

Rainier-S20 Quick Start Guide

This quick start guide will give you all the essential information needed for successfully deploying and accessing your data from a Wildlife Computers Rainier-S20 tag.

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Before You Begin



The information contained in this guide is designed to help you get the most from your deployment. In the guide, you will see the yellow icon highlighting information where special attention should be paid.

The list below shows what is required to interact with a Rainier tag:

- A Windows® computer with Tag Agent and our USB driver installed
- A Wildlife Computers Portal Account
- A Wildlife Computers Communications Cable

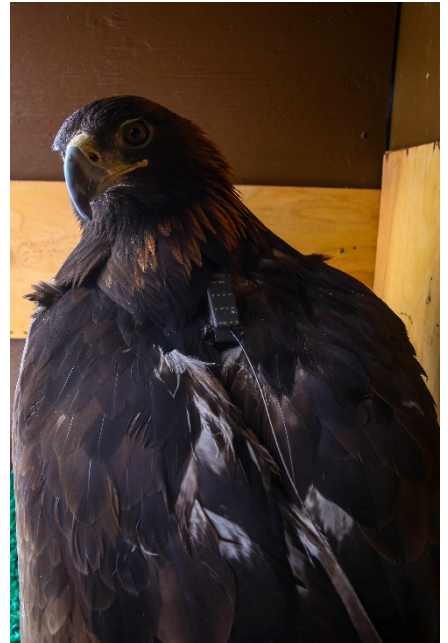
Visit wildlifecomputers.com to create a Portal account and download the required software.

About the Rainier-S20

The Wildlife Computers Rainier-S20 tag is a rechargeable, solar powered, GPS-equipped Argos transmitter (PTT) specifically designed for birds. The Rainier-S20 is suitable for birds weighing as little as 650 grams to be tracked with GPS precision and accuracy over land and sea for multiple seasons.

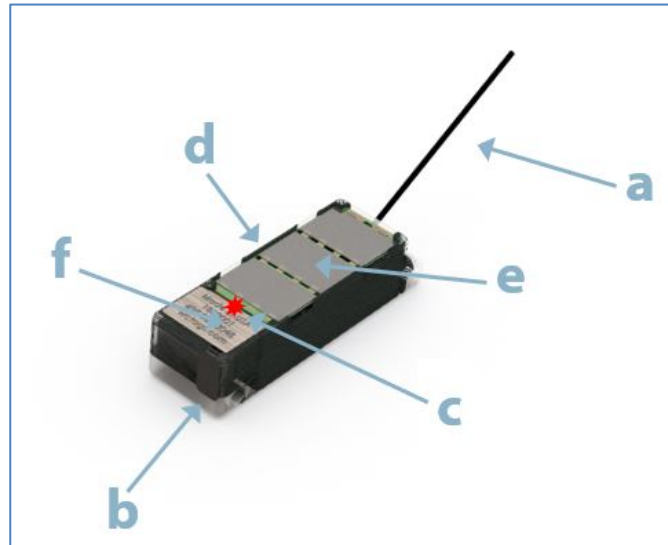
The tag collects GPS locations and other sensor data on a flexible, customer-programmable schedule saved prior to deployment. The archived data are stored locally as well as transmitted via the Argos satellite network.

The Wildlife Computers cloud-based portal automatically downloads and processes the data and makes it available in near real time.



Anatomy of a Tag

Below is a Rainier-S20 tag showing: (a) Argos antenna, (b) communications port with plug, (c) LED indicator light, (d) magnetic switch, (e) solar panels, and (f) GPS patch antenna.



Tag Storage and Battery Maintenance

Store tags in a room temperature environment, around 25° C, with the magnet holder in place on the tag. Do not store in direct sunlight.



Do NOT store these tags in extreme hot or cold environments. This will cause a significant drop in the capacity of the rechargeable battery.

To check the operating voltage, select “Advanced,” and then “Send Test Transmission.” The transmission voltage should read between 3 and 4 volts.

Testing Tags

Please ensure you test the Rainier-S20 tags after you receive them, or after they have been in storage for more than a month before deploying them. This not only initializes them to the new location after shipping from our offices, but also gives you (and us) peace of mind they are working properly prior to deployment and that you can access your data on the Wildlife Computers Portal (see “Data Access” section).

Tags are shipped and stored at half capacity so we suggest giving them a boost charge initially via USB using the USB communications cable supplied in your shipment, especially if they have been in storage out of the sunlight. Each tag may take up to 90 minutes to charge depending on its battery state at the start of charging. It does not matter if you plug the USB via a computer connection or through a wall plug. Battery charging is fully automatic and it is impossible to overcharge or damage the battery through USB or solar charging.

1. With the magnet holder on the tag, plug the USB connector end into the communications port of the tag. Take care to ensure the pins in the tag align exactly with the recesses in the charging end of the USB. There is only one orientation of the connector that will work. Look at the communications port on the tag and you will see three pins in a row, a space, and then a fourth pin. You will see the same configuration in the recess of the USB cable.



If the pins and connector are not aligned correctly and you apply force as you insert the charger, you may bend and damage a pin.

