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**TACTICAL
MICRO-ROBOT
SYSTEMS™**



THROWBOT® 2

VERSION 1.0, SEPTEMBER 2023

**MODULAR MISSION PAYLOAD (MMP)
USER MANUAL**



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Place Serial Number Sticker Here

THROWBOT²

STROBE AND NOISE DISTRACTION (SAND) AND SPEAKER USER MANUAL

PRODUCT IDENTIFICATION

This user manual applies to the ReconRobotics Strobe and Noise Distraction (SAND) and Speaker Modular Mission Payloads used in conjunction with the Throwbot 2 Robot and Operator Control Unit 3 (OCU3). These Modular Mission Payloads will only work with a Throwbot² Robot controlled by an OCU3.

NOTICE: Any changes or modifications, whether to the physical equipment, software, or firmware, that are not expressly approved by ReconRobotics, will void the user's warranty and license to operate the equipment.

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Failure to adhere to the terms of this manual (User Manual), or ignoring the safety warnings described on pages 27-29, will void the user's license to operate the equipment and subject the user to liability. The "license" or "licenses" means all licenses applicable to the user, including the FCC License (as defined on page 32) and any applicable end user license agreements for the product or accessories ("EULAs").

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KIT CONTENTS

Please inspect the contents of this package to ensure that all materials listed below are present. If any of the materials are missing, please contact support@reconrobotics.com.

STROBE AND NOISE DISTRACTION (SAND) MMP KIT



Kit Contents Included:

- Strobe And Noise Distraction MMP
- 3/32" Hex Driver
- Throwbot[®] 2 Robot Tails (2)
- USB Cable Protector (See below)
- User Manual

SPEAKER MMP KIT



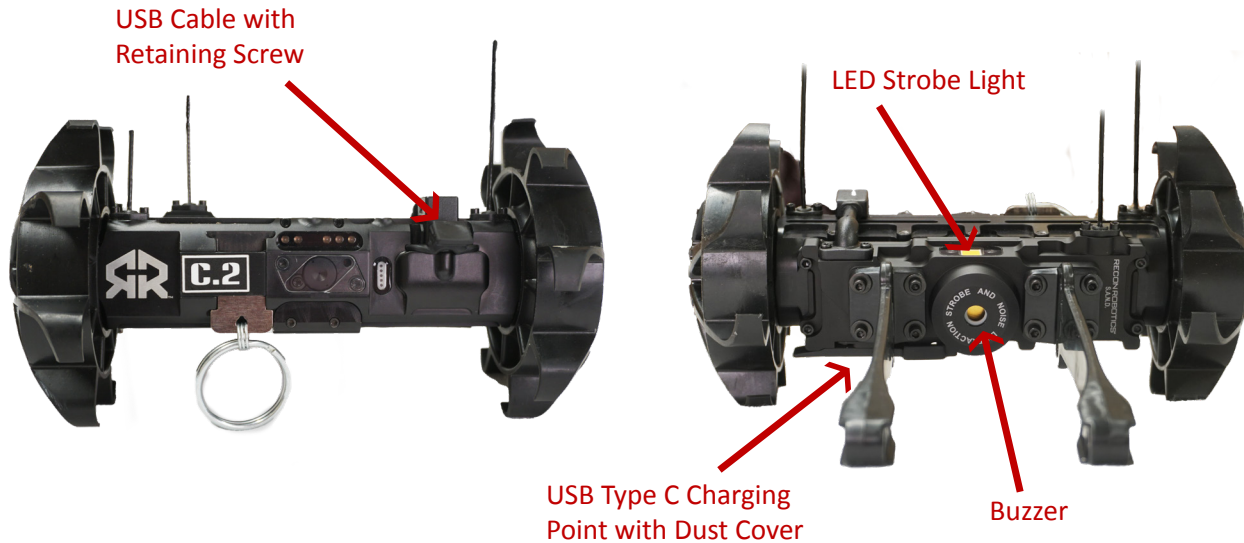
Kit Contents Included:

- Speaker Modular Mission Payload
- 3/32" Hex Driver
- Throwbot[®] 2 Robot Tail
- USB Cable Protector (See below)
- User Manual

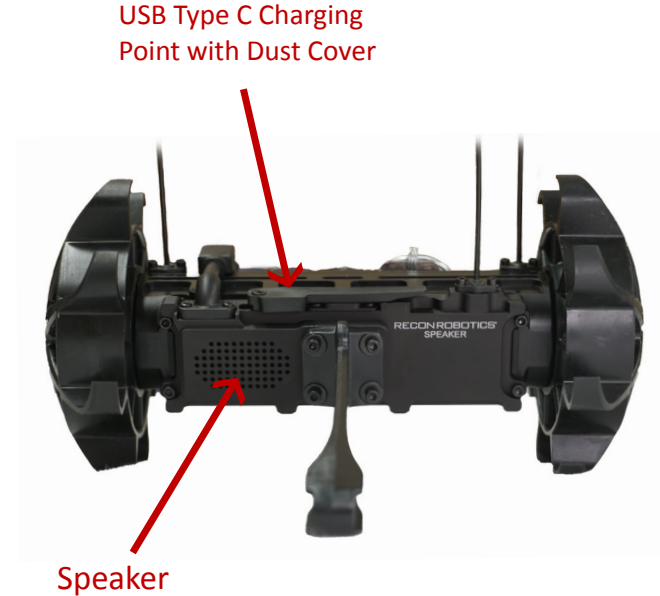


USB Cable Protector
- Attached to MMP (Left)
- Solo (Right)

