



# **Sky-Hero by Axon Loki MkII Breaching Drone User Guide**

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# Introduction

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The Sky-Hero by Axon Loki MkII Breaching Drone is a single-use aerial platform engineered for remote entry in high-risk or inaccessible environments. It allows tactical teams to perform breaching operations precisely from a safe distance.

## Intended Use

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Breaching is used in military, law enforcement, and emergency response operations to gain rapid entry into secured or obstructed environments. In law enforcement, breaching supports controlled entry during high-risk operations such as hostage rescues, warrant service, and barricaded-suspect incidents, reducing risk to officers and civilians while preserving tactical advantage.

Across all operational contexts, effective breaching requires careful planning, specialized training, and strict risk management to minimize collateral damage. Traditional breaching methods may be insufficient against hardened entry points or in time-critical scenarios. In these situations, specialized breaching drones provide a rapid, precise, and remote means of entry, improving safety and operational effectiveness.

## Safety

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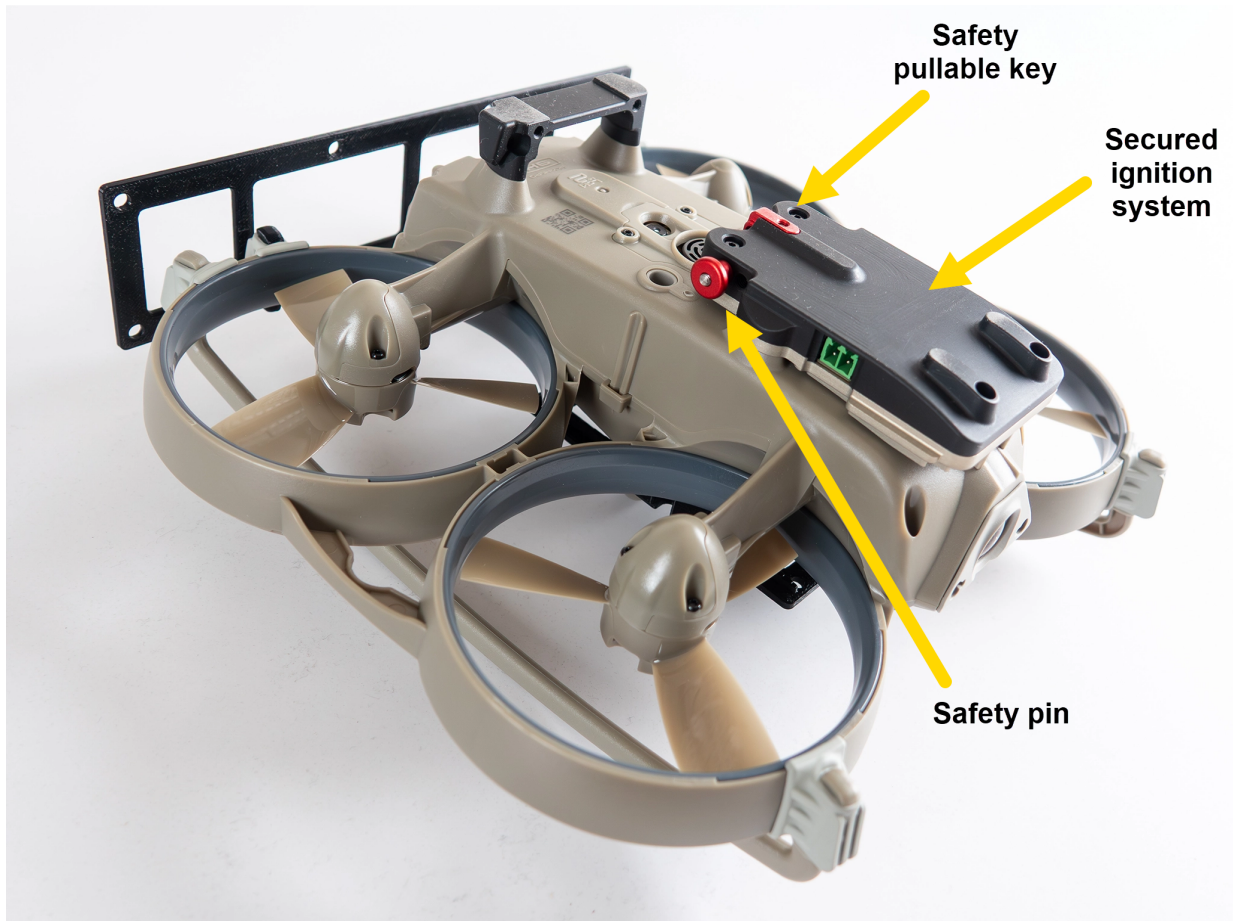
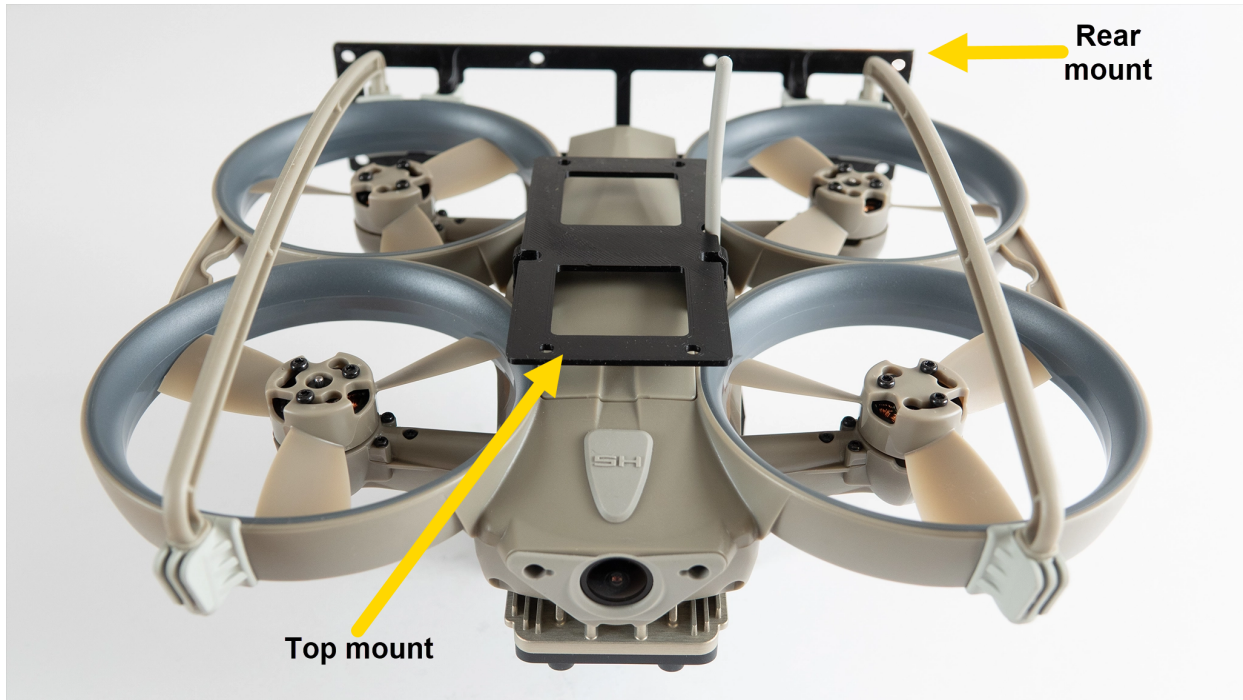
The system supports two activation configurations: in the first, the drone pilot initiates the charge directly via the Ground Control Station (GCS) MkII. In the second, detonation is carried out by a separate operator using the Remote Trigger wired to the GCS. This flexibility allows teams to adapt deployment to their operational protocols while maintaining clear division of responsibilities between pilot and breacher.

