

## BLE AoA Gateway and Beacon for Enterprise-grade RTLS Solutions

AiRISTA's Angle of Arrival Gateway applies the latest Bluetooth® Low Energy (BLE) technology in a compact design to provide location insights of people and assets to under 1 meter of accuracy.

A series of micro antennas precisely located on the substrate compare the "angle" of an incoming BLE signal. Minute differences in the arriving angles are traced back to a point of intersection which represents the location of the signal source. Location is also tracked in the vertical dimension, providing x,y,z coordinates.

Unlike other designs, a single AiRISTA Angle of Arrival Gateway can provide submeter accuracy (configuration dependent). AiRISTA's proprietary echo cancelation techniques overcome what had been one of the final hurdles to making location accuracy with less than one (1) meter using a single BLE angle of arrival reader that produces industry leading performance.

### Applications

Combined with low cost BLE tags, retailers can automate inventory accounting. Warehouses can provide guided picking instructions including vertical shelves. Hospitals can track and automatically assign equipment relative to the patient's body. Manufacturing routing applications ensure accurate paths of vehicles. Industrial tools can be programed based on position.

- |                       |                       |
|-----------------------|-----------------------|
| - Workflows & alerts  | - Routemonitoring     |
| - Analytics & reports | - People/patient flow |
| - Low-code dev. env.  | - Staff safety        |

BLE is proving to do more at lower costs.

### Unified Vision Solution Support

AiRISTA's Unified Vision Solution software platform (UVS) creates the business value from location insights provided by the gateway.



### Benefits

- Submeter location accuracy using standards-based technology
- Support for most existing AiRISTA BLE tags
- Location provided in the vertical dimension (x,y,z coordinates)
- Submeter accuracy from a single device eliminating the need for 3 or more gateways (configuration dependent)
- Integration with popular third-party access points (vendor dependent)

### Features

- Ethernet, Wi-Fi and USB connectivity
- Power derived from PoE or USB
- Adjustable angle of view
- Mountable at any angle for wider coverage

# Technical Specifications

## BLE Angle of Arrival Gateway Submeter Accuracy in a Compact Design

### Two BLE Radios

Power Consumption:  
RX BLE: 5 mA  
TX BLE at 0dBm: 6 mA  
Firmware configurable transmit power: -6dBm to +4dBm  
Operating Current TX & RX Disable: 10uA Cortex M3  
Maximum Output Power: +5dBm  
Default Output Power: 0dBm  
RX Sensitivity -94 dB

### PoE Ethernet Interface

Compatible with IEEE 802.3af  
Supports Static and Dynamic IP address  
Supports Backup Server IP Address List  
Over LAN configuration  
Built-in Http based management interface

### Wi-Fi Radios

Supported Wi-Fi Networks: 802.11 b/g/n  
FCC, Canada, ETSI 2.4 - 2.4835 GHz Japan 2.471 -2.497 GHz  
Layer 2 Network Support: CCX, Blink  
Security: WEP, WPA2-PSK  
Supported Data Rates, 1, 6,11,54,72 Mbps

### Electrical Interface

Certification: FCC and CE  
Current Consumption: 1A

### Antenna Specifications

Internal Antenna 1: internal Omni-directional  
Internal Antenna 2: AoA Antenna with 16 Micro antennas  
with 1-2 Micro Second RF Switching

### Environment

Operating Temperature: 32 to 122 °F / 0 to 55°C  
Storage Temperature: -40 to 140 °F / -40 to 60 °C  
\*outdoor installation requires NEMA 4X enclosures

### Typical Operating Range

Device in TX mode  
Line of Sight:  
BLE +4dBm 1Mbps: ~150ft/50m  
Obstructions:  
BLE +4dBm 1Mbps: ~75ft/25m

AoA Receiver range varies based on the installation height, angle of view and transmitting BLE device's TX output power settings. Please see AoA Reader Technical Configuration Guide for details.

### Physical

Dimensions:  
6.63 x 4.68 x 1.63 in / 168.40 x 118.87 x 41.40 mm.  
Weight: 0.64 Lbs

### Part Number

AoA Beaconsing Gateway: BGU.AoA

### Accessories

Swivel Wall Mount: PSU.MB

### Warranty

One Year Warranty

**FCC Statement**

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 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:

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

Important Note:

**Radiation Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/Canada.

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