NEXUS MINI
BY INDEMNIS

EQUIPMENT | OPERATIONS GUIDE

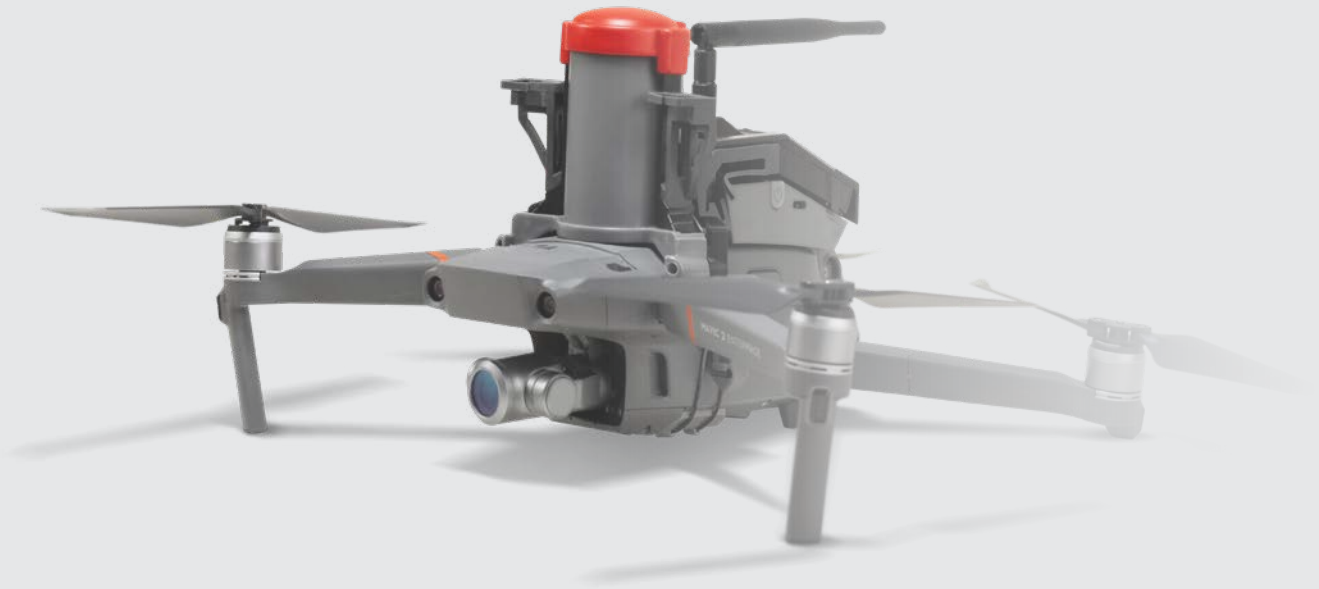MANUAL FOR THE NEXUS MINI PARACHUTE RECOVERY SYSTEM (Nexus Mini PRS)

INDEMNIS

IN-DEM-NIS; Noun from Latin: Indemnitasm Indemni(s)
uninjured; suffering no damage or loss; suffering no loss of wealth or property

DISCLAIMER |

This Parachute Manual (PM) satisfies the Requirements of ASTM F3322-18, Section 3.1.30.

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The Indemnis Nexus Mini Parachute Recovery System (Nexus Mini PRS) for the DJI Mavic 2 is an advanced ballistic safety system designed to protect life and property on the ground and enable advanced flight operations by reducing the drones level of kinetic energy in the event of a failure. This manual explains installation instructions and how the Nexus Mini PRS works and how to properly operate the system both on the ground and in the air. **The Nexus Mini PRS should only be used by trained pilots with authorization to fly near or over people.**

YOUR GUIDE TO THIS GUIDE | # TABLE OF CONTENTS

SAFETY PRECAUTIONS | PAY ATTENTION

Using the Nexus MINI PRS does not eliminate all risk associated with operating a drone near or over people. Pilots should ensure they are operating in accordance with the rules and regulations of the Civil Aviation Authority (CAA) of the operating location.

