



AeroScout Exciter

EX3100

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Introduction

The AeroScout EX3100 Exciter is a component of the AeroScout suite of enterprise visibility solutions that enables location-based applications. The EX3100 Exciter extends the AeroScout suite to provide robust and sophisticated RFID detection capabilities, using the same AeroScout tags that can also be accurately located in real time by the AeroScout system.

The EX3100 Exciter triggers AeroScout's T2 tags in range, and those transmit a message to AeroScout Location Receivers or compatible Access Points. This provides instant acknowledgment that a tagged asset was present in a well-defined area. The detection and programming capabilities of the Exciter, combined with the location features of the AeroScout Visibility System, make the AeroScout suite the most sophisticated enterprise visibility solution for a wide variety of industries.

The EX3100 Exciter can be utilized in one of the following ways:

1. Standalone: The EX3100 Exciter can trigger Tags located within a spherical area around it.
2. Chained: Several EX3100 Exciters can be used to cover a larger area and to operate as a single entity.

Application and Industry Examples

High value asset tracking

Health care facilities and general enterprises can tag valuable assets that are intended to stay within a certain area. The AeroScout system can track the location of those assets, and if they leave through an exit or enter a restricted area, the Exciter EX3100 triggers a tag message.

Process control

Manufacturing and supply chain facilities can track the location and presence of equipment and in-process inventory as it moves through the production process. This gives an enterprise a real-time view of which (and how many) assets have passed each step in the process, enabling better supply chain management.

Inventory management

Logistics and manufacturing enterprises can automatically update inventory records as inventory enters and leaves the warehouse, ensuring real-time knowledge of levels without manual checks or physical scanning.

Reduced searching time

Exciters can identify an individual asset among many similar assets, such as WIP items on a shelf in manufacturing, or multiple beds in a hospital room. The person initiating the search will not only know the location of the asset, but can also make the Tag physically identify itself through a blinking light.

Security applications

Government agencies and enterprises can tag secure assets and people that are restricted to certain areas or require historical location tracking. If those assets leave through an exit or enter a restricted area, EX3100 Exciter triggers a tag message.

Features

RFID detection of AeroScout T2 Tags

Triggering the tags to transmit as they pass through a defined area, EX3100 Exciters reach up to a 3m (10 ft) range. Exciters can also be chained one to another, thus increasing the RFID detection range for accommodating even very large areas.

Configurability

The EX3100 Exciter Manager is a Windows application designed to configure the EX3100 Exciter.

EX3100 Exciter Hardware

The AeroScout Exciter includes:

- Two RJ-45 interfaces
- Power Connector
- Bi-color Led indicator



Figure 1. AeroScout EX3100 Exciter

LED Indications

The front panel of the EX3100 Exciter includes a single LED. This LED has 3 indications:

- Green constant – Indicates that the Exciter is powered but currently not transmitting.
- Green blinking – Indicates that the Exciter is powered and currently transmitting.
- Orange – Indicates hardware failure.

Connectors Panel

Figure 4 describes the EX3100 Exciter connectors panel (bottom panel).



Figure 2. AeroScout EX3100 Exciter Connectors Panel

1. Chain In / RS232 Connection – RJ-45 interface. This connector is used both for configuring the Exciter and for chaining it to another Exciter. When used in a chain, this connector is used for both power and data. In addition, this connector serves configuration purposes and may be used to power the Exciter using a USB-to-serial adapter (ADP-050).

2. Chain OUT – RJ-45 connector. This connector is used for distributing power, serial interface and data to chained Exciters.

Power Input

The EX3100 Exciter may receive its power from a connector located on the side. The input is 5VDC or 12VDC.

Power Supply Options

The various power supply options for powering up the EX3100 Exciter are described below.

Power Supply through the Chain

An Exciter chained to another Exciter receives its power from its predecessor in the chain and does not need external power supply.

110VAC/220VAC to 5VDC

These adaptors convert 110/220VAC inputs to 5VDC

12VDC supply

Chaining Exciters

When an Exciter solution needs to be applied at a point where the required coverage is more than a single EX3100 Exciter can actually cover, you can chain several Exciters to each other, thus extending the coverage area..

Mounting the Exciter

The exciter can be mounted on a wall or a doorpost. The exciter enclosure has two screws holes for mounting the exciter to a wall. Using two #8 x 1 inch (2.54mm) screws and two wall anchors (not provided).

The exciter can also be installed using two plastic or nylon restraints in order to attach the exciter enclosure to any surface.

Exciter Specifications



Figure 5. EX3100 Exciter Size

Range

- Adjustable range up to 3 m (10 feet) @12VDC
- Supports AeroScout T2 Tags

Physical and Mechanical

- Dimensions:
 - Millimeters: 98 x 53 x 23
 - Inches: 3.9 x 2.1 x 0.9
- Weight: 61.5g (2.15 oz)
- Housing: ABS, Indoor use only

Power

- Input voltage: 5VDC or 12VDC
- Maximum power consumption: 600mW @5VDC / 4W @ 12VDC

Environmental Specifications

- Operating temperature: -20°C to +60°C (-4°F to 140°F)
- Humidity: 0 to 95%, non-condensing

LF Channel

- 125kHz
- Field intensity limits: 22.9dB μ A/m at 10m (ETSI)
- Propagation limits: 15.3dB μ V/m at 300m (FCC)
- Modulation: ASK

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.

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 be maintained during operation of the equipment.

Warranty

Hardware. AeroScout Inc. ("AeroScout"), warrants that commencing from the date of delivery to Customer, and continuing for a period of one year 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 returned of affected articles in accordance with AeroScout's then-current Return Material Authorization (RMA) procedures.

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