

Reading 2

Skills:

- Details
- Cohesion and coherence

Getting started: Do you know how precise live statistics are gotten in sports nowadays?

RFID TAGS



Have you seen how during sports broadcasts the audience can see accurate live statistics on players' performance? This is possible thanks to RFID tags. RFID tags are a type of tracking system that uses smart barcodes in order to identify items. ____ (1) and as such, RFID **tags** utilize radio frequency technology. These **radio waves** transmit data from the tag to a reader, which then transmits the information to an RFID computer program. RFID tags are frequently used for merchandise, but they can also be used to keep track of athletes' statistics, or track vehicles, pets, and even patients with Alzheimer's disease. An RFID tag may also be called an RFID chip.

An RFID tag works by transmitting and receiving information via an antenna and a microchip — also sometimes called an integrated circuit or IC. The microchip on an RFID reader is written with whatever information the user wants.

There are two main types of RFID tags: battery-operated (active) and passive. As the name suggests, battery-operated RFID tags contain an onboard battery as a power supply, ____ (2), instead working by using electromagnetic energy transmitted from an RFID reader.

Active tags contain three main parts, ____ (3). The battery in an active RFID tag should supply enough power to last for 3-5 years. When it dies, the unit will need to be replaced, as the batteries are not currently replaceable. There are two main kinds of active RFID tags: beacons and transponders. Beacons send out an information ping every few seconds, and their signal is readable from several hundreds of feet away. As they are sending out data so frequently, their battery tends to deplete quicker. Like passive RFID tags, transponders require the use of a reader to transmit information. When within range of one another, a reader first sends out a signal to the transponder, which then returns with the relevant information. Because they only activate when near a reader, transponders are much more battery-efficient than beacons.

When a passive RFID tag is scanned by a reader, the reader transmits energy to the tag which powers it enough for the chip and antenna to transmit information back to the reader. The reader then sends this information back to an RFID computer program for interpretation. ____ (4): inlays and hard tags. Inlays are typically quite thin and can be stuck on various materials, whereas hard tags are just as the name suggests, made of a hard, durable material such as plastic or metal.

____ (5), it makes an excellent choice for those looking for up-to-the-minute live tracking, such as in sports or real-time vehicle tracking applications. They are an expensive product, but they do offer a long-read range, which may be preferred depending on their application.

Passive RFID tags are a much more economical choice than active RFID tags, ____ (6). This makes them a popular choice for supply chain management, race tracking, file management, and access control applications. While a passive RFID tag does not require a direct line of sight to the RFID reader, it has a much shorter read range than an active RFID tag. However, they are small in size, lightweight, and can potentially last a lifetime.

Since active RFID tags feature a larger, stronger design than passive RFID tags, they are better suited for applications where durability is required. ____ (7), cargo tracking applications, and even in devices used to track people.

**Adapted from <https://www.camcode.com/asset-tags/what-are-rfid-tags/>*

Glossary:

- **Tag:** An electronic device that can be attached to a person, animal or object so that police, researchers, etc. know where the person, animal, etc. is.
- **Radio waves:** Low-energy electromagnetic waves, especially when used for long-distance communication.

Look at gaps (____) in the text. Complete the gaps with phrases A-G below.

- A. including a tag, antenna, and interrogator
- B. They are frequently used in toll payment systems
- C. while a passive RFID tag does not
- D. and cost around 20 cents each
- E. Since an active RFID is constantly sending out a signal
- F. RFID is short for "radio frequency identification,"
- G. There are two main types of passive RFID tags

What do you think?

How else can such tags be used in this current world? Think of some possible uses.