WARNING: Do not lean against, press, drop, or stand directly over top of the red cap of the system, or point the system in any direction that may cause harm, injury, or damage to life or property in the event of a ground deployment. **** Operators shall disarm and turn the system off immediately after landing BEFORE handling the aircraft.**

**While the Nexus Mini PRS has multiple electronic and software-based safeguards to prevent the possibility of an accidental or inadvertent deployment on the ground, it should be noted that the Nexus Mini PRS deploys from the top of the aircraft where the RED CAP is located. It is recommended that the operator maintains a clear area above the red cap direction of fire when the system is powered on.

DIRECTION OF LAUNCH

Operational Considerations

The Nexus Mini PRS has a minimum operational altitude of 19.8meters (65ft) to have a successful deployment and recovery in any failure scenario.

Environmental Considerations

The system is designed to be flown in all dry conditions the aircraft is designed for. The operator should never exceed aircraft manufacturer's environmental operating conditions and specifications.

a) **TEMPERATURE** of -10C - 40C
b) **MAXIMUM WIND FACTOR** of 29 - 38 KPH
c) **RAIN or SNOW** no flying in any precipitation per DJI guidelines

The Nexus Mini PRS is approved to operate with the following DJI accessory payloads attached to the DJI Mavic 2:
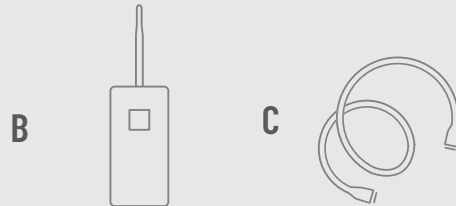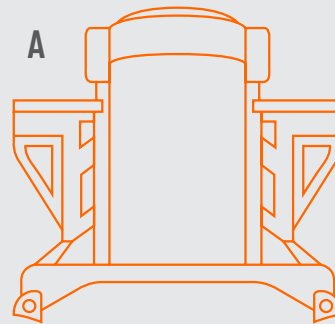
1) **Mavic 2 Beacon**
2) **Mavic 2 Spotlight**
3) **Mavic 2 Speaker**

SYSTEM COMPONENTS | WHAT'S IN THE CASE

A: **Nexus Mini M2 System**

B: **Manual Triggering Device (MTD)**

C: **Charging Cable**

A

B

C

Charging your Nexus Mini PRS

The Nexus Mini PRS must be charged before each use. It uses a USB-C cable to charge the unit and can be charged with any standard USB charger. The battery charge status is indicated by pressing the power button once. Each of the 4 leds indicates a 25% charge with a steady green led. A fully charged battery is indicated by a fully lit green led strip when unplugged. The battery percentage can also be viewed on the Nexus MTD. The Nexus Mini PRS will not allow for operation below 25% battery life. ** Note: The Nexus Mini PRS will not boot up if it is below its operational threshold.**

The Nexus MTD must be charged before each use. It uses a USB-C cable to charge the unit and can be charged with any standard USB charger. The batter charge status is indicated by pressing the power button once. Each of the 4 leds indicates a 25% charge with a steady white led. The Nexus MTD will flash all four leds and beep once to indicate charging.

INSTALLATION

Attaching the Nexus Mini PRS

The Nexus Mini PRS is designed to quickly attach and detach from the DJI Mavic 2 aircraft. It attaches to the back of the Mavic airframe just above the front arms and the battery compartment.

1) Remove the Nexus Mini PRS from the case and place the Nexus Mini on top of the Mavic.

2) Align the triangular tabs on the bottom side of the Nexus Mini PRS with the triangular openings in the front arms of the Mavic.

3) Hold the Nexus Mini PRS tight to the Mavic while picking up the aircraft. Wrap the body harness down and around the Mavic's body such that the harness guide rests around the downward facing rear camera.

4) Pull the line lock up through the body harness lines and hook it to the loop coming from the Nexus Mini PRS.

5) Flip the line lock up until it seats against the body of the Mavic.
NOTE: The smaller end of the line lock should rest inside of the body harness lines with the loop lines running between the legs of the larger end.

6) Verify triangular alignment tabs on the bottom side of the Nexus Mini PRS are still seated in the triangular openings of the front arms of the Mavic and the lower shell is positioned around the bottom camera.

