GOUAV
INNOVATIVE FLYING SOLUTIONS

MicaSense®

RedEdge-MX™
Dual Camera System
INTEGRATION GUIDE

Rev 02 - December 2019

P/N: 200-00038-01

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Thank you for your purchase!

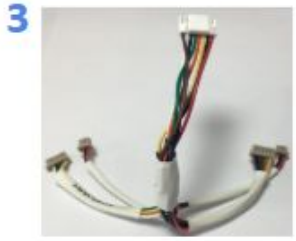
These instructions show how to integrate the MicaSense RedEdge-MX and RedEdge-MX Blue with a DJI M100/M200 Series/M600 series drones. It covers attaching mounting brackets included in the kit, powering the camera from the host system, and placement of the Downwelling Light Sensor (DLS 2) unit.

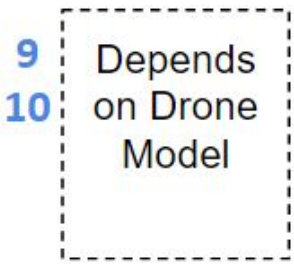
Warning: This kit is not intended for any other RedEdge models other than the RedEdge-M/MX. Damage will occur if any other RedEdge model is connected.

Both the RedEdge-MX and RedEdge-MX Blue need to be updated to the latest firmware. The system will not operate if the firmware versions do not match. You can find the latest firmware available at https://www.micasense.com/firmware-updates

What's needed for the integration?

1. Dual Camera System Mount (Qty 1)
2. 6-pin 60cm cable (Qty 2)
3. Dual Camera System Cable (Qty 2)
4. M3 X 10mm black-oxide Screws (Qty 6)
5. M3 Flat Nylon Washers (6)
6. M3 Lock Washers (Qty 6)
7. Loctite threadlocker (Qty 1)
8. Zip Ties (Qty 5)
9. DLS 2 mounting screws (Varies depending on drone model)
10. DLS 2 Mounting plate (Qty 1) (Varies depending on Drone model)





Notes: Kit content may differ as hardware may already be installed.
Dual camera configuration requires the use of a DLS 2; a RedEdge-M can be used, but an upgrade to the DLS 2 is required for software compatibility and support.
DJI Z30 adapter is needed for this kit to be compatible with the Matrice 100 and 600 Series drones. (not provided by MicaSense).

What's Required?

- #1 Phillips Screwdriver
- Cutting tool - such as scissors or diagonal cutter
- 1.5 mm hex wrench
- 2 mm hex wrench
- 2.5 mm hex wrench

Notes: Tools included in your kit may vary depending on drone model selected when kit was purchased.

Let's get started!

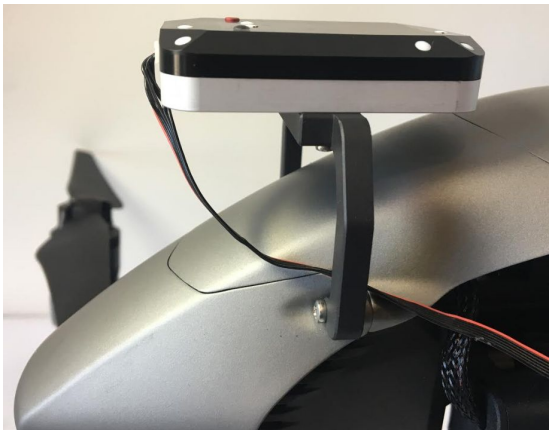
Warning: Installation of this kit into a drone should be done by an experienced person, in adherence with all recommendations and guidelines of the drone manufacturer. Before assembling this kit, ensure the drone is not powered, has the battery removed, and the rotor blades removed. Failure to follow these instructions can result in injury, death and/or damage to the drone, or RedEdge-M/MX/MX Blue sensors.
MicaSense recommends checking all fasteners periodically and tighten as needed.

