

A3-AG/N3-AG

Agriculture Kit 2.0

User Manual v1.2

2019.04

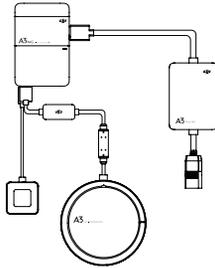


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A3-AG Introduction

The A3-AG Agriculture Flight Control System, based on the DJI A3 flight control system, is designed for agriculture applications. It consists of flight controller, GPS-Compass Pro, PMU (Power Management Unit) and LED module.

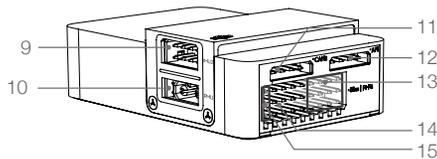
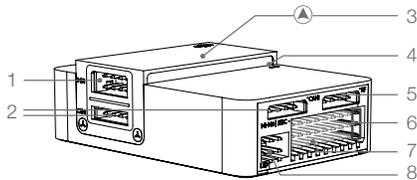


A3-AG Parts

Flight Controller

Feature Highlights

1. Built-in inertial sensors for the measurement of aircraft attitude and built-in pressure sensor for the detection of aircraft altitude.
2. Support for multiple receiver types. If used with the DJI Datalink 3, the A3-AG has direct access to features in the DJI MG app such as intelligent planning and operation.
3. M1 to M8 are used to connect the ESCs of the aircraft and iESC for DJI Intelligent ESC communication.

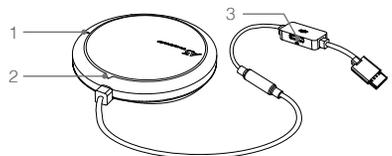


1. IMU1 Port
Reserved port.
2. CAN1 Port
Dedicated DJI CAN-Bus port. Communicates with the A3 GPS-Compass Pro or other DJI devices (e.g. Agriculture Management Unit II (AMU II) .
3. Orientation Arrow
The FC module should be mounted with the arrow pointing in the specified direction (orientation can be set in DJI Assistant 2 for MG).
4. Status Indicator
Indicates the status of the flight controller.
5. RF Port
Communicates with the DJI Datalink 3 Air System.
6. iESC Port
Communicates with the DJI Smart ESC using the Smart ESC Communication Cable.
7. M1-M8 Pins
Connects to the corresponding ESC PWM port for each motor.
8. LED Port
Communicates with the LED module.
9. IMU2 Port
Reserved port.
10. PMU Port
Derives power from the PMU.
11. CAN2
Reserved port.
12. API Port
Reserved port.
13. F5-F8 Pins
Reserved ports.
14. F1-F4 Pins
Reserved ports.
15. S-Bus Port
Reserved port.

GPS-Compass Pro Module

The GPS-Compass Pro module has a built-in GPS/GLONASS receiver and compass. The compass is used for geomagnetic field measurements. Compass calibration is required before use. DO NOT use or store the compass in environments with ferromagnetic materials.

1. Status Indicator
Indicates the status of the GPS-Compass Pro module.
2. Orientation Arrow
The GPS-Compass Pro module should be mounted with the arrow pointing to the aircraft's nose.
3. Extended CAN1 Port
Dedicated DJI CAN-Bus port. Communicates with DJI devices (e.g. Agriculture Management Unit II (AMU II)).



PMU Module

Supported the LiPo batteries, with built-in PMU providing power for the whole Flight Control System and low voltage protection function.

1. Power Port (9V 3A)

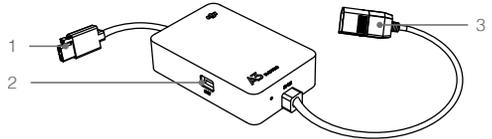
Connected to the Flight Controller for power supply.

2. iBAT

Reserved.

3. 3S-12S

Derives power from the LiPo batteries.



LED Module

The LED Module has an integrated LED Indicator and Micro USB port.

A. The LED is mainly for flight control system status indication during flight (e.g. Flight Mode).

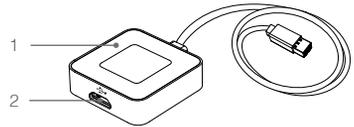
B. In addition, there is a Micro USB port for firmware upgrades via DJI Assistant 2 for MG.

1. Flight Status Indicator

Indicates the status of the flight control system.

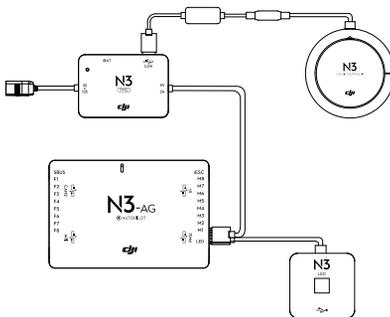
2. Micro USB Port

Used to configure and upgrade the A3 via DJI Assistant 2 for MG.



N3-AG Introduction

The N3-AG Agriculture Flight Control System, based on the DJI N3 flight control system, is designed for agriculture applications. It consists of flight controller, GNSS-Compass Pro, PMU (Power Management Unit) and LED module.

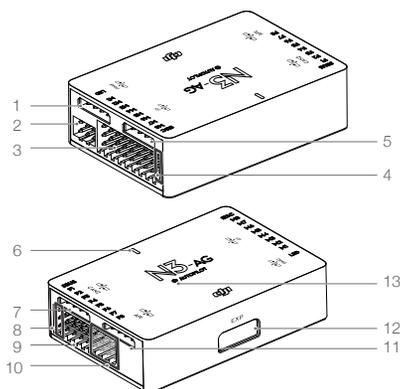


N3-AG Parts

Flight Controller

Feature Highlights

1. Built-in inertial sensors for the measurement of aircraft attitude and built-in pressure sensor for the detection of aircraft altitude.
2. Support for multiple receiver types. If used with the DJI Datalink 3, the N3-AG has direct access to features in the DJI MG app such as intelligent planning and operation.
3. M1 to M8 are used to connect the ESCs of the aircraft and iESC for DJI Intelligent ESC communication.

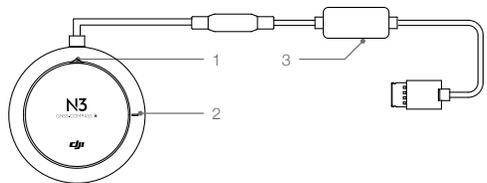


- | | |
|---|---|
| <ol style="list-style-type: none"> 1. PMU Port
Derives power from the PMU module. 2. LED Port
Communicates with the LED module. 3. M1-M8 Pins
Connects to the corresponding ESC PWM port for each motor. 4. iESC Port
Communicates with the DJI Smart ESC using the Smart ESC Communication Cable. 5. RF Port
Communicates with the DJI Datalink 3 Air System. 6. Status Indicator
Indicates the status of the flight controller. | <ol style="list-style-type: none"> 7. CAN2 Port
CAN Bus port (reserved port). 8. S-Bus Port
Reserved port. 9. F1-F4 Pins
Reserved ports. 10. F5-F8 Pins
Reserved ports. 11. API Port
Reserved port. 12. EXP Port
Reserved port. 13. Orientation Arrow
The flight controller orientation arrow. |
|---|---|

GNSS-Compass Module

The GNSS-Compass module has a built-in GPS/GLONASS and compass. The compass is used for geomagnetic field measurements. Compass calibration is required before use. DO NOT use or store the compass in environments with ferromagnetic materials.

1. Orientation Arrow
The GNSS-Compass module should be mounted with the arrow pointing toward the aircraft nose.
2. GNSS-Compass Status Indicator
Indicates the status of the GNSS-Compass Module.
3. Extended CAN1 Port
Dedicated DJI CAN-Bus port. Communicates with a DJI device.



PMU Module

Supported the LiPo batteries, with built-in PMU providing power for the whole Flight Control System and low voltage protection function.

1. iBAT

Reserved.

2. Power Status Indicator

Indicates the power status of the flight control system.

3. 3S-12S

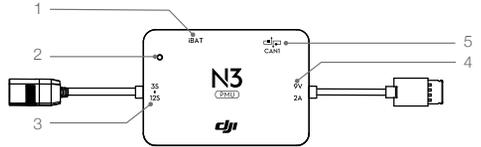
Derives power from LiPo battery.

4. Power Port (9V 2A)

Connected to the Flight Controller for power supply.

5. CAN1 Port

Connected to the GNSS-Compass module.



LED Module

The LED Module has an integrated LED Indicator and Micro USB port.

A. The LED is mainly for flight control system status indication during flight (e.g. Flight Mode).

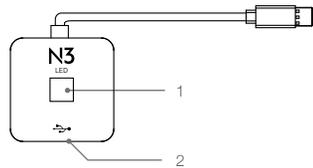
B. In addition, there is a Micro USB port for firmware upgrades via DJI Assistant 2 for MG.

1. Flight Status Indicator

Indicates the status of the flight control system.

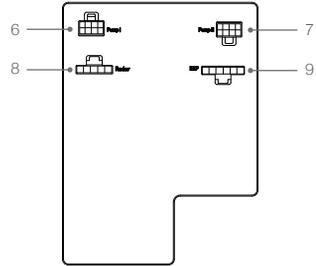
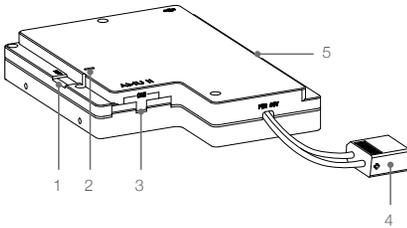
2. Micro USB Port

Used to configure and upgrade the N3 via DJI Assistant 2 for MG.



Agriculture Management Unit II (AMU II) Introduction

The Agriculture Management Unit II (AMU II) is equipped with essential expansion ports to support DJI modules such as the MG Spreading System, radar modules, and water pumps.

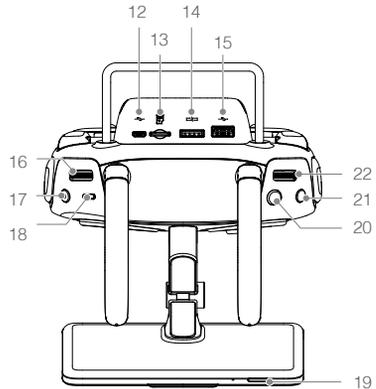
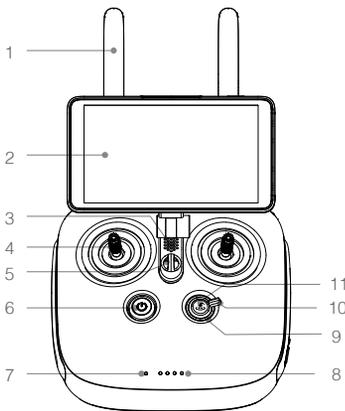


- 1. iBAT Port**
Intelligent battery communication port.
Connected to the Agras battery using an adapter cable.
- 2. Working Status Indicator**
It will glow solid green when the device is working normally.
- 3. CAN Ports**
Both of the two CAN Bus ports can be connected to the CAN1 port on the flight controller.
- 4. Power Port**
XT60 port. Connected to an external power supply (12S Li-Po battery).
- 5. RTK Port**
Reserved port.
- 6. Pump I Port**
Connected to DJI Pump I.
- 7. Pump II Port**
Connected to DJI Pump II.
- 8. Radar Port**
Connected the DJI radar module.
- 9. EXP Port**
Expansion port. Connected to other Agras accessories such as the MG Spreading System.