THROWBOT 2 ROBOT WITH STROBE AND NOISE DISTRACTION MODULAR MISSION PAYLOAD FEATURE OVERVIEW

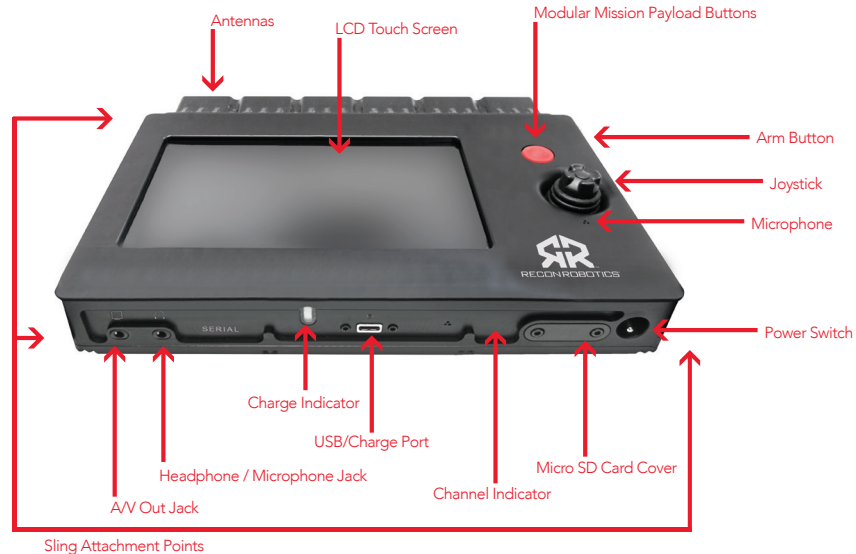


THROWBOT 2 ROBOT WITH SPEAKER MODULAR MISSION PAYLOAD FEATURE OVERVIEW



OPERATOR CONTROL UNIT 3 (OCU3) FEATURE OVERVIEW

FACE/BOTTOM VIEW



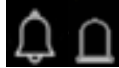
VIDEO OVERLAYS

When coupled with the Strobe and Noise Distraction or Speaker Modular Mission Payload, the Throwbot® 2 video stream will have additional icons that appear. The icons for charging and signal strength will remain the same. For a detailed overview of that functionality, please see the Robot and OCU3 User Manual

STROBE AND NOISE DISTRACTION MMP

When the Strobe and Noise Distraction MMP is attached, additional icons will appear in the video from the Throwbot® 2 Robot as shown below:

Payload Detected and Off



Strobe and Buzzer On



Similar icons will appear on the left-hand side of the OCU3 when paired with this payload.

VIDEO OVERLAYS

When coupled with the Strobe and Noise Distraction or Speaker Modular Mission Payload, the Throwbot® 2 video stream will have additional icons that appear. The icons for charging and signal strength will remain the same. For a detailed overview of that functionality, please see the Robot and OCU3 User Manual.

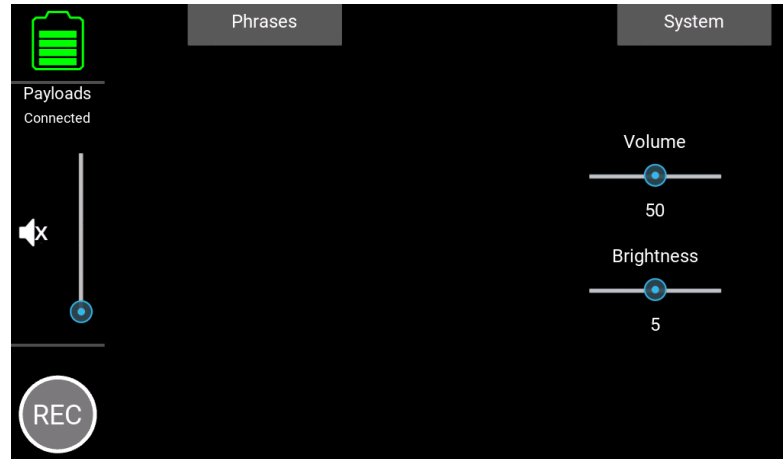
SPEAKER MMP

When the Speaker MMP is attached, additional icons will appear in the video from the Throwbot® 2 Robot as shown below:

Payload Detected and Off



Speaker On



On the OCU3, the Phrases menu will appear near the top, and a slider to control the speaker's volume will appear on the left.

OPERATIONAL SPECIFICATIONS

The Throwbot® 2 robotic system has been designed to provide immediate situational awareness in a variety of situations. When coupled with Modular Mission Payloads (MMP), the performance characteristics of the system changes as shown on the table to the right. For information on reconfiguring the system, see System Reconfiguration on page 23.

¹The Throwbot® 2 Robot with MMPs and OCU3 have been tested to these ranges. Performance may vary depending upon local environmental conditions.

²Typical Runtime is defined as 75% driving, 25% observation on flat terrain in a well-lit area. When one of the MMPs are attached, this includes 10 operations for 30 seconds each operation. Observation mode is defined as remaining stationary and broadcasting video and audio only. When an MMP is attached, this includes 10 operations for 30 seconds each operation.

³Rating is given with the base configuration wheels. Performance will vary with RXL or CT wheels. The Throwbot® 2 Robot with either MMP is not rated for drop or throw with CT wheels.

Specification	Base Configuration	With Speaker MMP	With SAND MMP
Image			
Range ¹			
Line of Sight (LOS)	450 ft / 137 m		
Indoors / Non-Line of Sight (NLOS)	150 ft / 45 m		
Runtime ²			
Typical	110 minutes	100 minutes	
Observation Mode	160 minutes	150 minutes	
Max Drop Height ³	30 ft / 9.1 m	10 ft / 3 m	
Max Throw Distance ³	120 ft / 36 m	40 ft / 12 m	
Max Obstacle Climb ³	2 in / 5 cm		
Max Speed	1.8 ft/s 0.6 m/s	1.7 ft/s 0.6 m/s	1.7 ft/s 0.6 m/s
MMP Sound Output	N/A	110 dB @ 1 ft / .3 m	100 dB @ 4 in / 10 cm
MMP Light Output	N/A	N/A	850 Lumens
IP Rating	IP66, IP67	IP65, IP67 when mated to a Throwbot 2 Robot	

QUICK START GUIDE

MATCHING RADIO CHANNELS

Ensure that the robot and OCU3 are on matching frequencies. The operating frequency channel is indicated by a sticker on the robot and OCU3. They must match for successful operation. To deploy multiple robots within the same area of operation, different channels must be used.

When pairing an OCU3 and a ReconRobotics robot for operation, the channel designations must match identically.

When operating multiple systems simultaneously, make sure you are using two different letters, for instance A.2 and C. Robots on channel A.2 and on channel A will interfere with each other and not work well in the same environment (the same will also occur with B/B.2 and C/C.2).

BASIC DEPLOYMENT INSTRUCTIONS

1. Switch the OCU3 on.
2. While the OCU3 is booting, pull the Activation Plate. Confirm that the robot is broadcasting video and accepting command from the OCU3 before deploying. If the video is noisy, it's possible that the OCU3's video receiver is being overpowered. Try moving the robot or OCU3 further apart.



3. Test headphones at a low volume setting.
4. Drop or throw robot into target environment.
5. Wait two seconds after robot lands to allow gyroscope to stabilize before operating.