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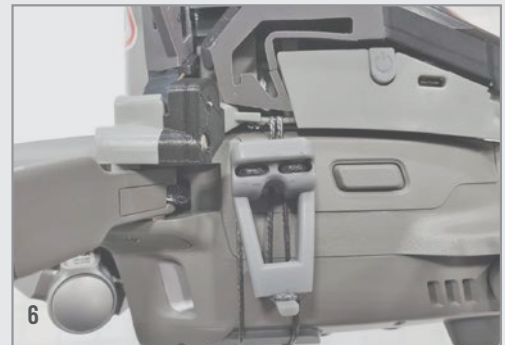
STATUS INDICATION

WHAT THE LEDS MEAN

The Nexus Mini PRS uses a four light LED strip on the top of the of the system along with an internal buzzer to indicate system status or battery to the user. The included Nexus MTD also provides users with Nexus Mini PRS systems status via an LCD screen and an internal buzzer.

LED Strip Colors and System Status State:

FULL GREEN FLASHING LEDS = POWERING ON
GREEN SINGLE LED = 25% BATTERY LEVEL
GREEN SCROLLING LEDS = SYSTEM DISARMED

BLUE SCROLLING LEDS

The system is charged, passed its internal checks, established commination, and is calibrated in a standby mode. It also indicates the system is ready for Pre-arm..

YELLOW SCROLLING LEDS

The Nexus Mini PRS is in its Pre-Armed mode and ready for takeoff.

RED SCROLLING LEDS

*The user will not be able to see the red scrolling LEDS on the top of the unit but there will be an audible tone and visual indication on the Nexus MTD when the Nexus Mini PRS has passed its altitude lockout of 15.24m (50ft). The PRS can now automatically deploy or be manually deployed from the Nexus MTD

IT IS HIGHLY RECOMMENDED TO USE THE NEXUS MTD

In absence of the Nexus MTD the LED light strip and audible tones indicate system Mode. See Nexus MTD operation on page 16.

IMPORTANT NOTE:

Any system error will be indicated by a purple color on the LED strip. If an error is present, please refer to the troubleshooting section of this guide and contact: support@indemnis.com. Few errors are user correctable. UNDER NO CIRCUMSTANCES IF AN ERROR IS PRESENT, SHOULD YOU ATTEMPT FLY WITH THE NEXUS MINI PRS.

RED FLASHING + AUDIBLE TONE | DEPLOYED !

PURPLE + AUDIBLE TONE   Nexus Mini PRS system error.

CHECKLIST |

Aircraft Inspection Checklist:

- ☐ Propellers installed and checked for cracks
- ☐ Batteries are charged and firmly in place
- ☐ DJI remote batteries are charged
- ☐ Nexus Mini battery charged
- ☐ Nexus Mini MTD remote charged

Nexus Mini Installation:

- ☐ Aircraft Top "Hot Zone" cleared before removing Nexus Mini from its case
- ☐ Nexus Mini is attached to aircraft and aligned
- ☐ Nexus Mini Line Lock is secure
- ☐ Antenna needs to be offset to avoid upward facing collision sensor at the rear of the aircraft
- ☐ Nexus Mini triangular tabs aligned and props spin freely

Pre-flight Checklist:

- ☐ T/O | LZ clear and safe from other individuals
- ☐ Power on Aircraft
- ☐ Power on Nexus Mini MTD
- ☐ Power on Nexus Mini PRS
- ☐ Wait for boot up tones and LED indication
- ☐ MTD reads "Ready for Pre-Arm"/LED indicates scrolling blue
- ☐ Pre-Arm Nexus Mini (Scrolling yellow/MTD indicates "Pre-Arm")
- ☐ RPIC clear of the T/O | LZ

Flight Checklist:

- ☐ No errors present
- ☐ All individuals clear the T/O | LZ
- ☐ Airspace/Mission Route Clear for T/O
- ☐ Climb above 50 ft (15.24 m) and ensure Nexus Mini is Armed

Post-flight Checklist:

- ☐ Land aircraft
- ☐ Stop aircraft propellers
- ☐ The Nexus Mini LED indication is scrolling yellow and MTD shows "System Pre-Armed"
- ☐ Disarm Nexus Mini via MTD, LED should turn scrolling green and MTD should read "Disarmed"
- ☐ Enter LZ, power off Nexus Mini PRS
- ☐ Power off aircraft
- ☐ Power off Nexus Mini MTD
- ☐ Remove aircraft from LZ while keeping Nexus Mini PRS pointed in safe direction, place the Nexus Mini PRS in its case.

