RedEdge-M/MX™
OEM Dual Camera Kit
INTEGRATION GUIDE

Note: This kit is intended as an aid for custom integrations. It provides power, communication, and ensures that the cameras are properly spaced for accurate data collection. It does NOT provide a solution to attach the mount to the drone itself nor does it provide a DLS2 mounting solution.

Rev 01 - March 2020

P/N: 900-00020

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Thank you for your purchase!

These instructions show how to use the OEM Dual Camera Kit to help integrate MicaSense RedEdge-M, RedEdge-MX and RedEdge-MX Blue on non-DJI drones or unique integrations. It covers attaching mounting brackets included in the kit and guidelines for custom integrating the DLS2.

NOTE: This kit does NOT provide a means of attaching the OEM Dual Camera Kit to the drone. This kit is intended to provide power, communication, and to ensure that the cameras are properly spaced for accurate data collection.

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-M/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 at: https://www.micasense.com/firmware-updates

What's needed for the integration?

1. OEM Dual Camera Mount (Qty 1)
2. 6-pin 60cm cable (Qty 2)
3. Dual Camera System Cable (Qty 2)
4. 2-prong mount (Qty 1)
5. Circuit Board w/ heat shrink (Qty 1)
6. VHB tape (Qty 3)
7. M3 X 10mm black-oxide Screws (Qty 6)
8. M2 X 8mm Screws (Qty 2)
9. M3 Lock Washers (Qty 6)
10. Hex Key 2.5mm (Qty 1)
11. Loctite threadlocker (Qty 1)
12. Zip Ties (Qty 6)
13. 2-pin DF-13 power cable (Qty 1)
14. Alcohol Wipe (Qty 1)

Images shown are not to scale

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.

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 the 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 tightening 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

Custom mounting DLS 2 guidelines

The OEM Dual Camera Kit does not come with a DLS2 mounting solution, however the general DLS2 mounting guidelines should be followed when integrating the DLS2 sensor. These guidelines can be found in the DLS2 Integration Guide on the MicaSense Knowledge Base.

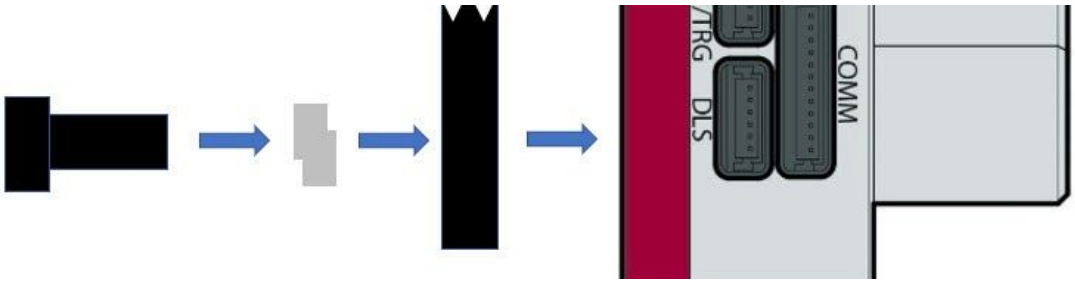
The DLS 2 should always be the highest object on the aircraft in order to avoid shadows or reflections. It contains an integrated GPS receiver that may be utilized for geotagging of the MicaSense sensor imagery if system GPS signals are not provided to the sensor by other means. Install the module where it will have a clear view of the sky, far away from any devices that could cause interference (such as a data link or video transmitters).

When the DLS 2 starts up, the sensor attempts to calibrate which requires it to be still and motionless. Ensure that there is no vibration or movement until the DLS 2 has completed this procedure, indicated by normal LED status lights (shown in the User Guide).

Attaching the RedEdge-M/MX, RedEdge-MX Blue and the OEM 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.

