the process finish before picking up the Ronin-M.

Restore Default Settings

This will restore all of the factory settings that are configurable through the app.

Device List

To force the App to find the Ronin-M, select "Device List" to force the App to search for Bluetooth devices it recognizes.

DJI PC / MAC Assistant Tuning

You may also tune the Ronin-M and upgrade the firmware through the DJI PC /MAC Assistant.



- The tuning settings of the DJI Assistant App and DJI PC /MAC Assistant are the same. There is no need to repeat your settings in both Assistants.
- The DJI Ronin-M Assistant App and the PC/MAC Assistant program cannot be simultaneously launched and connected at the same time. If running the Assistant App on your mobile device, be sure to disconnect the micro USB cable.

Install DJI PC / MAC Assistant

Installing and Running on Windows

1. Download the DJI WIN DRIVER INSTALLER from the Ronin-M product page on DJI.com. Connect the Ronin-M to your PC via USB cable and be sure the Ronin-M is powered on prior to installing the DJI WIN Driver.
2. Download the appropriate Assistant installer from DJI.com.
3. Double click the Assistant installer and follow the steps to finish the installation.
4. Run Assistant.
5. Upgrade the firmware or configure parameters using Assistant as needed.



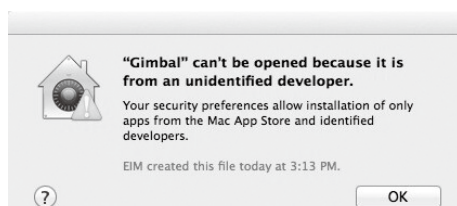
The Assistant installer can be used on Windows XP, Win7, and Win8 (32 or 64 bit)

Installing and Running on Mac OS X

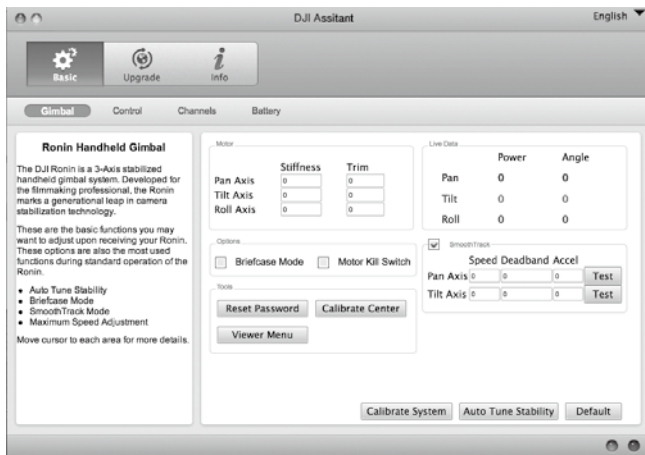
1. Download the Assistant installer (.DMG) format from the Ronin-M download page.
2. Run the installer and follow the prompts to finish installation.



3. When launching for the first time, if using Launchpad to run the Ronin-M Assistant, Launchpad will not allow access because Assistant has not been reviewed by the Mac App Store.



4. Locate the Gimbal icon in Finder, press Control then click the icon (or right-click the icon using a mouse). Choose Open from the shortcut menu, then click Open in the prompt dialog box to launch.
5. After the first successful launch, double click the Gimbal icon as normal to launch using Finder or Launchpad.



DMG installer supports Mac OS X 10.9 or above.



Ronin-M Assistant on Mac OS X and Windows are the same. Assistant pages shown in this manual are from the Windows version.

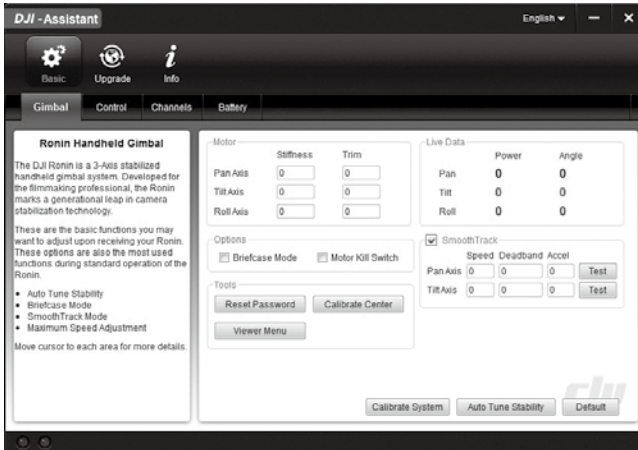
Settings

Adjust the following basic functions before using the Ronin-M: Auto Tune Stability, Briefcase Mode, SmoothTrack and Maximum Speed Adjustment.

