Warranty and Service

Warranty

The Manufacturer's Warranty documentation is enclosed with all new product shipments and available online at http://www.reconrobotics.com/warranty.

To request service or repairs:

Call or e-mail your ReconRobotics reseller to describe the problem you are experiencing and request a Return Material Authorization (RMA) tracking number. In addition to your original sales receipt, you will need to provide the unit's serial number, your return shipping address, email address, and a daytime telephone number.

Your ReconRobotics reseller is:

ReconRobotics, Inc.
7620 W 78th Street
Edina, MN 55439
952-935-5515

13

RECON SCOUT®

Know Before You Go®

User's Manual

Version 5   January 2012

RECON ROBOTICS™

R000851

Product Identification

This manual applies to the ReconRobotics Recon Scout® Platform and Recon Scout OCU.

Notice:

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

ReconRobotics Corporate Headquarters:

ReconRobotics, Inc.
7620 West 78th Street
Edina, MN 55439
Phone: 1-866-697-6267 or 952-935-5515
Fax: 952-935-5508
Email: support@reconrobotics.com
Website: www.reconrobotics.com

Place Serial Number Sticker Here

➢ Lithium Polymer batteries are volatile. Use provided Recon Scout robot and Recon Scout OCU chargers only. Failure to do so may cause fire which may result in personal injury and/or property damage.

➢ By purchasing the Recon Scout robot kit, the buyer assumes all risks associated with lithium polymer batteries. If you do not agree with these conditions, please return the Recon Scout robot kit.

- Do not attempt to disassemble or modify the Recon Scout robot. This may cause an electric shock, a fire, or failure.

- Do not put pieces of metal, such as a paper clip, inside the Recon Scout robot. This may cause an electric shock, a fire, or failure.

- Do not immerse the OCU or chargers into water or liquids.

- If water or any liquid enters the inside of the OCU, immediately stop use to avoid shock, fire, or unit failure.

➢ The following describes additional symptoms of a device that needs technical attention and should not be used:

- After a full charge, the OCU display intermittently turns ON and OFF or suddenly loses its signal.

- The OCU or charger have been dropped and are malfunctioning.

- The Recon Scout robot, OCU or charger become too hot to touch.

- There is an unusual sound emitted from any of the components.

- There is smoke emitted from any of the components.

- There is a burning smell emitted from any of the components.

⚠ Note **If you have questions/concerns regarding the use/operation of the Recon Scout robot, discontinue use and contact the vendor from whom you purchased your Recon Scout Kit.**

RECON ROBOTICS

Safety Information & Warnings

Read these warnings before charging or using your Recon Scout Robot. Failure to read and follow instructions may result in fire, personal injury and/or damage to property if Recon Scout Robot or OCU is charged or used improperly.

➢ To reduce the risk of electric shock, do not remove the shell of the Recon Scout robot, Operator Control Unit (OCU) or the chargers. No user-serviceable parts are inside. Refer servicing to qualified service personnel.

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

➢ Read all safety and operating instructions before operating the Recon Scout robot.

➢ Retain the safety and operating instructions for future reference.

➢ Follow all operating and use instructions.

➢ Do not attempt to service the Recon Scout robot yourself. Refer all non-routine servicing to qualified service personnel. Repairs or modifications not conducted by authorized personnel may result in the voiding of warranty and/or Annual Maintenance Plans.

➢ Keep loose clothing and hair away from the Recon Scout robot.

➢ Considerations for Charging:

• Always charge with the activation pin inserted in the Recon Scout robot and the OCU turned off.

• Always charge in an open, fireproof location.

• Do not leave system unattended while charging.

• Only charge the Recon Scout robot and OCU with chargers provided by ReconRobotics.

• Always use a proper country-specific AC wall socket (120-240 VAC). Do not force the plug into a socket.

• Ensure connecting pin is not bent when inserting in robot or OCU.

Table of Contents

⚠ Note   **For applicable FCC guidelines, refer to your FCC logbook (U.S. customers only)**

Recon Scout Inventory

Please inspect the inventory in this package to ensure that all materials are present.

If any of the materials are missing, please contact support@reconrobotics.com for further assistance.

