

21st May, 2018

Choosing tags for optimum performance

We remain delighted with the performance of our ChronoTrack UHF equipment, which continually produces results at industry standards.

ChronoTrack offer Bib Tags for “running” events in two options:

- A single tag per bib
- Dual tags per bib

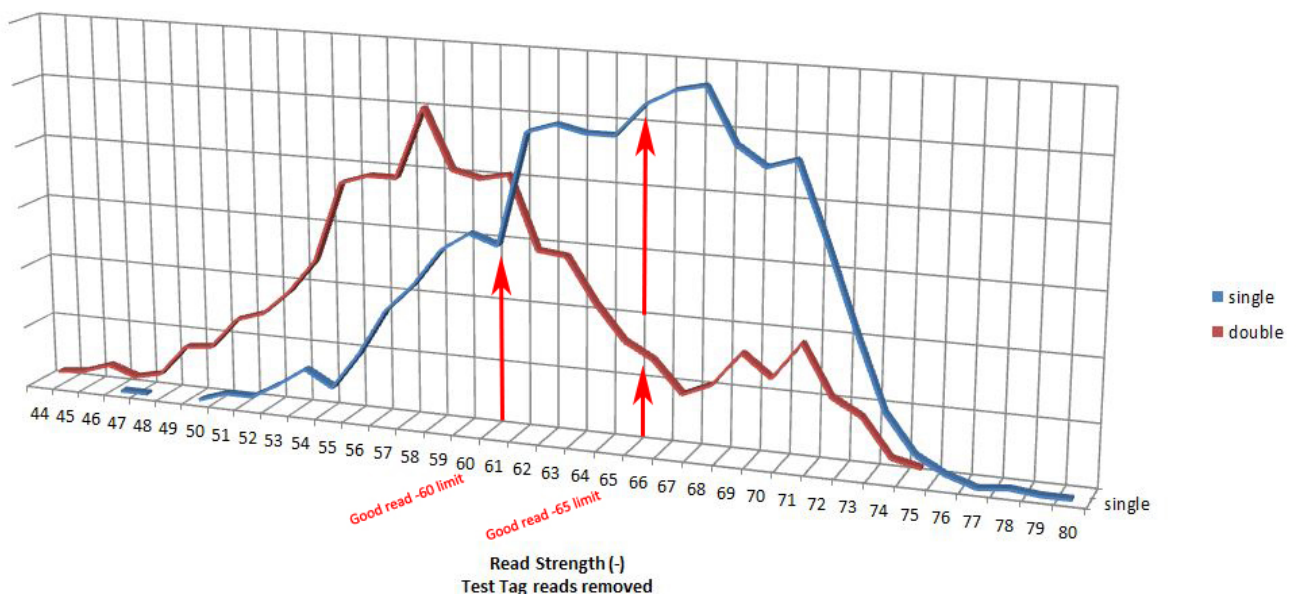
We have always recommended dual tags per bib as the best option. We make this recommendation because dual tags per bib provide significantly increased read strengths, and consequently provide a capacity to deal with the consistent real world variables.

These variables include, but are not restricted to:

- Weather
- The location the entrant wears their bib
- The build of the entrant
- The height of the entrant
- Entrant covering tags
- A tag being damaged during race pack or post registration handling
- Humidity

To give you an example of read strengths from the same event, two consecutive years. Once with dual bib tags and once with single bib tags

Single compared to Dual Bib Tags



Our advice is that a read less than 60dB, or to be generous less than 65dB is a "good" read.

- If one uses the tighter -60dB as the close off point for "good" reads then 18% of the single tagged bibs achieve this cf 57.65% of the dual tagged bibs.
- If one uses the more generous -65dB as the cut off for "good" reads then 48.26% of single tagged bibs achieved this cf 81.91% of dual tagged bibs.

The data is from the same event, same equipment, same layout, a year apart with similar weather conditions. All the usual variables (especially the entrant bib placement, entrant "build", and entrant height variables) apply.

Even with the more generous interpretation of a "good" read, less than half the entrants in a field had "good" reads when using a single tag. *The tags were still read, but the reads became increasingly marginal.*

Every -3db equates to a reduction of half the power so for example, if we had two reads (-60db read and a -66db) the -66dB read is a quarter the strength of the -60dB read. In the above example the dual tag reads peaked between 57 and 58dB. The single tag reads peaked at -67dB, that is at *less than 15% of the strength of the dual tag bibs peak.*

ChronoTrack Dual bib tags do not cost twice the price of ChronoTrack single bib tags – for a small increase from the price of a single tag you get an 85% improvement in read strength.

We do not recommend single tags.