The definition and function of every button in the DJI Assistant App and DJI PC Assistant are the same, refer to the DJI Assistant App for more details.

Basic

1. Gimbal



Motor: The Auto Tune Stability button allows for automatic adjustment of each motor's stiffness settings (as relayed from the sensors and how the Ronin-M sees each axis's interaction) to accomplish an optimized setting. Each axis has its own stiffness and trim adjustment.

Live Data: This monitors the feedback from the motors on each axis.

Briefcase Mode: Select the checkbox to enable Briefcase Mode.

Motor Kill Switch: Select the checkbox to enable the Motor Kill Switch.

SmoothTrack: Select the checkbox to enable SmoothTrack. Note the Pan Axis and the Tilt Axis can be independently adjusted.

The Pan and Tilt SmoothTrack speed can be tested. Ensure there is no obstruction of the camera when clicking the Test buttons.

Reset Password: If you forgot your Bluetooth connection password, click here to reset your password.

Calibrate Center: If the Ronin-M's Pan Axis is off center, you can recalibrate the true center of the Ronin-M using this switch. Using a remote controller, position the pan axis at dead center, then click the Calibrate Center. Click "Center" again in the pop-up to confirm.

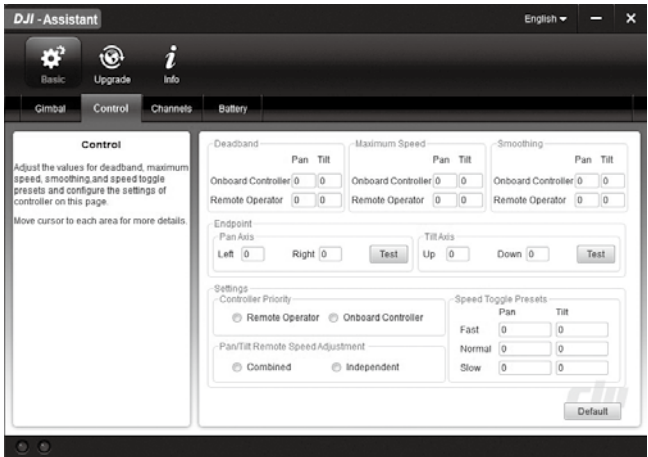
Viewer Menu: The Viewer provides essential live data for monitoring the Ronin-M's electronics and feedback from the motors. Power is indicated for each axis. The current angle of each axis is also indicated.

Calibrate System: Calibrate System is only used if you notice any kind of drift in any of the axes. To calibrate the system, place the Ronin-M on the tuning stand and make sure it is completely steady. Then click the Calibrate System button and let the process finish before picking up the Ronin-M.

Auto Tune Stability: The Auto Tune Stability button allows for automatic adjustment of each motor's stiffness settings (as relayed from the sensors and how the Ronin-M sees each axis's interaction) to accomplish an optimized setting.

Default: Click here to restore all of the factory settings.

2. Control



The onboard controller and the remote operator control sticks have a Deadband, Maximum Speed, and Smoothing, all of which can be set independently.

Endpoint: Pan Axis endpoints can be adjusted independently for left and right movement when used with a remote control or the onboard controller. Tilt Axis endpoints can be adjusted independently for up and down movement when used with a remote control or the onboard controller.

If the requirement to rotate 360 degrees on the Pan axis is needed, simply adjust the endpoints for pan to 0. If endpoints are set to 0 for 360 degree Pan ability, then "Test Pan Endpoint" will not move the pan axis.

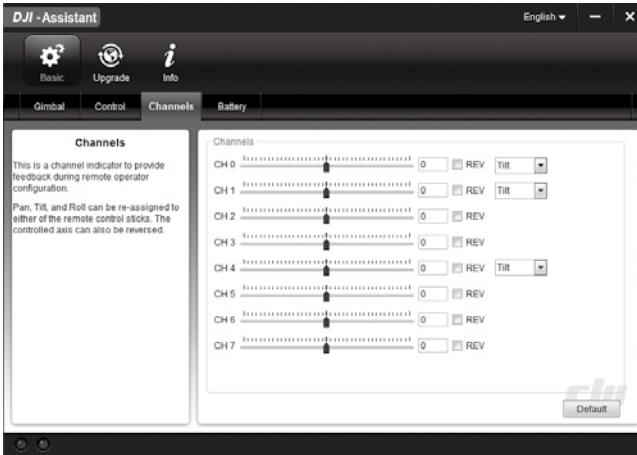
The Pan and Tilt endpoints can be tested. Ensure the camera is unobstructed when clicking the Test buttons.