## System Overview

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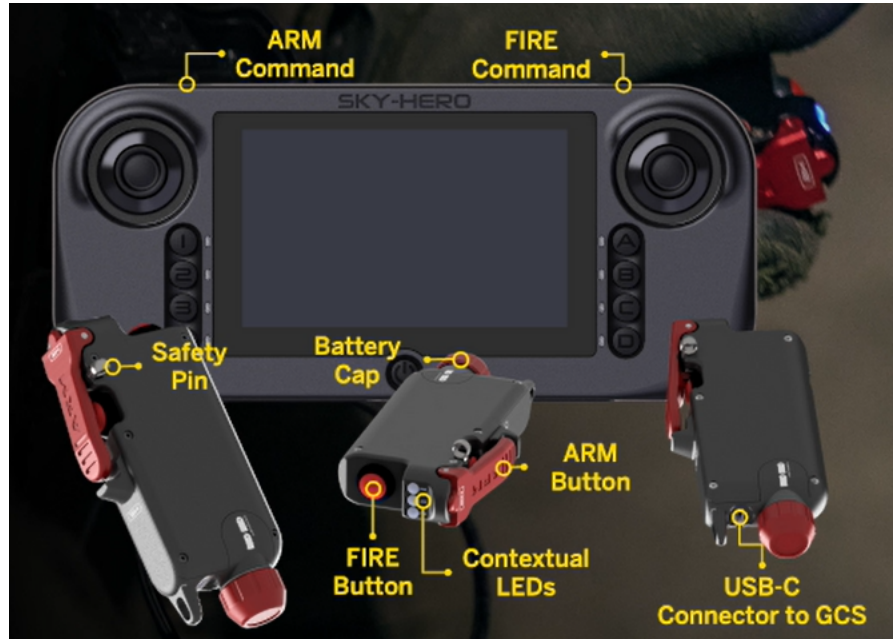
### Note

Breaching charges are not supplied by Axon Robotics. Follow all operational safety protocols.

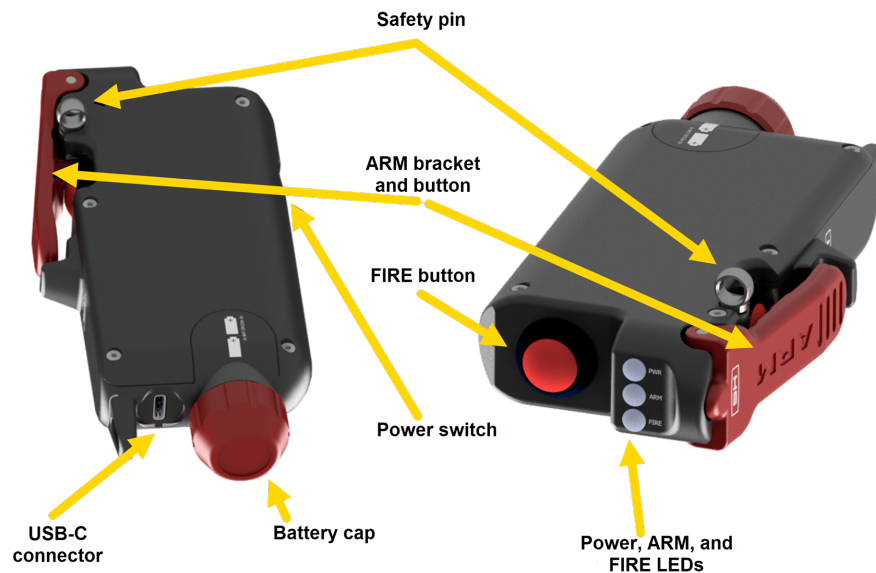


The **Loki MkII Breaching Drone** includes a fixed ignition payload with electro-

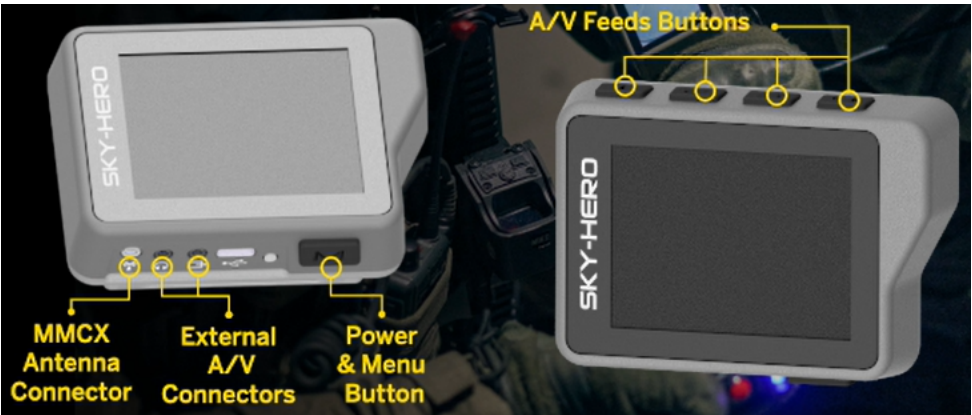
mechanical safeguards. Mounting options on the top or rear allow operators to position breaching charges for optimal effect while reducing unintended effects beyond the designated entry point.