INSTRUCTIONS FOR USE: SETUP

POWERING THE OCU3

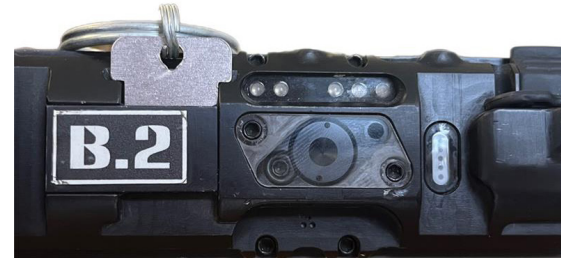
Flip the power switch at the base of the controller from the Off to On Position. A splash screen should appear while the OCU3 is loading. If the robot is powered on, video from the robot should appear. Otherwise, the screen will display static.

NOTE: The OCU3 boot time is approximately 10 seconds until video or static will appear.



POWERING THE ROBOT

To activate the robot, pull the activation plate. Reinserting the plate will turn the robot off. You will hear and feel a click when the activation plate is fully seated with the “shoulder” of the plate making contact with the housing as shown below. The plate may be installed from the top or bottom of the Throwbot® 2 robot. When used with Modular Mission Payloads, bottom installation may be required to allow for insertion.

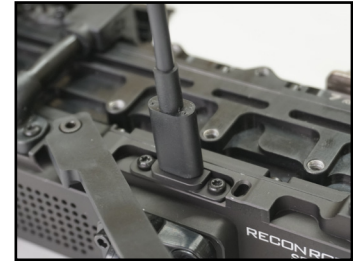


NOTE: When not in use, always ensure the OCU3 is switched off and the robot activation plate is inserted.

INSTRUCTIONS FOR USE: CHARGING WITH MODULAR MISSION PAYLOADS

When installed on a Throwbot® 2 Robot, the Strobe and Noise Distraction and Speaker Modular Mission Payloads allow pass-through charging of the system. Simply plug the USB Type C to C cable that would normally be used to charge the robot into the USB Type C Ports indicated in the pictures (right).

1. Ensure the robot and OCU3 are off before charging.
2. Prior to charging ensure the charge plugs and receptacles are dry, debris free, and not damaged. If anything appears damaged, contact support@reconrobotics.com for assistance.
3. If needed, plug the AC electrical cord into charger and plug charger into the power source before charging.
4. Fully insert the appropriate charger cord into the OCU3 or robot with MMP. Do not force a connection. Ensure connecting plugs are not bent during insertion or removal.
5. Remove robot with MMP and OCU3 from charger when charging is complete or keep everything connected to trickle charge and maintain a full battery. Charge your robot and OCU3 at least once per month to ensure the batteries are kept topped off to be ready for immediate deployment.
6. Always charge in a cool, ventilated, and firesafe area.
7. Do not leave devices charging unattended.
8. After charging, make sure the dust covers are in place on the Modular Mission Payloads and OCU3.
9. If there is an unusual sound, smoke, or burning odor emitted from any of the components during charging, discontinue charging, unplug the equipment and contact support@reconrobotics.com for assistance.



Speaker MMP Above, SAND MMP Below



INSTRUCTIONS FOR USE: ACTIVATING THE STROBE AND NOISE DISTRACTION PAYLOAD

To avoid accidental firing of the Strobe and Noise Distraction MMP, there is a two-step process for activation. Without any buttons pressed, the OCU3 will show the MMP is off as shown below.



First, press and hold the red button on the right-hand side of the OCU3 (labelled "Arm Button" in the image on page 7). This will put the system in an Armed State.



NOTE: Prior to use, ensure that the Strobe and Noise Distraction MMP is paired with the OCU3. See page 20 for more information

INSTRUCTIONS FOR USE: ACTIVATING THE STROBE AND NOISE DISTRACTION PAYLOAD

Then without releasing the "Arm Button", press the red button on the front face of the OCU3 (labelled "Modular Mission Payload Buttons" in the image on page 7).

If the Arm button is released before pressing the "Arm Button" Button on the front of the OCU3, a Not Armed Message will appear.



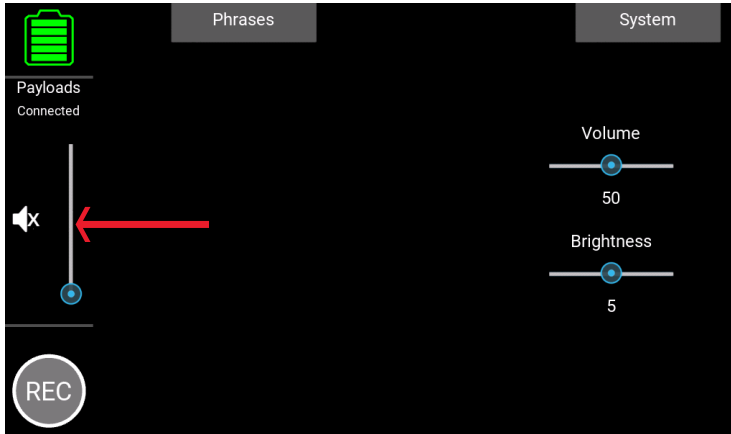
When activated, the light will strobe and buzzer will sound until either of the red buttons are released. The icons in the video stream from the robot will change from inactive to active while operational.



INSTRUCTIONS FOR USE: ACTIVATING THE SPEAKER PAYLOAD

The Speaker MMP has two operational modes.

The first mode is Push to Talk. Prior to using either mode, ensure that the speaker volume is set above zero using the slider on the left hand side of the OCU3 as shown in the picture below.



NOTE: Prior to use, ensure that the Speaker MMP is paired with the OCU3. See page 20 for more information

The Push to Talk feature can be used with either the internal microphone of the OCU3 or an external microphone can be plugged into the Headphone / Microphone Jack. External headsets must utilize the AHJ standard. See the diagram for the appropriate pin-out of the headphone.

EARBUD JACK CONFORMS TO AHJ STANDARD (MOST COMMON)

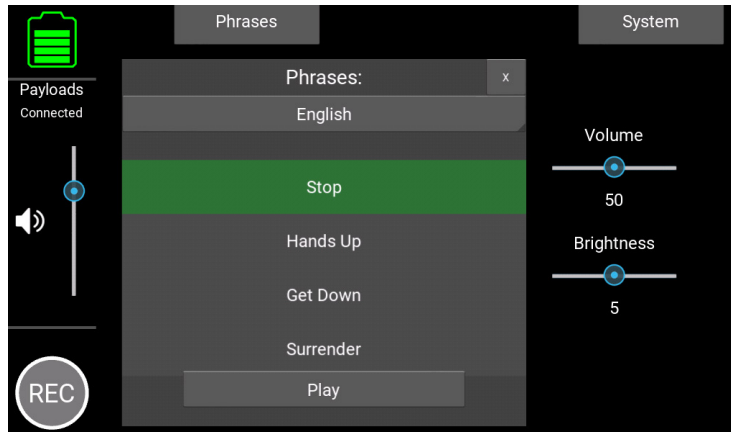


Press and hold the "Modular Mission Payload Button" and "Arm Button" on the OCU3 to transmit audio from the microphone. Releasing either button will stop transmission.