Operating the Nexus Mini PRS:

1) To power on the aircraft verify the power button can be reached through the hole in the Nexus Mini PRS just in front of the antenna.

2) Press once, then press and hold the Nexus MTD power button to power on the unit. MTD will boot and display "Connecting to Nexus"

3) On the left side of the Nexus Mini PRS, press once, then press and hold the power until the green lights flash and become blue. Nexus MTD will display "Ready for Pre-Arm".

4) Press and hold the arm button to arm the system. Led light will scroll yellow. The system is now ready to automatically arm itself after passing the altitude lockout.

5) Take off and climb past 15.24m (50ft), the Nexus Mini system will automatically arm and switch the leds to scrolling red. The Nexus Mini and the Nexus MTD will make an audible sound when switching states and the MTD will read "Armed". The Nexus Mini PRS is now ready to deploy manually or automatically.

6) After flight, the Nexus Mini PRS will automatically re-enter its Pre-Armed Mode when the aircraft descends below about 15.24m (50ft), this will be noted by yellow scrolling leds. The Nexus MTD will give an audible tone stating the disarming altitude has been reached. The Nexus MTD will read "System Pre-Armed".

**NOTE: After descending past the altitude lockout, automatic deployment capabilities are turned off, however manual deployments are still functional down to the ground.

7) Landing should only take place after the Nexus Mini PRS has re-entered the Pre-Armed mode. After landing the system can be disarmed by pressing and holding the arm/disarm button. The system may also be disarmed manually on the right side of the Nexus Mini PRS unit. To disarm press and hold the arm/disarm button on the right side of the unit until the lights switch to green. An audible tone will also let you know the system has been disarmed.

8) To power off the Nexus Mini PRS press once, then press and hold the power button on the left side of the unit. The green lights will flash, then fade and the unit will make an audible tone as it shuts down. The Nexus Mini PRS should be powered off before moving or handling your Mavic unit and the unit should be completely powered down and rebooted upon every landing.

WARNING - The disarming altitude is based on the altitude recorded at the takeoff location. The system may not automatically disarm if a pilot lands at a higher elevation than that of the original takeoff location. If the Nexus Mini PRS has not automatically disarmed, then it should be kept level until it is manually disarmed with the Nexus MTD or by the Arm/Disarm button on the Nexus Mini PRS. Tilting an armed Nexus Mini PRS can cause the system to deploy. A red scrolling LED light strip always means that the system is armed, and care should be taken.****

REMOTE | NEXUS MANUAL TRIGGERING DEVICE (MTD)

The Nexus manual triggering device (MTD) is included in your Nexus Mini PRS purchase – The Nexus MTD is the same for all Indemnis systems and should be labeled if you own multiple systems, as it is paired with the specific unit it is supplied with.

THE DEPLOY BUTTON SHOULD ALWAYS BE TREATED AS LIVE

1) The Nexus MTD is designed to be hung around the pilot's neck using the included neck lanyard, mounted to a tripod using a standard 1/4-20 screw, or attached to the pilot via included and pre-installed belt clip..

2) The Nexus MTD has three (3) buttons:
   A) ARM / DISARM   B) POWER   C) DEPLOY

3) The Nexus MTD provides users with Nexus Mini PRS systems status via both visual and audible system status indication, as well as Nexus MTD battery life and error messages, if applicable.

4) Manual deployment is only available once the aircraft with the Nexus Mini PRS has reached its arming altitude.
NOTE: If the Nexus Mini PRS is armed and the Nexus Mini PRS goes into an error Mode, manual deployment will be available regardless of aircraft altitude.

5) The Nexus MTD has an internal battery that is rated to last 12 hours and is charged via USB-C.

6) The Nexus MTD will indicate lost link status. It has a rated usable range of 1km (0.62 miles). If the aircraft is out of range of the Nexus MTD, you will be notified via the Nexus MTD that it has entered the lost link status – in this state, the automatic triggering system will still be active. The Nexus MTD will automatically reconnect to the Nexus i2 PRS when possible and takes 3 seconds to calibrate before the Nexus MTD option is available.