**Ground Control Station (GCS MkII):** GCS is the main interface for flight control, featuring AES-256 encrypted connectivity.



**Remote Trigger:** Manages charge detonation independently with dual-action fire safety, encrypted communication, and visual status indicators.



**Tactical Monitor:** The interface a specialized officer who oversees the breaching procedure will use that shows the exact moment of detonation.

## Technical Specifications

| Parameter              | Specification                                                     |
|------------------------|-------------------------------------------------------------------|
| Charge Capacity        | Up to 150g breaching charge (not supplied by Axon)                |
| Ignition System        | Secure electric detonation via GCS MkII or Remote Activation Unit |
| Mounting Options       | Top or rear (supports directional deployment)                     |
| Connectivity           | AES-256 encrypted link                                            |
| Remote Activation Unit | Dual-action safety, visual indicators, encrypted communication    |



# Cautions and warnings

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## Warnings

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1. **SKY-HERO BY AXON LOKI MKII BREACHING DRONE IS NOT A TOY AND SHOULD NOT BE USED OR HANDLED BY PERSONS UNDER 18 YEARS OLD.**
2. **BEFORE USING SKY-HERO BY AXON LOKI MKII BREACHING DRONE:**
  - **CAREFULLY READ THIS ENTIRE USER MANUAL. THIS DOCUMENT MAY BE UPDATED AT ANY TIME WITHOUT PRIOR NOTICE.**
  - **PAY SPECIAL ATTENTION TO RED CAUTION AND WARNING BOXES.**
  - **LEARN ABOUT REGULATIONS APPLICABLE TO THE USE OF UNMANNED AERIAL VEHICLES (UAVS) AND THEIR ACCESSORIES IN YOUR AREA.**
  - **REMEMBER THAT SKY-HERO BY AXON LOKI MKII BREACHING DRONE MAY EXPOSE YOU OR OTHERS TO EQUIPMENT DAMAGE, PERSONAL INJURY, OR BOTH, WHICH COULD RESULT IN SERIOUS HARM OR DEATH.**
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## Warnings | Breaching Drone

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**DUE TO THE REQUIREMENTS OF THE DESIGN, THE AXON ROBOTICS TRIGGER SYSTEM COULD BE USED TO ACTIVATE KINETIC PAYLOADS (PYROTECHNICS, MILITARY DISTRACTION SYSTEMS OR EVEN EXPLOSIVES).**

**BY RECEIPT AND USE OF THIS PRODUCT, USERS ACKNOWLEDGE RESPONSIBILITY AND RISKS ASSOCIATED WITH THE UTILIZATION OF SKY-HERO BY AXON LOKI MKII BREACHING DRONE. THE USER IS RESPONSIBLE**



**FOR THE CREATION, ATTACHMENT, DEPLOYMENT AND DETONATION OF ASSOCIATED EXPLOSIVES. USERS ARE HIGHLY RECOMMENDED TO UNDERSTAND ALL PROVIDED SAFETY FEATURES AND PROCESSES TO SAFELY UTILIZE BREACHING DRONE.**

**AXON ROBOTICS UNDERLINES THAT THIS SKY-HERO BY AXON LOKI MKII BREACHING DRONE SYSTEM (REMOTE TRIGGER AND BREACHING PAYLOAD) IS NOT FULLY TESTED AND HAS NOT PASSED ANY VALIDATION. AXON ROBOTICS PROVIDES THE SYSTEM FOR EVALUATION PURPOSES ONLY AND THE SKY-HERO BY AXON LOKI MKII BREACHING DRONE SYSTEM (REMOTE TRIGGER AND BREACHING PAYLOAD) WILL BE USED UNDER THE SOLE RESPONSIBILITY OF THE PEOPLE IN CHARGE OF THE EVALUATION. AXON ROBOTICS DECLINES ANY RESPONSIBILITY, BUT AXON ROBOTICS IS OPEN TO SHARE ANY DOCUMENTATION OR INFORMATION REQUESTED BY PEOPLE IN CHARGE OF THE EVALUATION.**

**THE SKY-HERO BY AXON LOKI MKII BREACHING DRONE SYSTEM (REMOTE TRIGGER AND BREACHING PAYLOAD) IS DELIVERED UPON REQUEST AND FOR EVALUATION PURPOSES ONLY. IT HAS BEEN DESIGNED AS A REMOTE-CONTROLLED ELECTRICAL TRIGGER MECHANISM TO ACTIVATE ELECTRIC IGNITION SYSTEMS. ALL PRECAUTIONS REGARDING THE USE OF PYROTECHNICAL DEVICES MUST BE PROVIDED BY THE PYROTECHNICAL MANUFACTURER AND STRICTLY RESPECTED BY THE PERSON IN CHARGE OF THE EVALUATION. AXON ROBOTICS DOES NOT DELIVER ANY PYROTECHNICAL DEVICES.**

**AXON ROBOTICS DISCLAIMS ANY RESPONSIBILITY FOR ANY DAMAGE OR INJURIES DONE OR SUFFERED CONSEQUENT TO THE USE OF THE TRIGGER SYSTEM. UNDER NO CIRCUMSTANCES SHALL AXON ROBOTICS BE DEEMED LIABLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES CAUSED FROM THE USE OF TRIGGER SYSTEM. THE PERSON AND ORGANIZATION IN CHARGE OF THE EVALUATION DECLARES TO UNDERSTAND THE RISKS AND THE CONSEQUENCES OF USING THE SKY-HERO BY AXON LOKI MKII BREACHING DRONE SYSTEM (REMOTE TRIGGER AND BREACHING PAYLOAD), SUPPORTS ALL RESPONSIBILITY ARISING FOR THE USE OF THE TRIGGER SYSTEM AND NEVER PURSUE AXON ROBOTICS OR ANY RELATED PARTIES IN CASE OF INJURIES OR DAMAGE OF ANY KIND RELATED TO THE USE OF THE SKY-HERO BY AXON LOKI MKII BREACHING DRONE SYSTEM (REMOTE TRIGGER AND BREACHING PAYLOAD).**