INSTRUCTIONS FOR USE: ACTIVATING THE SPEAKER PAYLOAD

The second mode allows the operator to play pre-recorded phrases.

This is especially useful if utilizing phrases recorded in foreign languages.



To activate pre-recorded phrases:

1. Press Phrases at the top of the screen
2. Select the Phrase you want (Picture Left)
3. Click Play
4. The selected sound will play from the Speaker MMP

For details and instructions on recording your own phrases, please reach out to support@reconrobotics.com.

REGULAR MAINTENANCE (RECOMMENDED AFTER EACH DEPLOYMENT)

1. Always re-insert the activation plate in the robot and turn the OCU3 off.
2. Keep the system clean of dust and debris.
3. Ensure the system is fully dry before charging or storing.
4. Inspect the robot for wear on its tail, wheels, and antennas.
 - a. Wheels – If the wheels are loose, tighten the nut with a 5/16" nut driver. The wheels should spin freely. Inspect the wheels for wear, rips, or tears.
 - b. Tail – If the tail is loose, use a 3/32" hex driver to tighten the bolts holding the tail. Tighten until the tail just begins to deform under the screw pressure. Do not over-tighten.
 - c. Antennas – Visually inspect for scuffing or cracking. If the wire is exposed or if the antennas have been severely kinked, antennas should be replaced. The antennas should stand nearly vertical. **NOTE: Do not operate the Robot if the antennas are missing, it may result in further damage.**
5. Inspect the OCU3 for wear.
 - a. Antennas – Ensure that the antenna cover is not dented or damaged.
 - b. Joystick – Ensure that the joystick travels for the full range of motion and returns to the center when released.
 - c. Screen – Check for scratches and other damage to the screen.
6. Inspect the MMP for wear.
 - a. Antennas – Visually inspect for scuffing or cracking. If the wire is exposed or if the antennas have been severely kinked, antennas should be replaced. The antennas should stand near vertical. **NOTE: Do not operate the Robot if the antennas are missing, it may result in further damage.**
 - b. MMP USB Connection – Visually inspect for cracks or other damage on the USB Connector.
7. Recharge the robot and OCU3 as described on page 13-14 of the Robot and OCU3 User Manual.

PAIRING OVERVIEW

The Strobe and Noise Distraction and Speaker MMPs communicate over a dedicated radio link with the OCU3. This requires that a pairing protocol be followed to ensure that the OCU3 is communicating with the intended Throwbot® 2 Robot and Modular Mission Payload.

FIRMWARE REVISION CHECK

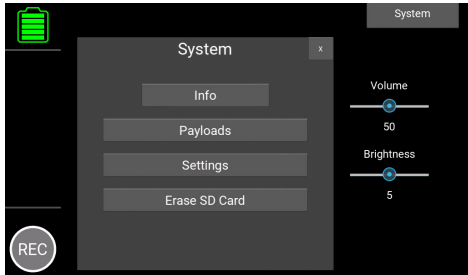
Prior to pairing, it is important to ensure that the Throwbot® 2 Robot has the appropriate firmware level for supporting the Modular Mission Payloads. To check this, turn on the OCU3 while the Throwbot® 2 Robot is off. Once the OCU3 is fully activated, look at the OCU3's screen while activating the Throwbot® 2 Robot. A number such as the one below should appear before any other icons on the video from the Throwbot® 2 Robot.



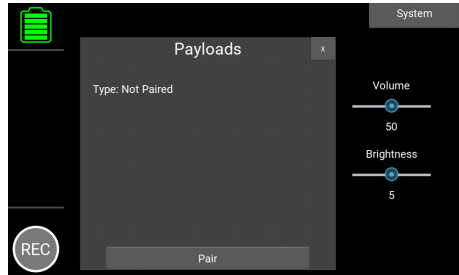
If this number is above 2.3, the Throwbot® 2 Robot should support the Strobe and Noise Distraction and Speaker MMPs. If it is not, contact support@reconrobotics.com or your local reseller for more information on getting an update for the robot.

PAIRING PROCESS

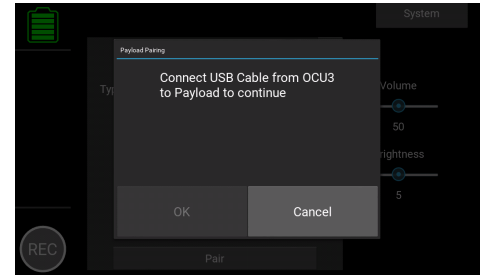
With the Throwbot® 2 Robot off and a Payload connected to it, plug the OCU3 into the Payload with a USB-C cable.



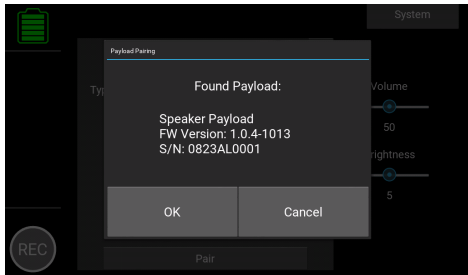
1. Click the System button in the top right then the Payloads button.



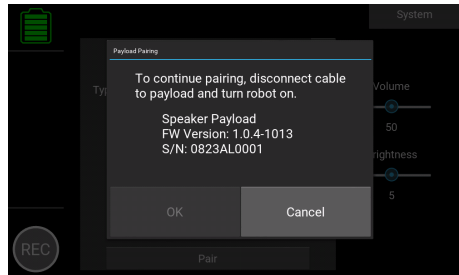
2. Click the Pair button at the bottom of the screen.



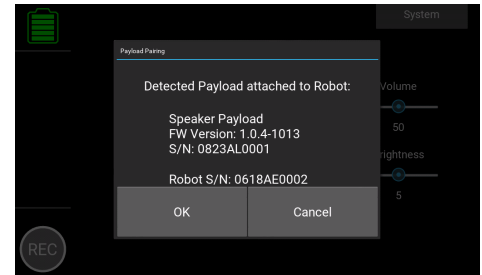
3. Make sure the cable is connected between the OCU3 and Payload.