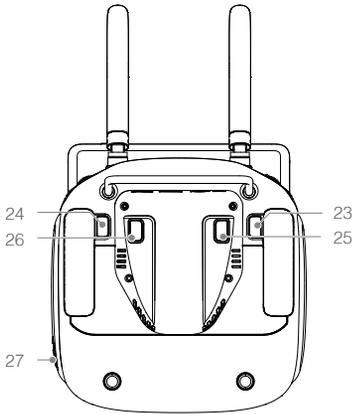
Remote Control System Introduction

The remote control system includes the remote controller and the Datalink 3 Air System. The remote controller is equipped with a bright, dedicated screen with a built-in Android system that runs the DJI MG app independently. When combined with the air system, the remote controller has a transmission range up to 1 km. The app features intelligent operation planning functions to produce flight routes automatically, according to marked operation areas and obstacles. The DJI MG app is able to display the system status, convenient when your aircraft is spraying far away from you.

Remote Controller

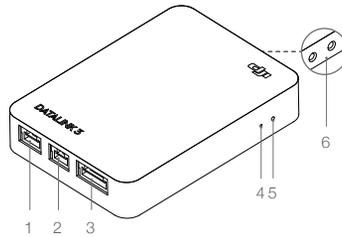


- 1. Antennas**
Relays aircraft control signals.
- 2. Display Device**
Android-based to run the DJI MG app.
- 3. Speaker**
Audio output.
- 4. Control Sticks**
Controls aircraft movement. Can be set to Mode 1, Mode 2, or a custom mode.
- 5. Lanyard Attachment**
Used to attach the remote controller lanyard.
- 6. Power Button**
Used to turn the remote controller on and off.
- 7. Status LED**
Indicates whether the remote controller is linked to the aircraft.
- 8. Battery Level LEDs**
Displays current battery level.
- 9. RTH Status LED**
Circular LED around the RTH button. Displays RTH status.
- 10. 3-Position Switch**
Reserved switch.
- 11. RTH Button**
Press and hold this button to initiate Return to Home (RTH).
- 12. Micro USB Port**
Reserved port.
- 13. microSD Card Slot**
Provides display device with up to 128 GB of extra storage. Insert a microSD card stored the firmware to update the remote controller.



14. **CAN Port**
Used to connect other accessories, such as a MG Remote Controller External GPS Module.
15. **USB Port**
Reserved port.
16. **Spray Rate Dial**
Turn to adjust the spray rate in Manual operation mode.
17. **Spray Button**
Press to start/stop spraying in Manual operation mode.
18. **Pause Switch / Flight Mode Switch**
Toggle to pause an automatic flight. If Multiple Flight Modes are enabled in DJI Assistant 2 for MG, use the toggle to switch between P-mode and A-mode. The P and F positions on the remote controller are for P-mode, and the A position is for A-mode.
19. **Sleep/Wake Button**
Press to sleep/wake the screen; press and hold to restart.
20. **Button A**
Records Point A of the operation route in A-B Route operations by default. Use the app to customize the button.
21. **Button B**
Records Point B of the operation route in A-B Route operations by default. Use the app to customize the button.
22. **Settings Dial**
Turn to adjust operation efficiency in Route, A-B Route or Manual Plus operation mode.
23. **Button C1**
When you are planning a field, it starts or ends obstacle measurement. When planning a field, the function cannot be customized. When you are not planning a field, the default function is Operations (to switch between A-B, M and M+). Use the app to customize the button.
24. **Button C2**
When you are planning a field, it adds a waypoint. When planning a field, the function cannot be customized. When you are not planning a field, the default function is Delete Route. Use the app to customize the button.
25. **Button C3**
Press Button C3 to use the sprinklers connected to the PUMP I port. This is the default setting in Manual operation mode only. The button can be customized in the app.
26. **Button C4**
Press Button C4 to use the sprinklers connected to the PUMP II port. This is the default setting in Manual operation mode only. The button can be customized in the app.
27. **Power Port**
Connects to a power source to charge the remote controller's internal battery.

Datalink 3 Air System



1. DBUS/SBUS Port

Used to connect to the RF port of the flight controller.

⚠ When using the DBUS cable to connect the flight controller and the Air System, no extra power supply is needed. DO NOT use the power port on the Air System for power supply. It is, however, essential to provide an additional power supply (8 to 30 V) when using the SBUS cable to connect the flight controller and the Air System.

2. Power Port

When using with the A3-AG 2.0 or N3-AG 2.0 flight controller, no extra power supply is needed.

When using with other flight controllers, it is essential to provide an additional power supply (8 to 30 V).

3. LINK Port

Reserved Port.

4. Status LED

Status LED	Description
Solid Red	Indicates successful power supply to the Air System, but linking has failed between the Air System and Ground System.
Alternating Red and Green	The Air System and Ground System are linking.
Solid Green	The Air System and Ground System are successfully linked.
Flashing Yellow	The Air System firmware is updating

5. Linking Button

Use this button to link the Air System and the remote controller.

6. Antenna Ports

Used to attach the Air System antennas and antenna extension cables.

Installation

Installation steps are similar for both the N3-AG and A3-AG. The descriptions in this chapter use the N3-AG as an example. Unless specified, the following context can also be applied to the A3-AG installation.

Overview

Installation Procedure

Read this section carefully and follow the procedures below to install your flight control system, otherwise the flight control system may not normally work.

- ① Ensure all parts are in good condition.
- ② Mount the parts to your airframe and connect them properly.
- ③ Launch the DJI Assistant 2 for MG and configure the parameters.
- ④ Ensure the motor and Failsafe settings are correct.
- ⑤ Ensure the devices connected to the flight controller are working normally and correctly set in DJI Assistant 2 for MG.

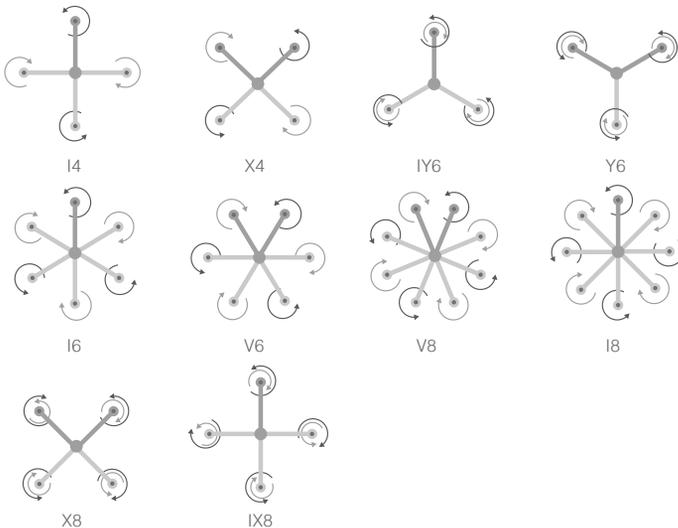
Preparation

Equipment

Ensure you have a suitable airframe, remote controller system, ESCs and battery to use with the flight control system. Below is a list of compatible equipment.

A. Airframes

The following airframes are supported. Choose an airframe and assemble it properly. Remember to select the corresponding airframe type in DJI Assistant 2 for MG after assembling the airframe and connecting the cables.



- ☀️ • The arrow directions in the above diagram indicate the rotation direction of the motor/propeller. Dark colored arm (s) indicate the direction of the aircraft's nose.
 - For coaxial propellers, dark colored propellers are at the top and gray colored propellers are at the bottom. Otherwise, all propellers are at the top.
-

B. Remote Controller System

Make sure to use the air system included in the package and that it has been linked to the remote controller.

- ⚠️ There is no need to enable the Failsafe function on the remote controller. Once the receiver loses signal from the remote controller, the controller unit will enter Failsafe mode automatically, and the aircraft will hover or return-to-home & land according to the Failsafe configurations in DJI Assistant 2 for MG.
-

C. Propulsion System

ESC

ESC output should be 400Hz. DJI Propulsion systems are recommended.

The iESC port can connect to the DJI Smart ESC Communication Cable if using the DJI Intelligent ESC.

Propeller and Motor

It is required to use with Propeller and Motor of more than 2400rpm.

D. Battery

If using a LiPo battery (3S - 12S), only the voltage information and low voltage protection are available.

Preparing DJI Assistant 2 for MG

Download DJI Assistant 2 for MG

Visit the official DJI website to download the software.

<https://www.dji.com/agriculture-solution-v2/info#downloads>

- ⚠️ Supports Windows 7 (or later) or Mac OS X 10.11 (or later).
-

Installing DJI Assistant 2 for MG

DJI Assistant 2 for MG will guide you through setting the Flight Control System's parameters. Carefully follow the on-screen prompts to configure the Flight Control System.

Installing and Running on Windows

Supports Windows 7, Windows 8, Windows 10 (32 or 64 bit).

1. Connect the Micro USB port on the LED module to a PC via a Micro USB cable.
2. Run the software assistant installer and follow the prompts to finish installation.
3. Double click the software assistant icon on your Windows desktop to launch the software.

Installing and Running on Mac OS X

Supports Mac OS X 10.11 (or later).

1. Run the DMG installer and follow the prompts to finish installation.
2. If using Launchpad to run DJI Assistant 2 for MG for the first time, Launchpad will not allow access because the software has not been reviewed by the Mac App Store.
3. Locate the DJI Assistant 2 for MG icon in the Finder, press the Control key and then click the DJI Assistant 2 for MG icon (or right-click the DJI Assistant 2 for MG icon using a mouse). Choose Open from the shortcut menu, click Open in the dialog box and the software will launch.
4. After the first successful launch, direct launching of the software can be achieved by double-clicking the DJI Assistant 2 for MG icon in the Finder or using Launchpad.

- DJI Assistant 2 for MG works exactly the same way on Mac OS X and Windows. The DJI Assistant 2 for MG screenshots that appear in this manual are taken from the Windows version.



- For safety reasons, do not use the power battery for power supply or remove the propellers from the motors before connecting to the Assistant Software. he Windows version.

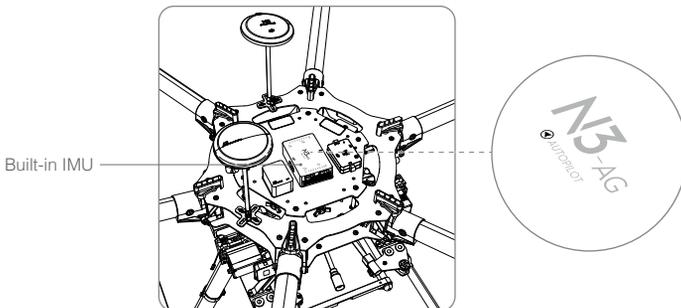
Start the Installation

Important: Strictly follow the provided guidelines. Failure to do so may lead to unexpected flight behavior or serious accidents.

Flight Control System Installation

Mounting the Flight Controller

Mount the Flight Controller with the Orientation Arrow pointing to the front, back, left or right. Make sure the module is parallel to the aircraft and then fix it onto the aircraft with double-faced adhesive tape. Configure the parameters in DJI Assistant 2 for MG and select the direction in which you mounted the Flight Controller. We recommend mounting the Flight Controller with the Orientation Arrow pointing forward.