## Cautions | Sky-Hero by Axon Loki MkII Breaching Drone UAV

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- Sky-Hero by Axon Loki MkII Breaching Drone is not weatherproof. Do not fly in airborne precipitation. Do not immerse in liquid. This can cause complete device malfunction.
- Sky-Hero by Axon Loki MkII Breaching Drone uses approximately 11.1 V at 20 A DC during typical use.
- Avoid operating Sky-Hero by Axon Loki MkII Breaching Drone in extremely dusty environments.
- Keep away from extreme direct heat sources and fire.
- Do not fly outside of the -4–122 °F (-20–50 °C) operating range.
- Remove battery when not in use. Store in a cool, dry place with a relative humidity below 75%.
- Protect the battery contacts from contact with metal, which may cause a short circuit.
- The pilot is responsible for monitoring directions, range, battery level, and information displayed on the controller.
- Never fly under the influence of drugs or alcohol.
- Use only accessories and parts authorized by Axon Enterprise, Inc.. Use of unapproved accessories will void warranty coverage.
- Eye protection should be worn at all times when operating Sky-Hero by Axon Loki MkII Breaching Drone.
- To clean or dust your device, use only a soft dry cloth. Do not apply any liquids of any kind (detergents, solvents, etc.) which could weaken the various parts of the appliance. Also do not apply any kind of lubricant or grease to the moving parts of the device.
- Avoid dropping Sky-Hero robots by Axon onto hard surfaces. A fall from height may cause severe damage to the unit, including complete structural failure and the ejection of components that could pose a risk of injury.
- The operator in command is responsible for managing directions, range, and battery level as well as monitoring messages and alerts displayed by the associated controller.
- Exclusively use accessories such as battery chargers authorized by Axon. Using unapproved accessories will void warranty coverage.

## GCS controller

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### WARNING

THE GCS CONTROLS REMOTELY OPERATED ROBOTIC DEVICES THAT CAN CAUSE INJURY, PROPERTY DAMAGE, OR DEATH IF MISHANDLED. OPERATORS MUST COMPLETE AGENCY-APPROVED TRAINING BEFORE DEPLOYING THE SYSTEM ON A LIVE MISSION.

NEVER OPERATE THE GCS WHILE DRIVING A VEHICLE, WHILE IMPAIRED, OR IN ANY ENVIRONMENT THAT REQUIRES YOUR FULL ATTENTION TO OTHER DUTIES.

- Keep the controller away from open flame, standing water, and excessive dust. The GCS is rated IP54 (dust-protected and splash-resistant) and is not designed for submersion or sustained heavy precipitation.
- Clean only with a soft dry cloth. Do not apply any liquid, detergent, or solvent.
- Store in a cool, dry place with a relative humidity below 75%.
- Charge to about 60% at least every three months.
- Do not disassemble the controller. There are no user-serviceable parts inside. Disassembly voids the warranty and may compromise sealing and structural integrity.
- Do not block the heat sink during operation. Restricted airflow may cause thermal throttling or shutdown.
- Never operate the GCS with one or both radio antennas removed or disconnected. Doing so reduces wireless range to only a few feet, lowers the IP rating, and may damage the radio transmitter.

## Cautions | Li-Ion and LiPo Battery

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This section outlines essential safety precautions and handling instructions for the Lithium-Ion (Li-Ion) and Lithium-Polymer (LiPo) batteries used in your Sky-Hero by Axon devices. Proper care, use, and storage of these batteries are critical to ensuring safe operation, maintaining battery performance, and preventing potential hazards such as fire, damage, or injury.

- Both the Loki and GCS controller use rechargeable lithium-polymer (LiPo) batteries that provide higher specific energy than other traditional batteries.
- Only use these batteries with proper protection circuitry, battery management system, or PCB (printed circuit board).

- Store out of direct sunlight in a dry and well-ventilated area at room temperature, ideally 68–82°F (20–28 °C).
- Do not store near sharp items, moisture, metal, or reactive chemicals.
- Use caution when working with and using lithium-ion and lithium-polymer batteries as they are very sensitive to charging characteristics and may explode, burn, or cause a fire if misused or mishandled.
  - a. The operator is responsible for any damage or injury caused by the misuse or mishandling of lithium-ion/Polymer batteries and chargers.
  - b. Charge only with the provided charger designed for this specific type of lithium-ion or lithium-Polymer battery.
  - c. Charging should be completed in an open area. Always charge in or on a fire-proof surface. Never leave batteries charging unattended.
  - d. Please note that the Li-Ion and LiPo batteries cannot be charged at temperatures above 45°C (113°F). The temperature range for charging the Li-Ion and LiPo battery is 0°C to 45°C.
- Do not disassemble the batteries or dual charging dock. Do not insert any foreign material into the battery terminal.
- Do not attempt to use batteries that are damaged, dented, or ruptured after a crash or drop. Avoid dropping or striking the batteries.
- Do not immerse the batteries or charging dock in water or other liquids
- If substances leak from the battery pack and get in your eyes, do not rub them. Seek emergency medical attention promptly.
- In storage (and also in operation), it's important not to allow the battery to come in close contact with moisture or heat sources. Store the battery in a dry and well-ventilated area at room temperature, ideally 20°C | 68°F to 28°C | 82°F.
- Do not store the battery in direct sunlight or near sharp items, moisture, metal, or reactive chemicals.
- Long storage periods should never exceed 12 weeks.
- Never store a battery with less than 35% battery life remaining. If storage must exceed 4 weeks, first fully charge the battery then immediately after, discharge it until the battery reaches 65%.
- Never store a fully charged battery for more than 4 weeks; charge and discharge at least every 4 weeks to maintain best battery performances. Over time, some reduction in battery life is expected.

## Cautions | Pre-operation Checklist

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Before each use, it is essential to inspect and prepare your Sky-Hero by Axon devices to ensure safe and optimal operation. The following checklist outlines the key points to verify prior to deployment in order to prevent equipment malfunction, mission failure, or potential safety risks.

