Product summary

XPLR-AOA-1

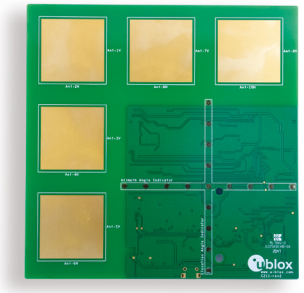
S

Bluetooth 5.1 direction finding explorer kit with NINA-B4

Angle out of the box

- Evaluation of Bluetooth 5.1 direction finding, using angle-of-arrival
- Includes one antenna board and one tag
- u-connectLocate software with optimized direction finding algorithm; fully compatible with Bluetooth 5.1
- High resolution angle calculation in two dimensions

C209 tag reference board



C211 antenna array board

Product description

With the XPLR-AOA-1 explorer kit you can evaluate and experiment with the Bluetooth 5.1 direction finding feature. The kit comprises an antenna board (C211) and a tag (C209) as well as the necessary software for leveraging the angle-of-arrival (AoA) technology in your specific application.

With the AoA technology, an anchor point containing an antenna array connected to a Bluetooth receiver can detect the direction, or angle, to a moving tag transmitting a signal with an appended Constant Tone Extension (CTE).

The XPLR-AOA-1 kit includes everything you need to start evaluating the AoA technology. The C209 tag with the NINA-B406 Bluetooth LE module and an example software sends out Bluetooth 5.1 advertisement messages. The C211 antenna board is equipped with a NINA-B411 Bluetooth LE module, which receives the messages and applies an angle calculation algorithm to extract the direction to the tag. The angle is calculated by the u-connectLocate software, running on the embedded MCU in NINA-B411.

u-connectLocate is fully compatible with the Bluetooth 5.1 standard and can track any Bluetooth 5.1-compatible device. Multiple devices can be tracked simultaneously. No additional processing is required; the angle is delivered directly from the USB port of the C211 board. The algorithm calculates the angles in two dimensions by using the full array of antennas on the C211 board. The calculated angle data can be visualized with the s-center evaluation tool.

The XPLR-AOA-1 kit can be used to explore many different 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-1 kits and triangulating the directions from three or more C211 boards.

Performance [1]

Angle accuracy	5° mean error
Update rate	40 updates per second
Simultaneously tracked tags	50+ (depending on update rate)

1 = Valid for the initial release; future versions will have increased capacity.

Features

- Out-of-the-box Bluetooth AoA explorer kit
- Antenna board with array of 5 dual-polarized antennas
- u-connectLocate with embedded angle calculation; fully compatible with the Bluetooth 5.1 standard
- 2-dimensional angle calculation supported
- USB interface to connect to a PC or other host system

Kit includes

- C211 antenna board with NINA-B411 Bluetooth LE module
- C209 tag with NINA-B406 Bluetooth 5.1 module
- u-connectLocate direction finding software (from u-blox.com)
- 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
- Operating system: Windows 7 onwards

Product variants

XPLR-AOA-1	u-blox Bluetooth 5.1 direction finding explorer kit

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-1-kit**.