- The top side should be facing up. DO NOT mount upside-down.
- Remember to warm up the battery if operating in cold weather.



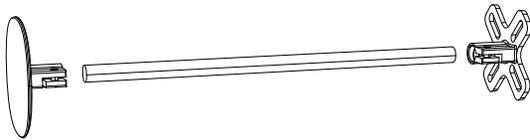
- Mount the flight controller at a low vibration position. The sides of the flight controller should be precisely parallel to the aircraft body. Based on our experience, there is less vibration near the aircraft's center of gravity.
- The flight controller is NOT water-proof or oil-proof.
- Check the double-faced adhesive tape regularly to ensure the IMU is fixed firmly in place.

Mounting the GNSS-Compass Module*

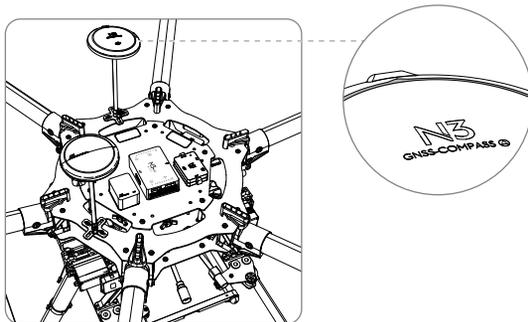
Follow the procedures below to mount the GNSS-Compass bracket and the GNSS-Compass module. The GNSS-Compass module included in the Upgrade Kits is the same as the one in the N3 package.

* For the A3-AG, it is GPS-Compass Pro module.

1. Use the M2.0x4 screws to assemble the GNSS-Compass bracket with the Ball End Hex Key assistant. The longest one is recommended.
2. With the M2.5x7 screws and M2.5x3.4 nuts, mount the bracket on the aircraft.



3. Ensure the GNSS-Compass arrow is pointing to the aircraft nose and then fix it onto the top of the GNSS-Compass bracket. Try to keep it parallel to the aircraft.

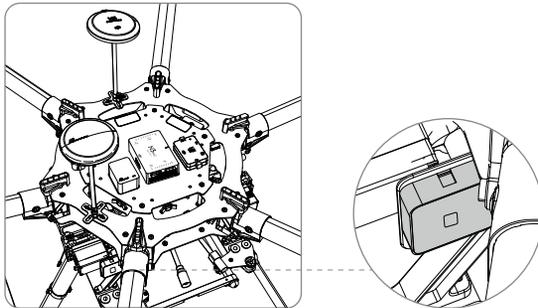


Usage Requirements

1. The DJI logo should be facing the sky, with the orientation arrow pointing directly to the nose direction; otherwise you may experience take off failure.
2. Fly the aircraft in an open space without buildings or trees; otherwise the GPS satellite number may be affected.
3. The compass is sensitive to magnetic interference. Always keep the compass module away from magnetic fields. Otherwise, the compass module may become damaged and lead the aircraft to work abnormally or even lose control.
4. Select a bracket of appropriate length for you aircraft to avoid interference with the compass. The length is based on the airframe type and the mounting position and so on. Ensure that there will not any compass warning when the aircraft is flying with maximum load and can normally fly.

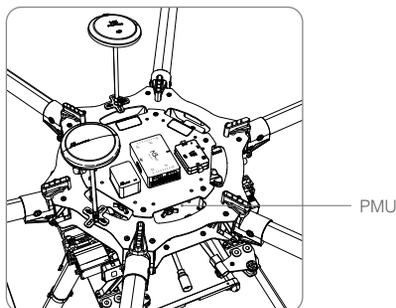
Mounting the LED Module

Mount the LED module in a position to ensure it remains visible during flight. The LED bracket included can be used to fix the LED module onto the aircraft.



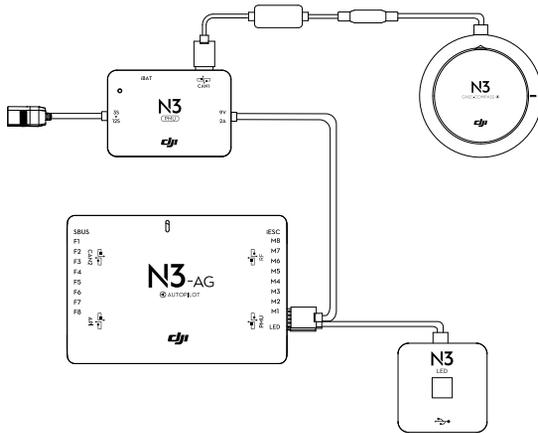
Mounting the PMU Module

Mount the PMU module to an unobstructed position on the bottom of the aircraft's upper plate for heat dissipation.



Flight Control System Connection

Follow the below diagram to connect the flight control system, and use the cable ties to tidy the cables.



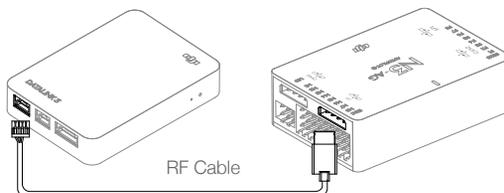
 The flight control system's shell is connected to the whole system's ground.

Connecting to the Airframe and its Equipment

Ensure you have a suitable airframe, remote controller system, ESCs and battery to use with the flight control system. Strictly follow the provided guidelines. Failure to do so may lead to unexpected flight behavior or serious accidents.

Connecting to a Receiver

1. Connect the DBUS port on the Air System to the RF port on the flight controller using the included RF cable.
2. Insert the Air System antennas into the ports on the side of the Air System, and snap them into place.
3. Mount the Air System onto a suitable flat surface. Make sure that there is a gap between the linking button and other structures on the aircraft to prevent the vibration of the airframe from triggering linking.

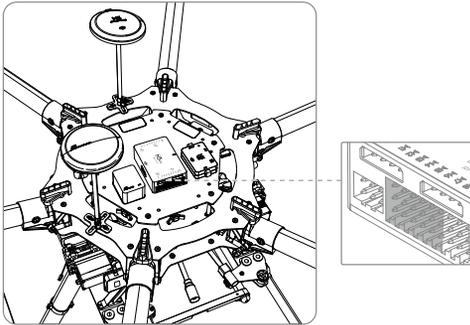


- ⚠ • Install the antennas before powering on the Air System.
- For optimal transmission quality, point the antennas downwards and avoid obstruction from other onboard equipment.
- Only use official DJI antennas and make sure you install them correctly.
- When connecting the antennas, ensure the connector pin aligns with the port hole. DO NOT apply excessive force to avoid damaging the pin.
- DO NOT remove the antennas from the Air System unless necessary. When removing the antennas, use pliers to grip the metal connector. DO NOT apply excessive force to the wire.

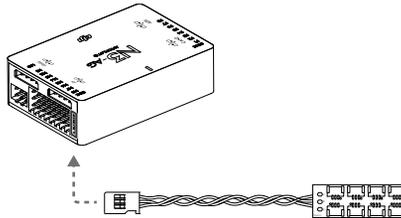
Connecting to the ESCs

S900 Connection Diagram

1. Connect the M1-M6 ports on the bottom board of the S900 to the M1-M6 ports on the Flight Controller in order.



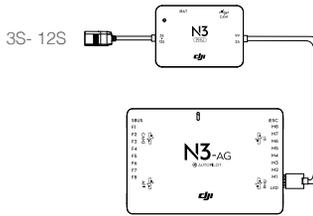
2. The iESC port can connect to the DJI Smart ESC Communication Cable if using the DJI Intelligent ESC.



- ☀ • **Other Airframe Type Connection Diagram**
Connect the ESC ports to the ESC ports on the Flight Controller.
- Power on the flight controller and ESCs at the same time when using for the first time to ensure addresses are successfully assigned to the ESCs. Perform the same operation if any of the ESCs are replaced.

Connecting to a Battery

Connect the PMU to the Flight Controller PMU port, and then connect the battery (3S - 12S, 11.1V - 51V) to the PMU.



⚠ Ensure the 3S battery voltage is higher than 11.1V, as low battery level may effect the battery life and decrease the PMU stability.

AMU Installation

Installation

Mount the AMU to an appropriate position on the aircraft for heat dissipation.

Connection

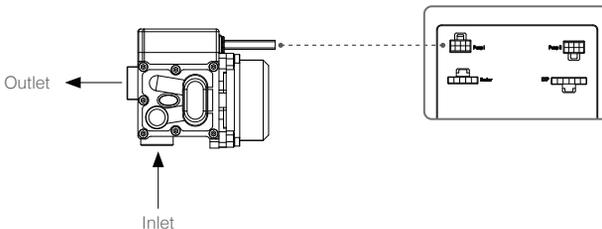
1. Connect the CAN Bus port on the AMU II to the CAN1 port on the flight controller or extended CAN1 port on the GNSS-Compass / GPS-Compass Pro module via the included CAN-Gimbal cable.
2. Connect the power port on the AMU II to the power supply of the aircraft via an appropriate cable.

Connecting to Expansion Devices

Delivery Pump

DJI delivery pump: used with the AMU II. Mount the DJI delivery pump to the desired position. Pay attention to the orientation of the outlets and inlets. Then connect the two cables of the pumps to the Pump I port and Pump II port on the AMU II respectively.

Other pumps: Connect the ESC signal cables of the pump to the F1 and F2 ports on the flight controller. The F1 or F2 port cannot supply power for the pump. Users should connect the pump to an extra power supply.

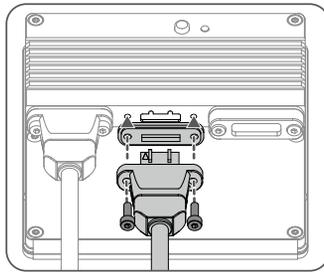


DJI Radar Module (Altitude Stabilization / Prediction)

The radar module uses microwave technology. In an optimal operating environment, the aircraft can fly at a constant distance to ensure even spraying. If three radar modules are mounted to the forward, rear, and downward positions of the aircraft, the forward and rear radar modules can predict the distance between the aircraft and surfaces to activate terrain follow.

Installation and Connection

1. If using a single radar module, mount it to the downward position of the aircraft to use for altitude stabilization, and connect it to the radar port on the AMU II.
2. If using three radar modules, mount them to the forward, rear, and downward positions of the aircraft to use them for altitude prediction in the front and rear directions and altitude stabilization in the downward direction. Connect the three radar modules in order, and connect to the radar port on the AMU II.
3. When connecting the cable to the radar module, attach the rubber pad included in the package to the radar cable plug, and connect the cable to the 4-pin port on the radar module. Tighten the two M2×6 screws.



Make sure that the surface of the radar module that can transmit and receive microwaves is facing outward and is unobstructed.

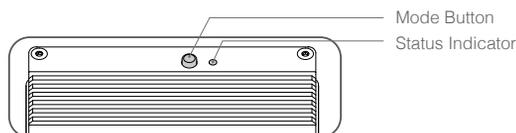


- Use the radar mounting base to secure the radar module as follows: Place the radar module into the mounting base, mount the washers, and tighten the M3×8 screw.
- If a port is not in use, mount the rubber pads and protective covers to protect them from dust and water.

Configuration

Set the operating mode for the radar module according to the position it is mounted to.