- Inspect the body structure and the camera glasses for visible damage and debris prior to drive.
- Inspect the robots for visible damage prior to operation.
- Only use accessories that came with the Sky-hero by Axon robots, or which are sold or authorized by Axon for use with the robots. Using unapproved accessories presents serious risks to safety and will void the product's warranty.
- Make sure the propellers are attached, undamaged, and clean.
- Make sure the battery cover, camera lenses, and LED sensors are undamaged, uncovered, and clean prior to operation. Clean only with a soft dry cloth.
- Make sure you've installed a battery with sufficient charge for the mission and properly attached the battery cover. Axon Robotics recommends using a fully charged battery for maximum mission operation.
- Inspect the GCS for visible damage and ensure it has sufficient charge for the mission.
- Make sure all devices have the latest firmware version.

# Operation

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## Pre-Deployment

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- Verify team readiness, safety distance, and environmental conditions.
- Make sure you have read all Sky-Hero by Axon Loki MkII Breaching Drone documentation and know how to operate the Sky-Hero by Axon Loki MkII Breaching Drone and the GCS in a safe manner.
- Follow all the instructions included in this manual and do not use this equipment before receiving a full training course by Axon Robotics.
- Refer to your local regulation and authority in order to confirm you are authorized to operate the Sky-Hero by Axon Loki MkII Breaching Drone System (Remote Trigger and Breaching Payload).
- Make sure you've installed a battery with sufficient charge for the mission and properly attached the battery cover. Axon Robotics recommends using a fully charged battery for maximum mission operation.
- Inspect the GCS for visible damage and ensure it has sufficient charge for the mission.
- Make sure all devices have the latest firmware version.

## Deployment

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### Operating the Remote Trigger

The Remote Trigger is designed to separate the control of the drone (operated through the GCS) and the activation of the Payload Trigger. The Remote Trigger has no wireless capability and can only be operated when connected to the GCS via a USB-C to USB-C cable. To operate the Remote Trigger:

1. Power on the GCS.
2. Connect the Remote Trigger to the GCS via the USB-C to USB-C cable.
3. Power on the Remote Trigger using the power switch on the Remote Trigger.

The PWR LED indicates the state the Remote Trigger is in:

- **Green/Yellow** when not connected to the GCS
  - **Blinking Blue** when connected to the GCS without payload
  - **Steady Blue** when connected to the GCS with payload
4. Make sure that the GCS operator confirms seeing a new pop up on the screen indicating 'TR CON' (Trigger Remote Connected).



### Note

Should 'TR Low' be shown, it indicates that the battery on the Remote Trigger is low on battery. Axon Robotics strongly recommends changing batteries at this point.

### Caution

When powered on, if only the PWR LED turns red, it means the batteries are empty. Replace the batteries and try again. Should there be any issue detected on the fire or arm buttons, the related LED will turn red as well. When the PWR and ARM LEDs both turn red, an issue has been detected on the arm button. When the PWR and FIRE LEDs both turn red, an issue has been detected on the fire button. In that case, make sure you were not pressing the related button when powering on the remote trigger. Power the remote trigger off again and back on. Should the LEDs still turn red, contact Axon Robotics support immediately.

5. The GCS operator switches to control a Sky-Hero by Axon Loki MkII Breaching Drone carrying a Payload Trigger, which makes the PWR LED turn blue on the Remote Trigger.



6. Hold the Arm bracket. The Arm LED will turn green and the indication on the GCS will switch to a red 'TR ARM' indicating that the system is armed.



### Caution

ONCE ARMED, THE OPERATOR HAS REMOVED ALL SOFTWARE SAFETIES AND THE REMOTE TRIGGER WILL INSTANTLY FIRE BY A SINGLE PRESS ON THE FIRE BUTTON (ONLY IF MECHANICAL SAFETIES HAVE BEEN REMOVED AS WELL).

7. Activate the Remote Trigger by pressing the Fire Button. The Fire LED will turn red, and the GCS will show a new pop-up indicating that the Fire Command has been sent to the controlled drone.

## Operating the Payload Trigger

The Payload Trigger has two independent electro-mechanical safety features that prevent most unintended activations of the Trigger System. The first is a *default short circuit*: until the trigger is deliberately fired, the Payload Trigger's output terminals are short-circuited, which diverts current away from the connected device. As a result, the device stays off and cannot receive activation current by default. The second feature is the *Safety Pullable Key*: activation is only possible after the key has been removed, which you can do from a safe distance by attaching a cable to it. The Safety Pullable Key can only be removed once the Safety Pin has been removed first.

The steps described here do not provide advice on when to connect the desired device/payload to the Payload Trigger. This is up to the end user or by decision of the concerned authorities. Upon request, Axon can share insights into previous tests and put you in contact with several units who have previously operated the breaching system.

To operate the Payload Trigger:

1. Use a flexible cable and attach it to the Safety Pullable Key. Make sure the key is firmly seated. Make sure no battery is inserted in the Sky-Hero by Axon Loki MkII Breaching Drone.

2. Insert the battery into the drone and connect your device/payload to the Payload Trigger.
3. Remove the Safety Pin and step away from the device to a safe distance.
4. Use the attached cable to pull the Safety Pullable Key while remaining at a safe distance from the device.

The output terminals of the breaching charge behave like a current source when triggered. A current of 3.3A will be pushed through for a maximum duration of 500ms. Take care to connect a device that will reliably trigger at this current. The compliance of the output is limited by the battery voltage. Complete test reports and electrical schematics can be provided by reaching out to Axon.

## Post-Operation

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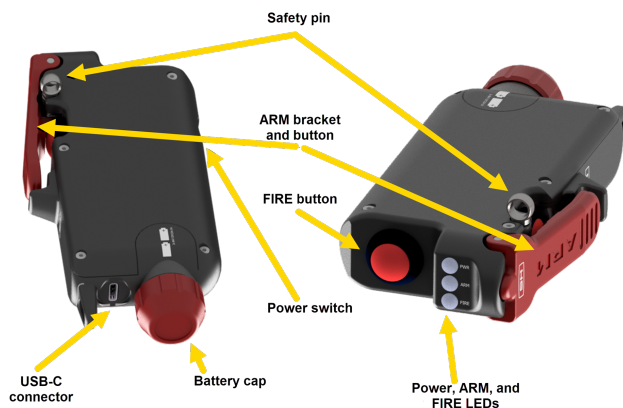
Confirm detonation and record mission data in the GCS system.