4. Click OK to continue pairing the listed payload.



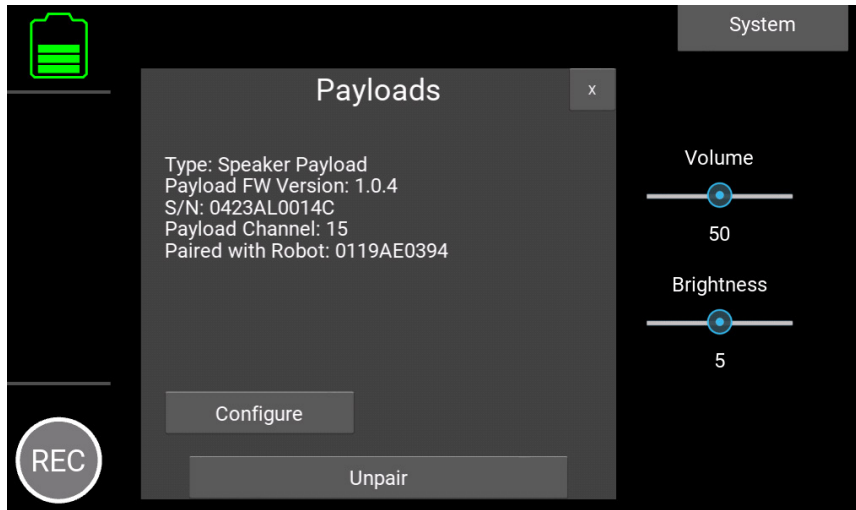
5. To continue pairing, disconnect the cable and turn the Throwbot® 2 robot on.



6. When the Robot is detected, click OK to complete the pairing process.

CHECKING PAIRING

Prior to mission deployment confirm that the equipment is paired by clicking on the System button in the top right, then Payloads button. A Screen outlining what Payload type is paired should appear. Test to ensure that the Payload is working as expected

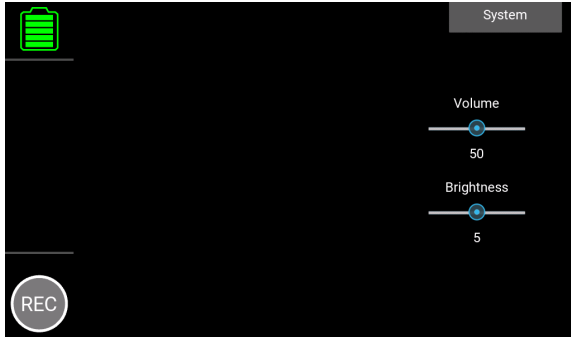


NOTE: A Modular Mission Payload will remain paired with an OCU3 until one of the following conditions occur:

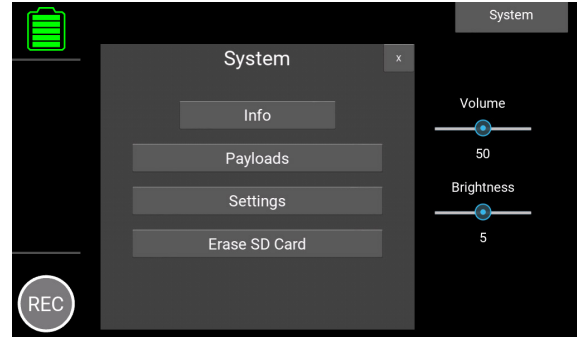
1. A different Payload is paired with the OCU3.
2. The Payload is paired with a different OCU3.
3. The Payload is plugged into a different robot.
4. The user manually unpairs the Payload.

To manually unpair the Payload, see instructions on the following page.

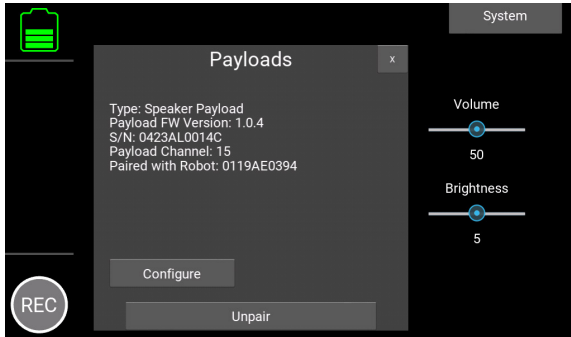
UNPAIRING A MODULAR MISSION PAYLOAD



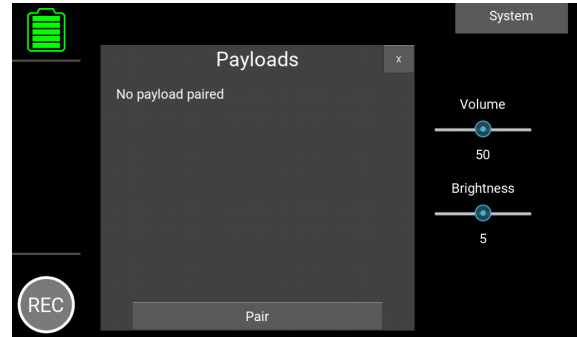
1. Click System in the top right.



2. Select Payloads.



3. Press Unpair.



4. Your Throwbot 2 Robot and Payload are now unpaired .

SYSTEM RECONFIGURATION

The following reconfiguration instructions assume that the Throwbot® 2 Robot is in the Base Configuration as shown below:



If the Robot has been configured to the Rugged XL (RXL) configurations or Carry and Tow (CT) configuration, the wheels should be switched back to those in the base configuration. If a Picatinny Rail is installed, it should be removed before proceeding.

To reconfigure the system to use the Strobe and Noise Distraction or Speakers Modular Mission Payloads perform the following steps:

1. Remove the tail using the 3/32" hex driver. The captive screws will be retained in the tail. If a screw becomes detached from the tail, push or screw it back into the hole in the tail until it can rotate freely.
2. Align the Modular Mission Payload so that it fits against the back of the Throwbot® 2 Robot. The mounting points on the back of the Throwbot® 2 Robot should interlock with the rear surface of the Modular Mission Payload. If installed, remove the USB Cable Protector from the Modular Mission Payload.
3. Insert the USB Type C Connector from the Modular Mission Payload into the Charging Port of the Throwbot® 2 Robot.
4. Tighten the captive screw in the USB Type C Connector into the main body of the Throwbot® 2 Robot using the 3/32" hex driver.

NOTE: Overtightening may cause the screw to snap. Failure to tighten this screw may cause the robot to lose communication with the payload when thrown.

