

RT Plus™ transmitter



Introduction

Congratulations on your purchase! The RT Plus transmitter incorporates many industry firsts to give your bird the best protection available -- long range coupled with reliability and excellent efficiency in a compact size:

- **Frequency Stability**
- **Short and Safe™** Antenna
- **Magnetic Tap On /Tap Off™**
- Works below **-34°C (-30°F)**
- Low Battery Sensor
- New Level of Efficiency for **longest battery life**
- **Power Line Static Protection™**
- Rugged, Hard-Coat Anodizing
- High Impact Crystal
- Highest **Reliability** possible
- Re-Configurable
- **Easy Crank™** Design



New features:

- **Rapid Pulse™** : the RT Plus features new “rapid pulse” technology that sends out a pulses twice as fast as most other transmitters. This allows the signals direction to be located much more quickly on the receiver. Getting your bird back faster!
- **Improved Low Battery Warning:** *Accurate low battery testing, including both a timer and real-time voltage measurements, so you can fly with confidence. Without this feature you're just guessing -- Russian roulette.*
- **Apollo 13 Mode™:** *If the transmitter has been going for 24 hours, your bird is probably lost. The transmitter does what NASA would do, acting immediately to conserve battery life with shorter and less frequent pulses.*
- **Improved Power and Range:** *Track even further and better.*



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 all the way 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 8.1 grams.

Battery Life

The RT+ will transmit for about 15 days continuous with a new battery installed. The RT+ will warn you when there are approximately 7 days remaining on the battery with a “double beep” every 10 pulses. 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.

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.*

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. For tail mounts, always inspect the condition of the tail spring. Replace if any cracks or weaknesses appear on spring. For leg mounts, inspect the Bewitt slot for any signs of wear or thinning.

Replacing the Antenna

The short antenna on RT+ transmitter is field replaceable. Use only Marshall replacement antennas with *Power Line Static Protection™*, length 7 7/8" for 216 MHz. Replacement instructions will be included with your new antenna.

RT+ Range

The RT+ is designed to give best range while on your bird. It has been tested to over 100 miles 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 3 to 50 miles, depending on height of transmitter, height of receiver, type of terrain and obstructions, and radio noise or interference.

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.

Customized Transmitter

If your needs change in the future, the frequency (channel) of the 2007 RT+ can be changed electronically without opening it up. A 216 MHz transmitter can be set anywhere from 216.000 to 219.995. Also, the pulse width and pulse rate can be adjusted to give either better battery life or more, longer, easier-to-track pulses. The low battery trigger point can also be set earlier or later if you prefer. The default operational settings are: 110 pulses per minute (ppm), 30 millisecond (ms) pulse width and approximately 5 days before low battery mode begins. Send transmitter to Marshall Radio to custom re-configure it. One business day turn-around guaranteed.

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.*

FCC Notice: This device does not interfere with TV reception or Federal Government radar.



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