## Canceling an Operation

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Should you wish to stop the deployment of a Sky-Hero by Axon Loki MkII Breaching Drone, for example in the case of a cancelled mission, follow this procedure.

1. Use the Ground Control Station (GCS) MkII to land the drone on a flat, accessible surface.
2. Power off the GCS.
3. Reinsert the two Safety Pins previously removed to enable the remote trigger.



# Maintenance

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Regular maintenance is essential to help ensure the long-term performance, reliability, and safety of your Sky-Hero by Axon Loki MkII Breaching Drone. While the Sky-Hero by Axon Loki MkII Breaching Drone is engineered to withstand significant impacts and challenging operational conditions, proactive upkeep will help extend its service life and prevent unnecessary wear or failures. This section outlines essential maintenance procedures, including the inspection and replacement of key components such as propellers, motors, bullbars, landing pads, and the upper frame. Follow these guidelines carefully to keep your Sky-Hero by Axon Loki MkII Breaching Drone in optimal condition and ready for mission-critical use.

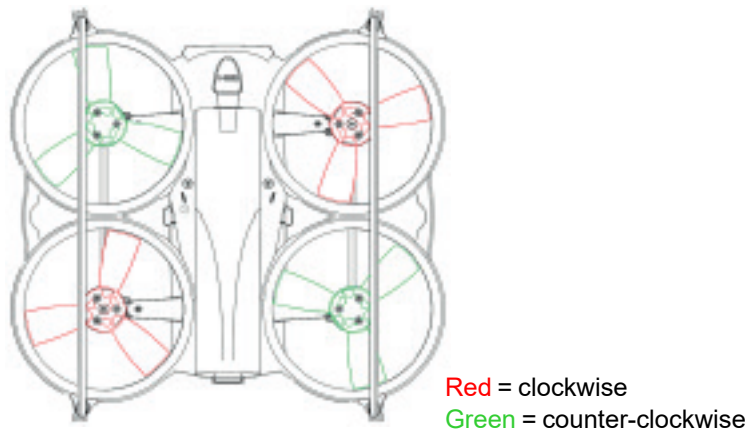
## Propellers

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The easiest and best way to keep your Sky-Hero by Axon Loki MkII Breaching Drone in good condition is to avoid the use of damaged propellers as much as possible. This generates a lot of vibrations, wears down the motor bearings quickly, and shortens the gyroscope's lifetime. The battery will also suffer from higher vibrations as all the sensors will be disturbed leading to over corrections and thus higher power use and shorter flight time.

## Tools and Components Required

- No Tools Required
- Sky-Hero by Axon Loki MkII Breaching Drone
- Corresponding propeller(s) to the one(s) broken. Make sure to use the correct propeller:
  - Clockwise propellers (in red below) have no hole
  - Counter-clockwise propellers (in green below) have a hole in the middle



## Replacement Steps

### Step 1: Stabilize and Remove the Damaged Propeller

- Place an additional counter-clockwise propeller (with a hole in its center) upside down on top of the damaged propeller.
- Hold this extra propeller firmly to lock the motor shaft and prevent it from rotating.
- Carefully rotate the damaged propeller counterclockwise (or as appropriate, depending on threading direction) using your fingers until it loosens.
- Remove the damaged propeller from the motor shaft.

### Step 2: Install the New Propeller

- Align the new propeller in the same orientation as the one you removed.
- Rotate the propeller in the correct direction (clockwise or counterclockwise) to screw it securely onto the motor shaft.
- Make sure that the propeller is properly seated, tightened, and correctly oriented for safe and efficient flight.

## Stiffeners / Fasteners

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Do not fly with damaged stiffeners; they can increase vibration levels and generate a weakness during an impact. Follow these steps to inspect and replace damaged stiffeners or fasteners on your Sky-Hero by Axon Loki MkII Breaching Drone.

## Tools and Components Required

- T5 screwdriver
- Sky-Hero by Axon Loki MkII Breaching Drone

- Replacement stiffener(s) and/or fastener(s)

## Replacement Steps

- Refer to the video corresponding to the part you're replacing in [Training Videos](#).

## Motors

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Follow this step-by-step guide to safely and effectively replace a motor on your Sky-Hero by Axon Loki MkII Breaching Drone. We recommend changing the 4 motors together to guarantee the best flight performances; however, you may replace only 1 if the other motors have been used less than 3 hours.

## Tools and Components Required

- Torx T6 screwdriver
- Hex 1.5 mm screwdriver
- A pair of fine-tipped pliers
- Loki MkII UAV
- Replacement motor(s)
- Center-perforated propeller (counter-clockwise, CCW)

## Replacement Steps

### Step 1: Remove the Propeller

- Identify the motor that needs to be replaced.
- To stabilize the motor during removal, place a second center-perforated propeller on top of the one already attached.
- Carefully slide the propeller off the motor shaft.

### Step 2: Access the Motor Cover

- Flip the UAV over to expose its underside.
- Using the Torx T6 screwdriver, unscrew the two fasteners securing the motor cover.
- Gently lift and remove the motor cover to reveal the internal wiring and motor housing.

### Step 3: Disconnect the Motor Cable

- Using fine-tipped pliers, gently unplug the motor's cable from the corresponding connector on the UAV's internal board.
- Take care not to pull forcefully to avoid damaging nearby components.

### Step 4: Remove the Old Motor

- Locate the three screws holding the motor to the UAV frame.
- With the Hex 1.5 mm screwdriver, remove all three screws. Note: One screw is partially hidden beneath the cable.
- Carefully lift the motor out of its housing.

### Step 5: Install the New Motor

- Align the replacement motor with the mounting points inside the motor housing.
- Slide it into place gently, ensuring that the shaft and wires are correctly oriented.

### Step 6: Secure the New Motor

- Reinsert the three screws using the Hex 1.5 mm screwdriver.
- Tighten them evenly but avoid overtightening—ensure the motor is held firmly against the plastic frame without applying excessive pressure.

### Step 7: Reconnect the Motor Cable

- Plug the new motor's cable back into the UAV connector using the pliers.
- Make sure the cable is neatly routed and seated into the frame to prevent interference during flight.