NEXUS MTD REMOTE OPERATION:

1) To turn on the MTD - Press once and press once, again and hold the power button on the controller for 3 seconds until the LED lights cycle and the LCD screen populates with information. The Nexus MTD will need to be worn by the RPIC or placed near them on a tripod stand so that the manual deploy button can be easily reached if needed..

2) Remote Arming - Press and hold the Nexus MTD Arm/Disarm button for 3 seconds. The LED lights will flash and then return to solid to indicate that it is Pre-Armed. The LCD screen will read "System Pre-Armed". **If you are Pre-Arming in flight and have already reached the arming minimum altitude, the LCD screen will read "System Armed".**

3) Remote Disarming – Press and hold the Nexus MTD Arm/Disarm button for 4 seconds. The LED lights will flash and then return to rotating green to indicate that it is disarmed. The LCD screen will read "Disarmed", indicating that the Nexus is disarmed, and you can visually observe that the rotating red LED ring on the Nexus i2 PRS has changed to rotating green, indicating it is Disarmed. The Nexus MTD will also make a series of audible tones indicating a change in mode. This is the preferred and primary method of disarming the Nexus i2 PRS because it places a safe distance between the operator and the aircraft.

IF THE SYSTEM IS ARMED OR DISARMED IT WILL BEEP 3 TIMES:

4) Manual Deployment is initiated by **pressing the DEPLOY button three (3) times within one (1) second.**
   NOTE - Manual deployment should always be used as a last option in cases such as imminent unavoidable collisions or fly-away.
   In the event of a manual deployment the user should continuously and rapidly press the DEPLOY button until the MTD indicates visually and audibly that the system has deployed.
   .
* The Nexus MTD operates at 915 Mhz. LTE version available if in EU for additional cost. Contact Sales@indemnis.com
Please check your country's local laws and regulations in regard to compliance before using this frequency. In absence of the Nexus MTD the LED light ring and audible tones indicate system mode.

INSPECTION | PROCEDURES

1) The system should be checked **AFTER EACH USE** for any noticeable damage. Take note that the system should never be pointed at the inspector or any bystander during the inspection. Any damage noted shall be reason for grounding the system and contacting support.

2) The Nexus Mini PRS is a ballistic parachute launcher and the system should always be **STORED IN ITS APPROVED CASE WHEN NOT IN USE**.

POST DEPLOYMENT PROCEDURE:

Like an airbag in your car, the Nexus Mini PRS is a certified safety system. To comply with ASTM F3322-18, it is not user re-packable or user serviceable after the Nexus Mini PRS has been deployed.

SERVICING:

The Nexus Mini PRS can only be serviced by Indemnis and service providers that have been authorized by Indemnis.

For more information on customer support and servicing, please contact

support@indemnis.com
or call **1-84-INDEMNIS** (1-844-633-6647).

REMINDER

Always turn off the aircraft before powering down or removing the Nexus Mini PRS

TROUBLESHOOTING | UNDERSTANDING THE WARNINGS AND ICONS

ON GROUND WARNING

CAUSE This error indicates that the Nexus Mini PRS has lost contact with the ATS.

SOLUTION Generally this is due to a loose connection in the USB harness. Check USB-C and USB-A connections are secure, power cycle the unit. If error persists, contact Indemnis. **1-84-INDEMNIS**

MID-FLIGHT WARNING

CAUSE This error indicates the Nexus Mini PRS has lost contact with the ATS. If this happens mid-flight, this represents a serious error that requires landing. *If the unit has ascended above the altitude lockout, manual deployment is enabled until the Nexus unit is disarmed.

SOLUTION Land immediately and handle with caution and disarm unit either manually or from the Nexus MTD.

CDS FAILURE WARNING

CAUSE This is an internal error of the Nexus Mini PRS, and indicates the unit needs to be serviced.

SOLUTION Do not operate further, keep unit in it's case and in a safe location. Contact Indemnis **1-84-INDEMNIS** to send in for service.

LOW BATTERY WARNING

CAUSE The independent battery on the Nexus Mini PRS is depleted and needs charging.

SOLUTION Land the UAV, power off the Nexus Mini PRS, and charge with USB-C charger.