Controller Priority: If both input devices send control signals to the gimbal, the selected controller priority will be the only device to send a signal at that given time.

Pan/Tilt Remote Speed Adjustment: Click to choose combined or independent settings.

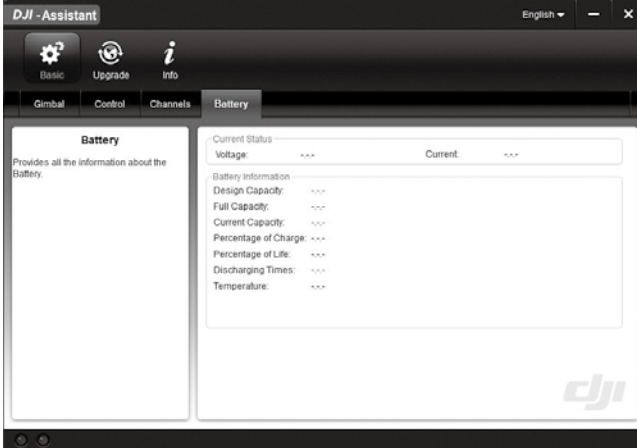
Speed Toggle Presets: These presets will allow you to change the SmoothTrack speed remotely. If the remote control is turned on, the Speed Toggle Presets for SmoothTrack will take precedence over the Assistant settings. Once the remote control is turned off, the SmoothTrack settings in the Assistant will take over.

3. Channels



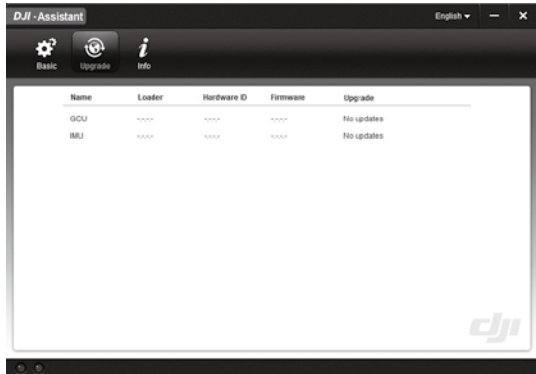
This is a channel indicator to provide feedback during remote operator configuration. Pan, Tilt, and Roll can be re-assigned to either of the remote control sticks. The controlled axis can also be reversed.

4. Battery



This page provides all of the essential information regarding the Ronin-M's battery.

Upgrade

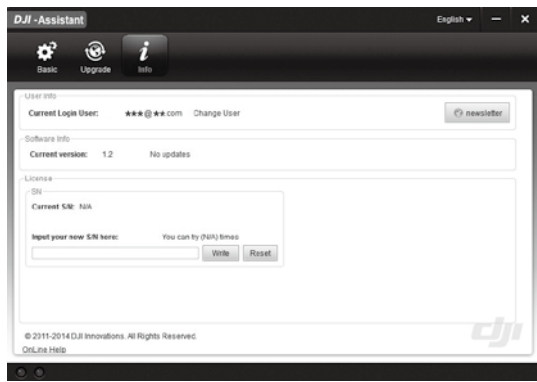


You can view the latest firmware version information on this page. Upgrade the firmware by following the steps below:

1. Connect the Ronin-M to your computer via the Micro-USB cable and wait until the blue indicator LED in the PC Assistant blinks.
2. Click “Upgrade”.
3. Wait for the download to finish.
4. Click “Upgrade” again and then click “Confirm”.
5. Power the Ronin-M off and on after the upgrade is complete.

-
- Ensure your computer is connected to the internet.
 - Close any antivirus programs and network firewalls during the upgrade.
 - Ensure the Ronin-M is powered on during the upgrade. Do not power off the Ronin-M until the upgrade is completed.
 - Do not disconnect the USB cable during the upgrade.

