AeroScout™ T2 Tag

Model No. BWH3000

User's Guide

Version 1.0

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Chapter 1   Introduction

The AeroScout™ T2 Tag is a key component of the AeroScout™ Location System. These dedicated battery-powered Tags send Wi-Fi compatible messages at pre-defined intervals and can be attached to non-Wi-Fi assets in order to locate them. Tags send messages with their unique ID number that are detected by Location Receivers and used to estimate the Tag's location.

The AeroScout T2 Tag enables the wireless network infrastructure to locate people and assets otherwise not connected to a wireless network. The tag can be used to track people in many valuable applications - child tracking in amusement parks, security personnel in enterprises, hospital patients and many more. Various types of equipment can be tagged. These include vehicles in parking lots; inventory in a manufacturing line; containers, forklifts and other assets for efficient supply chain management; shopping carts in supermarkets; and medical equipment in hospitals.

This User's Guide is intended for the person configuring and maintaining an AeroScout™ T2 Tag.

✎ Please read this manual before attempting Tag configuration or maintenance.

This document contains the following information:

Section	Contains
Introduction	Introduction to the AeroScout T2 Tag
Tag Mounting	Information about Tag mounting options
Tag Configuration	Information about performing Tag configuration.
Tag Maintenance	Information and procedures for replacement of the Tag battery
Tag Specifications	Radio Specifications, Environmental Specifications, Safety and Warnings
Warranty	Terms of limited hardware warranty

Chapter 2   Tag Mounting

The AeroScout T2 Tag is enclosed in a compact custom case and offers a variety of mounting options. The tag's small size and weight allow mounting even on very small assets.

Mounting options include:

- A wrist strap that can be placed on a person's wrist.
- A mounting plate for attaching the tag with a safety pin or clip.
- The tag can also be mounted directly on assets using adhesive tape or Velcro.

Figure 1: AeroScout T2 Tag with Wrist Strap

Chapter 3   Tag Configuration

The AeroScout T2 Tag can be programmed and activated either via a direct serial interface or a wireless magnetic interface.

The following describes how to establish the communication link between the AeroScout System Manager and an AeroScout Tag, specify a new configuration of the Tag and download the new configuration. A Tag can be re-configured manually or by loading a Tag configuration file stored in your workstation or on the network.

The Tag housing must be opened in order to configure a Tag.

➤ **To configure a Tag**

1. Select **Configuration ➔ Tag ➔ Tag Configuration** to open the Tag configuration application. The window shown in Figure 2: Tag Configuration Dialog Box appears.
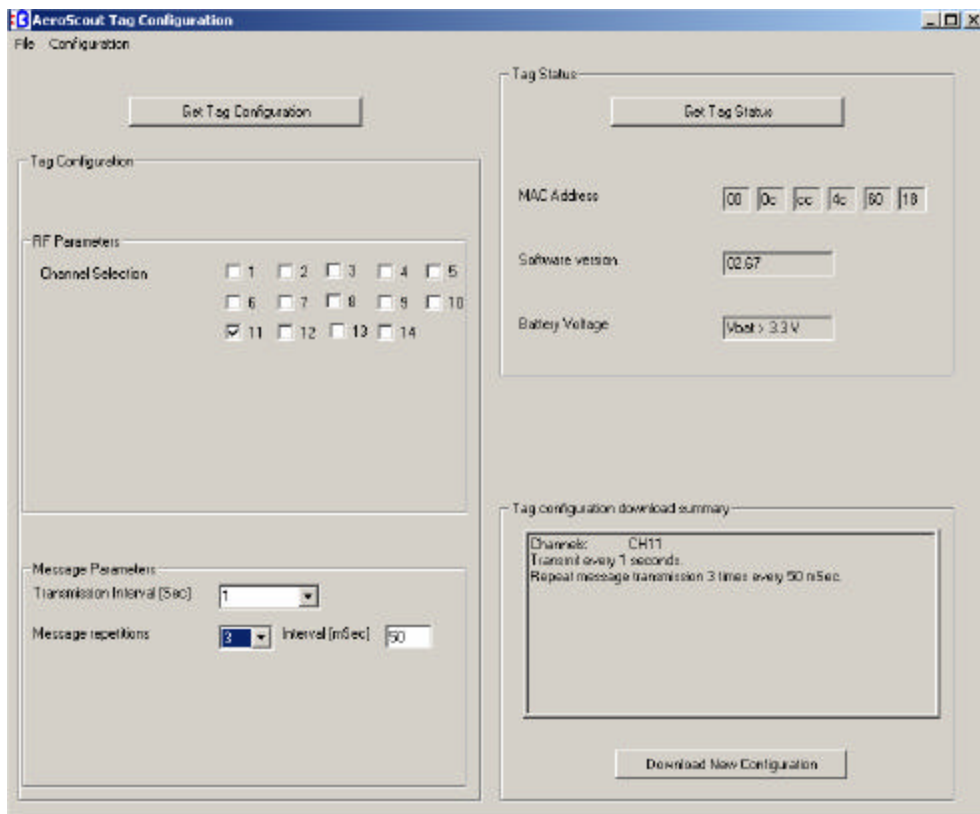
Figure 2: Tag Configuration Dialog Box

2. Select **Configuration → Com setup** from the menu bar. The serial communication port dialog box appears (see Figure 3: Communication Port Settings).