1. Power off the module. Press and hold the mode button on the module, and power it on. Release the button after the status indicator glows solid white.



2. Press the mode button to select an operating mode. The color corresponds to the operating mode.

Blue	Forward Radar
Green	Rear Radar
Yellow	Downward Radar

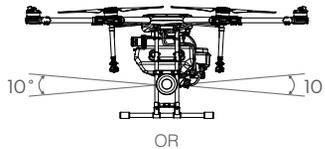
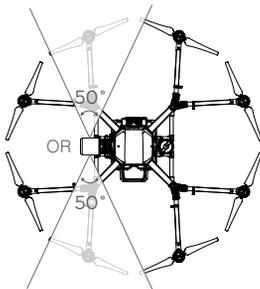
3. Make sure to select the corresponding operating mode according to the position the radar module is mounted to. Then press and hold the mode button until the status indicator blinks the corresponding color.

DJI Liquid Indicator

Mount the liquid indicator to the bottom of the spray tank. Connect the cable to the 5-pin port on the downward radar module.

DJI Obstacle Avoidance Radar (Optional)

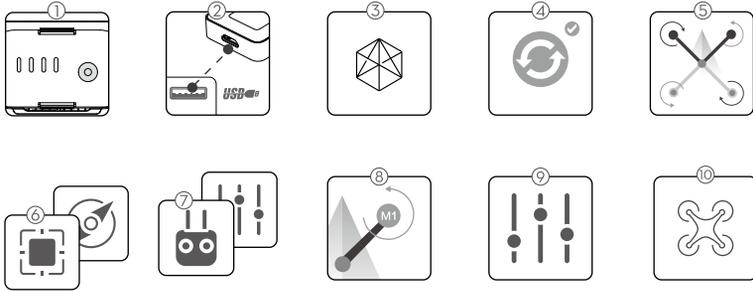
1. Mount the obstacle avoidance radar to a proper position according to its detection range. DO NOT block the radar. Otherwise, the performance of the radar may be adversely affected.



2. Attach the rubber pad to the cable plug of obstacle avoidance radar. Connect the cable to the 4-pin port on the altitude stabilization radar module or the altitude prediction radar module and tighten the two M2×6 screws.

Parameter Configuration

Launch DJI Assistant 2 for MG and follow the prompts to complete configuration.



- ① Ensure the flight control system is properly powered on.
- ② Connect the Micro USB port on the LED module to a PC via a Micro USB cable.
- ③ Run DJI Assistant 2 for MG. Note that you may be asked to register for first time use.
- ④ Follow the prompts to upgrade the firmware to the latest version*.
- ⑤ Select the airframe type.
- ⑥ Configure the Flight Controller, IMU and GNSS-Compass / GPS-Compass Promounting parameters.
- ⑦ Select the receiver type and configure the channel mapping.
- ⑧ Make sure the motors are rotating in correct direction. If not, change the rotating direction.
- ⑨ Configure the function channels, propulsion, gain, Failsafe, battery, and flight restriction settings.

-
- ⚠ • Ensure to connect all modules before power on.
• Ensure to power cycle the battery after firmware upgrade.
-

System Functions

Flight Modes

The aircraft will fly in P-mode by default. Switch between P-mode and A-mode by toggling the Flight Mode Switch if switching between multiple flight modes is enabled in the DJI Assistant 2 for MG.

P-mode (Positioning): The aircraft uses GNSS for positioning and it can only maintain attitude stabilization when GNSS signal is weak. In P-mode, users can start the motors, record Point A and B, and enter Route and A-B Route operation modes when the GNSS signal is strong. It will revert to A-mode when GNSS signal is weak.

A-mode (Attitude): GNSS is not used for positioning, and aircraft can only maintain altitude using the barometer. Aircraft can still record its position and return to the Home Point if a GNSS signal is present.

Attitude Mode Warning

The aircraft will enter A-mode in the following two instances:

Passive: When there is weak GNSS signal or when the compass experiences interference.

Active: Users toggle the flight mode switch to A-mode.

In A-mode, some advanced features are disabled. Therefore, the aircraft cannot position in this mode and is easily affected by its surroundings, which may result in horizontal shifting. Use the remote controller to position the aircraft.

Maneuvering the aircraft in A-mode can be difficult. Before switching the aircraft into A-mode, make sure you are comfortable flying in this mode. DO NOT fly the aircraft too far away as you might lose control and cause a potential hazard.

Avoid flying in areas where GNSS signal is weak, or in confined spaces. The aircraft will otherwise be forced to enter A-mode, leading to potential flight risks, please land it in a safe place as soon as possible.

Operation Modes

The system provides Route, A-B Route, Manual, and Manual Plus operation modes. Switch to one of these modes in the DJI MG app.

Route Operation Mode

After the operation area and obstacles have been measured, and settings have been configured, the DJI MG app uses a built-in Intelligent Operation Planning System to produce a flight route based on the user's input. Users can use the operation after field planning, and the aircraft can operate automatically, following the generated flight route. Operation resumption, and the altitude stabilization and obstacle avoidance functions of the radar module are available in this mode. Use the app to adjust operation efficiency (affecting the flying speed and spray rate). Route operation mode is recommended for large spray areas.

Field Planning

The DJI MG app supports multiple planning methods for various applications.

Fly the Aircraft

Users can fly the aircraft to desired positions and then use the button on the remote controller or app to add waypoints for operation area and obstacles measurements.

1. Power on the remote controller and enter the DJI MG app. Then power on the aircraft.
2. Tap Field Plan and then select Fly the aircraft.
3. Ensure that the System Status bar on top of the screen displays Manual Route (GNSS).
4. Tap Start Measuring in the lower right corner of the screen. Fly the aircraft alongside the boundary of the target field. Tap Add Waypoint C2 or press Button C2 on the back of the remote controller at each corner of the field.
5. Mark any obstacles:

Use two methods below to mark obstacles if there is any in the target field.

- ① Tap Obstacle C1 onscreen or press the C1 button on the back of the remote controller, fly the aircraft around the obstacle, and then tap End Obstacle C1 onscreen or press the C1 button again.
 - ② Tap Obstacle C1 onscreen or press the C1 button on the back of the remote controller, fly the aircraft around the obstacle, and tap Add Waypoint C2 onscreen or press the C2 button to add waypoints. Tap End Obstacle C1 onscreen or press the C1 button when finished.
6. Continue measuring the field by flying the aircraft alongside the boundary and adding waypoints at each corner of the field. Tap End Measurement when the field has been measured and all obstacles have been marked. The DJI MG app will produce a flight route according to the field's perimeter and obstacles.
 7. Add calibration point(s): Fly the aircraft to the location of each calibration point. Tap Calibration Point onscreen.

The calibration points are used to offset the bias of the flight route caused by the positioning difference between the remote controller and aircraft. Choose at least one existing landmark as the fixed reference point(s) for calibration when executing the same operation. If none are available, use an easily identifiable object, such as a metal stake.

Walk with RC

Users should walk along the boundary of the field or the obstacles with the remote controller for measurements. Ensure that the aircraft is powered off when planning your flight route.

1. Power on the remote controller and enter the DJI MG app. Tap Field Plan and select Walk with RC.
2. Wait until GNSS signal is strong. Satellite counts should be no less than 10. Positioning accuracy may vary by +/-2 meters. Complete the remaining steps by walking with the remote controller following the same instructions as the "Fly the Aircraft" method.

Field Editing

Tap any blank space onscreen to enter Edit Status.

1. Edit Waypoints

Move: Drag the waypoint to move.

Fine Tuning: Tap the waypoint to show Fine Tuning buttons. Tap to adjust.

Delete: Tap twice to delete a waypoint.

2. Adjust Route

Route Direction: Tap and drag the  icon near the route to adjust the flight direction of the produced route.

Line Spacing: Tap the  icon at the top of the screen to adjust the line spacing between two neighboring lines.

Collision Avoidance Safety Margin: Tap the corresponding button on bottom of the screen, and then adjust the safety margin between the route and the edge of the field or obstacle.

3. Edit Obstacles

Tap and hold the marked obstacle or the position that needs to mark an obstacle on the screen to choose the shape and size of the obstacle in the menu.

Tap the obstacle on the screen which has waypoints added, then follow the Edit Waypoints instructions to edit the added waypoints for complete obstacle information.

4. Tap Save Field, and then name the operation, choose crop, and configure other parameters.

Performing an Operation

1. Power on the remote controller. Place the aircraft at one of the previously set calibration points and then power it on.

2. Go to the main screen in the DJI MG app, and then tap Execute Operation to enter the Operation View.

3. Tap  to select a field in "Fields" tag, and then tap Invoke.

4. Tap Rectify Offset and then Rectify Aircraft Position, or adjust the route position via the Fine Tuning buttons and then tap OK.

5. Tap Start, set operation type, and then tap OK.

6. Takeoff and perform the operation.

① If you fly to the targeted height, slide to start spraying.

② If the aircraft is on the ground, slide to takeoff and start spraying.



• Be sure to takeoff in open areas.

• The operation will be automatically cancelled if the motors are started before beginning the operation. You will need to recall the operation in the task list.

• Once started, the aircraft will fly to the starting point of the route and lock its heading in the direction of the first turning point for the duration of the flight path. Users cannot control the aircraft heading via the control stick during the operation.

• The aircraft does not spray while flying along line spacing, but automatically sprays while flying along the rest of the route. Users can adjust operation efficiency (affecting the flying speed and spray rate) and height above the crops in the DJI MG app.

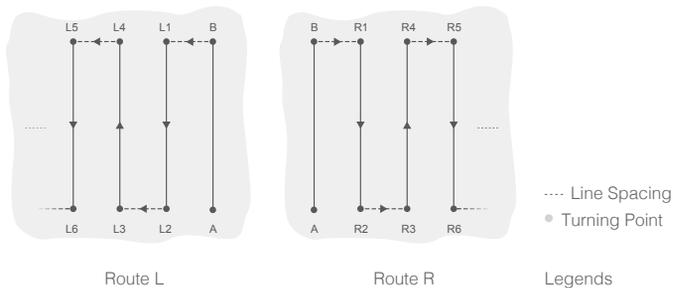
- ⚠ • An operation can be paused by toggling the Pause switch. The aircraft will hover and record the breakpoint, and then the aircraft can be controlled manually. To continue the operation, tap Resume in the app and the aircraft will return to the breakpoint automatically and resume the operation. If switching between multiple flight modes is enabled in DJI Assistant 2 for MG, the Pause Switch will be used as Flight Mode Switch. Therefore, the aircraft may enter A-mode (Attitude) when toggling the switch. Make sure to operate the aircraft with caution.
- The aircraft will hover at the ending point of the flight route after the operation is completed. Instead of hovering the aircraft can also be set to perform other flight actions in the app.

A-B Route Operation Mode

In A-B Route operation mode, the aircraft will travel along a pre-planned route. Operation resumption, data protection, and the altitude stabilization and obstacle avoidance functions of the radar module are available in this mode. Use the app to adjust operation efficiency (affecting the flying speed and spray rate). A-B Route operation mode is recommended for large, rectangular spray areas.

Operation Route

The aircraft travels along a pre-designated square zig-zag route after recording turning points A and B. Under optimal working conditions, the obstacle avoidance function is available and the aircraft maintains distance from the vegetation. The length of the dotted lines, called Line Spacing, can be adjusted in the DJI MG app.