Both the RedEdge-MX and RedEdge-MX Blue need to be updated to the latest firmware. The system will not operate if the firmware versions do not match. You can find the latest firmware available at https://www.micasense.com/firmware-updates

Attaching DLS 2 mast assembly

Attaching DLS2 mast to an Inspire 2

1. Mount the DLS 2 unit on top of the mast using the provided M2 X 8 (Qty 2) screws.
2. Using the appropriate Allen key, remove the two M2.5 screws from the drone to install DLS2 mounting plate (see image below)
3. Secure the mast to the top of the Inspire 2 using the provided M2.5 X 16 (Qty 2) screws making sure the DLS 2 connector is oriented toward the front of the drone.
4. Use zip ties to secure any loose wires.



DLS 2 mounted on Inspire 2

Warning: Failure to properly secure loose wires may lead to interference with the aircraft propellers. This may damage the Inspire, RedEdge-MX/Altum, or both.

Attaching DLS2 mast to a M100 or M600 series

1. Locate and remove the DJI mast kit from its packaging.
2. There are three carbon rod sizes. Choose the longest and insert it into the base mount.
3. Secure the base mount with the included M2 screw.
4. Place the top cap on the other side of the carbon rod.
5. Secure the top cap on the rod by screwing the M2 screw.
6. Screw in the base of the mast assembly into the aircraft frame using the provided M2.5 screws and mating cap.
7. Secure the DLS2 mounting disc to the mast using the provided M2.5 x 4mm screws.
8. Mount the DLS2 to the DLS2 mounting disc using the provided M2 x 6mm screws.
9. Ensure the DLS 2 connector is oriented toward the front of the drone.

10. Use zip ties to secure any loose wires.

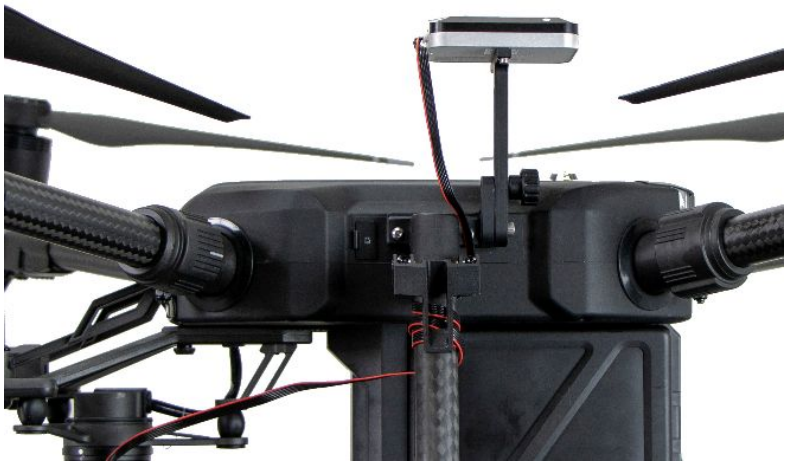
DLS2 Mounted on Matrice 100

DLS2 Mounted on a Matrice 600Pro

Warning: Failure to properly secure loose wires may lead to interference with the aircraft propellers. This may damage the Matrice, RedEdge-MX/Altum, or both.

Attaching DLS2 mast to a M200 series

1. Remove the left side drone leg holder. The mount should only be installed on the left side of the aircraft.
2. Align the DLS2 mounting bracket behind the leg holder and re-attach the leg holder and the bracket to the drone using the provided M3, 8 mm BHC Screws (Qty 3) and applying loctite to the threads.
3. Mount the DLS 2 unit on top of the mast using the provided M2 X 8 (Qty 2) screws and the M2 lock washer (Qty 2). Make sure the DLS2 connector is oriented toward the front of the drone.



