

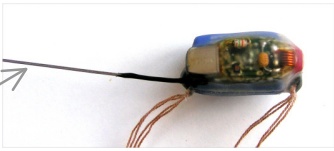
Bird Radio Tags

The effect of the tag upon the bird you are trying to study is the most important consideration, followed by your project requirements of tag range and tag life. The tag types below enable Biotrack to adapt the attachment technique to your species, and the overleaf tables show how we can tailor the transmitter specifications to your project.


Tags shown 1/2 size – see overleaf for dimensions.

Safest
Self-detachable during moult.

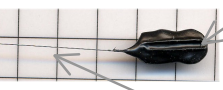
Tailmounts



Secure with strings.

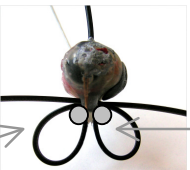

Tag lost during moult. Can not be used on growing feather.

Glue on feather using groove to position.



Thin antennas should be tied and glued to tail feather for protection.

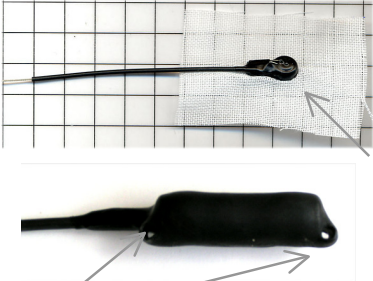
Secure with cable-ties.




Feather shaft position.

Long-life
Stays on during moult. Higher load over centre of gravity can increase tag life.

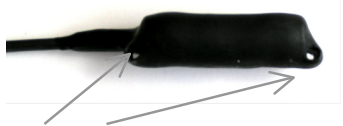
Backpacks




Tiny tags glued directly, or gauze to increase the surface.


Harnesses have many risks so should not be attempted without demonstration from someone with successful experience.

With end tubes for harness material.




With side tubes for harness material (contact Biotrack for details).




Safe Alternative
When feathers are not developed enough for tailmounts or tracking is required through the moult.


Legmounts




Raptors: fitted around Tarsus.



Secured with pop-riev and washers.



Lower range (from shorter antenna). Shorter tag life (weight of protection).

Waders: position on tibia, above knee.




Secured with cable-tie (sometimes glue is sufficient).

Antenna protection must be strong.





Gamebirds
and other birds that do not fly much.



Necklaces

Cord cut to required length, knotted and secured with glue or stitch.


Leave sufficient room for swallowing large objects.



Tag Specifications

Basic Weight (g)	Legmount Weight (g)	Battery Life				Dimensions			Range Band	Tx	Battery
		Min	Std	Max		H	W	L			
90	n/a	4.3	6.5	11.1	Years	68	30	30	8	TW-3	C
70	n/a	3.2	5	9.2	Years	21	30	66	8	TW-3	AA (x2)
50	n/a	2.6	4.1	8	Years	21	30	60	7	TW-3	2/3AA (x2)
40	n/a	1.6	2.6	5.5	Years	21	30	40	7	TW-3	1/2AA (x2)
33	42-55	1.7	2.9	6	Years	21	20	66	7	TW-3	AA
23	36-50	1.4	2.3	5	Years	21	20	50	7	TW-3	2/3AA
17	19-45	0.8	1.4	3.2	Years	21	20	40	7	TW-3	1/2AA
11	10-19	4.4	7.6	18.4	Months	18	17	37	6	TW-3	10-28
7	n/a	2.1	3.7	9.3	Months	15	24	24	5	TW-3	CR2032
4.5	4.5-7.0	3.2	5.5	13	Months	7	13	32	4	Pip	Ag357
2.4	3.5-5.0	2.3	3.9	9.4	Months	7	13	32	3	Pip	Ag386
1.7	2.5-5.0	1.4	2.4	5.9	Months	7	9	24	3	Pip	Ag393
1.2	1.6-3.0	0.7	1.3	3	Months	7	9	19	3	Pip	Ag392
0.7	1.4-3.0	0.5	0.8	2	Months	7	9	19	2	Pip	Ag376
0.5	1.1-1.5	9	15	37	Days	6	9	16	2	Pip	Ag379
0.45	1.1-1.3	6	11	27	Days	6	9	13	2	Pip	Ag317
0.35	1.1-1.3	4	7	16	Days	6	9	13	2	Pip	Ag337

Basic weight may vary with protection, attachments and sensors.

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 (Max) 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).

Range Bands

Please note ranges may be less for some formats, e.g. legmounts with shorter antennas.

Range Band	Signal range		
	Line-of-sight	Above ground	Ground-to-ground
1	200-1000 m	50 - 200 m	20 - 100 m
2	1 - 5 km	200 - 1000 m	100 - 500 m
3	5 - 10 km	1 - 2 km	500 - 1200 m
4	8 - 15 km	1 - 3 km	800 - 1500 m
5	10 - 20 km	2 - 4 km	1 - 2 km
6	15 - 30 km	3 - 6 km	1.5 - 3 km
7	20 - 40 km	4 - 8 km	2 - 4 km
8	30 - 60 km	6 - 12 km	3 - 6 km

Signal range varies enormously with topography, habitat, tag and receiver height, tag antenna length, and transmitter pulse parameters. The figures given are typical ranges for a -145 dBm signal to a 3-element Yagi antenna. 'Line-of-sight' ranges can be achieved from the air or from high hills. 'Above ground' ranges are from a tag or receiver which is 3 m above ground (e.g. a tag in a tree or a mast-mounted Yagi). Ground-to-ground' ranges are to a handheld Yagi from a tag on the ground.

Delivery Time

To supply researchers with what they need, when they want it, we need to plan ahead. Please 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 provisional work with no obligation for you to buy the tags if the funding is not granted. We will not build the tags until you have confirmed. 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

to choose the tag most suitable for your project.

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