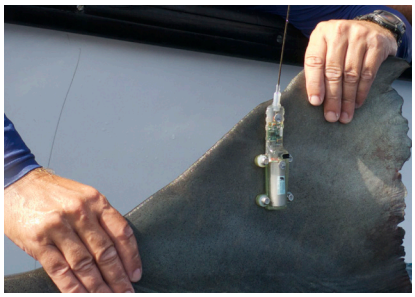
READY FOR TAKE-OFF

USING THE REDROCK RR100 IN WILDLIFE TRACKING DEVICES.



Wildlife tracking devices are highly constrained in both size and mass, which also constrains the size and mass of the electronic components used in their design. One typical application involves radio frequency tracking collars that are applied to mammals and birds. The RR100 microfabricated reed switch is used to start the tracking circuitry (which includes a battery, RF transmitter and may include an ultra-low power microprocessor and data storage circuitry.) The waterproof, sealed tracking device is shipped to the end user with a small magnet attached to its exterior – when the device is ready for use, the magnet is removed, starting the circuitry. The magnet-switch combination may be used for other applications such as triggering a stored data dump from the device, or to make programming changes to the microprocessor.

"The 1.1mm^3 volume, 6mg mass, and zero power operation of the RR100 switch offer highly desirable features for wildlife tracking applications."

To avoid compromising the target species' natural behavior, it is important that the tracking device be as small and light as possible. Tracking device manufacturers recommend that the device should not exceed 3% of the species' body weight. For example, tracking a 1 kg osprey requires a device weighing no more than 30 gm, and less is highly desirable. Device manufacturers therefore have very tight weight budgets, so the 1.1 mm^3 volume and 6 mg mass of the RedRock switch are highly desirable features. The passive, zero power operation of the RR100 switch also eliminates battery drain, allowing the use of smaller, lighter batteries than devices using active circuits such as Hall switches.

Fish tracking system requirements are even more mass-sensitive. Because the tracking device needs to be embedded in the target fish species, its size and mass are even more restricted. A typical fish tracking device is 10 mm * 5 mm * 3 mm in size, with a mass of 300 mg, and transmits coded sonar pulse signals to a submerged sonar receiver where they are stored for subsequent retrieval and analysis. At only 2% of the mass of the transmitter, the 6 mg mass of the RedRock RR100 switch makes it an ideal device for starting this type of device.

For further information, sample switches or evaluation kits, contact redrock@cotorelay.com

To learn more about how Coto Technology and RedRock can enable your design aspirations, please contact us at the web address below.