



## 433/434 MHz Transmitter USER GUIDE

### Introduction

*Congratulations on your purchase of a RT UHF Transmitter! The RT offers your bird the best protection available -- long range coupled with reliability and excellent efficiency in a compact size:*

- **Frequency Stability**
- Low Battery Sensor
- New Level of Efficiency for **longest battery life**
- **Tap On / Tap Off** Magnetic switch
- **Power Line Static Protection™**
- Rugged, Hard-Coat Anodizing
- High Impact Crystal
- Highest **Reliability** possible
- Full length ¼ wave antenna for Maximum Range
- Low Battery detection
- **Easy Crank™** Design

**Battery:** The RT uses the same 1/3N Lithium Photo Battery proven by falconers for years. We recommend the Duracell DL1/3N.



Battery is installed positive side inside the lid (positive side is marked with a "+"). When installing battery, screw the lid down finger tight. Circular battery spring exerts back-pressure onto the lid preventing it from unscrewing. As soon as the battery is installed transmitter will begin running. Transmitter weight with battery is 9 grams.

### Tap On / Tap Off™ Switch

The RT uses a unique magnetic switch to turn transmitter on and off. You can leave it on bird while not in use, removing only to change battery. To turn RT off, touch magnet to transmitter case near the base of the antenna until you hear 5 rapid beeps on receiver as confirmation (the delay is to prevent accidental turn-off.) Repeat process to turn back on, confirmed by 3 rapid beeps. If you lose magnet, transmitter can be turned on and off by un-screwing the lid. Always double check for transmitter signal by tuning in on receiver before flight, and when turning it off.

**Note:** Due to the ultra-low drain of the RT circuit, there is no need to worry about leaving a battery in the transmitter after turning off with the magnet – a new battery will be fine after two years in transmitter.

## Battery Life

The RT UHF will transmit continuously for about 3 days before telling you when to change battery with a “double beep” every 10 pulses. It will run about 4 more days after the double beep warning. The transmitter keeps track of cumulative transmission time to estimate remaining battery life. As a backup system it also measures battery voltage in real time, which will warn you should you accidentally put in an old battery. If you put in an old or bad battery, the RT will give a double beep telling you to change the battery.

## Maintenance

The RT is completely waterproof and can be washed with hot water. Make sure insides of case and lid are dry before installing battery. **Inspect antenna** and replace as soon as you see cracks or any exposed metal wire.

## Replacing the Antenna

The antenna on the RT transmitter is field replaceable. Use only Marshall replacement antennas with *Power Line Static Protection™*.

**Remove old antenna** using X-acto knife to slice off the old epoxy seal at the base of the antenna. Then un-screw old antenna. Make sure brass threads on the stud are clean and shiny.

**Install new antenna** hand tight., and secure with a small bead of quick drying epoxy around the base.

Note: **Never use liquid super glue** or any type of thread locking compound to secure the antenna. Liquid Super Glue can wick up the threads causing them to permanently bond to the antenna stud. This may permanently damage your transmitter.

## RT Range

The RT is designed to give best range while on your bird. It has been tested to over 150 kilometers line-of-sight. Like any transmitter, *range varies greatly with terrain*. Tests have shown its range in hunting situations of western US deserts to be anywhere from 9 to 100 kilos, depending on height of transmitter, height of receiver, type of terrain and obstructions, and radio noise or interference. The RT has about twice (2X) the range of the Marshall RT Plus transmitter used in the USA and Europe.

## Using the Receiver

Signal from RT is *strongest* if **receiver antenna is lined up in same orientation as RT antenna**. Since a falcon on a perch keeps tail almost vertical, you will get best signal if holding receiver antenna with its elements vertical. However, there are cases when transmitter's antenna could be nearly horizontal and holding your receiver antenna horizontally will give the better result.



*Bird on perch*



*Bird on ground*

Hint: *If both horizontal and vertical signals can be heard, use **horizontal** for better pinpoint accuracy.*

## Warranty

Marshall Radio Telemetry warrants that the RT will be free from defects of workmanship and materials for Three (3) Years from the date of purchase by end-user. Return defective transmitter directly to Marshall Radio Telemetry and we will repair or replace it and return it free of charge. However, we will not be responsible for damage from misuse or normal wear and tear incurred during use. Warranty is void if a non-Marshall Radio Telemetry antenna has been used. *Under no circumstances will Marshall Radio be responsible for damages or loss beyond the value of the transmitter itself, including but not limited to the loss of a bird or lost time.*

**MARSHALL RADIO TELEMETRY** 896 West 100 North, North Salt Lake, UT 84054, USA

Toll Free (800) 729-7123 International 1-801-936-9000

[www.marshallradio.com](http://www.marshallradio.com)