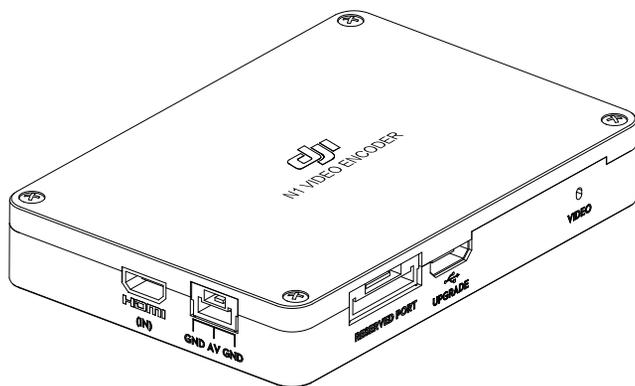# N1 Video Encoder
User Manual

V1.0   2015.8

dji

Disclaimer

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Product Profile

The N1 Video Encoder is intended for the DJI Matrice 100 (abbreviated as M100) and DJI N1 Flight Controller, for which it offers video signal transmission and firmware upgrade capabilities if you are not using the Zenmuse X3 Gimbal with Camera as your recording device.

The AV or HDMI port on the encoder receives video input from the non-DJI camera to generate a live HD video feed in the DJI GO app. In addition, users may utilise the Micro USB port on the encoder to upgrade the firmware of various modules on the M100.

In the Box

N1 Video Encoder ×1

AV Cable ×1

Upgrade Cable ×1

Power Cable ×1
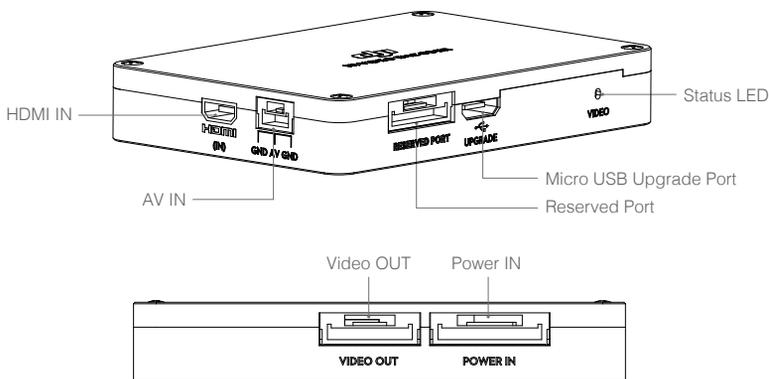
Video Cable ×1

Reserved Cable ×1

Overview

HDMI IN

Status LED

AV IN

Micro USB Upgrade Port

Reserved Port

Video OUT   Power IN

⚠ • DO NOT connect the power cable to the reserved port. This will cause serious damage to both the flight controller and the N1 Video Encoder.
• The video and power cables are delicate parts. Handle with care.

You will require a 2.0mm hex key and foam tape to install the N1 Video Encoder onto the M100. If you are using HDMI IN, prepare an HDMI cable. If you are using AV IN, prepare a soldering iron, some solder and heat shrink tubing for wiring.

Installation

1. Remove the two screws (M3x8 self-tapping) on the Aircraft Status Indicator, and then detach it from the upper plate gently to avoid damaging the cable.

⚠ Handle the indicator cable gently

Aircraft Status Indicator
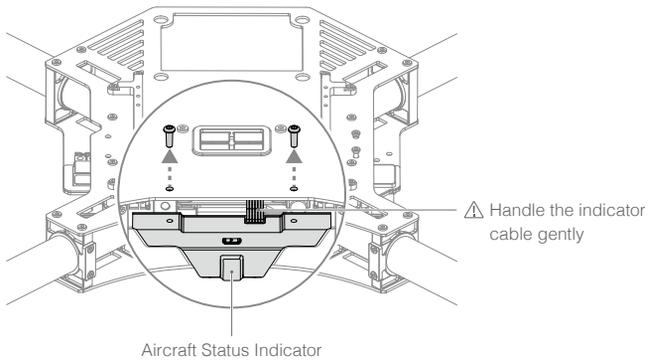
2. Remove the 16 screws (M2.5x5) on the upper plate of the center frame, and the eight screws (M2.5x8) on the mounting rails. Then remove the mounting rails and the upper plate.