Showing DLS2 mast mounted on M200 with DLS2 connector facing forward and DLS2 mount on the left side of the drone (if looking from above)

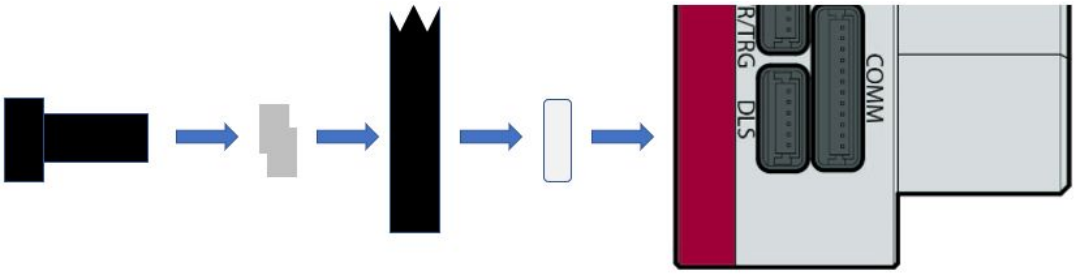
IMPORTANT: The mount should only be installed on the left side of the aircraft. Do not install the mast on the right side of the aircraft as the propeller may pass too close to the mast causing instability of the DLS2 or contact with the mast.

Warning: Failure to properly secure loose wires may lead to interference with the aircraft propellers. This may damage the Matrice, RedEdge-MX/Altum, or both.

Attaching the RedEdge-MX, RedEdge-MX Blue and the Dual Camera Mount

Note: Dual configuration requires the use of a DLS 2; a RedEdge-M can be used, but an upgrade to the DLS 2 is required for software compatibility and support.

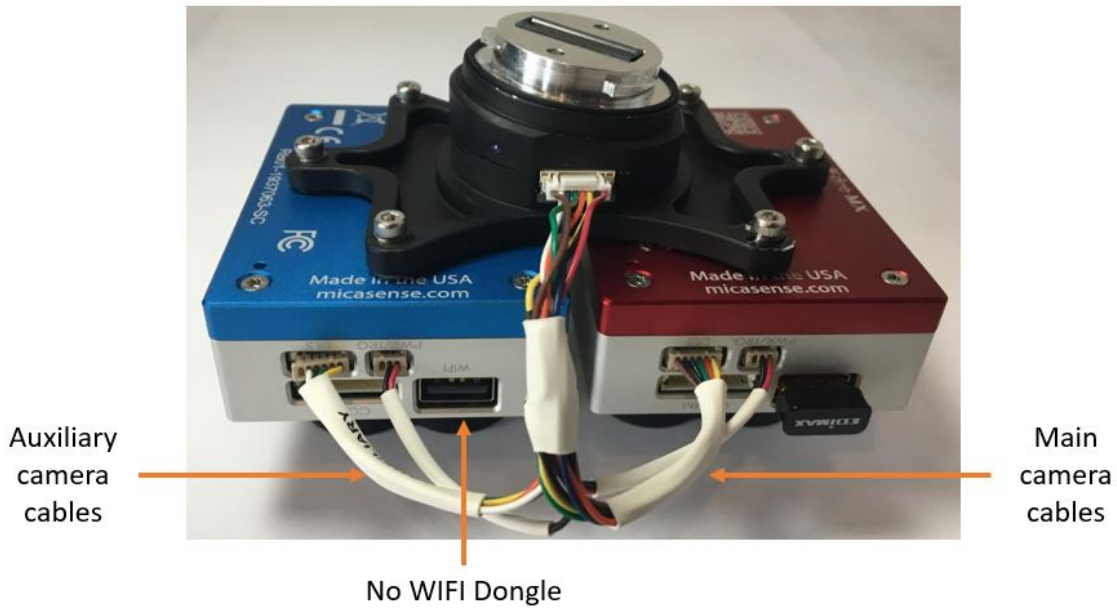
1. Locate the M3 x 10 mm black-oxide screws, M3 lock washers, M3 flat nylon washers, and Dual Camera Mount.
2. Using the screw holes, attach the mount to the back of both the RedEdge-MX and the RedEdge-MX Blue. Make sure the mount's 8-pin camera port is located on the same side as the cameras "PWR/TRG" ports. Add a drop of loctite to the threads of the screws. The order of the components is:



Black-oxide screw → Lock Washer → Dual Cam Mount → Nylon Flat Washer → Camera

3. The RedEdge-MX (Red camera) should be in the front of the dual camera mount when the system is properly installed. Also, only one WIFI dongle should be installed in the Red camera and not in the Blue camera. The extra WIFI dongle should only be used for advanced configurations.