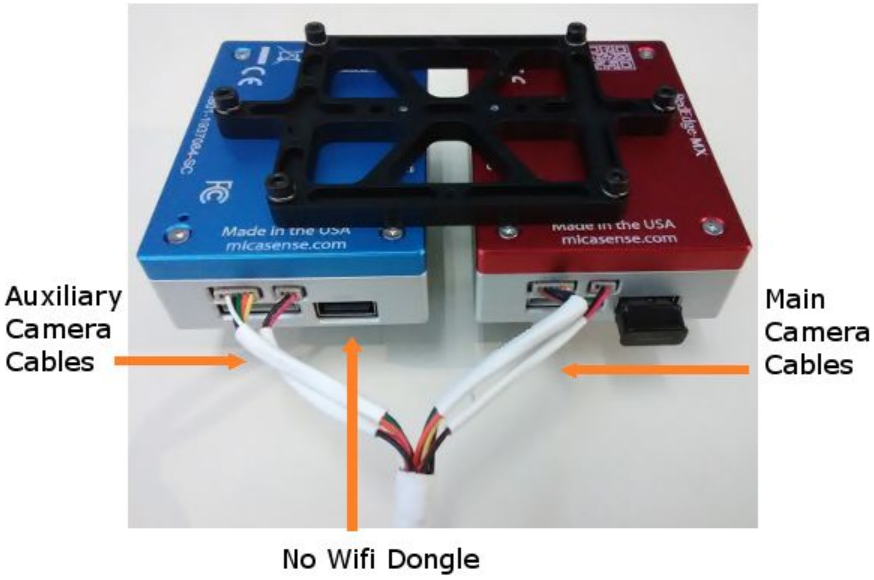
1. Locate the M3 x 10 mm black-oxide screws, M3 lock washers, and OEM Dual Camera Mount.
2. Using the screw holes, attach the mount to the back of both the RedEdge-MX and the RedEdge-MX Blue. Add a drop of loctite to the threads of the screws. The order of the components is:



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

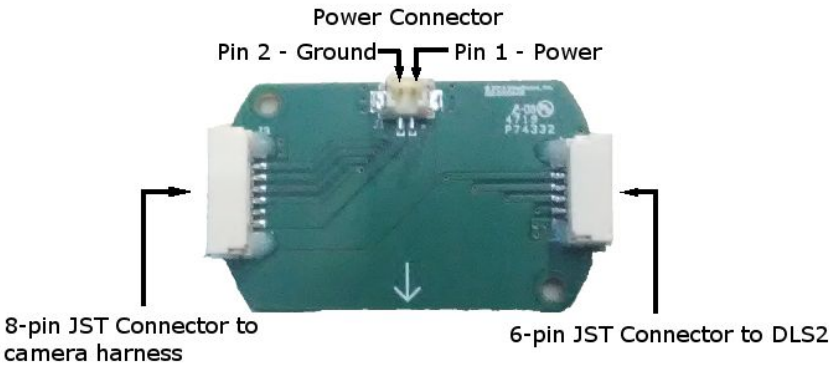
3. The RedEdge-MX (Red camera) should be in the front of the dual camera mount when the system is properly installed. Also, only one WIFI dongle should be installed in the Red camera and not in the Blue camera. The extra WIFI dongle should only be used for advanced configurations.

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



Connection between OEM Dual Camera Kit Mount, RedEdge-M/MX and RedEdge-MX Blue

5. Connect the 8-pin JST connector on the Dual Camera cable to the 8-pin JST connector on the circuit board.
6. Connect the 2-pin DF-13 cable to the circuit board. Use this cable to power the Dual Camera Kit by attaching to a power source. RedEdge-MX requires 5.0 volts DC for operation, with a maximum operating voltage of 15.8V. The supply must be able to provide 10W (2A@5V) peak. RedEdge-MX powering guidelines are outlined in the "How do I power the RedEdge-M/MX" article.



Circuit board diagram and pinout for power

7. Double-sided VHB tape is included in the kit as an option to help secure the circuit board in place on a custom integration.

Attaching the Dual Camera Kit and DLS 2 to the drone

This kit is intended as an aid for custom integrations. It provides power, communication, and ensures that the cameras are properly spaced for accurate data collection. It does NOT provide a solution to attach the mount to the drone itself nor does it provide a DLS2 mounting solution.

1. As noted above, this kit provides a mount to hold both RedEdge-M/MX and RedEdge-MX Blue cameras and to allow communication between all components, but the means for attaching the mount to the drone is up to the customer. Included in the kit is a 2-prong Go-Pro mount adapter, if you are looking to integrate with a Go-Pro mount.
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 6-pin JST port on the circuit board.
3. When attached, the cameras should be tilted forward slightly to compensate for the tilt of the aircraft while flying.

Warning: Failure to properly secure loose wires may lead to interference with the aircraft propellers. This may damage the drone, 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-M/MX & RedEdge-MX Blue OEM 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.

RedEdge-M/MX & RedEdge-MX Blue OEM Dual Camera Integration Guide Rev 01 – March 2020
P/N: 900-00020

Revision History

Revision	Description	Date
01	Initial Release	19 March 2020