M2.5x8

M2.5x5
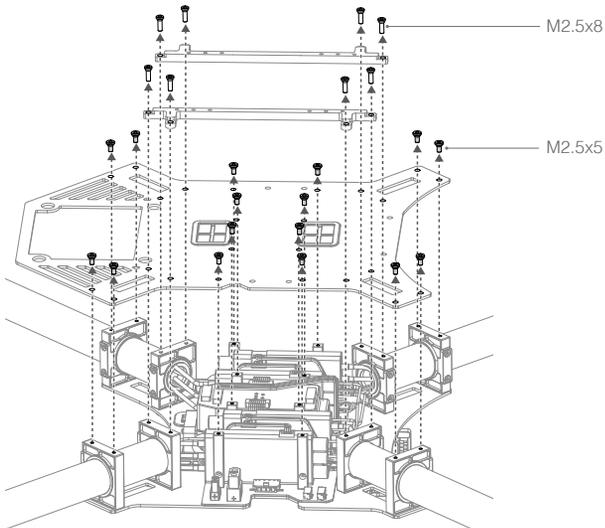
3. Connect one end of the N1 Video Encoder's video and power cables to their corresponding 10-pin or 8-pin port on the N1 Flight Controller.
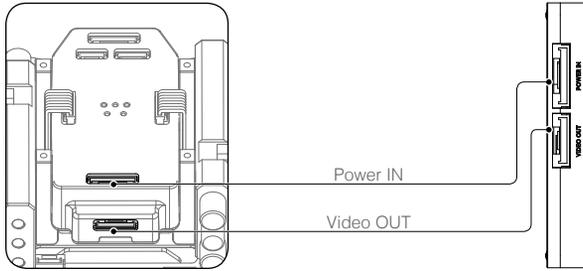

Flight Controller

10-pin Port

8-pin Port
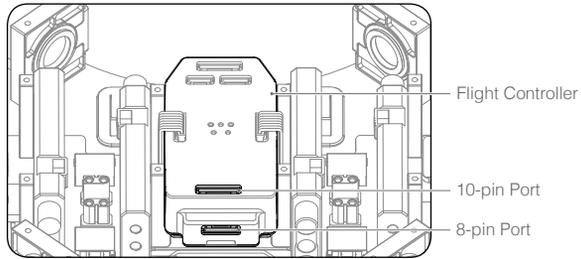
4. Place the other end of the power and video cables near the mounting position of the N1 Video Encoder.

5. Re-mount the upper plate of the center frame, and tighten the 16 screws (M2.5x5). Orientate the upper plate so that the notch faces the left of the aircraft (with its tail facing you). Then place the mounting rails and tighten the 8 screws (M2.5x8). Refer to the figure in step 2 for the screw positions.

● Aircraft's Tail

Notch
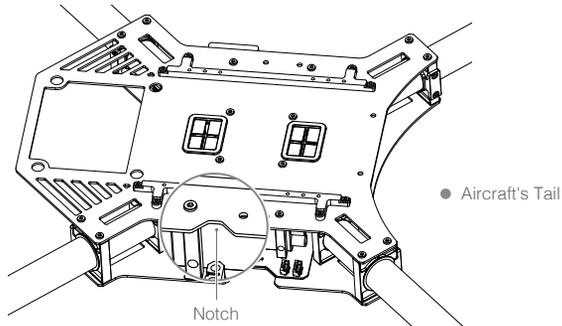
6. Re-mount the Aircraft Status Indicator, and tighten the two screws (M3x8 self-tapping). Do not overtighten the screws to avoid damaging the threads.

Aircraft Status Indicator
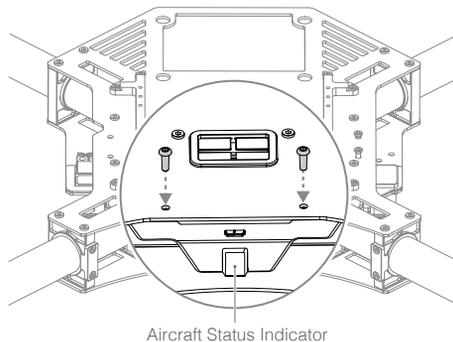
7. Connect the other end of the power and video cables to the power and video ports of the N1 Video Encoder.

> ⚠ The N1 Video Encoder only supports the DJI N1 Flight Controller. Please strictly follow the steps above to supply power to the device.

8. Use foam tape to mount the N1 Video Encoder to the expansion bay, gimbal mounting plate

   or other flat surfaces.