Your Recon Scout ® Robot Kit includes:

➢ One (1) Recon Scout Robot

➢ One (1) Recon Scout Robot Charger

➢ One (1) Recon Scout Operator Control Unit (OCU)

➢ One (1) Recon Scout OCU Charger

➢ One (1) Carrying Case

➢ One (1) User's Manual

➢ One (1) Spare Activation Key

➢ One (1) Lanyard

➢ One (1) Warranty Card

➢ One (1) Battery Charge Indicator

In addition, the Recon Scout XT Kit contains:

➢ One (1) Tether Cord

➢ One (1) Lens Cover Sticker Replacement Kit

Double Recon Scout Kits will also include:

➢ One (1) Additional Recon Scout Robot

➢ One (1) Additional Recon Scout Robot Charger

Water-Resistant XT Instructions

This Recon Scout® XT and *Rescue* robots have enhanced water resistance capabilities, which means that it can be safely driven through puddles, used in heavy rain, or briefly submerged in water. Please review the following guidelines for using and maintaining your Recon Scout XT or *Rescue* robot.

Note
The robot should never be submerged intentionally. Remove from water as soon as possible after submersion.

HOW TO MAKE THE ROBOT WATERTIGHT
Deployment:
1. Check that the plug band is properly seated in the charging port.
2. Pull pin to activate robot.
3. Plug pin hole (press on the bump to fully seat).
4. Confirm that both the pin and charge ports are sealed.
5. Deploy robot.

After Deployment:

1. Towel dry the robot and OCU.
2. Unplug pin hole.
2. Reinsert pin to deactivate robot.
4. Replace lens cover if seal is peeling or scratched.
5. Push down antenna boots if they are coming loose.

Charging:
1. Pull out plug to charge.
2. Replace the plug after charging is complete.

ADDITIONAL MAINTENANCE GUIDELINES
➢ The OCU is not waterproof so exposure to moisture should be minimized.
➢ Do not remove any screws on the robot; this may unseat the gaskets.
➢ To replace cover, follow instructions included in bag of spare covers and alcohol swabs.

The IR light is always turning on even in daylight, is my Recon Scout IR/XT/*Rescue* Robot broken?

If there are dust or debris present on the IR blister, the light sensor may determine the environment has less ambient light than it really does. Ensure that the IR blister is free of dust or debris by wiping it with a soft towel.

The OCU screen is black, but the Recon Scout robot can still be controlled, what is going on?

If the screen is black, it typically means that the backlight in the LCD screen is broken. This is generally caused by dropping or other action which causes an impact to the OCU. Contact your authorized service station for repair information.

The Recon Scout robot/OCU don't seem to be holding a charge, what can be done?

First, give them a full charge. Make sure the Recon Scout robot and OCU are off (pin in the robot, switch off on the OCU). Charge them for a full six hours. If the lights on the OCU start flashing, there may be a problem with the charger or the battery. Otherwise, after six hours, perform a runtime test by turning both devices on and driving them in place. If they still do not run as expected (1 hour for robot; 2 hours for OCU), contact your authorized service station for repair information.

How do I request service if my Recon Scout is still experiencing problems?

If you're experiencing problems with your Recon Scout robot and it hasn't been covered by any of the questions in the FAQ, you can request service by contacting your ReconRobotics sales representative.

When you contact, please have the serial number of the product that is experiencing difficulties available. Our technical staff will attempt to evaluate the problem and if necessary issue an RMA for repair. When sending equipment in for RMA, please include the entire kit (Recon Scout robot, OCU, and chargers) as some problems may manifest in one device when caused by another.

Recon Scout Robot Components

A Recon Scout robot should have...

	Throwbot®, UVI, IR	XT, *Rescue*
Antennas		
Activation Pin		
Wheels (2)		
Stabilizer		
IR Blister	(IR Scout Only)	

If any of these items are missing, notify ReconRobotics immediately.

Quick Start Guide

Your Battery Charge Indicator (BCI) allows you to quickly determine the battery charge levels of your Recon Scout robot and Operator Control Unit (OCU). Simply plug the appropriate end into the charging port of the device and one of three LED lights will illuminate.