Operation Procedure

- ⚠ • Maintain line of sight of the aircraft at all times.
- Ensure that the GNSS signal is strong. Otherwise, A-B Route operation mode may be unreliable.

💡 Always inspect operating environments before flying.

Set the operation mode switch button to M (Manual operation mode) when a strong GNSS signal is present and the onscreen display is Manual Route (GNSS). Then fly the aircraft to a proper height.

1. Record Points A and B in Order

Fly the aircraft to the starting point, depicted as Point A/B, hover, and then press Button A/B on the remote controller or tap Point A/B onscreen. The icon for Point A/B will change from gray to purple and the Flight Status Indicator will blink red/green after recording the starting points.

- ⚠ • Points A and B cannot be recorded if the spray tank is empty.
 - Be sure to record Point A first and then record Point B and that the distance between Point A and B should be more than 1 m.
 - Update Point B by flying the aircraft to a new position to record. Note that if you update Point A, you must also update Point B.
 - It is recommended to keep the direction of Point A to B parallel to one side of the rectangular spray area for optimal effect.
-

- ☀️ • After recording Point A, there will be a menu prompt for operation type settings. Set the amount of pesticide per acre, operation type, Banked Turning, etc. Use the slider to adjust operation efficiency (affecting the flying speed and spray rate). During the operation, tap the icon at the top of the screen to adjust parameters (Banked Turning excluded). You can also adjust operation efficiency via the Settings dial on the remote controller.
 - The DJI MG app will display an icon of line spacing after Point A and B are recorded. Tap to adjust the value. The line spacing cannot be adjusted during operation.
-

2. Select the Route

After Point A and B are recorded, the app produces Route R by default. Tap Direction on the lower right corner of the screen to switch to Route L.

3. Configuring Aircraft Altitude

Tap  on top of the screen to set the desired height above the vegetation. Under optimal working conditions, the radar module will start working automatically and maintain the spraying distance between aircraft and vegetation after performing the operation.

4. Performing an Operation

Tap Start on the lower right corner and slide to start the operation.

- ⚠ • If, after recording Points A and B, you fly the aircraft more than five meters away from Point B, Resume will appear on the lower right corner of the screen. Tap Resume, and the aircraft will automatically fly to Point B to perform the operation.
 - If the GNSS signal is weak during the operation, the aircraft will enter Attitude mode and exit from A-B Route operation mode. Operate the aircraft with caution. The operation can be resumed after GNSS signal is recovered.
 - If you press the A or B buttons during operation while the flying speed of the aircraft is lower than 0.3 m/s, the data for Points A and B of the current route will be erased and the aircraft will hover in place.
-

-
- ☀️ • The line spacing can be customized from 3-10 m in DJI MG. It is set to a length of 5 m by default.
 - The nose of the aircraft will always point from Point A to Point B regardless of flight direction. Users cannot control the aircraft heading via the control stick during the operation.
 - When using the control sticks to control the aircraft in A-B Route operation mode, the aircraft will automatically switch to Manual operation mode, complete corresponding flight behavior, and then hover. To resume the operation, tap Resume onscreen. The aircraft will resume flying along the operation route. Refer to [Operation Resumption \(p. 30\)](#) for details.
 - Even though the heading of the aircraft cannot be adjusted, use the control sticks to avoid obstacles if obstacle avoidance function of the radar module is disabled. Refer to [Manual Obstacle Avoidance \(p. 31\)](#) for details.
 - During the operation, the aircraft doesn't spray liquid while flying along the direction of the line spacing, and it automatically sprays liquid while flying along the rest parts of the route.
-

Manual Operation Mode

Tap the operation mode switch button in the app and select M to enter Manual operation mode. You can control all the movements of the aircraft, spray liquid via the remote controller's Spray button, and adjust the spray rate via the dial. Manual operation mode is ideal when the operating area is small.

Manual Plus Operation Mode

Tap the operation mode switch button in the app and select M+ to enter Manual Plus operation mode. The aircraft's maximum flying speed is 7 m/s (customizable in the DJI MG app), the heading is locked, and all other movement can be manually controlled in this mode. Users can disable M+ heading lock in the app. Under optimal working conditions, the radar module will maintain the spraying distance between aircraft and vegetation if altitude stabilization function is enabled. Press the corresponding buttons onscreen or C1 or C2 buttons on the remote controller (if customized) to steer the aircraft left or right. The aircraft automatically sprays when accelerating forward, backward or diagonally, but does not spray when flying right or left. Manual Plus operation is ideal for irregularly-shaped operating areas.

- ☀️ • The line spacing cannot be adjusted during operation.
 - Spray rate will be adjusted automatically according to the flying speed.
 - Operation efficiency (affecting the maximum flying speed and maximum spray rate) and height above the vegetation can be adjusted in the DJI MG app.
 - Please fly with caution when steering the aircraft using the app or the C1 or C2 buttons because obstacles on both sides of the aircraft may not be detected if they are in the radar module's blind spots.
-

Operation Resumption

When exiting a Route or a A-B Route operation, the aircraft will record a breakpoint. The Operation Resumption function allows you to pause an operation temporarily (e.g., to refill the spray, change battery, and avoid obstacles manually) and then resume operation at the breakpoint.

Recording a Breakpoint

Exit a Route or A-B Route operation through one of the following methods and the aircraft records its location as a breakpoint if GNSS signal is strong:

1. Tap the Pause or End button on the lower right corner of the screen. Note: tapping the End button during an A-B Route operation does not make the aircraft record a breakpoint. The operation ends immediately and cannot be resumed.
2. Initialize the RTH procedure.
3. Toggle the Pause switch / Flight Mode switch.
4. Push the Pitch or Roll stick in any direction on the remote controller.
5. Obstacle detected. The aircraft brakes and enters obstacle avoidance mode.
6. Radar module error detected when its obstacle avoidance function is enabled.
7. The aircraft reaches its distance limit or altitude limit.
8. Empty tank.
9. If the GNSS signal is weak, the aircraft enters Attitude mode and exits the Route or A-B Route operation. The last position where there was a strong GNSS signal is recorded as a breakpoint.



- Ensure that GNSS signal is strong when using the Operation Resumption function. Otherwise, the aircraft cannot record and return to the breakpoint.
 - The breakpoint is updated as long as it meets one of the above conditions.
-

Resume Operation

1. Exit a Route or A-B Route operation through one of the above methods. The aircraft records the current location as the breakpoint.
2. Fly the aircraft to a safe location after operating the aircraft or removing the conditions for recording a breakpoint.
3. Tap Resume on the lower right corner of the screen to continue the operation.
4. Return Route

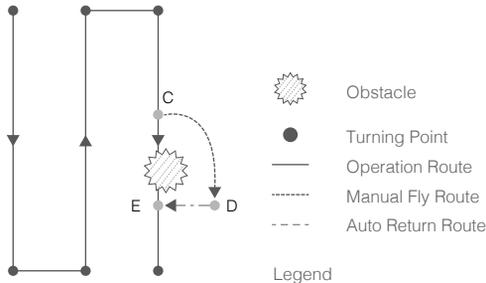
If the aircraft is in the operating area, there will be prompt in the DJI MG app. Users can select from returning to the breakpoint or the operating route along a path vertical to the operating route. If the aircraft is out of the operating area, it will return straight to the breakpoint and resume operation.

5. If obstacle avoidance is required during the return procedure, users can control the aircraft forwards, backwards, left, and right. Refer to Manual Obstacle Avoidance for details.

Typical Applications

In Route or A-B Route operation mode, users can control the aircraft forward, backward, left, and right, avoiding obstacles along the operation route, or in an emergency (e.g., abnormal aircraft behavior). The following instructions describe how to avoid obstacles manually:

Manual Obstacle Avoidance



1. Exit a Route or A-B Route operation

In the two modes, when using the control sticks to control the aircraft forward, backward, left or right (i.e., push the pitch or roll stick), the aircraft will automatically switch the current mode to Manual operation mode, pause the operation and record the current position as a breakpoint (Point C), then complete the corresponding flight behavior and hover.

⚠ When pushing the control sticks to exit the operation, the aircraft will need a braking distance. Ensure that there is a safe distance between the aircraft and any obstacles.

2. Avoid an Obstacle

After switching to Manual operation mode, users can control the aircraft to avoid the obstacle from Point C to D.

3. Resume Operation

Tap Resume in the DJI MG app. If the aircraft is in the operating area, there will be a prompt in the DJI MG app. Select Fly to Project Point. If the aircraft is out of the operating area, it will return straight to the breakpoint and resume the operation.

⚠

- To avoid risk, ensure that the aircraft has completely avoided the obstacle before resuming operation.
- In the event of an emergency, ensure that the aircraft is in normal status and then fly the aircraft manually to a safe area to resume operation.

⚠ Repeat the instructions above to exit and resume operation in the event of an emergency (i.e., whenever obstacle avoidance is required) during the return procedure.

System Data Protection

In Route or A-B Route operation mode, the System Data Protection feature enables the aircraft to retain vital system data (e.g., operation progress, breakpoint, Point A, Point B) after the aircraft is powered off for a battery replacement or spray refill. Follow the instructions in Operation Resumption to resume the operation after restarting the aircraft.

Empty Tank

Profile

An indication appears in the DJI MG app and the aircraft hovers in place when the spray tank is empty. In Route, A-B Route, and Manual Plus operation modes the aircraft can also be set to ascend or Return to Home instead of hovering.

Usage

1. When an empty tank warning appears in the app, the sprinklers will automatically turn off.
2. Make sure that the aircraft is in Manual operation mode, land, and then stop the motors. Next, refill the spray tank and tightly secure the cover.
3. Take off in Manual operation mode and fly the aircraft to where the operation was interrupted. Enter the desired mode to continue the operation.

Return to Home (RTH)



- **Home Point:** The default Home Point is the first location where your aircraft received strong GNSS signals that are required for positioning. The Flight Status Indicator will blink several times after the Home Point has been recorded.
- **RTH:** The Return to Home (RTH) function brings the aircraft back to the last recorded Home Point.



When using System Data Protection, the Home Point will not be updated if you restart the aircraft after changing the battery.

There are three events that will trigger RTH procedure: Smart RTH, Failsafe RTH and Low Battery RTH.

Smart RTH

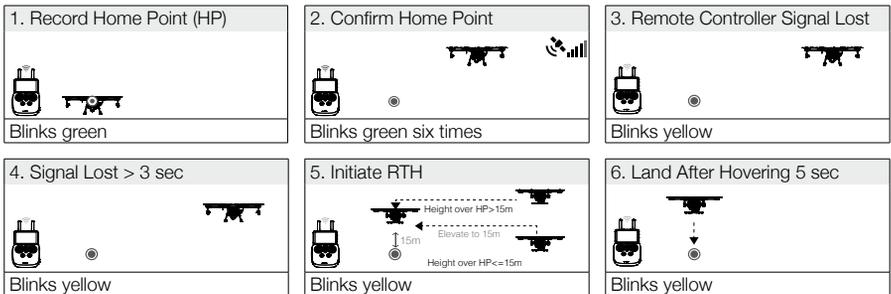
Press and hold the RTH button on the remote controller when GNSS is available to enable Smart RTH. Both Smart and Failsafe RTH use the same RTH procedure. With Smart RTH, you may control the aircraft's speed and altitude to avoid collisions when returning to the Home Point. The Flight Status Indicator will show the current flight mode during RTH. Press the Smart RTH button once to exit Smart RTH and regain control of the aircraft.