2. A blue LED lights up on the tag when you insert the charger. When fully charged, the blue LED extinguishes, this takes up to 90 minutes per tag. You can charge with the magnet cover on or off, but if its off, don't forget to replace the magnet cover as soon as complete if you are indoors.
3. Once fully charged, you need to test the tag. Remove the magnet cover outdoors and leave in clear view of the sky with the solar panels exposed to the sun.
4. When you remove the magnet cover, the tag will be in Start mode and a red LED will flash giving you visual feedback of the tag status. The sequence is 10 rapid flashes followed by an extended blink then off (about four or five seconds max).
5. If you are testing multiple tags they should be separated by a short distance with their antennas in as much free space as possible. The antennas are naturally droopy, a characteristic of the antenna material. They will tend to droop more in colder weather.
6. It can take several hours for Argos transmissions to be downloaded, processed, and displayed in your Wildlife Computers Data Portal (portal) account.
7. Once you are satisfied with the data received and happy the tags are functioning as required, put the tag in Stop mode by replacing the magnet cover. The visual feedback from the red LED is two quick flashes, a pause, two flashes, a pause, two flashes (about six seconds in total).
8. If you are not deploying the tags immediately, please leave in Stop mode with the magnet covers in place to maintain an adequate charge.

Deploying the Tags

1. Mount any base or neoprene pad (if using, see the Peel Ply section below) onto the base of the tags well ahead of your actual deployment. Make sure the tag is elevated appropriately for the size and species of bird on which you are deploying the tag.
2. Insert the supplied black plug into the communications port recess of the tag to protect the pins.
3. Remove the magnet cover and observe the flashing red LED Start mode sequence prior to attaching to the bird.



When the magnet holder is in place on the tag, the tag is in Stop mode. When the magnet holder is removed from the tag, the tag is in Start mode and ready to begin deployment.

Peel Ply

Your tags were shipped with a sheet of heavy-duty white polyester peel ply attached to the base. When the peel ply is removed, the tags will have a superior contamination-free bondable surface that requires no additional preparation.

Attachment Instructions

1. Prior to attachment, peel off the peel ply fabric. Do not remove peel ply until immediately before you are ready to attach the tag to the neoprene material.
2. Apply a contact adhesive to the base of the tag and neoprene pad (follow specific adhesive instructions).
3. Attach the tag to the neoprene material with the fabric side towards the bird.

Recommendations

- Always remove peel ply fabric prior to tag deployment. It is not intended to be integrated into your attachment method.
- If your application process includes sterilizing the tag, do so with the peel ply fabric in place.
- Do not touch the exposed tag bottom surface with anything other than your adhesive.
- Surfaces with peel ply should not be sanded.
- Always use a contact adhesive that dries soft, for example, barge cement, Aquaseal, Weldwood.
- Do not use super glue/Loctite (cyanoacrylate) adhesives, they dry hard and brittle.

Accessing Your Data

“My Data” on the Wildlife Computers Portal is the interface that allows you to remotely access, store, and manage your data. To do so, you need to create a portal account and link your Argos account username and password (supplied to you by Argos) to your portal account. This allows the portal to automatically and seamlessly pull and decode data from Argos for the tags supplied.

1. To create a portal account, visit wildlifecomputers.com and click on “My Data” tab in the center of the page.
2. Click “Create Account” and complete the form.
3. Once created, log in to your account.
4. To register your Argos account, click on “Link Argos Account” at the top of the page
5. Click “Add Account” and enter the guest account username and password and hit Add. Once your Argos account is synced with your portal account, data from deployed tags will automatically be downloaded into your portal account.
6. Once testing is underway and data has been received, each individual tag will be identified by its serial number and PTT Argos ID number as a separate row in the portal.
7. To access the data, click on the left-hand side of the row and click the blue Download tab.

See [Wildlife Computers Portal and Tag Agent User Guide](#) for further details.



Additional Information

Glossary of Terms

- Administrator—someone who has the authority to publish tag settings.
- Argos ID—uniquely identifies a transmitter for the Argos system. The ID consists of a decimal number and a hexadecimal (base 16) number.
- Argos Location—a location generated by the Argos system from uplinks received during a satellite pass. Get more information about how the Argos system works here: <http://www.argos-system.org/web/en/391-faq-general-questions.php>
- Argos Uplink—a radio transmission intended for the Argos satellite system.
- Daily Data—generated from sensors over a fixed 24-hour period.
- Data Message—created by the tag to transmit data through the Argos system. Each data message is transmitted as payload in an Argos uplink. In order to increase the likelihood of its reception by the Argos system, each message is sent a fixed number of times.
- Data Products—the various types of data available from Wildlife Computer tags.
- Deployment—the period when a tag is associated with an animal and actively collecting and sending telemetry data.
- Location Uplink—a transmission intended to generate an Argos location. These uplinks can also carry a data message payload. Multiple uplinks are required to generate an Argos location.
- PTT—position tracking terminals. CLS assigns PTT ids for every tag.
- Pinger—a UHF radio tracking beacon.
- Start/Auto Start/Stop—tag states. When Started, will generate locations and/or collect sensor data. Auto Start will allow the tag to Start using a magnet or when reading wet. Stop causes the tag to do nothing until reconnected to Tag Agent.
- Summary Period Data—generated from sensors during a defined number of hours.
- Tag Agent—the program used to change tag states and select tag settings and connect a tag to the Wildlife Computers Tag Portal.
- Tagware—the software running on a tag.
- Wildlife Computers Communication Cable—the Wildlife Computers communication cable required by Tag Agent.
- Tag Portal—the cloud-based service offered by Wildlife Computers for remote tag setup. A historic record of tag settings and templates is maintained within the Tag Portal.

Contacting Wildlife Computers

U.S. and International

Members of the Wildlife Computers technical sales and support team are located in Redmond, WA, USA, and Havelock North, New Zealand, allowing us to cover promptly a wide range of time zones.

Mailing and Shipping

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For Asian Clients

While we welcome your direct correspondence, we recommend that you contact our colleague, Yong Huang, for assistance. Mr. Huang understands the special purchase processes for your countries, and will provide you with the best service for the best price. He also is fluent in Japanese, Chinese, and English.

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