



# **AeroScout T3 tag**

## **User Guide**

T3-UG-010507-01

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## Introduction

The AeroScout T3 tag is a key component of the AeroScout Visibility System. The T3 tag is a small, flat, Wi-Fi, active RFID device that enables the wireless network infrastructure to locate assets not connected to a wireless network. The tag can be attached to mobile equipment such as vehicles in parking lots, inventory in a manufacturing line, containers, forklifts and medical equipment in hospitals. The tag can also be used to track people - security personnel hospital patients, and many more.



*Figure 1. AeroScout T3 tag*

## T3 Tag Features

### **Flat-Form Factor**

The AeroScout T3 tag is lightweight, flat device that can easily be incorporated into existing equipment and concealed, and can be comfortably carried by people.

### **Flexible Mounting and Usage Options**

The tag is supplied with a variety of mounting options. It can be mounted on flat hard surfaces using special holes for screws, adhesive tape or Velcro. It can be mounted on cylindrical forms (such as poles) using tie-wraps. It can be hung on a pocket using a badge clip, or on the carrier's neck using a band. An optional cradle is also available, enabling the indirect mounting of the tag on various assets.

### **Call Buttons**

T3 tags include two call buttons, a large one and a small one, that can be configured to send standard tag messages when the buttons are pressed or released.

The tag can be configured to send different data depending on how the buttons are pressed: different messages can be associated with a long push of the buttons and with short, successive pushes.

Each call button can be configured to serve a different purpose according to the organization's needs.

#### **Motion Sensing**

T3 tags are shipped with on-board motion sensors that report when it starts to move and whether it is in motion or not. The motion sensor can be used to define tag behavior when in motion or when at rest.

#### **Temperature Sensing**

T3 tags can optionally be equipped with temperature sensors that can report the temperature measured in the vicinity of the tag. Temperature can also be reported if the temperature exceeds pre-defined thresholds.

#### **Long Battery Life**

A powerful, replaceable battery provides power for a period of up to 4 years (depending on the tag's transmission interval). The tag periodically provides a report on the battery level so that when the battery level runs low, it can be replaced efficiently with minimum down time. Replacing the battery is simple and done using a special battery compartment removal tool. The AeroScout T3 tag can also be easily deactivated in order to conserve battery power.

#### **Tag Management**

The T3 tag can be programmed via a wireless interface using the AeroScout Tag Activator. Together with the AeroScout Tag Manager software it allows for easy and efficient tag configuration, activation or deactivation and programming. T3 tags are supported by Tag Manager, version 3.0 and above.

#### **Active RFID Functionality**

Using the AeroScout Exciter, the tag sends out specific location reports upon arrival at chokepoints or gateways. The tag behavior can also be automatically modified while passing through a chokepoint such as a doorway or gate. This includes activating/deactivating tags or changing the tags' transmission rate to accommodate different usage patterns.

#### **Compatibility and Non-interference**

AeroScout tags are 802.11b compatible. The tag's clear channel sensing techniques avoid interference with Wi-Fi networks. The use of the unlicensed 2.4GHz frequency band at low power levels ensures no interference with other wireless equipment, making AeroScout tags safe for use with such sensitive equipment as medical devices in a hospital.

## Tag Mounting

The AeroScout T3 tag is enclosed in a compact case and offers a variety of mounting options described in this section.

### Single Hanger

The T3 tag may come with a single hanger on one of the narrow sides (the “top” side).



*Figure 2. AeroScout T3 tag with single hanger*

### No Hanger

The T3 tag can also be supplied without hangers. The tag can be fixed on a surface by applying adhesive on its back or using Velcro or double-sided tape.



*Figure 3. AeroScout T3 tag without hanger*

## Tag Management

The AeroScout T3 tag can be configured, programmed and activated via a wireless interface. This is done with the help of the AeroScout Tag Manager version 3.0 (and later) and the AeroScout Tag Activator.