Failsafe RTH

-  Failsafe RTH must be enabled in the DJI Assistant 2 for MG or DJI MG app. If Failsafe RTH is not enabled, the aircraft will hover in place when the remote controller signal is lost.

Failsafe RTH activates automatically if the remote controller signal is lost for more than three seconds, provided that the Home Point has been successfully recorded, the GNSS signal is strong (white GNSS icon), and the compass is working normally. Users can interrupt the Return to Home procedure and regain control of the aircraft if the remote controller signal is recovered. Press the RTH button or toggle the Pause switch on the remote controller once to cancel RTH.

RTH Illustrator



Low Battery RTH

The low battery RTH or critical low battery landing is triggered when the LiPo battery voltage is low.

-  • The Low Battery RTH is disabled by default. The Flight Status Indicator will blink red slowly when battery voltage is low. RTH or landing can be set in the DJI Assistant 2 for MG or the DJI MG app.
- Control the aircraft through the remote controller during RTH or landing if the remote controller signal is strong.
 - Users can set the threshold of both low battery and critical low battery levels in the DJI Assistant 2 for MG.

When battery voltage is low, motor output may be not enough for flight. Users are advised to land the aircraft immediately. Otherwise the aircraft will crash leading to damage or other dangers. The flight control system will automatically determine whether the battery voltage is adequate based on the current aircraft altitude and its distance from the Home Point. (Refer to the Figure 5 and 6 in “Failsafe Illustration” for RTH action.)

1. The Flight Status Indicator slowly blinks red if the battery voltage is low. The low battery RTH will be triggered. Users can change the settings to LED blinking only or hovering in the DJI Assistant 2 for MG.

- The Flight Status Indicator quickly blinks red if the battery voltage is critical low. The critical low battery land will be triggered. The aircraft will begin to descend and land automatically which cannot be cancelled. Users can change the settings in the DJI Assistant 2 for MG so that the aircraft will not automatically descend and land when the Flight Status Indicator LED blinks red.

Updating the Home Point

You can update the Home Point in the DJI MG app during flight. There are two options for setting the Home Point:

- Set the aircraft's current coordinates as the Home Point.
- Set the remote controller's current coordinates as the Home Point.

 Ensure the space above the remote controller's GNSS module (located beneath the DJI logo) is not obstructed and that there are no tall buildings around when updating the Home Point.

Follow the instructions below to update the Home Point:

- Go to DJI MG > Operation View.
- Tap ●●● > ⚙️, select  in Home Point settings to set the aircraft's current coordinates as the Home Point.
- Tap ●●● > ⚙️, select  in Home Point settings to set the remote controller's current coordinates as the Home Point.
- The Flight Status Indicator will blink green to indicate that the new Home Point has successfully been set.

RTH Safety Notices

	The aircraft cannot avoid obstacles during RTH. Users can only control the speed and altitude of the aircraft. If the aircraft is in risk of collision, exit RTH immediately. Before each flight, it is important to set an RTH altitude that is appropriate for the given environment. Go to DJI Assistant 2 for MG, or DJI MG > Operation View > ●●● > ⚙️, to set Return to Home Altitude.
	If the aircraft is flying under 15 meters and RTH (including Smart, Failsafe, and Low Battery RTH) is triggered, the aircraft will first automatically ascend to 15 meters from the current altitude. You cannot control the aircraft during this ascent. In Smart RTH, you can exit RTH to cancel automatic ascent by pressing the RTH button once.
	The aircraft automatically descends and lands if RTH is triggered when the aircraft flies within a 5 m radius of the Home Point.
	The aircraft cannot return to the Home Point when GNSS signal is weak  or is unavailable.



When the RTH altitude is set to more than 15 m and the aircraft is ascending between 15 m and the preset RTH altitude, the aircraft will stop ascending and immediately return to the Home Point if you push the throttle stick.

Attitude Control When One Motor Output Fails

For 6-rotor and 8-rotor, the flight control system can control the aircraft's attitude when one motor fails:

1. During flight, the aircraft with this flight control system is attitude controllable when one motor output fails.
2. The motor will not start before take-off. (DJI Intelligent ESCs are required for communication.)

Propulsion System Protection

Low voltage and overweight aircraft warnings are provided.

Radar Module (Altitude Stabilization / Prediction)

Profile

The radar module uses microwave technology. In an optimal operating environment, the aircraft can fly at a constant distance to ensure even spraying. If three radar modules are mount to the forward, rear, and downward positions of the aircraft, the forward and rear radar modules can predict the distance between the aircraft and the vegetation or other surface to achieve terrain follow function.

The radar functions can be enable or disabled in the app. When enabled, the aircraft will fly above the vegetation at a constant spraying distance. In Manual operation mode, the radar module can also measure the spraying distance above the vegetation or other surface, but the aircraft will not be able to fly at a constant spraying distance.

Usage

1. Ensure that you have enabled the radar functions in the app.
2. Enter the desired operation mode, and then configure the desired spraying distance in the app.
3. If the operating environment is ideal, the aircraft will fly above the vegetation at the preset height.



- The radar module enables the aircraft to maintain a fixed distance from vegetation only within its working range.
- Observe the aircraft's distance from the vegetation at all times.
- Operate with extra caution when flying over inclined surfaces (depending on aircraft speed). Recommended maximum inclination at different speeds: 15° at 1 m/s, 6° at 3 m/s and 3° at 5 m/s.
- Obey local radio transmission laws and regulations.

Radar Status Display

The Radar Status Indicator shows the current status of the radar module. See the table below:

Blinking Pattern	Description
Solid (Forward Radar: Blue, Rear Radar: Green, Downward Radar: Yellow)	Warming up
Blinking (Forward Radar: Blue, Rear Radar: Green, Downward Radar: Yellow)	Working
Off	Disconnected: check the cable connection

Radar Status will be shown in the DJI MG app. Pay attention to the prompt messages at all times and fix any issues that may occur.

Obstacle Avoidance Radar (Optional)

Profile

Microwave technology means the radar is fully operational in dusty, misty, or nighttime conditions. It enables the aircraft to sense obstacles in front of or behind it within 30 meters improving operation safety. The DJI MG app will display obstacle information according to the orientation of the aircraft. A built-in stabilized gimbal means that attitude changes cause no interference to the detection of angles. Additionally, front and rear obstacle detection can be switched when flying forward or backward.

Usage

Configuration in the App

Make sure that the radar is correctly mounted. Then power on the remote controller and aircraft. Go to Operation View in the app > ●●● > ●) to enable the obstacle avoidance function.

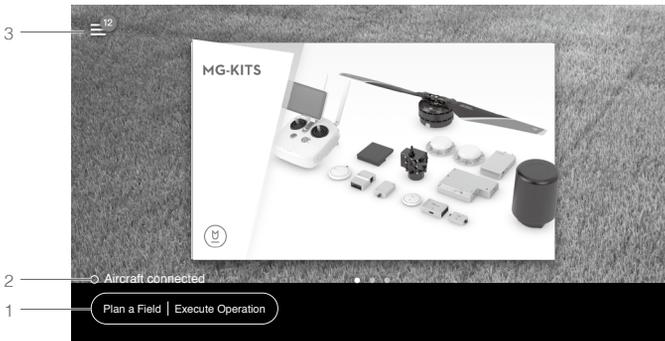
Aircraft Actions

1. If obstacles are detected more than 6 m away from the aircraft during flight, it will slow down and hover in place about 6 m away from the obstacle.
2. If obstacles are detected within 6 m from the aircraft during flight, the aircraft will immediately brake and hover in place. Braking distance is required when stopping mid-flight. Observe the distance between an obstacle and the aircraft at all times. If necessary, fly in a different direction than the obstacle to avoid a collision.
3. When the aircraft is in Route or A-B Route operation mode, it will pause the current operation and record a break point when slowing down. Users can resume operation after controlling the aircraft to avoid the obstacles. Refer to the "Operation Resumption" section for more details.

DJI MG App

The DJI MG app is designed for agricultural applications and is able to display the system status and configure various settings. After planning a field via the app's intelligent operation planning system, the aircraft can operate automatically following the produced flight route.

Main Screen



1. Plan a Field | Execute Operation

Plan a Field: Tap the button and then select planning method to plan a field.

Execute Operation: Tap to enter Operation View to view the aircraft status, configure settings, and switch between different operation modes.

2. Aircraft Connection Status

○ : Shows whether the aircraft is connected to the remote controller.

3. Menu

Tap ≡ to manage tasks, view user information, aircraft information, and configure general settings.

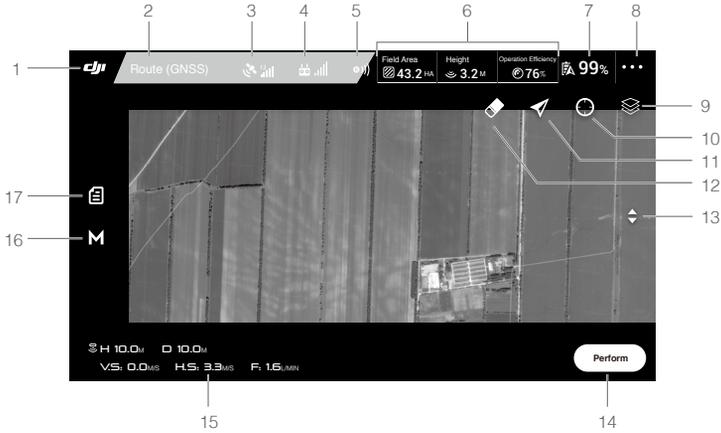
☰ : Task Management — View planned fields and operation progress. You can synchronize the local data with the data on the DJI Agricultural Management Platform.

👤 : User Info — View user information of the account logged in.

🔧 : Aircraft Info — View the information of the connected aircraft and manuals.

⚙️ : General Settings — Tap for settings such as units of measurement, network diagnosis, and Android system settings.

Operation View



1. Main Screen

DJI : Tap this icon to return to the main screen.

2. System Status

Route (GNSS) : Indicates current flight modes, operation modes, and warning messages.

3. GNSS Status

GNSS Signal Strength : Shows the current GNSS signal strength and number of satellites connected.

4. Remote Controller Signal

Remote Controller Signal : Shows the signal strength of the remote controller.

5. Radar Module Obstacle Avoidance Function Status

Obstacle Avoidance Function Status : Shows the working status of the obstacle avoidance function.

6. Operation Parameters

Shows parameters of current spraying operation. The display will vary according to operation mode.

Field Area — Shows the total plan area value when planning fields for Route operations via the intelligent operation planning system.

Plan Area — Shows the value of the actual area of the produced flight route after planning fields. There is the following formula: Plan Area = Field Area - Obstacle Area - Collision Avoidance Safety Margin zone. **Sprayed Area** — Shows the value of the area already sprayed (only available when using Route operation or A-B Route operation).

Obstacle Area — Shows the area value of the obstacles measured when planning fields for Route operations.

Operation Type and Efficiency — Shows operation type and efficiency settings in Route, A-B Route or M+ mode. Tap to set Pesticide Usage for Spray, choose Efficient or Effective mode, and use the slider to adjust operation efficiency.

