



Adds Bi-directional Communication to Market Leading Wi-Fi Tags to Enable Advanced Applications

Overview

The AeroScout T4b Tag is a small, Wi-Fi Active RFID device that facilitates bi-directional connectivity with any standard Wi-Fi network infrastructure. The tag can be used to determine the location and status of mobile assets and people, and its wireless messages are received and processed by standard Wi-Fi access points, keeping infrastructure costs low and installation simple. Bi-directional communication between the tag and the Wi-Fi network enables advanced application capabilities and supports many valuable use cases.

Similar to all AeroScout tags, the T4b Bi-directional Tag performs location calculations through a unique beaconing method that keeps network impact low and ensures scalability and long battery life. In addition, the T4b Tag features full bi-directional Wi-Fi connectivity and security, enabling it to receive information and acknowledgments from the network as part of a variety of advanced applications. Acknowledgments can activate several configurable indicators on the tag – including multicolor LED's, a buzzer and also a vibrating mechanism. Individual indicators and combinations of indicators can be set up to represent specific events and information.



The T4b Bi-directional Tag is a key part of many different types of solutions. Its capabilities drive significant business value for customers in manufacturing, logistics, healthcare and other industries. Some examples of this include:

- Workers in harsh industrial environments or patients in hospitals can request assistance and then be acknowledged by the tag buzzing or vibrating — informing them that help is on the way
- In manufacturing environments, line operators can push the tag's call button to request parts replenishment and later receive the status progress of the request back from the network using the tag's LED colors
- A tag connected to a host device that is receiving and transmitting telemetry data can request verification that all of the information has been received, and then continue to transmit until receiving the acknowledgement

Key Features

Beaconing and Bi-directional Communication

The T4b Tag utilizes both lightweight beaconing communication (for standard messages) and bi-directional Wi-Fi communication with full network association and authentication (for advanced applications). This unique combination ensures both high scalability and also a broad range of applications. The tag can operate with up to five different network SSIDs in secure or non-secure mode.

Acknowledgements

The AeroScout T4b Tag is capable of requesting and receiving system acknowledgements for events such as call button messaging or telemetry transmissions. Acknowledgements can trigger various audio-visual indications.

Audio-Visual Indications

The tag includes two multicolor LEDs, a buzzer and a vibrating mechanism. These indicators can be activated from the network for purposes such as enabling users to visually or audibly identify the assets that need to be found.

Flexible Mounting and Usage Options

A wide variety of mounting options are available for the T4b Tag. Screw mounts, adhesives, velcro and tie-wraps are available, as well as belt clips, badge clips or lanyards. An optional cradle allows the indirect mounting of the tag on various assets.



Combines bi-directional communication and Wi-Fi Active RFID to streamline business processes

- Bi-directional Wi-Fi communication delivers feedback and acknowledgment and optimizes operations
- Multiple audio-visual indications (LED's, Buzzer, Vibration) allow customization specific to the customer and use case
- Use of both beaconing and bi-directional communication methods allows highly scalable deployments, with minimal impact on network
- Improves business processes that require reliable and cost efficient bi-directional communication such as parts replenishment processes and emergency notifications

Call Buttons

AeroScout T4b Tags include two call buttons, adding the ability to define events according to button pushes, such as reporting an emergency or parts replenishment. Multiple messages can be set up using different button-push patterns.

Motion Sensing

T4b Tags contain on-board motion sensors. The motion sensor can be configured to trigger alerts. It also enables different transmission intervals for tags when they are stationary or in motion -- which reduces unnecessary network traffic and conserves battery life.

Long Battery Life

A single replaceable battery provides up to four years of battery life (dependent on the tag's transmission interval, operating temperature and frequency of associations with the Wi-Fi network). The tag provides a report on its battery level for timely replacement and can be easily deactivated to conserve battery power.

Tag Management

The T4b Tag is capable of associating with the Wi-Fi network at pre-configured intervals and automatically receiving acknowledgements, firmware and configuration updates. Bi-directional Wi-Fi communication management requires AeroScout's Tag Controller application and enables remote tag management and offers API's to integrate to enterprise systems for sending tag data and receiving verifications.

Choke-point Detection

The T4b Tag sends out specific location reports upon arrival at chokepoints or gateways where AeroScout Exciters are placed. Tag behavior can also be automatically modified when passing through a chokepoint. This includes activating/deactivating tags or changing the transmission rates to accommodate different usage scenarios.

Telemetry Functionality

T4b Tags include a serial interface that enables data retrieval from host devices. The tags can be customized and configured to retrieve data such as pressure measurement or operational status and to transmit that information.

Rugged Performance

AeroScout tags are designed to function in harsh work environments and weather conditions. The tag enclosure is water-resistant (IP-65) and designed to withstand significant physical shocks.

Worker Safety Model

The T4b Worker Safety Tag (TAG-4000-S) offers additional functionality required for injury-alerting applications. When a tagged person is not in motion for a defined amount of time, the tag sends an immediate alert to the control center. The person wearing the tag is alerted by the buzzer and vibrating mechanism that an alert has been sent and can cancel the emergency notification by pushing a call button.

AeroScout T4b Tag Specifications

PERFORMANCE

- Outdoor range: Up to 200m (650 feet)
- Indoor range: Up to 80m (260 feet)

PHYSICAL AND MECHANICAL

- Dimensions: 69mm x 48mm x 21mm (2.7" x 1.9" x 0.8")
- Weight: 50g (1.8oz)

RADIO

- Bi-directional 802.11b radio (2.4GHz)
- Security: WPA2 compliant
- Low frequency receiver: 125kHz
- Transmission power: up to +20dBm, ~81mW
- Patented clear channel sensing avoids interference with wireless networks

FEATURES

- Motion Sensor
- 2 Call buttons
- Indicators: 2 LED's (single color + dual color), vibrating mechanism, buzzer

ENVIRONMENTAL SPECIFICATIONS

- Temperature: -20°C to +75°C (-4°F to 167°F)
- Humidity: 0 to 100%, condensing
- IP-65 rated; The housing is water and dust resistant and includes a rubber lining.

ELECTRICAL

- 3.0V Lithium manganese dioxide battery (replaceable)
- Battery life: up to 4 years, depending on usage scenario

CERTIFICATIONS

- Radio:
 - FCC Part 15, sub-part C class B, sub-part B
 - EN 300-328, EN 300-330, EN 301-489
 - EN 60601 / IEC 6100 (Healthcare)
- Safety:
 - CE, cTUVus (IEC60950-1)

Ordering Information

For ordering and pricing information on the T4b Tag and accessories, contact AeroScout at info@aeroscout.com and refer to the AeroScout T4b Tag line of products (TAG-4000).

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US patent: 6,963,289
US patent: 7,552,049 B2
US patent: 7,403,108 B2

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