

# Active vs. Passive RFID Tags

RFID tags come in two forms, active and passive. Though both use the same RFID technology, they are different in many ways. Active tags are powered by a battery built into the tag allowing data to be communicated through long distances. Passive RFID tags are smaller and use radio waves to transfer data. To help you decide what type of RFID tag is right for your needs, I created a chart to show the differences and similarities between active and passive tracking.

	Active RFID	Passive RFID
<b>Distance</b>	Up to 100 feet	Up to 20 feet
<b>Power Source</b>	Internal- Battery powered	External- Relies on a reader
<b>Cost</b>	Around \$20 per tag	.07 - 20 cents per tag
<b>Data Storage</b>	128kb large read/write data	128b small read/write data
<b>Tag Expiration</b>	About 5-10 years, dependant on the battery's life.	Often longer than a lifetime depending on the environment.
<b>Size</b>	Large enough to accommodate the battery. Usually bulky.	As small as a microchip and as large as a paperback book
<b>Advantages</b>	<ul style="list-style-type: none"><li>• Reads long distances</li><li>• Highest data bandwidth</li><li>• Able to initiate communications</li><li>• Tag must be replaced when battery dies</li></ul>	<ul style="list-style-type: none"><li>• Longer lasting, tag life doesn't depend on battery</li><li>• Tags are inexpensive</li><li>• Small tag size accommodates range of assets and is easy to conceal</li><li>• Tags are more resistant to physical damage or harsh environments</li></ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"><li>• Tags are costly</li><li>• Cannot function without a battery</li><li>• The tags are large in size, not suitable for smaller assets</li></ul>	<ul style="list-style-type: none"><li>• Communication depends on the antenna size and shape</li><li>• Read range is limited</li><li>• Difficulty reading through metal or liquid</li></ul>