In addition, Tag Manager is used to activate and deactivate tags and to program stored messages on the tags.

The Tag Manager functions can also be activated via APIs that enable easy integration with third-party applications.

Please refer to *AeroScout Tag Manager User Guide*.

## Replacing the Internal Battery

The AeroScout tag uses one 3.6V Lithium Thionyl Chloride 1Ah 1/10 D size coin type battery. The battery has a diameter of 33mm and thickness of 6.5mm. This internal battery can last up to 4 years depending on the configured tag parameters (e.g. the transmission interval rate).



**Figure 4. T3 tag battery**



**WARNING:** Use only batteries listed in Table 1 or batteries that have been approved by AeroScout. The battery should be replaced by a trained person. There is a danger of fatal tag damage if the battery is replaced incorrectly or by an incorrect type. Dispose used batteries according to the instructions.

### To replace a battery:

1. Deactivate the tag with Tag Activator and Tag Manager (recommended).
2. Unscrew the battery cover using the special battery replacement tool





**Figure 5. Battery lid and opening tool**

3. Install a new 3.6V lithium battery in the battery holder.
4. Screw the battery cover into place, using the tool.
5. Activate the tag.
6. Dispose of the old lithium Thionyl Chloride battery properly.



**WARNING:** Local regulations vary. Federal regulations allow up to 100 kg./month of lithium thionyl chloride batteries to be disposed in common landfill. All leads (the terminals) should be taped to prevent short circuit. The user is responsible for safe disposal.

Table 1 lists the approved battery types for the T3 tag:

Manufacturer	Battery Part Number
Tadiran	TL-4934
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GMB POWER	ER33060
MINAMOTO	ER34065
WOHAN	ER32L65
XENO	XL-210F
EEMB	ER34070

**Table 1 – T3 tag Approved Battery Types**

## Tag Specifications

### Performance

Outdoor range: Up to 200m (600 feet)

Indoor range: Up to 80m (180 feet)

### Physical and Mechanical

- Dimensions: 2.9" x 2.0" x 0.4" (74mm x 50mm x 10mm)
- Weight: 1.5oz (42.5g)

### Radio

- 802.11b radio (2.4GHz)
- Low frequency receiver (125kHz)
- Transmission power: up to +19dBm, ~81mW
- Clear channel sensing avoids interference with wireless networks

### Environmental Specifications

- Operating Temperature: -30°C to +75°C (-22°F to 167°F)
- The housing is water and dust resistant and includes a rubber lining  
According to IP-65 standards .
- The T3 was designed to work at indoor and outdoor environments

### Electrical

- 3.6V Lithium coin battery (replaceable)
- Battery life: up to 4 years

### Certification

- 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 (EN60950)



## Safety and Warnings

### FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- a) Reorient or relocate the receiving antenna.
- b) Increase the separation between the equipment and receiver.
- c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- d) Consult the dealer or an experienced radio/TV technician.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- a) This device may not cause harmful interference
- b) This device must accept any interference received, including interference that may cause undesired operation.

### FCC Warning

Modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC Rules.

## Warranty

**Hardware.** AeroScout Inc. ("AeroScout"), warrants that commencing from the date of delivery to Customer, and continuing for a period of ninety (90) days the Hardware will be free from defects in material and workmanship under normal use. The date of shipment of a Product by AeroScout is set forth on the packaging material in which the Product is shipped. This limited warranty extends only to the original user of the Product. Customer's sole and exclusive remedy and the entire liability of AeroScout and its suppliers under this limited warranty will be, at AeroScout's or its service center's option, shipment of a replacement within the period or a refund of the purchase price if the Hardware is returned to the party supplying it to Customer, if different than AeroScout, freight and insurance prepaid. AeroScout replacement parts used in Hardware repair may be new or equivalent to new. AeroScout's obligations hereunder are conditioned upon the return of affected articles in accordance with AeroScout's then-current Return Material Authorization (RMA) procedures.

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