Figure 3: Communication Port Settings

3. Enter the **Serial Port** to which the Tag is connected.
3. Remove both screws on the back of the tag with a Philips screwdriver (see Figure 4: Opening the Tag Case) and open carefully the plastic case.

Figure 4: Opening the Tag Case
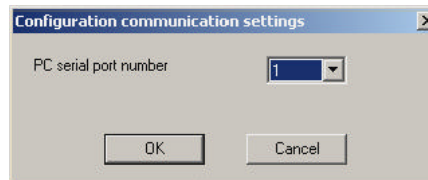
5. Connect the RS-232 cable (supplied) to the serial communication port of the PC in which the configuration application is running on
6. Connect the other end of the RS-232 cable to the serial port socket inside the Tag (see Figure 5: Connecting the RS-232 Cable to the Tag – make sure that the red wire of the flat cable is on your right).
7. Press the **Get Tag Status** to check the connection.
8. Press **Get Tag Configuration** to upload the Tag configuration and edit it according to the new configuration desired.
   Alternatively, select a configuration file using the **File → Restore** command from the menu bar and browse the available files to load the desired Tag configuration file for editing or direct download to the Tag.

Figure 5: Connecting the RS-232 Cable to the Tag

9. In the **RF Parameters** section, set the following options for Tag transmissions:

Option	Used to
Channel frequency	Select up to 3 Tag transmission channels.

10. In the **Message Parameters** section, set the transmission message mode as follows:

Set	By
Transmission Interval	Select the interval between successive messages [Sec]
Message Repetition	Select the number of times the message is being transmitted within a single burst.
Interval	Select the interval between successive messages within a burst.

11. When complete, review the configuration data in the Tag configuration download summary section and press Download New Configuration to download the new configuration to the Tag.

12. Do not leave the serial cable connected to the Tag; make sure you disconnected the serial cable from the Tag as soon as the programming was made.

Chapter 4   Tag Maintenance

Replacing the Internal Battery

The AeroScout™ Tag uses one 3.6V Lithium Thionyl Chloride (LTC) ½ AA size cell.

This internal battery can last up to 3 depending on the transmit interval rate.

Table 1 describes the steps for replacing the internal battery.

Step	Instructions
1	Remove the rear panel by unscrewing the case screws (see Figure 4: Opening the Tag Case)
2	Carefully remove the old battery from the battery holder. NOTE: Do not use a metal object to remove the battery
3	Install new 3.6V lithium Thionyl Chloride ½ 'AA' size battery in the battery holder. ⚠ WARNING: Use only batteries from the battery replacement table (Table 2) or others that have been approved by Bluesoft. There is danger of explosion if the battery is replaced incorrectly or by an incorrect type. Dispose of used batteries according to the instructions.
4	Close the rear panel by screwing back the screws
5	Dispose of the old lithium Thionyl Chloride battery properly. ⚠ 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 - **Replacing the internal batteries.**

Manufacturer	Battery part number
Tadiran	TL-5902
Xeno Energy	XL-050F
Sonnenschein	SL-350
Saft	LS-14250C

Table 2 -Battery replacements - part numbers.

Chapter 5   Tag Specifications

Radio Specifications

Standards compliance: IEEE 802.11b, Wi-Fi

Frequency range: 2.400 – 2.4835 GHz (Subject to local regulation)

Transmission Power: 19dBm

Regulatory Approvals: FCC Part 15 Sub Part C, EN 300 328-1, EN 301 489-1, EN 300 330-1

Environmental Specifications

Dimensions: 63mm x 40mm x 17mm (2.48" x 1.57" x .67")

Weight: 35g (1.2oz.)

Power: 3.6V Lithium Thionyl Chloride ½ AA size cell

Certifications: FCC Part 15 class B, cTUVus (UL 60950 by TUV), CE mark

Operating temp: -20°C to +65°C (-4°F to 149°F)

Storage temp: -30°C to 70°C (-22°F to 158°F)

Operating humidity: 0% to 95% Non-Condensing

Storage humidity: 0% to 95% Non-Condensing

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:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. 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:

1. This device may not cause harmful interference
2. 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.

Chapter 6   Warranty

Hardware. Bluesoft Inc. ("Bluesoft"), 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 Bluesoft 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 Bluesoft and its suppliers under this limited warranty will be, at Bluesoft'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 Bluesoft, freight and insurance prepaid. Bluesoft replacement parts used in Hardware repair may be new or equivalent to new. Bluesoft's obligations hereunder are conditioned upon the return of affected articles in accordance with Bluesoft's then-current Return Material Authorization (RMA) procedures.

Restrictions. This warranty does not apply if the Product (a) has been altered, except by Bluesoft, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Bluesoft, (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident; or (d) is sold for beta, evaluation, testing, or demonstration purposes for which Bluesoft does not receive a payment of purchase price or license fee.

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