NEXUS REBOOTING
Reboot is in progress. Please wait a moment to allow completion. Do not touch the UAV or Nexus system during reboot.

LAND & REBOOT
Internal error, requires you to land the UAV and power cycle the unit.

REBOOT SYSTEM
Power cycle the Nexus Mini PRS.

SYSTEM ON BATTERY
USB-A has come unplugged and the unit is running on internal Nexus Mini PRS battery. Land UAV and reconnect the USB-A cord.

CONNECTING
MTD is connecting to the Nexus Mini PRS, please wait a moment to complete.

GENERAL WARNING
Land the UAV and troubleshoot.

READY FOR PRE-ARM
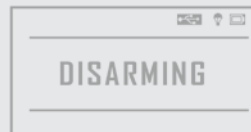The Nexus Mini PRS is calibrated / charged and ready to be Pre-Armed.

SYSTEM PRE-ARMED
Nexus Mini PRS and UAV are ready for flight. The system will arm once it reaches the arming altitude.

ARMED
Nexus Mini PRS is armed and ready to manually or automatically deploy.

DISARMING
The system is disarming, do not touch the UAV or Nexus Mini PRS until the screen says "Disarmed".

DISARMED
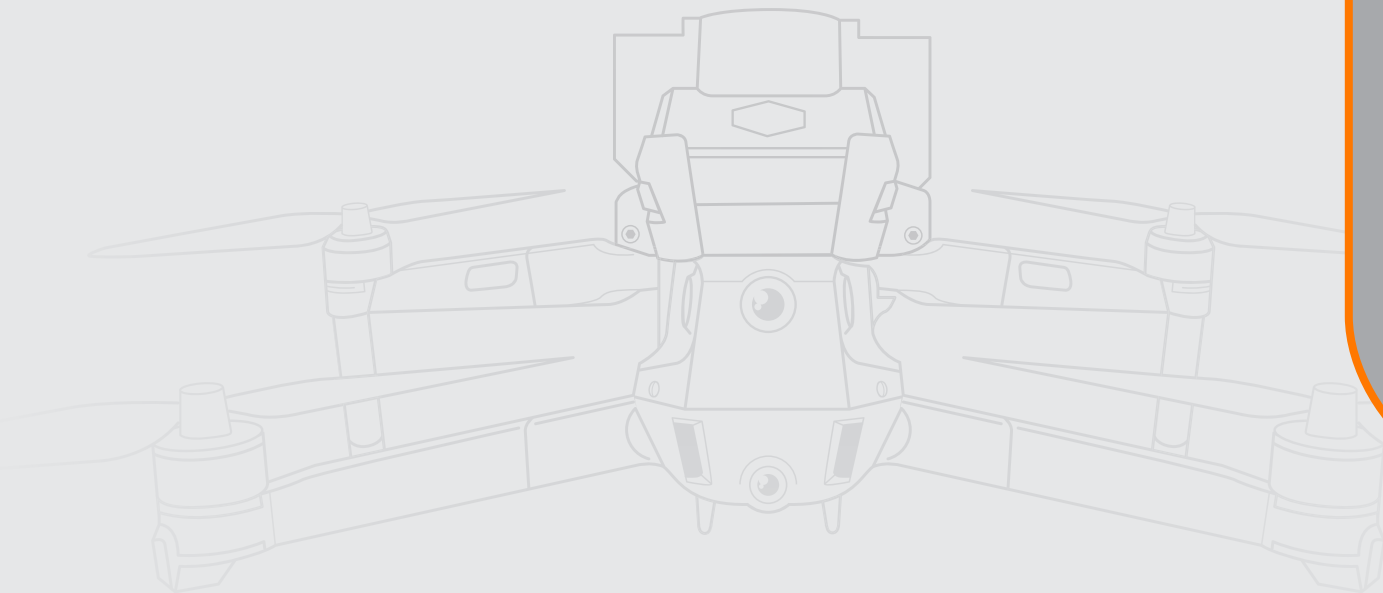The Nexus Mini PRS is disarmed. It is now safe to power off or return to "Ready for Pre-Arm" Mode.

SYSTEM READY TO DEPLOY
System is working properly and is ready to be deployed automatically or manually via MTD.

SYSTEM WILL NOT DEPLOY
System is not ready to be deployed..