### Step 8: Reattach the Motor Cover

- Place the motor cover back over the assembly.
- Secure it in place using the two screws removed earlier and the Torx T6 screwdriver.

### Step 9: Reinstall the Propeller

- Turn the UAV back over to its upright position.
- Reinstall the propeller onto the motor shaft. Use a second propeller to help stabilize the motor if needed.

### Final Check

- Your Sky-Hero by Axon Loki MkII Breaching Drone is now equipped with a new motor and ready to fly. Before takeoff, double-check all connections and ensure the propeller is secure.

# Bullbars

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Follow these steps to safely and correctly replace the bullbars and rubber mounting points on your Sky-Hero by Axon Loki MkII Breaching Drone.

## Tools and Components Required

- No Tools Required
- Instant CA Glue
- Sky-Hero by Axon Loki MkII Breaching Drone
- Replacement Longitudinal Bullbar(s) and/or Rubber Mounting Point(s)

## Replacement Steps

### Replacing Longitudinal Bullbars

#### Step 1: Remove the Existing Bullbars

- Firmly grip each longitudinal bullbar and gently pull it out of the rubber mounting points.
- No adhesive is used on the bullbars, so they should detach with light force.

#### Step 2: Inspect the Bullbars

- Check for cracks, breaks, or any signs of damage.
- Discard and replace any bullbar that is broken or deformed.

#### Step 3: Install New Bullbars

- Align the new bullbar with the rubber mounting points.
- Firmly press it into place until it is securely seated.

### Replacing Damaged Rubber Mounting Points

#### Step 1: Remove the Bullbars

- Detach the longitudinal bullbars from both ends to access the rubber mounts.

## Step 2: Detach the Damaged Mounts

- Carefully peel off any broken or loose rubber mounting points.
- Take care not to damage the drone's frame or surrounding components.

## Step 3: Clean the Mounting Area

- Thoroughly clean the area where the rubber mount was attached.
- Remove any adhesive residue or debris to ensure a strong bond.

## Step 4: Apply Adhesive

- Apply a small amount of Instant CA glue (cyanoacrylate adhesive) to the cleaned mounting surface.

## Step 5: Install the New Rubber Mounts

- Position the new rubber mount on the glued area.
- Press firmly and hold in place until the adhesive sets.

## Step 6: Reinsert the Bullbars

- Once the glue has fully cured, reinsert the longitudinal bullbars into the new rubber mounts.

## Final Check

- Verify that all bullbars and mounts are securely in place before operating the UAV.

# Landing pads

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Follow these steps to safely replace the landing pads of your Sky-Hero by Axon Loki MkII Breaching Drone.

## Tools and Components Required

- No Tools Required
- Instant CA Glue
- Sky-Hero by Axon Loki MkII Breaching Drone
- Replacement landing pad(s)



## Replacement Steps

### Step 1: Remove the Damaged Landing Pad

- Gently grasp the damaged black rubber landing pad.
- Carefully pull the landing pad out of its slot without applying excessive force.
- Inspect the landing pad slot and surrounding area for any debris, adhesive residue, or leftover fragments.
- Clean the slot thoroughly using a small brush, dry cloth, or compressed air to ensure the area is clear and dry.

### Step 2: Prepare and Install the New Landing Pad

- Apply a small amount of Instant CA glue (cyanoacrylate adhesive) evenly inside the landing pad slot.
- Immediately insert the new landing pad into the slot.
- Align the landing pad correctly to ensure it sits flush and stable.
- Press the landing pad gently but firmly to secure it in place.
- Wipe away any excess glue carefully, if necessary.
- Allow the glue to fully cure according to the adhesive manufacturer's instructions.
- Do not operate or move the equipment until the glue is completely dry and the landing pad is securely attached.

## Upper frame

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This procedure provides step-by-step instructions for replacing the upper frame of your Sky-Hero by Axon Loki MkII Breaching Drone. Follow these directions carefully to ensure proper assembly and safe operation after reassembly.

## Tools and Components Required

- Torx 8 screwdriver
- Torx 6 screwdriver
- A pair of fine-tipped pliers
- Your Loki MkII UAV
- A center-perforated propeller (Counter-Clockwise [CCW] type for this example)
- A replacement Sky-Hero by Axon Loki MkII Breaching Drone upper frame

## Replacement Steps

### Step 1: Remove All Propellers

- Start by removing all four propellers from the UAV.
- To make this easier and avoid rotating the motors during removal, use a center-drilled (perforated) propeller to secure the motor shaft. This provides a firm grip while sliding off each propeller.

### Step 2: Access the Underside Screws

- Flip the UAV over to expose the bottom side.
- Using the Torx 8 screwdriver, remove the four screws located at the front and rear of the underside. These screws secure the upper frame to the lower structure.

### Step 3: Remove the Underside Screws

- Using the fine pliers, carefully extract the screws you just loosened. Place them in a safe spot for reinstallation later.

### Step 4: Remove Top-Side Screws

- Turn the UAV back upright.
- With the Torx 6 screwdriver, remove the 12 screws along the motor arms and three screws located at the back edge near the battery connector.
- Use pliers if necessary to pull out the screws. Organize them so they are easy to identify when reinstalling.

### Step 5: Detach Upper Frame

- Slide off the battery clip at the rear of the UAV.
- Carefully lift the upper frame, separating it from the lower half, which contains the flight electronics and internal components. Set the upper frame aside.

### Step 6: Remove Remaining Arm Screws

- With the upper frame removed, extract any remaining screws from the motor arms using the pliers as needed. These screws will also be reused during reassembly.

### Step 7: Transfer Bull Bars

- Retrieve the two bull bars from the old frame. Reattach them to the new upper frame by applying even pressure on each attachment point until they click or slide securely into place.

## Step 8: Attach the New Upper Frame

- Align the new upper frame with the lower section of the UAV.
- Carefully insert the antenna wire into its designated rubber sleeve on the new upper frame.
- Once everything is properly aligned, gently press the upper and lower halves together.

## Step 9: Reinstall All Screws

- Begin by reinstalling the motor arm screws, starting with the screws on opposite sides (parallel screws) to evenly distribute pressure. Follow with the central screws. Tighten each screw just until snug—do not overtighten.
- Next, reinstall the three screws behind the battery connector.