Usage

Video Encoding

1. Turn on the remote controller and then the Intelligent Flight Battery. Connect your mobile device to the remote controller and turn on your camera.
2. Connect your camera to the N1 Video Encoder through the HDMI or AV port. The two video ports cannot transmit together. See the Appendix for the pinout diagram of the AV port.
3. Launch the DJI GO app and enter Camer View. A live camera preview on the screen indicates that the N1 Video Encoder is working normally.

> ☼ If both the HDMI and the AV ports are connected, the HDMI signal will take priority.

Firmware Upgrade

Upgrading the Aicraft Firmware

1. Check the Battery Level and Storage Device
   Ensure that the Intelligent Flight Battery has at least 50% battery level and that there is at least 100MB of free space on your USB flash drive.

2. Prepare the Firmware Upgrade Package
   1) Download the firmware upgrade package from the DJI Developer website. (https://developer.dji.com/matrice-100/downloads)
   2) Insert your USB flash drive into your PC. Extract all the downloaded files to the root directory. While the M100 is powered off, remove the USB flash drive from your PC and connect it to the upgrade port of the N1 Video Encoder using the upgrade cable.

3. Upgrade the Aircraft
   1) Ensure the remote controller is powered off, and then power on the aircraft. The firmware upgrade will begin automatically once the aircraft is powered on.
   2) The Status LED will blink red and green alternatively to indicate that the upgrade is in progress. It will take approximately 12 minutes to complete the firmware upgrade.
   3) The Status LED will blink green if the upgrade is successful, at which point you should restart the aircraft. Check the upgrade result by opening the .txt file that is automatically generated in the root directory of your storage device. The text "result: Success" indicates that the upgrade is successful.
   4) If the Status LED blinks red, the upgrade is unsuccessful. Run the firmware upgrade again.

Upgrading the Intelligent Flight Battery Firmware

The Intelligent Flight Battery firmware is upgraded during the aircraft firmware upgrade. It is recommended to keep the upgrade package files on your USB flash drive after the firmware upgrade.

Upgrade the firmware of an extra Intelligent Flight Battery as follows:

1. Power off all the Intelligent Flight Batteries.
2. Insert the battery that needs the firmware upgrade into the battery compartment connected to the flight controller.
3. Power on the Intelligent Flight Battery in the battery compartment. The upgrade will start automatically.

⚠ • Remove the propellers before upgrading the firmware to avoid injuries. DO NOT touch the motors during the firmware upgrade.
• DO NOT start the motors while upgrading the firmware.
• DO NOT use the N1 Assistant while upgrading the firmware.
• Only USB flash drives formatted with FAT32 or exFAT file systems are supported.
• Ensure that there is only one firmware upgrade package on your USB flash drive.
• The remote controller may become unlinked from the aircraft after the firmware upgrade. Re-link the remote controller and aircraft if necessary.

Appendix

Status LED Blinking Patterns

Blinking Pattern	Description
Ⓡ —— Solid Red	No video input
Ⓖ —— Solid Green	Video input detected
Ⓡⓖ ······ Blinking Red and Green Alternatively	Upgrading firmware
Ⓖ ······ Blinking Green	Firmware upgrade successful
Ⓡ ······ Blinking Red	Firmware upgrade failed

Supported Video Inputs

Source	Video Formats
AV	PAL, NTSC
HDMI	720p50, 720p60, 1080i50, 1080i60, 1080p25, 1080p30, 1080p50, 1080p60

Specificaitions

Dimensions	65.2 mm × 45 mm × 10.7 mm
Weight	31.4 g
Operating Temperature	-10° to 40° C

Pinout Diagrams

AV Port

[1] GND
[2] AV IN
[3] GND

Reserved Port

[1] IO (RX)   [5] 12V
[2] IO (TX)   [6] GND
[3] GND   [7] IO (TX)
[4] 12V   [8] IO (RX)
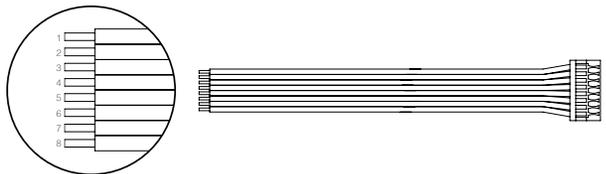
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**Download the latest version from
https://developer.dji.com/matrice-100**

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