 : Height — When altitude stabilization function of the radar module is enabled, shows the preset height between the aircraft and the object under it. Appears in all modes except Manual operation mode. Tap to adjust the height.

 : Line Spacing — Shows the preset distance when flying left or right in Route, A-B Route or M+ mode. Tap to adjust the value. Note that the value can only be adjusted before performing an operation.

7. Battery Level

 99% : Shows the current battery level (using an MG battery) or voltage (using other batteries). Tap to set the Low Battery Warning threshold and view battery information (using an MG battery).

8. More Settings

Tap ●●● to enter the extended menu to view and adjust the parameters of all other settings.

 : Aircraft Settings — Includes spraying completed action, lock the heading in M+, RC signal lost action, operation completed action, Home Point settings, Return to Home altitude, maximum altitude, distance limit, advanced settings, etc.

 : Spraying System Settings — Includes nozzle model, flow, air detector calibration, spraying system data display.

 : Radar Settings — Includes altitude stabilization, prediction (should be disabled if an altitude prediction radar module is not in use), terrain mode, and obstacle avoidance (should be disabled if an obstacle avoidance radar is not in use).

 : RC Settings — Includes RC calibration, stick mode, RC custom key and linking.

 : Aircraft Battery — Includes Low Battery Warning, battery information, etc.

... : General Settings — Includes map settings, flight route display, etc.

9. Map Mode

 : Tap to switch among Standard, Satellite, or Night modes.

10. Location Follow

 : Tap to center the map around the aircraft's location at all times, following its location update.

11. Location

 : Tap to center the map around the aircraft's location or the latest recorded Home Point.

12. Clear Screen

 : Tap to clear the flight path currently shown on the map.

13. Map Zoom In/Out

 : Tap to show the slider, and then slide it to zoom in or out.

14. Operation Control Buttons

Buttons to control during different operation types, including measure an operation area, use, perform, pause, or end an operation, etc.

15. Flight Parameters

 H : When the altitude stabilization function of the radar module is enabled, shows the preset height between the aircraft and the object underneath it.

 : Horizontal distance from the aircraft to the Home Point.

V.S : Movement speed across a vertical distance.

H.S : Movement speed across a horizontal distance.

F : Pesticide flow rate.

16. Operation Mode Switch Button

M / M⁺ / AB : Tap to switch between Manual (M), Manual Plus (M+), and A-B Route (AB) operation modes.

17. Operation List / Point A/B

 : Operation List — Icon displayed in M operation mode. Tap to view the planned fields and operations in progress and use operations.

 : Point A/B — Icon displayed in AB operation mode. Tap to record Point A or B. The color of the icon will change from grey to purple to indicate successful recording. Tap  to clear the recorded Point A and B.

Flight

Operation Environment

1. DO NOT use the aircraft in adverse weather conditions, such as heavy rain, high winds, fog, snow, lightning, tornadoes, or hurricanes.
2. Only fly in open areas. Tall buildings and steel structures may affect the accuracy of the compass and the GNSS signal.
3. Maintain line of sight of the aircraft at all times, and avoid flying near obstacles, crowds, animals, trees, and bodies of water.
4. Avoid flying in areas with high levels of electromagnetism, including mobile phone base stations and radio transmission towers.
5. Ensure that there is a strong GNSS signal in the Smart or Manual Plus operation mode or F-mode.
6. DO NOT operate the aircraft indoors.
7. The system cannot operate in P-mode within the earth's polar regions.

Flight Limits and No-Fly Zones

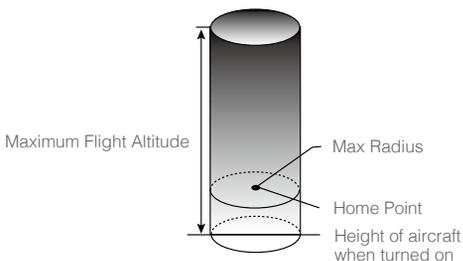
Users can set flight limits on height and distance.

Unmanned aerial vehicle (UAV) operators should abide by the regulations from self-regulatory organizations such as the International Civil Aviation Organization, the Federal Aviation Administration, and their local aviation authorities. For safety reasons, flight limits are enabled by default to help users operate this aircraft safely and legally.

When operating in P or F-mode, the height and distance limits and no-fly zones work together to monitor flight. In A-mode, only the height limit prevents the aircraft from going above 50 meters.

Maximum Height and Radius Limits

Users can change the maximum height and radius limits in DJI Assistant 2 for MG or the DJI MG app. Once complete, your aircraft will fly in a restricted cylinder that is determined by these settings. The tables below show the details of these limits.



P-mode (with strong GNSS signal)

Flight Limits

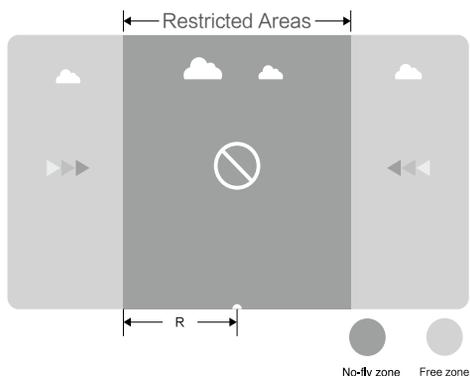
Max Height	Flight altitude must be below the preset height.
Max Radius	Flight distance must be within the max radius.

A-mode or P-mode (with weak GNSS signal)	
Flight Limits	
Max Height	Flight altitude must be below the preset height.
Max Radius	No limits.

- ⚠ If you fly into a no-fly zone, you can still control the aircraft, but cannot fly it further.
- If the aircraft loses GNSS signal or is in A-mode and flies out of the max radius but regains GNSS signal or the flight mode is switched from A-mode to P-mode (with strong GNSS signal) afterwards, it will fly back within range automatically.

No-Fly Zones

Detailed no-fly zones are listed on the DJI official website at <http://flysafe.dji.com/no-fly>. No-fly zones are divided into airports and restricted areas. Airports include major airports and flying fields where manned aircraft operate at low altitudes. Restricted areas include borders between countries or sensitive sites. The details of the no-fly zones are explained below (GNSS required): R mi around the restricted area (depending on the regulation) is a no-fly zone, inside which takeoff and flight are prohibited.



P-mode (with strong GNSS signal)		
Zone	Restriction	Aircraft Status Indicator
No-Fly Zone ●	Motors will not start. If the aircraft loses GNSS signal or is in A-mode and enters the restricted area but regains GNSS signal or the flight mode is switched from A-mode to P-mode (with strong GNSS signal) afterwards, the aircraft will enter semi-automatic descent and land.	Blinking Red 
Free Zone ●	No flight restrictions.	None.

 **Semi-Automatic Descent:** All stick commands except the throttle stick command are available during descent and landing. Motors will automatically stop after landing.

-  • When operating in no-fly zones, the Flight Status Indicator will blink red slowly and continue for 5 seconds, then switch to indicate the current flying status and continue for 12 seconds, at which point it will switch back to blinking red slowly.
- For safety reasons, DO NOT fly near airports, highways, railway stations, railway lines, city centers, or other busy areas. Ensure the aircraft is visible at all times.

Pre-Flight Checklist

Mounting and Components Checklist

1. Ensure that all parts are mounted correctly and firmly.
2. Ensure that the ESCs and receiver are connected correctly and firmly.
3. Ensure that the spraying hoses are without any blockage.
4. Test if the nozzles work normally.

LED Status Checklist

1. Ensure that the mode switch corresponds to the flight status LED.
2. System status LEDs on the GNSS-Compass / GPS-Compass Pro are normal.
3. Ensure that all the sensor parameters are correct and the IMUs are calibrated correctly.

DJI Assistant 2 for MG Checklist

1. Ensure that the aircraft mounting parameters are correct.
2. Ensure that the flight controller parameters are correct.
3. Low voltage level protection and Failsafe protection are set correctly.

Compass Calibration

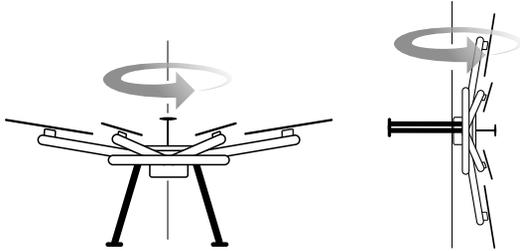
Ensure the compass is calibrated before every flight. Failure to calibrate may lead to poor flight performance or a crash.

1. DO NOT attempt to calibrate your compass where there is a chance of strong magnetic interference. This includes areas where there are massive metal objects, parking structures, steel reinforcements underground, or under bridges.
2. DO NOT carry ferromagnetic materials with you during calibration, such as keys or mobile phones.
3. The compass should always be calibrated when moving from indoor spaces to outdoor spaces.
4. After successful calibration, the compass may become abnormal when you place the aircraft on the ground. This may be because of underground magnetic interference. Move the aircraft to another location and try again.

Calibration Procedures

Choose an open space to carry out the following procedures.

1. Go to the app and tap Execute Operation to enter Operation View. Tap the System Status Bar at the top of the screen and select Calibration in the Aircraft Status List, then follow the on-screen instructions.
2. Hold the aircraft horizontally and rotate it 360 degrees around a vertical axis until the Aircraft Status Indicators change to solid green and the display goes to the next step in the app.
3. Hold the aircraft vertically, with its nose pointing upward, and rotate it 360 degrees around a vertical axis.



4. The Flight Status Indicator shows the current flight mode and the calibration page disappears in the app when calibration is complete. If the Flight Status Indicator blinks red or a calibration failure is displayed in the app, repeat the steps above to calibrate the compass.

When to Recalibrate

1. Compass data is abnormal, and the Flight Status Indicator is alternately blinking red and yellow.
2. Flying in a new location, or a location that is different from your last flight.
3. The mechanical structure of the aircraft has changed.
4. Severe drifting occurs in flight (e.g., the aircraft has difficulty flying in a straight line).

Calibrating the Spraying System

Be sure to calibrate the spraying system before your first spray operation, or else it will adversely affect spraying performance. Use the included measuring cup to ensure accuracy. Calibration takes around 6 to 14 minutes.

1. Preparation before calibration: If there are any bubbles in the hoses, discharge them before calibrating. If there are no bubbles proceed directly to calibration.
 - ① Fill the spray tank with about 2 L of water.
 - ② Power on the remote controller and the aircraft.
 - ③ Loosen the four manual relief valves on the side of the sprinklers and press the Spray button on the remote controller until the bubbles in the hoses have been fully discharged.* Tighten the valves and press the Spray button to stop spraying.

* If the bubbles have still not been fully discharged after a long period of time, rotate the valve cover and remove it, then re-mount the cover once the bubbles have been fully discharged.

2. Spraying System Calibration

① Liquid indicator calibration

Pour about 1 L of water into the spray tank. In the DJI MG app go to Operation View > ●●● > ⓧ, then tap Calibrate in Flow IMU settings.

Select Nozzle Model, select the correct model in the list (it is recommended to use the listed models), then tap Start Calibration. The aircraft will spray automatically, then when ready the app will indicate that the aircraft is ready for left pump calibration.

3. Discharge any bubbles in the hoses using the same procedure as used when preparing for calibration.

⚠: During calibration, tap ●●● > ⓧ to cancel. The accuracy of the flow meter will be the data before calibration.