4. Connect the provided Dual Camera System cable to connect the "PWR/TRG" and "DLS" ports on both cameras. The RedEdge-MX (Red camera) should be the Main camera in the configuration. Connect the Main cables and connectors to and the RedEdge-MX and the Auxiliary cables and connectors to the RedEdge-MX Blue camera.

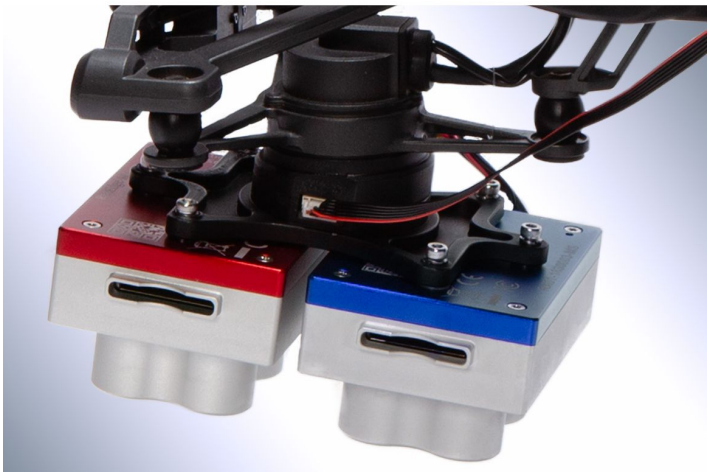


Connection between Dual Camera System Mount, RedEdge-MX and RedEdge-MX Blue

Attaching the Dual Camera System and DLS 2 to the drone

Once assembled, the Dual Camera Mount can quickly and easily be installed or removed from the drone. Power is provided by the drone via the Dual Camera Mount.

1. Attach the assembled Dual Camera Mount (with connected RedEdge-MX/M and RedEdge-MX Blue) to the drone using the DJI lock mechanism on the drone.
2. Use the provided 6-pin 60cm cable to connect the DLS2 and the camera sensors. Plug the DLS 2 cable from the DLS 2 port to the Dual Camera Mount "6-pin DLS" port.
3. When attached, the cameras will be tilted forward slightly to compensate for the tilt of the aircraft while flying.



Fully connected Dual Camera Configuration on a DJI M200

Warning: Failure to properly secure loose wires may lead to interference with the aircraft propellers. This may damage the Inspire, RedEdge-MX/Altum, or both.

Support

For other RedEdge-MX or Altum associated integration guides, please visit our Knowledge Base at support.micasense.com

For additional questions, please contact support@micasense.com

MicaSense RedEdge-MX & RedEdge-MX Blue Dual Camera Integration Instructions.

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It’s simple to plan a successful mission

FLY

The MicaSense sensors low weight, low power requirements, and ability to capture RGB and narrowband spectral bands simultaneously means you can gather the data you need in fewer flights. Have multiple UAVs? MicaSense sensors quickly integrate with many different drone platforms.

PROCESS

With MicaSense sensors, you own your data. You’re not limited to a particular processing platform. You can choose whichever platform is best for you, your customer, or your project.

ANYWHERE

We know you need tools you can rely on. That’s why we built the sensors we wanted in the field—predictable, tough, and reliable—so you can gather the data you need when you need it.

ANALYZE

RedEdge-MX and RedEdge-MX Blue have 10 distinct bands that our research showed were optimal for sensing. It simply shows you more. And with analytics applications you can see many different analytical layers and compare these outputs across time.

SIGN UP

Visit atlas.micasense.com to create your free MicaSense Atlas account.

DOWNLOAD

Download MicaSense Sensor user manuals, integration guides and support resources via your Atlas account.

CONTACT

Support@micasense.com US-based MicaSense support is here to help.

MicaSense®

Located in Seattle, Washington, MicaSense delivers integrated solutions for data gathering, processing, and analytics across the global agriculture market. With decades of expertise in widely varied UAV applications, the MicaSense team is redefining remote sensing technology and pioneering new ways to collect and analyze information.

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Revision History

Revision	Description	Date
01	Initial Release	15 October 2019
02	Added warnings and updated title	06 December 2019