5. There are 4 captive screws in the Modular Mission Payload that should align with mounting holes in the back of the Throwbot® 2 Robot. Use a 3/32" hex driver to tighten those screws down.

NOTE: The Strobe and Noise Distraction Payload utilizes two tails. Ensure that the directional arrow on the tails points the same way between the tails if they have been removed.

TROUBLESHOOTING / FREQUENTLY ASKED QUESTIONS

I'VE TURNED THE OCU3 ON AND THE SCREEN IS NOT DISPLAYING A SOLID VIDEO STREAM.

“Bad” video can have several causes:

- The robot may be out of range. Try decreasing range between the robot and the OCU3.
- The robot may be too close and overpowering the OCU3. Try to maintain a few feet between the devices.
- The robot may be low on power or deactivated. Try recharging and/or activating the robot.
- The robot or OCU3 may be experiencing interference caused by environmental factors (e.g. other radios in the area, proximity to metal buildings, etc.). Try using the system in another location.
- There may be another robot operating nearby on the same channel, which will cause interference. For multi-robot operation, refer to page 11.

I HAVE HEADPHONES PLUGGED INTO MY OCU3, BUT ALL I HEAR IS STATIC.

The OCU3 will only transmit audio if you are using an active, audio-enabled ReconRobotics robot system on the

same channel. Also, make sure your headphones have an appropriate jack as described on page 16.

WHEN I THROW THE ROBOT, IT DOES NOT DRIVE STRAIGHT WHEN IT LANDS.

The robot has electronic circuitry that self-calibrates after landing. Let it sit for a few seconds before driving. It will automatically recalibrate itself during this time and should resume driving as expected.

THE ROBOT'S IR LIGHT IS NOT TURNING ON.

In order to conserve battery life, the IR LEDs will not turn on if the light sensor detects sufficient light. If your robot's IR LEDs are not activating when the robot is in a state of complete darkness, there may be an issue with the light sensor. Contact support@reconrobotics.com for service.

THE ROBOT'S IR LIGHT STAYS ON CONSTANTLY, EVEN IN DAYLIGHT.

If there is dust or debris present on the light sensor, the sensor may be fooled into thinking it is darker than it really is. Ensure the light sensor is free of dust or debris by wiping it with a soft towel.

TROUBLESHOOTING / FREQUENTLY ASKED QUESTIONS

THE VIDEO STREAM LOSES COLOR FROM TIME TO TIME.

As the robot reaches the end of video range or in the presence of other interference, the color from the video signal may start to disappear. Try moving the OCU3 closer to the robot to restore the color.

THE VIDEO STREAM FROM THE ROBOT IS WASHED OUT, ESPECIALLY IN THE DARK.

When the robot is close to other objects in the dark, the IR lighting may cause a spot-light effect causing distortion of the video. This version of the robot will attempt to automatically detect and lower the IR output in this scenario, however, it still may result in some washing out. To alleviate this issue, try backing up the robot slightly or turning it slightly to aim the “spotlight” away from the object of interest.

I HAVE A RECON SCOUT XL OR RECON SCOUT CT WITH A FLEX PACK. CAN I USE THOSE COMPONENTS WITH MY THROWBOT 2 ROBOT INSTEAD OF GETTING A DELUXE PACK?

While the larger wheels in the Deluxe Pack may look

similar to the Recon Scout XL wheels in size, they are a new design. The Throwbot 2 XL wheels can be utilized on older Recon Scout XL or Recon Scout CT robots, but the older Recon Scout XL wheels from the Recon Scout XL or Flex Pack will not afford the same drop ratings as the new wheels and should not be used on a Throwbot 2 robot. Similarly, the wider tail on the Recon Scout XL or Recon Scout CT may look the same, but the mounting mechanisms are different and they are not interchangeable. Finally, the Picatinny Rail from the Recon Scout CT cannot mount onto the Throwbot 2 robot.

CAN THE ROBOT BE OPERATED IN WET CONDITIONS?

The Throwbot 2 robot system is both IP66 and IP67 rated which means that it can be sprayed with a hose to clean it off or submerged for up to 30 minutes in 3 feet (1m) of water. The OCU3 is IP65 and IP67 rated. While the Throwbot 2 robot and OCU3 have these ratings, they are not meant for operation underwater. The warranty and Annual Maintenance Plan do not cover any damage resulting from exposure of the system to water beyond these ratings, salt water spray, hazardous or caustic chemicals, etc.

TROUBLESHOOTING / FREQUENTLY ASKED QUESTIONS

I'VE CRACKED THE SCREEN ON MY OCU3, DOES IT STILL MEET IP65 AND IP67

Unfortunately, we can not guarantee that the OCU3 remains waterproof if the screen gets cracked. Please contact support@reconrobotics.com regarding screen replacement.

THE ROBOT OR OCU3 HAS BEEN EXPOSED TO BLOOD OR OTHER BIOLOGICAL HAZARDS. WHAT CAN I USE TO CLEAN IT?

We recommend cleaning the robot or OCU3 with one of the below:

- Bleach
- Ammonia
- Isopropyl Alcohol
- SaniZide Plus®
- Spray Nine®
- Spray Nine® Heavy Duty
- Fantastik® Heavy Duty
- Simple Green®

When cleaning, remember to do the following:

- Spray or wipe down the robot or OCU3 with your preferred cleaner, then rinse under water.
- It is best to dry off the robot or OCU3 as soon as

possible; do not soak in a cleaning solution or in water more than necessary.

- For the deepest clean, remove the wheels and tail and wash them separately.
- Until the robot or OCU3 is completely dry, do not insert the dust cover into the USB connector.
- While the OCU3 is drying, try to keep the screen face down to help drain any cleaning agents or water from the screen and microphone on the top surface.

NOTE: While the Throwbot® 2 robot and OCU3 have been tested for cleaning with these chemicals, exposure to some caustic substances being cleaned with these chemicals may damage the seals in the robot and OCU3. Please contact ReconRobotics for assistance.

ARE THERE TRANSLATIONS OF THIS USER MANUAL AVAILABLE?

- For the most current version of the User Manual, along with all available translations of the User Manual, please visit our website at www.reconrobotics.com. User consents to abide by the terms and conditions of the most recent update/published version of the User Manual.

SAFETY INFORMATION AND WARNINGS

Read these warnings before charging or using your robot or OCU3. Failure to read and follow these instructions may result in fire, personal injury and/or damage to property.