## Step 10: Reattach Components

- Propellers: Secure all four propellers back onto their respective motors. Use the center-perforated propeller again if needed for stabilization during tightening.
- Battery Clip: Slide the battery clip back into its slot at the rear of the UAV.
- Bull Bars: Insert the bull bars into their designated mounting holes on the frame.

## Step 11: Final Underside Screws

- Flip the UAV over once more and use the Torx 8 screwdriver to reinstall the four large screws you removed in Step 2. These connect the lower and upper frames. Tighten them securely but avoid excessive force.

## Replacement Complete

- Your upper frame has been successfully replaced. Your Sky-Hero by Axon Loki MkII Breaching Drone is now ready for flight. Perform a quick systems check before flying to ensure all parts are securely attached and functioning properly.

# Duct

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To ensure proper functioning and safety, follow the step-by-step procedure outlined below to remove and replace a damaged or broken insert duct. This will help maintain the efficiency of the system and prevent further damage.

## Tools and Components Required

- No Tools Required
- Sky-Hero by Axon Loki MkII Breaching Drone

- Replacement duct

## Replacement Steps

### Step 1: Remove the Damaged Duct

- Locate the gray duct that needs to be replaced.
- Carefully remove the duct by gently pulling it out from its position. Ensure that the entire duct is removed without leaving any fragments in the upper frame.

### Step 2: Install the New Duct

#### **Caution**

Proper alignment and full insertion are essential to ensure optimal performance and avoid any obstruction

- Position the new duct precisely in the designated slot of the upper frame.
- Align the grooves on the duct with the corresponding grooves on the upper frame.
- Firmly press the duct into place until it securely clips in. Make sure the duct is fully inserted and flush with the edges of the upper frame. There should be no visible gaps or differences in height between the duct and the frame surface.

# Storage

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- Make sure contacts on batteries and charger do not come into contact with conductive materials.
- Store out of direct sunlight in a dry and well-ventilated area at room temperature, ideally 68–82 °F (20–28 °C). Extreme cold or heat can lead to permanent damage to batteries and electrical elements of the UAV and controller.
- Store in a relative humidity below 75% to avoid corrosion of metal elements and mildew on system components or cases. Do not store in a damp basement, uninsulated attic, vehicle, or non-climate-controlled storage unit.
- Store away from sources of magnetism to avoid damage to computer or electrical components.
- Charge and store batteries in a cool, dry environment.

# Troubleshooting

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If connection loss or activation failure occurs:

- Verify encrypted link and battery charge.
- Make sure the Remote Trigger indicator shows 'Ready'.
- Live payload activation failures should be handled in accordance to agency standard operating procedures.
- Reach out to Axon Robotics Support for additional diagnostics or repairs.

# FCC Registration

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Use of Loki MkII in an official capacity may exempt the requirement to register it with the FAA. However, if you take the UAV home for the weekend for practice flights, this could be considered personal flight time and a violation of FAA statute if flown unregistered. Additionally, flying for any reason remotely construed as being for commercial purposes requires a Part 107 drone pilot license.

Loki MkII broadcasts the required Remote ID (RID) for drones as required by FCC statute. Register your UAV's serial number at [https://www.faa.gov/uas/getting\\_started/register\\_drone](https://www.faa.gov/uas/getting_started/register_drone). Label your drone with the ID number the FCC provides. Many pilots also include a phone number and the words "Reward if returned" to aid in recovery of a lost drone.

FAA registration must be renewed every two years.

# FCC Compliance Statement for Loki MkII

## FCC ID: X4GSH-00002

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Changes or modifications to the equipment not expressly approved by the manufacturer could void the product warranty and the user's authority to operate the equipment.

Your wireless device (model ) is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. Before a device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure.

Axon equipment (model ) has been tested and found to comply with the limits for Class B digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult Axon technical support for help.
- Axon systems comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device must be professionally installed.



This equipment complies with FCC's radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

This portable equipment with its antenna complies with FCC's radiation exposure limits set forth for an uncontrolled environment. To maintain compliance, follow the instructions below:

1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. Avoid direct contact to the antenna, or keep contact to a minimum while using this equipment.

#### FCC Notice – Waiver Granted for Use under Specific Conditions

This device, Loki, operates under a waiver granted by the Federal Communications Commission (FCC) pursuant to DA 24-1216. The waiver allows analog-modulated devices to operate in the 5725–5850 MHz band under conditions normally reserved for digitally modulated devices, including higher transmit power and slightly relaxed out-of-band emission (OOBE) limits. Operation of this device is subject to the following conditions:

#### 1. Authorized Use Only:

This device is authorized **only for use by law enforcement agencies** for emergency or safety-of-life surveillance operations. Routine monitoring or generalized surveillance is strictly prohibited.

#### 2. Transmission Channels:

The device is limited to operate over the following four channels:

- SH23: 5729.5 – 5734.5 MHz
- SH24: 5766.5 – 5771.5 MHz
- SH25: 5803.5 – 5808.5 MHz
- SH26: 5840.5 – 5845.5 MHz

The device must prioritize the use of channels SH23 and SH26, which do not overlap with standard Wi-Fi channels.

#### 3. Power and Emissions:

- The device may exceed the OOBE limit defined in 47 CFR §15.247(d) by up to 6 dB.
- The maximum output power is limited to 0.563 Watts with a power spectral density of 6.5 dBm/3kHz.

#### 4. Temporary, Mobile Use Only:

- This device must be **battery-powered only**.
- It must not be used for permanent or fixed installations.

#### **5. Sales Restrictions:**

This device is only authorized for sale to law enforcement agencies eligible under FCC rule §90.20. It must not be sold or leased to the general public or used by unauthorized entities.

#### **6. Proximity Notification Requirement:**

If this device is deployed within 40 km of **Patrick Space Force Base, FL** or **Vandenberg Space Force Base, CA**, the Department of the Air Force must be notified in advance at: [thu.luu@us.af.mil](mailto:thu.luu@us.af.mil).

#### **7. Waiver Validity Period:**

This FCC waiver is valid for **three years from December 5, 2024**. After this period, no new devices may be sold or marketed. Existing devices may continue to operate under the waiver conditions.

**Warning: Operation of this device outside of the above conditions is a violation of FCC regulations and may result in penalties.**