Charge Indicators:
   Green = Fully charged
   Yellow/Red = Unit must be charged

To Robot   To OCU

Battery Management
   When not in use, ensure the OCU is switched off and the pin is inserted in the
      robot. Never force the pin into the robot.
   Expected battery runtime on full charge:
   ➢ OCU: 120 minutes
   ➢ Robot: 60 minutes

Matching Frequencies
The operating channel is indicated by a sticker on the robot and OCU. Channel on the OCU and robot must match for successful operation. To deploy multiple Recon Scout units within the same area of operation, different channels must be used.

Basic Deployment Instructions
   1. Test battery charge with the BCI.
   2. Charge robot or OCU if needed.
   3. Rotate OCU antennas to an upright position.
   4. Switch OCU on.
   5. Pull pin from robot.
   6. Drop or throw robot into target environment.
   7. Wait two seconds after robot lands to allow gyro to stabilize before operating.

I've turned the OCU on and don't have a solid video stream. What could be wrong?

"Bad" video can have several possible causes:

➢ The Recon Scout robot may be out of range.

➢ The Recon Scout robot may be low on power or off.

➢ There may be interference caused by environmental factors such as proximity to metal by either the OCU or the Recon Scout robot.

The charger indicator lights do not light up when the Recon Scout robot or OCU is connected. How do I fix this?

This is an error state in the charger indicator that can be caused by:

➢ Faulty power to the charger. Try powering the charger from another source.

➢ The device may already be fully charged.

➢ There is a general failure in the charger. If the problem persists after changing the power supply contact ReconRobotics.

When I throw the Recon Scout robot, it does not drive straight when it lands. What could be wrong?

The Recon Scout robot now has integrated accelerometers and gyros. When the Recon Scout robot lands, let it sit still for a few seconds before driving. The Recon Scout robot will automatically recalibrate itself during this time and should resume driving as expected.

The IR light is not turning on, is my Recon Scout robot broken?

The Recon Scout IR/XT/*Rescue* robots has a light sensor to measure ambient light. If there is sufficient light, the IR LEDs will not turn on in order to conserve battery life.

Frequently Asked Questions

©2011 ReconRobotics

How long will the Recon Scout robot run on a full charge?

The actual lifetime of a Recon Scout robot will vary depending on the amount of driving and terrain the Recon Scout robot is crossing. On a fully charged battery, while driving full speed, the Recon Scout robot should be able to run for approximately 60 minutes.

How long will the OCU run on a full charge?

The lifetime of the OCU is approximately 120 minutes.

How many times can the Recon Scout robot and the OCU be recharged?

The Recon Scout robot and OCU use Lithium Polymer batteries which are rated for 300 to 500 recharges before any degradation of capacity.

How long does it take to recharge the OCU and Recon Scout robot?

The recharging times for the OCU and Recon Scout robot are approximately one to three hours depending on usage.

Can the Recon Scout robot be operated in wet conditions?

The robot and OCU should only be used in a dry environment. The warranty and Annual Maintenance Plan do not cover any damage resulting from exposure of the system to water, salt water spray, hazardous or caustic chemicals, etc. Refer to page 10 for information about the water-resistant XT and *Rescue* robots.

I've been using the OCU for an extended period of time and now the screen is black when I power on and I can not control the Recon Scout robot. What could be wrong?

For safety purposes, when the battery drops below a certain voltage, the OCU deactivates itself. You will need to recharge the OCU as described in the "Instructions for Use: Chargers" section (page 5).

7

Instructions for Use: Recon Scout Robot and OCU

©2011 ReconRobotics

Setting up the OCU

Rotate antennas to an upright position as shown.

WARNING: Modification of the antenna system or the usage of unauthorized antennas may violate your authorization to use this product.

Powering the OCU

Flip the power switch at the base of the controller from the **Off** to the **On** position.
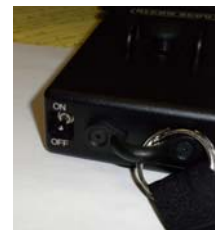
The screen should light up indicating the unit is ready to use. If the Recon Scout robot is powered on, video from the Recon Scout robot should appear. Otherwise, the screen will display static.

