# Product summary
XPLR-AOA-3

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Bluetooth® direction finding explorer kit and reference design

Angle-of-Arrival anchor point out of the box

- ANT-B10 Bluetooth Low Energy antenna board evaluation
- Angle-of-arrival anchor point reference design
- Includes application board with powerful MCU and a variety of connectivity options
- Includes Bluetooth 5.1 angle-of-arrival tag
- u-locateEmbed* software with optimized direction-finding algorithm; fully compatible with Bluetooth 5.1
- High resolution angle calculation in two dimensions

C209 tag reference board
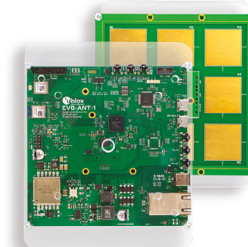
EVB-ANT-1 development board
ANT-B10 antenna board

Product description

The XPLR-AOA-3 kit features boards designed by u-blox for Bluetooth direction finding and indoor positioning. Users can evaluate the ANT-B10 antenna board as well as the u-blox optimized direction-finding algorithm. It also serves as a complete angle-of-arrival (AoA) anchor point reference design. The kit includes an ANT-B10 antenna board, an EVB-ANT-1 development board, and a C209 AoA tag, as well as all necessary software for operating the kit and evaluating the u-blox direction finding solution.

The ANT-B10 antenna board features an antenna array comprising eight individual patch antennas as well as the u-blox NINA-B411 Bluetooth 5.1 module. Designed for integration into commercial end-products, the board enables low power, high precision indoor positioning and speeds up evaluation, testing, and commercialization of Bluetooth direction finding and indoor positioning solutions. Using the u-locateEmbed software, which runs on the Bluetooth module, developers can easily execute the u-blox angle calculation algorithm.

The EVB-ANT-1 application board offers developers a quick and easy way to evaluate the ANT-B10 antenna board. It features the NXP RT1061 MCU for configuring and developing direction finding applications, as well as an Ethernet PHY chip and u-blox MAYA-W1 Wi-Fi module. An off-the-shelf pin header on EVB-ANT-1 allows easy connection to ANT-B10, yielding a ready-to-use AoA indoor positioning anchor point in seconds.

The C209 is a tag based on the NINA-B406 Bluetooth LE module. It runs software that sends out Bluetooth 5.1 advertisement messages for reception by the ANT-B10 antenna board, which will then determine the direction of the tag via the u-locateEmbed software.

The XPLR-AOA-3 kit can be used to explore many different indoor positioning applications. For example, it can detect if an object is approaching a door, keep track of goods passing through a gate, avoid collisions between automated guided vehicles, or let a camera follow an asset moving in a room. A positioning system can be created by combining several XPLR-AOA-3 kits and triangulating the directions from three or more ANT-B10 antenna boards.

Features

- Bluetooth AoA explorer kit and anchor point reference design
- Antenna board with array of 8 dual-polarized antennas
- Development platform with application processor
- Tag with Bluetooth transmitter
- u-locateEmbed software with angle calculation; fully compatible with the Bluetooth 5.1 standard
- Connect to PC via USB or Ethernet
- Wireless module (Wi-Fi 4, Bluetooth 5.2)
- 50+ tags tracked simultaneously (depending on update rate)

Kit includes

- ANT-B10 antenna board with NINA-B411 Bluetooth LE module
- EVB-ANT-1 development platform with NXP RT1061 MCU
- C209 tag with NINA-B406 Bluetooth LE module
- u-locateEmbed direction finding software
- C209 tag software example (from Github)

Supported evaluation software

- u-blox s-center Bluetooth and Wi-Fi evaluation software

System requirements

- PC with USB interface or network switch
- Operating system: Windows 7 onwards

Product variants

XPLR-AOA-3	Bluetooth 5.1 direction finding explorer kit with u-locateEmbed software, ANT-B10 antenna board, EVB-ANT-1 development platform, and C209 tag

* Note: u-locateEmbed was previously named u-connectLocate.

Further information

For contact information, see **www.u-blox.com/contact-u-blox**.

For more product details and ordering information, see the product webpage: **www.u-blox.com/product/xplr-aoa-3-kit**.

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