Any negligent or reckless use, intentional misuse, or use of the robot or OCU3 for any purpose not authorized in this User Manual, including failure to request service for the Throwbot2 robot upon discovery of a malfunction, continued use of a Throwbot2 robot after signs of malfunction, or ignoring the safety warnings below, may terminate your license and the user assumes all risk and liability for damage, injury or loss that may occur.

Retain these instructions for future reference. To reduce the risk of injury or damage, keep these safety precautions in mind when setting up, using, and maintaining your equipment.

- To reduce the risk of electric shock, do not open the shell of the robot, Operator Control Unit (OCU3) or the chargers. No user serviceable parts are inside. Refer servicing to qualified ReconRobotics service personnel.
- Do not attempt to operate the robot or OCU3 while operating a vehicle.
- Use caution if operating the robot or OCU3 in bad weather (i.e. strong winds, rain, sand/dusty storms, etc.).
- Do not attempt to service the robot or OCU3 yourself. Repairs of the physical equipment, software, or firmware not conducted by authorized personnel will result in the voiding of warranty, applicable licenses, and/or Annual Maintenance Plans.
- Do not attempt to use the robot or OCU3 with unapproved third party products, including accessories and third party software.
- Use caution if operating the robot or OCU3 in environments suffering from interference from other wireless devices (i.e. transmitter, video-downlink, WI-FI signals, etc.) or increased electromagnetic interference (i.e. in mining areas or close to radio transmission towers, high-voltage wires, substations, etc.).
- Keep loose clothing and hair away from the robot.

SAFETY INFORMATION AND WARNINGS

- Considerations for charging:
 - Always charge the OCU3 with it turned off.
 - Always charge the robot with the activation plate inserted.
 - Always charge in a cool, ventilated, fire-safe area.
 - Always use a proper country-specific AC socket (120-240 VAC) with the battery charger. Do not force the plug into a socket.
 - Ensure the charger plug is not deformed, bent or otherwise damaged before inserting into the robot or OCU3.
- Lithium Polymer batteries are volatile. Only charge the robot and OCU3 with the appropriate chargers. Failure to do so may cause fire, which could result in personal injury and/or property damage. Do not leave system unattended while charging.
- By purchasing a robot kit from ReconRobotics, the buyer assumes all risks associated with lithium polymer batteries. If you do not agree with these conditions, please return the robot kit to ReconRobotics.
- Do not attempt to disassemble or modify the robot or OCU3. This may cause an electric shock, fire, or system failure.
- Keep the robot and OCU3 away from children. The robot and OCU3 contain small, sharp, and potentially dangerous parts which may be a safety hazard.
- Do not insert any foreign objects inside the robot or OCU3. This may cause electric shock, fire or system failure.
- To reduce the risk of unauthorized use or frequency interference, contact ReconRobotics if the robot exhibits any signs that unauthorized parties may have accessed the operations frequency; signs include excessive lag time between commands and mechanical responses or unexplained mechanical movements.
- While IP rated, do not intentionally immerse the OCU3 or Throwbot 2 robot into water or other liquids. Never immerse the chargers into water or liquids. If water or any liquid enters the OCU3 or Throwbot 2 robot, immediately stop use to avoid electric shock, fire, or system failure

SAFETY INFORMATION AND WARNINGS

- The following symptoms indicate a device may need technical attention and should not be used:
 - After a full charge, the OCU3 display intermittently turns ON and OFF.
 - The OCU3 or charger has been dropped and is malfunctioning.
 - There are exposed wires on a charger cable.
 - The robot, OCU3, or charger becomes too hot to touch.
 - There is an unusual sound, smoke, or burning odor emitted from any of the components.
- This product emits small amounts of radiation which may cause cancer, birth defects, or other reproductive harm. It is the user's responsibility to take the reasonable care described in the section titled "FCC RF Radiation Exposure Statement" when using this product.
- This product may contain Formaldehyde or other similar substances or chemicals known to cause cancer, birth defects, or other reproductive harm. It is the user's responsibility to take reasonable care when using this product.



WARRANTY AND SERVICE

WARRANTY

The full Manufacturer's Warranty documentation is appended to this User Manual and available at the following web address: www.reconrobotics.com.

REQUESTING SERVICE OR REPAIR

You can request service by contacting your ReconRobotics sales representative or by emailing support@reconrobotics.com. When you contact, please be prepared to provide the following information:

- Problem description
- Customer Agency Name and Address
- Point of Contact
- Contact Phone or Email, along with best times to reach you
- Serial number of the product that is experiencing difficulties
- You may also be asked to provide proof of purchase

ReconRobotics staff will attempt to remotely troubleshoot and resolve the problem. If repair service is needed, an

RMA (Return Material Authorization) will be opened and shipping instructions for repair will be provided. Please do not just ship equipment to ReconRobotics without an RMA in place as this will cause delays in processing.

If your issue cannot be resolved remotely, ReconRobotics may provide loaner equipment during the repair process.

If your issue is not covered under warranty or by an extended service plan or annual maintenance plan, we will provide a not-to-exceed (NTE) repair cost estimate for your approval before commencing repair. After repairs are complete, you will be invoiced for the actual cost of repairs up to the estimate. Typical turnaround time for a repair is one week after receipt and approval to begin.

When sending equipment in for RMA, please include the entire kit (Robot, OCU3, and chargers) to ensure all problems can be identified and necessary repairs can be completed.

NOTE: If, after remote troubleshooting, the system is sent back for maintenance and no problem can be identified, a diagnostic fee may be assessed.

LIMITATIONS OF LIABILITY AND WARRANTY

Your exclusive remedy for the breach of the Manufacturer's Warranty shall be for ReconRobotics to repair or replace the product. Under no circumstances will ReconRobotics have liability for user's unauthorized use, or modification or intentional misuse, of the product under this agreement. Unauthorized use includes use after user activity that voids that user's license to operate the product and any applicable EULAs. If any applicable jurisdiction limits or otherwise restricts the voidability of a license, then, in the case of unauthorized use or modification, or intentional misuse, the user's license will be limited to the greatest extent permitted by law.

Under no circumstances shall ReconRobotics, its affiliates, suppliers, resellers, or service providers be liable for any of the following even if informed of their possibility and regardless of whether the claim is based in contract, warranty, negligence, strict liability, or any other theory of liability: (1) third party claims for damages; (2) loss, damage, or disclosure of data; (3) special, incidental, punitive, indirect, or consequential damages. In no case shall the total liability of ReconRobotics, its affiliates, suppliers, resellers, or service providers for damages from

any cause stemming from any theory of liability exceed the amounts paid by you to ReconRobotics over the prior twelve (12) month period. For any jurisdiction that limits the limit or exclusion of liability by contract, this provision shall be interpreted to provide the greatest limitation on liability permitted by law. In no case shall the total liability of ReconRobotics, its affiliates, suppliers, resellers, or service providers for damages from any cause exceed the amount of actual direct damages, not to exceed the amount the user paid for the product.

