BLE AOA Evaluation Kit

Evaluation Kit

- 1 x TI LauchXL-CC2640 board with AOA firmware preinstalled
- 1 x 12-element phase antenna array. Size 190x190mm
- A mountable heavy duty case for easy installation. Size 275x200mm
- AOA 2D angle calcuation software
- A downloadable Android App for testing AOA with any android phone and viewing the results.

WiTagg's Silverant BLE AOA evaluation kit(SEK-BLE-AOA) allow developers to evaluate and experiment the lastest Bluetooth 5.1 direction finding(Angle of Arrival, AOA) feature.

The kit will be acting as an positioning anchor. It comes with an TI CC2640 BLE developer board, and an 12 - element antenna array. Customers can use TI SimpleLINK™ SDK to reprogram the positing anchor for different BLE cofigurations. The kit will work with BLE 4.2+ AOA beacons, and Android smartphones (An Android app is needed and can be downloaded.)

A PC or Raspberry Pi acting as a host computer is needed(not included) to run SEK-BLE-AOA. The host computer uses a USB interface to power the CC2640 and also receives phase IQ data captured by CC2640. An AOA software(available at Windows, Linux) can be installed in the host computer. This software calcautes the Azimuth Angle and Elevation Angle based on the input IQ phase data. With these angles, plus the height information, one SEK-BLE-AOA can calcuate both X and Y coordinates.

WiTagg provides high accuracy indoor positioning solutions using advanaced RF sensing technology. WiTagg's solution is built on ubiquitous wireless technologies, like WiFI or Bluetooth. It can be used used with billions of smartphones, laptops and IoT devices. Using Bluetooth Low Energy(BLE) to localize people and things is the very natural and prominent way to leverage the tremeendously successful ecosystrm. WiTagg develops fine-tuned smart antenna arrays and advanced RF algorithms to deliver the best performance in the market. The evaluation board provide 1-3 meters positionging in 10-to-15 meters radius line of sight(LOS) environment. With 2 or more boards, the accuracy and coverage can be improved further. The antenna array in this evaluation kit is a 12-element design. Smaller sized designs are also available. All necearry software to run the evaluation kit is included.
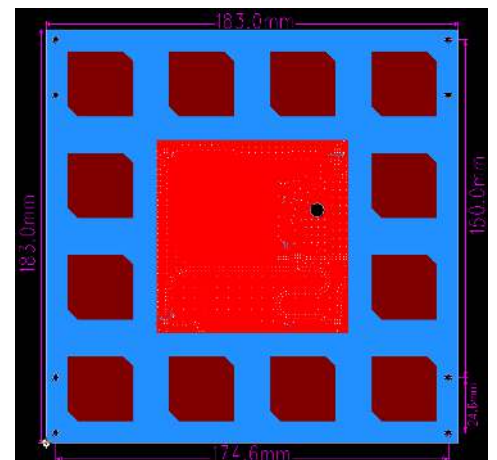
Realtime Location Solution

RF ANTENNA DESIGN

We deisgn high quality, fine tunned antenna for WiFi, BLE, UWB and other RF products.
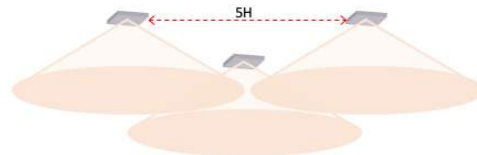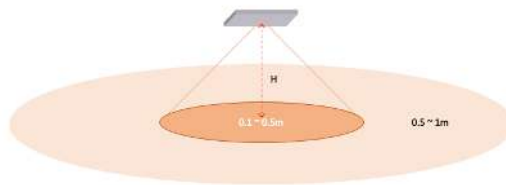
RTLS AGLORITHMS

We provide software algorithms for all kinds of Realtime Location Service.

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TURNKEY SOLUTIONS

The hardware and software will be ready to use and can be whitelabed with your brand.

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www.witagg.com

SEK-BLE-AOA can deliver both Azimuth and Elevation Angle estimates. That means one board can provide 2D X and Y coordinates. The actual positioning accuracy depends on the veritcal and horizontal distance between the board and BLE devices. The closer a BLE device is to the board, the higher positioning accuarcy it can achieve. For example, if the height difference between the board and a BLE device is H*, then the coverage area and accuary will be like this:

Horizontal Distance from the Center	Accuarcy
1H	0.1~0.5m
2H	0.5m~1m
3H	1~3m
4-6H	3~7m

*H is normally between 2 and 5 meters

When more SEK-BLE-AOA boards are used. The accuracy can be futher improved.

Spacing between boards	Overall Accuarcy
5H	1~3m
7H	3~5m

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