LinkTrack AOA

UWB Distance & Direction Positioning System

Integrated UWB ranging, angle-of-arrival measurement and bidirectional wireless data communication

Parameter	Specification
System hardware	AOA Tag + AOA Anchor
Repeat ranging accuracy	±5 cm
Repeat direction accuracy	±5°
Angular range	150°
Communication distance	120 m
Update rate	1-200 Hz adjustable
Communication interface	UART
Supply voltage	3.6-5.5 V
Operating temperature	-20°C to +80°C

1. Product Overview

LinkTrack AOA is a UWB-based high-precision tracking and positioning system built around two hardware types: the compact AOA Tag and the AOA Anchor. The supplied product information combines distance measurement, direction measurement, wireless data transmission and configurable network roles in one platform. The system is intended for applications requiring compact, low-latency relative positioning with bidirectional communication.

2. Key Selling Points & Features

- UWB-based ranging and angle-of-arrival positioning in a single system.
- Repeat ranging accuracy specified at ±5 cm.
- Repeat direction accuracy specified at ±5°.
- Adjustable update rate from 1 to 200 Hz for responsive tracking.
- Communication distance specified to 120 m.
- 150° angular measurement range.
- Bidirectional wireless data transmission in addition to ranging and direction measurement.
- Multiple operating roles: Tag, Anchor/Base Station and Monitor.
- One-to-one and one-to-many system architectures are supported by the product concept.
- Anchor hardware can be configured as a base station or monitor, expanding application flexibility.
- UART host interface with adjustable baud rate from 115200 to 3000000.
- Firmware-upgrade capability is highlighted in the supplied product information.
- NAssistant host software, C-language driver code and ROS support are provided/referenced.
- Compact Tag module weighing only 3.1 g.

3. Product Variants & Hardware

Parameter	Specification
Tag model	LinkTrack AOA Tag
Tag short name	LTAOATag
Tag antenna	Integrated PCB antenna
Tag dimensions	27 × 32 × 7 mm
Tag weight	3.1 g
Tag power consumption	0.6 W
Tag housing	None / exposed module
Anchor model	LinkTrack AOA Anchor
Anchor short name	LTAOAAnchor
Anchor antenna	Integrated PCB antenna
Anchor dimensions	84 × 53 × 16 mm
Anchor weight	45 g
Anchor power consumption	1.5 W
Anchor housing	ABS

4. System Performance

Parameter	Specification
Repeat ranging accuracy	±5 cm
Repeat direction accuracy	±5°
Angular range	150°
Communication distance	120 m
Operating frequency	6240 MHz and 6739.2 MHz
Update rate	1-200 Hz, adjustable
Supply voltage	3.6-5.5 V
Communication interface	UART
UART baud rate	115200-3000000, adjustable
Operating temperature	-20°C to +80°C

5. Operating Roles

Parameter	Specification
Tag	Maximum default quantity: 1. Outputs/participates in distance, direction and signal-strength information
Base Station / Anchor role	Maximum default quantity: 4. Provides distance, direction and signal-strength information associated w
Monitor role	Maximum quantity stated as unrestricted. Monitors distance, direction and signal-strength information b

The supplied system description states that AOA Anchor hardware can be configured for either Base Station or Monitor roles, allowing the same hardware platform to serve multiple deployment functions.

6. Measurement Principle

The supplied material describes UWB time-of-flight ranging between the Tag and base station for precise distance calculation. Direction is obtained from phase differences measured by the Anchor's multi-antenna array, enabling relative-angle estimation. The system therefore combines ToF-based distance measurement with angle-of-arrival processing.

7. Mechanical Information

Parameter	Specification
AOA Tag overall size	27 × 32 × 7 mm
AOA Tag board width reference	27 mm
AOA Tag length reference	32 mm
AOA Tag mechanical features	Integrated antenna, indicator LED, mounting holes, UART TTL connector
AOA Anchor overall size	84 × 53 × 16 mm
AOA Anchor length reference	84 mm
AOA Anchor width reference	53 mm
AOA Anchor height reference	16 mm
AOA Anchor mechanical features	Internal antenna, indicator LED, mounting holes, UART TTL interface

The original dimensional images contain Chinese annotations and are intentionally not reproduced in this datasheet. The dimensional values above were extracted from those source images.

8. Software & Development Support

- NAssistant host software for data display and waveform visualization.
- Multi-platform host-software support is referenced, including Windows, Ubuntu, macOS and Raspberry Pi.
- Standard C-language parsing/driver code is provided or referenced for migration to embedded development platforms.
- ROS driver package/support is referenced for robotic-system integration.
- Functions shown include data display, waveform display, recording, playback and export.
- Documentation support includes datasheets, user manuals and communication-protocol documentation.

9. Typical Applications

- Robot relative positioning and tracking
- Indoor UWB localization experiments
- Mobile-platform distance and bearing measurement
- Multi-anchor tracking systems
- Autonomous equipment and research platforms
- Wireless sensor networks requiring ranging plus data communication
- ROS-based robotics development

10. Integration Guidance

- Provide a regulated supply within the stated 3.6-5.5 V range.
- Configure UART baud rate to match the host controller; the stated adjustable range is 115200 to 3000000.
- Choose the update rate according to system dynamics and communication/processing bandwidth.
- Maintain clear antenna surroundings and evaluate installation effects on UWB ranging and direction performance.
- Use Anchor hardware in Base Station or Monitor mode according to the required network topology.
- Validate ranging and direction performance in the final mechanical enclosure and RF environment.

11. Source Notes

This datasheet was created exclusively from the supplied product-image package. Chinese-language parameter, feature, software and mechanical images were used only to extract technical information and are not reproduced in the final PDF. Only clean product imagery without Chinese annotations is included. Values not explicitly provided in the source package have not been invented.