TO THE EXTENT PERMITTED BY LAW, EXCEPT AS EXPRESSLY PROVIDED IN THE MANUFACTURER'S WARRANTY, RECONROBOTICS DISCLAIMS ALL WARRANTIES OF ANY KIND, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING: (A) ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE; AND (B) ANY WARRANTY ARISING OUT OF COURSE OF DEALING, USAGE, OR TRADE. RECONROBOTICS AND ITS AFFILIATES, SUPPLIERS, RESELLERS, AND SERVICE PROVIDERS DO NOT WARRANT, EXCEPT AS EXPRESSLY PROVIDED IN ITS MANUFACTURER'S WARRANTY, THAT THE PRODUCT, PRODUCT ACCESSORIES, OR ANY PORTION OF THE PRODUCT, OR ANY MATERIALS, WILL BE UNINTERRUPTED, SECURE, OR FREE OF ERRORS, VIRUSES, OR OTHER HARMFUL COMPONENTS.

IF SUCH WARRANTIES CANNOT BE DISCLAIMED, RECONROBOTICS LIMITS THE DURATION AND REMEDIES OF SUCH WARRANTIES TO THE DURATION OF THIS EXPRESS WARRANTY AND, AT RECONROBOTIC'S OPTION, THE REPAIR OR REPLACEMENT SERVICES PROVIDED IN THE MANUFACTURER'S WARRANTY.

[US FCC CUSTOMERS ONLY]
FCC CLASS B PRODUCT COMPLIANCE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules except where waived by waiver DA 10-291 (the "FCC Ruling"). This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. 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 the dealer or an experienced radio/TV technician for help.

This device may not interfere with Federal stations operating in the 420-450 MHz band and must accept any interference received.

Although this transmitter has been approved by the Federal Communications Commission, it must accept any interference received from Federal or non-federal stations, including interference that may cause undesired operation.

Operation of the Throwbot®2 robot by eligible entities will require a separate Commission authorization.

Licensees must maintain a log of all ReconRobotics® product use. The log will include date of operation, start/stop times, location of operation, frequency segment of operation, reason for use, and point of contact. Licensees must provide this log to the Federal Communications Commission or to the National Telecommunications and Information Administration upon request of either agency.

When multiple Throwbot 2 robots are available on separate frequencies, the agency deploying them must deploy a Channel C/C.2 Throwbot 2 robot first, followed

RECONROBOTICS THROWBOT 2 ROBOT FCC GUIDELINES AND LOGBOOK

by a Channel A/A.2, followed by a Channel B/B.2.

Operation of the Recon Scout® or Throwbot 2 robot in an unauthorized manner, or failure to maintain the log, will subject licensees to Commission enforcement action and license revocation.

Any modifications to the physical equipment, software, or firmware that are not expressly approved by ReconRobotics will void the user's warranty and license to operate the equipment. User assumes all liability for any injury or loss caused by a robot and/or equipment that is modified without express approval by ReconRobotics, whether or not the unauthorized modifications caused or contributed to the injury or loss.

FCC RF RADIATION EXPOSURE STATEMENTS:

To comply with FCC RF exposure compliance requirements, the antenna used for the robot's transmitter must maintain a separation distance of at least 20 cm from all persons during use and must not be co-located or operating in conjunction with any other transmitter except in accordance with FCC multi-transmitter product procedures.

The Operator Control Unit (OCU3) complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operated in conjunction with any other transmitter except in accordance with FCC multi-transmitter product procedures.

FCC GUIDELINES

The usage of the Throwbot 2 robot and related equipment is subject to the following conditions:

Eligibility is limited to state and local police and firefighters eligible for licensing under Section 90.20(a)(1) of the Commission's Rules (such licensing and the FCC Ruling are collectively the "FCC License"), and security personnel in critical infrastructure industries.

The Throwbot 2 robot may be used only during actual emergencies involving threats to safety of life, and for necessary training related to such operations. Security personnel in critical infrastructure industries may operate the Throwbot 2 robot only in areas that are environmentally

RECONROBOTICS THROWBOT 2 ROBOT FCC GUIDELINES AND LOGBOOK

hazardous for entry by human personnel, and for necessary training related to such operations.

Training operations are not permitted within thirty kilometers of the following Federal radio location sites:

Site	Coordinates (degrees-minutes-seconds)
Beale Air Force Base	39-08-10 N / 121-21-04 W
Cape Cod Air Force Station	41-45-07 N / 70-32-17 W
Clear Air Force Station	64-55-16 N / 143-05-02 W
Cavalier Air Force Station	48-43-12 N / 97-54-00 W
Eglin Air Force Base	30-43-12 N / 86-12-36 W

The Throwbot 2 robot will operate on a secondary basis (cannot cause interference and is not protected from interference) to all Federal users and licensed non-Federal users. This device may not interfere with Federal stations operating in the 420-450 MHz band and must accept any interference received.

The operation of the Throwbot 2 robot may be impacted in the vicinity of the following radar and ionospheric research sites:

Site	Coordinates (degrees-minutes-seconds)
Arecibo, Puerto Rico	18-20-37 N / 66-45-11 W
Westford, Massachusetts	42-37-24 N / 71-29-18 W
Poker Flats, Alaska	65-07-47 N / 147-28-14 W

Any operation, modification or use of the Throwbot 2 robot and related equipment that violates the guidelines or usage restrictions in this User Manual, including but not limited to the FCC guidelines and compliance terms above, will immediately void all warranties, terminate all licenses to use the Throwbot 2 robot and related equipment, and the user will be liable for any consequences and loss that results from the unauthorized or incorrect use and violations of the terms of this User Manual.

FCC LOGBOOK

The usage of and license for the Throwbot® 2 robot is expressly subject to maintenance of a logbook. Please use the following sheet to record the date of operation, the start and stop times, channel information, the location of usage, a brief reason for usage and a point of contact. This logbook must be made available upon request of the Federal Communications Commission or the National Telecommunications and Information Administration.

Refer to your User's Manual for serial numbers and channel information. The next page may be photocopied, or additional pages are available from your authorized ReconRobotics® dealer.

DATE	START	STOP	LOCATION	REASON	POC



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