Note: **To prevent permanent damage to the rechargeable battery system, turn the OCU off when charging or not in use.**

Powering the Recon Scout

➢ Pulling the pin from the Recon Scout robot powers it on.

➢ Reinsertion of the pin powers the Recon Scout robot off.

Note: **Always reinsert the activation pin when the Recon Scout is charging or not in use.**

4

Instructions for Use: Chargers

Place the chargers in a cool, ventilated (fire safe) area. Attach robot or OCU to the corresponding charger. Ensure devices are properly powered off before charging.

When the chargers are plugged into the wall, the **light turns green** to let you know there is power.

When you plug the units (OCU or Recon Scout robot) into the chargers, the **light turns red** to let you know the unit is charging.

When the light turns from red to green, it means the charger has entered trickle mode. Allow the robot to trickle charge for an hour or two for best performance.

Note   **DO NOT use any chargers other than the ones that came with your Recon Scout or OCU.**

OCU Charger

➢ The OCU charger is in two parts: the charger unit and the electrical cord.

➢ Turn off OCU before charging.

➢ Plug OCU charger unit electrical cord into charger transformer socket on the OCU charger.

➢ Plug OCU charger unit electrical cord into the proper country-specific AC wall socket (120-240 VAC).

➢ Plug the OCU charger unit into the OCU. Ensure connecting plug is not bent.

Recon Scout Robot Charger

➢ Insert activation pin into robot. The activation pin must remain inserted in the robot while charging.

➢ Plug Recon Scout robot charger unit electrical cord into the proper country-specific AC wall socket (120-240 VAC).

➢ Plug Recon Scout robot charger unit electrical cord into the Recon Scout. Ensure connecting pin is not bent.

Note   **The charger units are NOT interchangeable. Plugging into the wrong charger unit could result in permanent damage.**

Instructions for Use: Field Maintenance

The Recon Scout robot and OCU are designed to provide mission critical information in harsh or hazardous environments, but no product is indestructible. In order to ensure that the Recon Scout robot keeps performing as expected please follow these steps after each usage of the Recon Scout robot and OCU.

Recon Scout Robot Maintenance

Wheels: If a wheel is wobbly, tighten the nut. Do not over-tighten, the wheel should spin freely.

Stabilizing Tail: If tail is loose, use a 1/16 inch (1.59mm) Allen wrench to tighten the bolts holding on the tail. Check crimping on tail-Scout connection and weight at end of the tail.

Note   **Wheels and tails are not interchangeable between the XT & other robots. Use the correct parts for your Recon Scout.**

Antennas: Visually inspect for scuffing or cracking. You may bend the antennas to point up from the Recon Scout to maintain performance.

Recon Scout IR , XT or *Rescue* Maintenance

If you have a Recon Scout IR, XT or *Rescue* robot, you may also want to lightly dust off the IR Blister to ensure the light sensor stays clear.

Recon Scout OCU Maintenance

Antennas: Ensure that the antennas are not bent or kinked, and that they are able to easily be rotated.

FCC Logbook

Date	Start	Stop	Location	Reason	POC

Recon Scout FCC Logbook

Version 1.3   January 2012

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. 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 Recon Scout® robot by eligible entities will require a separate Commission authorization. **Licensees must maintain a log of all Recon Scout 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 Recon Scout robots are available on separate frequencies, the agency deploying them must deploy a Channel C Recon Scout robot first, followed by a Channel A, followed by a Channel B.

Operation of the Recon Scout robot in an unauthorized manner will subject licensees to Commission enforcement action and license revocation.

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

FCC RF Radiation Exposure Statement:
The Operator Control Unit (OCU) 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 operating in conjunction with any other transmitter except in accordance with FCC multi-transmitter product procedures.

FCC Guidelines

The usage of the Recon Scout® 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, and security personnel in critical infrastructure industries.

The Recon Scout 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 Recon Scout robot only in areas that are environmentally hazardous for entry by human personnel, and for necessary training related to such operations.

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

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

The Recon Scout 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.**

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, Arkansas	65-07-47 N / 147-28-14 W

TM

FCC Logbook

The usage of the Recon Scout robot is 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