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Specialists in Animal Radio Monitoring

## Radio Tags

**Biotrack radio tags can usually be modified to suit a particular application, or customised to your own preferred format. For example pulse characteristics, sensing options, antenna positions, ground-plane antennas and collar materials can all influence how well the tags perform, and therefore the quality of the data you collect. This data sheet covers the most popular tag formats.**

### Tailmounts

Tail-mounting is the safest way to radio-tag most birds. The tags can be attached without a harness and will be shed by the bird during the moult. They can be mounted only on fully grown feathers and should weigh no more than 1-2% of body weight. Standard Biotrack tailmounts are supplied with either fine braided nylon threads or cable-ties, which are attached to the two central rectrices. The smallest tags (<3 g) do not usually have threads attached. They are glued and bound to the central tail feathers.

### Implants

Biotrack implants and ingestible tags are mainly used in fish, reptiles and amphibians. Please seek expert veterinary advice before using these tags. Tags must be coated in a physiocompatible compound before being implanted. The preferred sealants are paraffin wax or medical grade silicone. All tags have an internal tuned-loop antenna.

### Necklaces

Biotrack Necklace tags were first developed for pheasants, *Phasianus colchicus* but have become the standard radio tag for most game birds in projects. In two large-scale studies comparing survival rates between groups of pheasants equipped with either harness-mounted dummy backpacks, dummy necklaces or leg bands, there was no difference in survival rates. We recommend necklace tags weighing 2-3% of body weight for most *Galliformes*, but please contact us before ordering.

### Backpacks

Backpack tags are designed primarily for birds, but suitably modified versions have also been used on mammals, fish, reptiles and amphibians. Bird tags weighing more than 4 g are usually fitted with harness tubes. Smaller tags may be glue-mounted. We can attach gauze to increase the surface area for gluing. Alternatively the tag can be glued onto a harness. We can supply harness materials, and advice but not complete harnesses. A ground-plane antenna can be fitted to improve the signal range.

### Collars

Collar tags are used mainly on terrestrial and arboreal mammals, although special designs are also suitable for some reptiles. We build a variety of collar formats; leather, braided nylon, brass, Teflon and cable-ties. The largest tag sizes can be supplied with lugs, to which you can attach your own collar material if you prefer. Smaller tags are normally supplied with collars already fitted. Magnetic switches are built into most large tags as standard.

### Fish tags

Biotrack implants are supplied mainly for use in fish. Please seek expert veterinary advice before using these tags and you may well need a license to implant such tags. Tags are fitted inside polycarbonate capsules. Having an antenna that is widely spaced in air, rather than surrounded by a potting medium, the ranges are better than normal implants. Implants are not normally suitable for use in medium to large mammals because of their reduced signal range compared to whip antennas.

# Tag Specifications

Weight (g)		Battery Life				Dimensions			Tx	Battery
Basic	Collar	Min	Std	Max		H	W	L		
90	200-400	4.3	6.5	11.1	Years	68	30	30	TW-3	C
70	130-280	3.2	5	9.2	Years	21	30	66	TW-3	AA (x2)
50	110-230	2.6	4.1	8	Years	21	30	60	TW-3	2/3AA (x2)
40	65-150	1.6	2.6	5.5	Years	21	30	40	TW-3	1/2AA (x2)
33	100-270	1.7	2.9	6	Years	21	20	66	TW-3	AA
23	27-120	1.4	2.3	5	Years	21	20	50	TW-3	2/3AA
17	20-60	0.8	1.4	3.2	Years	21	20	40	TW-3	1/2AA
11	12-40	4.4	7.6	18.4	Months	18	17	37	TW-3	10-28
7	n/a	2.1	3.7	9.3	Months	15	24	24	TW-3	CR2032
4.5	4.0-10.0	3.2	5.5	13	Months	7	13	32	Pip	Ag357
2.4	3.5-6.0	2.3	3.9	9.4	Months	7	13	32	Pip	Ag386
1.7	2.4-3.6	1.4	2.4	5.9	Months	7	9	24	Pip	Ag393
1.2	2.0-3.0	0.7	1.3	3	Months	6	8	17	Pip	Ag392
0.65	1.4-1.6	0.5	0.8	2	Months	5	8	17	Pip	Ag376
0.45	1.1-1.5	9	15	37	Days	4	7	14	Pip	Ag379
0.41	1.2-1.5	6	11	27	Days	4	7	14	Pip	Ag317
0.35	0.9-1.0	4	8	18	Days	4	7	13	Pip	Ag337
1.03	1.9-2.9	1.1	1.9	4.4	Months	6	8	17	PicoPip	Ag392
0.58	1.3-1.5	0.7	1.3	2.9	Months	5	8	17	PicoPip	Ag376
0.40	1.1-1.4	13	22	40	Days	4	6	14	PicoPip	Ag379
0.34	1.0-1.4	10	17	38	Days	3	6	14	PicoPip	Ag317
0.26	0.8-0.95	6	10	23	Days	3	5	13	PicoPip	Ag337

## PicoPips are our new premium tags – smaller, lighter and longer lasting

The lives, weights and sizes of tags listed in the table can be modified to meet individual project needs. Standard (Std.) tags have a pulse rate of 50 pulses /minute and a pulse length of 20 milliseconds. Tags with maximum life have a pulse rate of 30 pulses/minute and a pulse length of 12 milliseconds, which give approximately 78% of the maximum range. Minimum life tags (Min.) have a pulse rate of 60 pulses/minute and a 30 millisecond pulse length, with maximum range. Other combinations of pulse length and rate may be more suitable for you (see More Information below).

## Delivery Time

In order to supply our customers with what they want, when they want it, we need to plan ahead. It is best to give us as much warning as possible, allowing plenty of time to discuss the details. We are happy to take provisional orders, if you are unsure of funding. We can then schedule the work with no obligation for you to buy the tags if the funding is not granted. We will not build the tags until confirmation from you. Occasionally it is possible to build the tags at very short notice. Please contact us, even if you think it may be too late.

## More Information?

We are more than happy to discuss any questions you may have about radio-tracking over the phone, by fax or by email. You may also like to use our website

[www.biotrack.co.uk](http://www.biotrack.co.uk)

to choose the tag most suitable for your project.

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