

Turbo USER GUIDE

US/EU Version





Introduction

Congratulations on your purchase of a Marshall Turbo Transmitter, the most powerful and rugged falconry transmitter ever produced. Truly the best in the world! Now with the added benefit of a full color LED light to show how the Turbo is operating. Designed to efficiently use the battery, the Turbo varies its output power (range) to best match the conditions of recovering your falcon

Operating Modes:

The Turbo transmitter is designed give the best range possible while hunting, but it is also able to reduce power to preserve battery life if your falcon is lost for an extended time. To the best balance of Range and Run-time, the Turbo starts out in Standard Power Mode for 1 hour (for when your bird is overhead), then, if the flight continues (tail chase scenario), the Turbo power mode will activate (Blue) and will transmit at full Turbo power for 12 hours. After the 12 hours, the Turbo reduces its power (still as strong as an RT Standard) to provide 5 full days of tracking. The LED light on the side of the Turbo indicates what mode the transmitter is in.

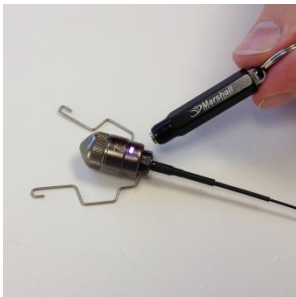
 **Blue LED - Turbo Power Mode** - maximum range (up to 2x the range of the RT Standard). *Turbo* mode lasts for 12 hours (with a fresh battery)

 **Green LED – Standard Power Mode.** While in this mode, the range still better than an RT Standard

 **Yellow LED** (and double beep) – **Change Battery.** The battery is getting low (2-3 days remaining)


 **Red LED** (and triple beep) – **Battery almost dead**, you have less than 1 day remaining

Note: the LED light is the latest technology and is super-efficient, it uses less than 1% of the transmitter's power.



Tap On /Tap Off™ Magnetic Switch

The Turbo uses Marshall's unique tap on/ tap off magnetic switch to turn the transmitter on and off. The status of the transmitter is then indicated by the color of the LED light.

When switched off with the magnet, the LED will flash slowly in  **Violet**. This indicates that the transmitter has a battery installed and is sleeping.

Note: If you lose your magnet, or prefer to use your transmitter without this feature, the Turbo can be switched on and off by simply removing the battery.

Battery: The Turbo 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.

Note: If the transmitter does not start blinking blue when a new battery has been installed, simply use the magnetic wand to switch it on.



Rechargeable Batteries: The RT (2018 and newer) is also compatible with Marshall's rechargeable batteries. These improve range (more output power) and better performance in sub-freezing conditions. Always start each flight with a fully charged battery!! Charger Kit's and additional batteries are sold separately.

Battery Life

The Turbo will run 5 days continuously when a new battery is installed. You will receive a warning (yellow LED and double beep) when approximately 3 days life is remaining. This is when it is time to change the battery. You will receive a 2nd warning (Red LED) and triple beep when only 1 day of life is remaining. In order to provide the best power and days to recover your falcon, we recommend changing the battery after 8-12 hours of usage. If the transmitter is used for more than 8 hours in a day, a new battery should be installed for each day of hunting.

Maintenance

Inspect your transmitter for signs of mechanical wear and tear. Inspect **Antenna** and replace as soon as you see cracks or any exposed metal wire (pay special attention to the tip of the antenna), replace when any metal is visible. Make sure **Antenna Protector** is secured.

Replacing the Antenna

The antenna on the Turbo transmitter is field replaceable. Use only Genuine Marshall replacement antennas with *Power Line Static Protection*[™], length 13-1/4 inches for 216 or 233 MHz, 7 inches for UHF.

Remove the antenna protector by un-screwing. Then un-screw the old antenna to remove. Make sure the threads on the stud are clean and shiny.

Install new antenna hand tight. You may apply a small bead of quick drying epoxy around the base. Then reinstall the antenna protector securely.

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. **Only use your fingers** to remove old antennas, using tools or pliers may permanently damage your transmitter.

Turbo Range

The Turbo is designed to give best range while on your bird. It has been tested to over 150 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 8 to 100 miles, depending on height of transmitter, height of receiver, type of terrain and obstructions, and radio noise or interference. The Turbo has about twice (2X) the range of the benchmark Marshall RT transmitter (or 4x the range of a Marshall RT Plus).

Using the Receiver

Signal from Turbo is *strongest* if **receiver antenna is lined up in same orientation as Turbo 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 Turbo transmitter will be free from defects of workmanship and materials for FIVE (5) 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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