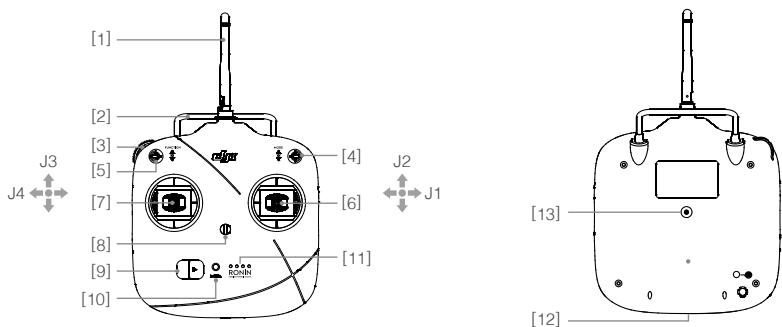
Info



You can check the Assistant version via Info.

S/N is a 32 digit authorization code for function activations. The authorization code for your unit is filled in after its manufacture. In the future, you may be asked to fill in a new S/N if you require function upgrades. Fill in the S/N and then click the Write button. If you fill in an invalid S/N more than 30 times, your MC will be locked and you will have to contact our customer support.

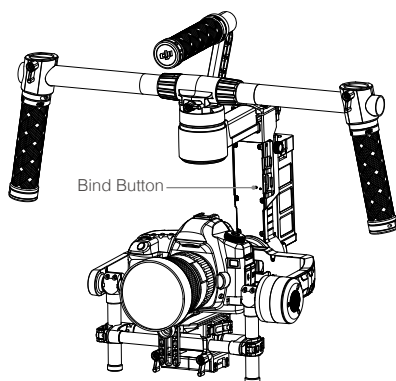
Remote Control



- | | |
|--------------------------------|--|
| [1] Antenna | [8] Neck Strap Attachment |
| [2] Carrying Handle | [9] Power Switch |
| [3] Left Dial(reserved) | [10] Power Indicator |
| [4] 3-Position Switch MODE | [11] Battery Level Indicator |
| [5] 3-Position Switch FUNCTION | [12] RC Assistant/ Charging Port
(Micro-USB Port) |
| [6] Joystick 1(J1;J2) | [13] Reserved Port |
| [7] Joystick 2(J3;J4) | |

Connecting the Remote Control to Ronin-M

1. Turn on the Ronin-M.
2. Slide the power switch to the right to power on the remote control. If the power LED indicator is solid, the remote control is functioning normally. To the right, the battery level indicators display the current battery status. The LED indicator on the Ronin-M gimbal will blink red at this time.
3. Press the Bind Button (shown below) once, the LED indicator will blinking red and green alternately. If the LED changes to a solid, green light after a few seconds, the remote control and the Ronin-M have been successfully bound. The binding process only needs to be done once unless the bind button is pressed or if the Ronin-M needs to be bound to another remote control.





- Please make sure the battery level of remote control is enough before use. If the low voltage warning alert sounds, (refer to <Remote Control Power LED Indicator Status>), please recharge the battery as soon as possible.
- Charge the remote control battery by using the included micro-USB cable. Using the incorrect type of charging cable may cause damage.
- Turn off the remote control before charging. The power LED indicator will display solid green when the battery is fully charged.

Remote Control Power LED Indicator Status

Power LED Indicator	Sound	Remote Control Status
— Solid Green	None	Functioning normally.
— Solid Red	None	Charging(remote control is powered off)
— Solid Yellow	None	Remote control joysticks calibration error. Needs to be recalibrated.
— Solid Red	BB---BB---BB	Low voltage (from 3.5V-3.53V). Recharge the remote control.
..... Quick Red flashing	B-B-B.....	Critical low voltage (from 3.45V-3.5V). Recharge the remote control immediately.
..... Slow Green flashing	B--B--B.....	Alert will sound after 15 minutes of inactivity. It will stop once you start using the remote control.



The remote control will power off automatically when battery voltage drops below 3.45V. Charge the battery as soon as possible when the low voltage alert occurs.

Remote Control Battery Level Indicator Status

The battery level indicator displays the current battery level. The following is a description of the indicators.

○ : The LED is in a solid state on

: The LED is blinking

○ : The LED is off

LED1	LED2	LED3	LED4	Current Battery Level
○	○	○	○	75%~100%
○	○	○	○	50%~75%
○	○	○	○	25%~50%
○	○	○	○	12.5%~25%
	○	○	○	0%~12.5%
○	○	○	○	<0%