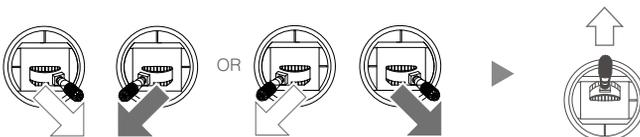
When to Recalibrate

1. Installing a different nozzle model. Note: choose the corresponding model in the DJI MG app after replacing nozzles. Go to Operation View > ●●● > ⓧ for configuration.
2. Using a liquid of a different viscosity.
3. The error between the actual value and the theoretical value of the completed area is more than 15%.

Flight Control

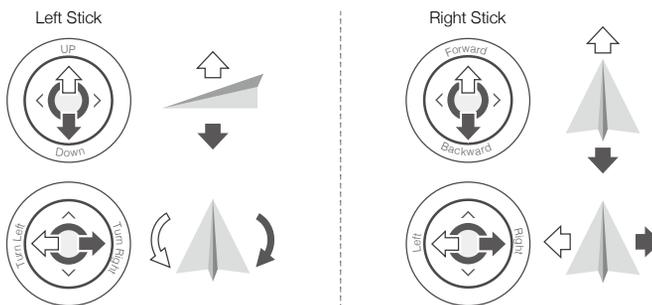
Manual Take-off

Start the motors by pulling both control sticks to the bottom inside (or outside) corners. Release the sticks once the motors start. Slowly push the left stick (throttle stick) up to takeoff.



Remote Controller Operation

Here are the default flight controls (Mode 2). The left stick controls altitude and rotation, while the right stick controls the forward, backward, left or right movements.



☀️ • You can customize or change these controls through the DJI MG app.

Manual Landing

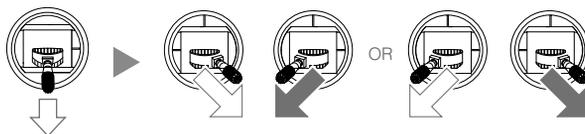
Use the below method to stop the motors:

When the aircraft has landed, push the throttle down and hold. The motors will stop after 3 seconds.



You can use the below method to stop the motors in the event of an emergency.

When the aircraft has landed, push the throttle down, then perform the CSC (Control Stick Combination). The motors will stop immediately. Release both sticks once the motors have stopped.



DJI Assistant 2 for MG

Configure settings of the remote controller and flying parameters, copy flight records, and update firmware in DJI Assistant 2 for MG.

Dashboard

Check all basic settings on this page. Click the blue hyperlinks for detailed settings.

Basic Settings

Airframes

Select the type of your airframe.

Mounting

Set IMU direction and GPS position. Please note the positive direction of the axis and the unit (mm).

Remote Controller

Enable multiple flight modes switch, adjust dead zone, control EXP, and calibrate the remote controller, etc.

ESC Settings

Choose ESC type, motor start method, test motors and calibrate ESC. The motor will rotate at full throttle during ESC calibration. Make sure to remove the propellers before ESC calibration.

Flight Settings

Propulsion Configuration

Set basic gain and propulsion system bandwidth.

Gain

Set advanced gain, horizontal velocity gain, sensitivity gain, control performance parameters, and brake sensitivity.

Battery

Configure the threshold and the aircraft actions of low battery warnings.

Failsafe Settings

Select the Failsafe action of the aircraft between hover and RTH, set RTH altitude (not beyond the maximum altitude) and the aircraft's heading during RTH.

Flight Restriction

Set the maximum altitude (up to 30 m). Enable or disable distance limit and set the value (up to 2000 m).

Tools

Topology

View system status and error information. Click the flight controller icon to enter IMU calibration. View and calibrate IMU status.

Flight Data

Enter SD card mode and copy the flight data.

Backup

Flight controller parameters backup and recovery. Only parameters in products of the same type and firmware can be supported for backup and recovery.

Firmware Update

A DJI account is required for firmware updates. Login with your DJI account or register for one.

Radar

Shows radar module information such as software version, hardware ID, loader.

Appendix

Specifications

N3-AG 2.0 / A3-AG 2.0

Built-in Functions	N3-AG 2.0	A3-NG 2.0
Flight Modes	A-mode (Attitude) P-mode (Positioning)	
Operation Modes	Route A-B Route Manual Manual Plus	
Return to Home (RTH)	Failsafe RTH Smart RTH Low voltage RTH	
Safety Features	Failsafe mode Low battery voltage warning Custom flight altitude and radius limits No Fly Zones Motor redundancy (for 6 and 8 rotor platforms) Motor overload detection	
Supported DJI Equipment	DJI aerial platforms (e.g. S900, S1000, S1000+) DJI iOSD Mark II, DJI iOSD mini	
Peripheral		
Supported Airframes	4-rotor: I4, X4 6-rotor: I6, V6, Y6, IY6 8-rotor: X8, I8, V8, IX8	
Supported ESC output	400 Hz refresh frequency	
Supported Receivers	DJI Datalink 3	
Recommended Batteries	3S-12S LiPo battery	
Required Operation System for DJI Assistant 2	Windows 7 or later Mac OS X 10.11 or later	
Expansion Ports	F1-F4 ports for output F5-F8 ports for I/O (supported later)	
Electrical & Mechanical		
Rated Power	3.3 W	5 W
Rated Peak Power	4.8 W	8 W
Input Voltage Range	10.5 – 52 V	
Static Electricity	AD: ±8 kV CD: ±4 kV	
Operating Temperature	14° to 113° F (-10° to 45° C)	

Weight	Flight Controller: 46 g	Flight Controller: 66 g
	GNSS-Compass: 37 g	GPS-Compass Pro: 60 g
Dimensions	LED Module: 13 g	LED Module: 15 g
	PMU: 36 g	PMU: 45 g
	Flight Controller: 58 mm × 39 mm × 17 mm	Flight Controller: 64 mm × 42 mm × 19.5 mm
	GNSS-Compass: 50 mm (diameter) × 12.2 mm	GNSS-Compass Pro: 61 mm (diameter) × 13 mm
	LED Module: 25 mm × 25 mm × 6.3 mm	LED Module: 25 mm × 25 mm × 6.3 mm
	PMU: 40 mm × 28.5 mm × 11.2 mm	PMU: 51 mm × 34 mm × 13.5 mm
	Positioning Performance	
GNSS-Compass / GNSS-Compass Pro	Vertical: 0.5 m; Horizontal: 1.5 m	
D-RTK GNSS	Vertical: 0.02 m + 1 ppm; Horizontal: 0.01 m + 1 ppm	

Agriculture Management Unit II (AMU II)

Dimensions	133.4 mm × 99.4 mm × 22 mm
Input Voltage	12S (50 V)
Input Current	5 A
Operating Temperature	32° to 104° F (0° to 40° C)

Radar Module

Stabilization Working Range	1.5 - 10 m (varies when flying above different kinds of vegetation)
Detection Accuracy	< 10 cm

High-Precision Obstacle Avoidance Radar

Gimbal	Controllable Range: -135° to +135°
	Stabilization System: Single axis (pitch)
Sensing Range	1.5 - 30 m
FOV	Horizontal: 50°; Vertical: 10°
Measuring Frequency	170 Hz
Power Consumption	5 W
Operating Frequency	24.050 GHz to 24.250 GHz
EIRP	19 dBm
Operating Environment	Flat farmland
Operating Conditions	Flying higher than 0.8 m over the obstacle
Speed Range for Obstacle	Lower than 5 m/s at altitudes lower than 2 m
Avoidance	Lower than 7 m/s at altitudes higher than 2 m
Stable Hover Distance	Approx. 6 m away from the obstacles in front
Obstacle Avoidance Direction	Forward or backward according to the flying direction

Water Pump

Operating Voltage	15 V
Operating Current	0 - 2 A
Max Power	30 W
Max Pressure	0.4 MPa
Dimensions	79 mm × 65 mm × 64 mm
Outlet	Inner Diameter: 4.2 mm; Thread: G1/8

Flight Status Indicator Descriptions

LED	Description
	Blinking Red, Green and Yellow Alternately The system is running a diagnostic test.
 × 4	Blinking Yellow Four Times The system is warming up.
	Blinking Green Slowly P-mode (Positioning)
	Blinking Yellow Slowly A-mode (Attitude)
	Blinking Green Rapidly for 1.5 seconds Home Point is set successfully
	Blinking Yellow Rapidly Remote controller signal lost
 × 3	Blinking Yellow Three Times Airframe vibration is abnormal, or yaw axis control is abnormal (for example, the motor is not properly installed, etc.), or the center of gravity offset is too large (roll / pitch axis offset is large)
	Blinking Red Slowly Low voltage warning
	Blinking Red Rapidly Critically low voltage warning
	Blinking Red Very Slowly for 5 seconds The aircraft is in a no-fly zone.
	Blinking Red Rapidly for 0.6 second when performing CSC Large IMU bias or IMU initialization
 —	Solid Red Critical error. Please contact with DJI Support.
	Blinking Red and Yellow Alternately Compass calibration required

FAQ

1. The flight controller cannot connect to DJI Assistant 2 for MG.
 - a. Check if the driver and software are successfully installed.
 - b. Check if the flight controller has been connected to a power supply.
 - c. Replace the Micro USB cable or connect to another USB port on the computer.
2. How to update the flight controller firmware?

Using a Micro USB cable, connect the computer to the LED module which is already connected to the flight controller. Update the firmware in DJI Assistant 2 for MG.
3. How to adjust the gain value?

Using a Micro USB cable, connect the computer to the LED module which is already connected to the flight controller. Adjust the gain value in DJI Assistant 2 for MG.
4. Can the air system and remote controller in this kit be replaced by the DJI Datalink 3 Air System and Ground System purchased on the official DJI website?

No. If required, replace the two modules with the one in this kit.
5. The pump does not work properly.
 - a. Check if the pump is open.
 - b. Check if the spray button on the remote controller is in good condition.
 - c. Check if the ESC signal cable of the pump is securely connected. Also, check if other related components are securely connected.
6. The aircraft rolls over after takeoff.
 - a. Check if the flight controller installation direction is correct.
 - b. Check if the motors and propellers rotating direction are correct.
 - c. Check if the connection between the ESC signal cables and the flight controller are correct.
 - d. Check if ESC throttle range calibration is required (for third-party ESCs).
7. When the obstacle avoidance radar detects obstacles, how far away will the aircraft hover from the obstacles?
 - a. If obstacles are detected more than 6 m away from the aircraft during flight, it will slow down and hover in place about 6 m away from the obstacle.
 - b. If obstacles are detected within 6 m from the aircraft during flight, the aircraft will immediately brake and hover in place. Braking distance is required when stopping mid-flight. Observe the distance between an obstacle and the aircraft at all times. If necessary, fly in a different direction than the obstacle to avoid a collision.
8. Is the DJI Lightbridge system supported?

No.
9. Is the MG Spreading System supported?

Yes.

10. Is a third-party liquid indicator supported?

It is supported if the level of the liquid level meter is 3.3 V. To ensure stability, however, it is not recommended to use a third-party liquid level meter.

DJI Support

<http://www.dji.com/support>

This content is subject to change.

Download the latest version from

<http://www.dji.com/agriculture-solution-v2>

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

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