

# AeroScout™ Location Receiver

Model No.: BWH1000

**Version 2.0**

**User's Guide**

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## Contents

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## Warranty

**Hardware.** Bluesoft, Inc., ("Bluesoft") warrants that commencing from the date of delivery to Customer (but in case of resale by a Bluesoft reseller, commencing not more than ninety (90) days after original shipment by Bluesoft), and continuing for a period of one (1) year 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 returned 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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## 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:**

- (1) This device may not cause harmful interference and
- (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.**

#### **Instructions concerning human exposure to radio frequency electromagnetic fields.**

To comply with FCC Section 1.307 (b)(1) for human exposure to radio frequency electromagnetic fields, implement the following instruction:

A distance of at least 20 cm between the equipment and all persons should maintain during operation of the equipment.



## Introduction

The AeroScout™ Location Receiver is a component of the AeroScout wireless LAN location platform, which adds accurate location capabilities to a Wi-Fi™ wireless network. The AeroScout architecture stands out in several ways:

- No modifications to mobile unit hardware or software. AeroScout works with standard laptops, PDAs, barcode scanners and other Wi-Fi™ wireless devices. This eliminates a major management challenge and enables simple implementation in public environments.
- No dedicated backbone network. All communications between Location Receivers and the AeroScout Location Server use standard Ethernet connections and AeroScout achieves accurate measurement synchronization without the use of a dedicated network.
- Locates equipment that is not Wi-Fi enabled. Small, battery-powered AeroScout Tags can be attached to a variety of equipment, such as medical devices, containers and shopping carts.
- Open development platform. The AeroScout System includes a set of tools for designing, testing and implementing enterprise-class location-based applications.

The AeroScout Location Receiver (BWH1000-02) includes a Wi-Fi radio module and a powerful TOA processor, typically installed alongside standard access points and remotely configurable from the AeroScout Administration Console.

Approximately the size of a small access point, Location Receivers include an external antenna connector and a Power-over-Ethernet adaptor. The Location Receivers can work over a wireless bridge to avoid the need for a wired Ethernet connection.

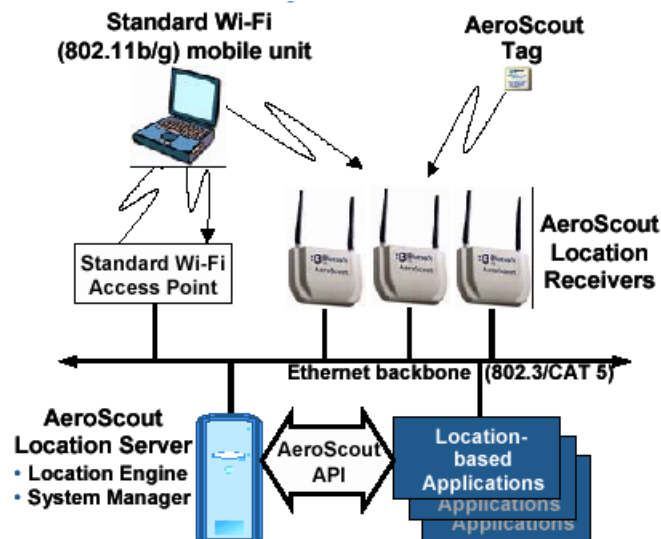


Figure 1 – AeroScout system

## HW description

Figure 2 and Figure 3 describes the AeroScout Location Receiver interface and indication LEDs.



Figure 2 – AeroScout Location Receiver Upper panel

1. **Antenna connectors** – connector to connect two 2.4GHz antennas or a single diversity antenna.
2. **Power** – The power jack provides connection to an external power supply for powering the unit. Please note that the adapter rating is 5VDC, 1.5A, and positive pole center. **(Use only CE or UL approved power supplies)**
3. **LAN** – 10/100 base-T Ethernet (RJ-45) connector, used also for Power-over-Ethernet: 802.3af (Note: Do not use external power supply when using Power-over-Ethernet)

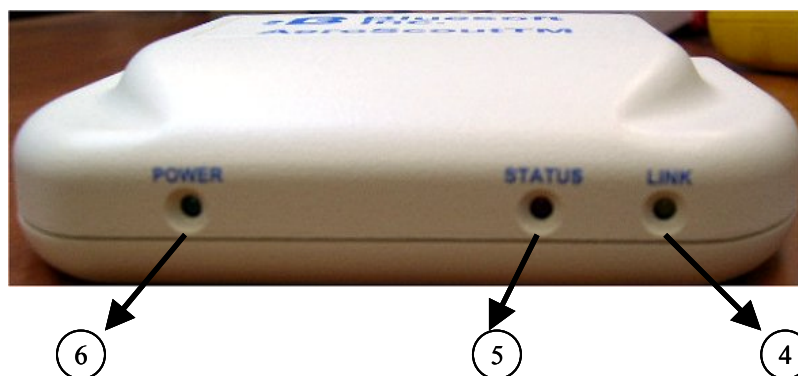


Figure 3 – AeroScout Location Receiver Bottom panel

1. **Link** – Yellow LED indicating an active Ethernet connection.
2. **Status** – Red LED indicating the status of the Location Receiver as follows:
  - **Blinking Mode 1** – the LED is blinking in 1 second duty cycle:
    1. The unit was not configured by the Location Engine.
    2. Unit configured but doesn't receive 802.11b messages.
  - **Blinking Mode 2** – Normal mode, the LED blinks shortly on each correct received and decoded 802.11b message.
3. **POWER** – Green LED indicating that the unit is connected to power.

## Installation:

Location Receivers communicate with the AeroScout Location Server via standard Ethernet or wirelessly over a Wi-Fi network – no dedicated location network cabling is required. Location Receivers also support Power over Ethernet, eliminating costly electrical installation. Configuration is simple, as well: The installer executes all setup tasks from the Location Server's System Manager software, which records the placement of a Location Receiver with a single mouse click.

## General Specifications

Typical outdoor range: up to 200m

Typical indoor range: 60m

Over 30 processed measurements per second

Patent-pending signal-processing algorithms Supports standard Wi-Fi (802.11b/g) clients and AeroScout Tags

### Interfaces

Ethernet: 10/100 base-T Ethernet (RJ-45)

External antennas: SMA connectors to enable customized area coverage and system topology

Compatible with standard wireless bridges to enable wireless backhaul

### Management

Static IP and DHCP support

All settings configured remotely using AeroScout System Manager

## Radio Specifications

**Frequency range:** 2.400 – 2.4835 GHz supports all worldwide Wi-Fi channels (1-14)  
(Subject to local regulation)

**Transmission power:** 50mW

**Antenna:** 2 Detachable omni-directional diversity antenna set.

**Regulatory approvals:** FCC Part 15 B&C, EN 300 328, EN 301 489-1 2001

## Environmental Specifications

**Dimensions:** 140mm x 110mm x 35mm (5.51" x 4.33" x .138")

**Weight:** 120g (4.2oz.)

**Power:** 5VDC 1.5A Wall unit with auto sensing 100/240 VAC

Power-over-Ethernet: 802.3af compliant

**Certifications:** FCC Class B, cTUVus, CE mark, UL60950

**Operating temp:** -20°C to 50°C (-4°F to 122°F)

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

**Operating humidity:** 5% to 90% Non-Condensing

**Storage humidity:** 0% to 90% Non-Condensing

Optional NEMA housing available for outdoor and rugged environments