

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
- Analytics & reports
- Low-code dev. env.
- Route monitoring
- People/patient flow
- 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

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