iWAP102-LR Zone 1 Location Receiver

Location receivers provide the ability to obtain accurate location data outdoors or for indoor areas where high positioning accuracy is required.

ATEX II 2(1) G Ex d [ia] IIC ***T4 (Ta 65°C Max)***

T5 (Ta 55°C Max)

T6 (Ta 40°C Max)

Operating temperature range -20°C to 50°C

IP66

Overview

The iWAP102-LR Location Receiver is a zone 1 hazardous area version of the AeroScout Location Receiver and is a core component of the AeroScout Visibility System that enables location-based applications in a WiFi wireless LAN environment. The AeroScout Location Receivers provide robust and sophisticated time difference of arrival (TDOA) measurement capabilities packaged in small, easy to install devices. The Location Receiver receives standard 802.11b messages and executes sophisticated radio signal measurements, enabling the AeroScout Engine software to accurately calculate the location of both AeroScout's WiFi-based Active RFID tags and any WiFi-enabled device.

Locates any tagged asset, using Extronics Tags. AeroScout's small, rugged, battery-powered tags can be attached to people and to a variety of equipment, such as medical devices, containers, manufacturing equipment and retail shopping carts. Location Receivers receive and process tag information accurately from a long range.

Locates standard WiFi clients without hardware or software modifications. The AeroScout system also locates standard WiFi clients such as laptops, PDAs and barcode scanners, without the need to tag these assets or introduce client software. This eliminates a major management challenge and enables simple implementation.

Accurate real-time location as well as sophisticated RFID choke-point detection. The AeroScout system uses time difference of arrival (TDOA) algorithms to determine accurate location. With the AeroScout Exciter, the same system also enables tags to be detected, reprogrammed or transfer data messages as they pass through doorways, gates or other choke points.

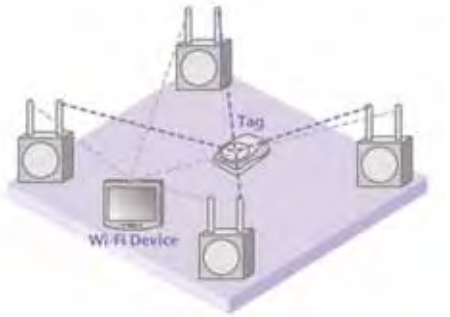
Indoor, outdoor and mixed operation. The AeroScout System is suitable for use in indoor, outdoor and mixed environments, from corporate offices to harsh industrial areas.

Features and Benefits

Low infrastructure requirement
Location Receivers communicate with the AeroScout Engine software via standard Ethernet or wirelessly over a WiFi network - no dedicated location network cabling is required. Also, because Location Receivers have a long read range (600 feet outdoors), large installations can be covered with much less infrastructure than standard RFID systems.

Ease of installation
Configuration is simple: The installer executes all setup tasks from the AeroScout Engine's System Manager software, which records the placement of a Location Receiver with a single mouse click. Location Receivers also support Power over Ethernet, eliminating costly electrical installation.

Performance
AeroScout's expertise in wireless signal measurement has led to the development of a range of patent-pending algorithms and techniques. Embedded in the Location Receiver, these measure the TDOA of standard 802.11b messages to the nanosecond. The AeroScout Engine processes this TDOA data to produce accurate and reliable location data suitable for mission critical visibility applications. Each Location Receiver can process over 300 location measurements per second, enough to satisfy even the most demanding applications. A minimum of three Location Receivers suffices to enable TDOA location processing. Location Receivers can also process presence based location for areas where fewer than three Receivers are available.



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Features and Benefits

Active RFID and Telemetry Functions
When used together with the AeroScout Exciter, Location Receivers enable multiple sophisticated tag functions. These include instant RFID detection at a choke point (such as a gate or doorway) and tag message and data retrieval for telemetry applications.

Compliance
All AeroScout products are fully compliant with WiFi and IEEE 802.11b standards. Location Receivers do not interfere with the wireless local area network. Even when set up with a bridge to provide location measurement data wirelessly, the volume of traffic they generate is insignificant.

Security
Location Receivers do not accept any WiFi client associations, so they need not be placed on secure Ethernet ports and pose no security risks. Together with appropriate se-curity software, Location Receivers may be used as wireless intrusion-detection devices to detect and locate unauthorised use of access points and/or client devices.

Specification

Location	Outdoor range : up to 200 metres (600 feet) Indoor range : up to 60 metres (180 feet) Over 300 measurements for second per Receiver cell (system capacity also dependant upon server processing power) Patent pending signal processing algorithms Supports standard WiFi (802.11b) clients and Extronics Tags
Power Supply	Universal 90-264VAC or 24VDC (If heating and/or is used AC voltage is not universal voltage, only 115VAC or 230VAC may be used)
Maximum Power Consumption	Without heating or cooling 18W With cooling 25W With heating and cooling 125W
Dimensions	300 x 280 x 200 mm (w x h x d)
Weight	Approx 15 Kg
Ingress Protection	IP66
Environmental	Operating temperature: AC With Heating 0°C to 50°C With Heating –20°C to 50°C 24VDC: 0 to 50°C Storage temperature; –10°C to 70°C Relative humidity; 0 to 95%, non condensing
Radio	2.4 GHz direct sequence spread spectrum 802.11 radio. Supports all worldwide WiFi channels 1-14 subject to local regulations Transmission power : 13.4 dBm without surge arrestor, 12.4dBm with surge arrestor
Inputs	10/100BaseT Ethernet on RJ45 and screw terminals 24/48V DC auxiliary supply input on screw terminals 115V/230VAC input option on screw terminals Multimode fibre input option on ST connectors Note that connectors may be specified as an option in the ordering data
Output Connections	Dual intrinsically safe external RF outputs via Ex d glands with optional lightning arrestors
Management	All settings configured remotely using the AeroScout System Manager
Radio Certification	FCC Part 15, sub part C class B, sub part B, EN 300-328, EN300-330, EN301-489, RSS 210 (Canada), ARIB STD-T66 (Japan), ARIB STD-33 (Japan)
Safety Certification	CE, cTUVus (EN60950)
ATEX Certification	ATEX II 2(1) G Ex d [ia] IIC T4 (Ta 65oC Max) T5 (Ta 55oC Max) T6 (Ta 40oC Max)

Ordering Information

iWAP102 Zone 1 Location Receiver **iWAP102-LR-[#4]-[#5]-[#6]-[#8]-[#9]**

Specify option [#4] - Power Supply	
Universal 90-264VAC (If heater option [#8] or cooling option [#10] is selected the unit is not universal voltage, either 115 or 230VAC)	AC
24V DC	DC
IEEE802.3af compliant Power-Over-Ethernet	POE
Specify option [#5] - Ethernet Connection	
10/100BaseT Ethernet on CAT5 copper	C
Multimode 10/100BaseFX fibre with ST connector	F
Specify option [#6] - Antenna Lightning Protection	
No Lightning Protection Fitted	N
2 x Lightning Protection Fitted	S
Specify option [#8] - Enclosure Heating (not compatible with universal 90-264VAC, 24VDC or POE supplies)	
No enclosure heating	N
230VAC enclosure heating	H1
115VAC enclosure heating	H2

iWAP102-LR is a flameproof / explosion-proof product and requires installation using the correct types of cable glands and stopping plugs. It is the customer's responsibility to ensure that the correct cable glands and stopping plugs are purchased for the installation.

Extronics can quote for cable glands if given a full cable specification. Full details on cable entries can be found in the product manual