



Fast, accurate, and secure indoor tracking for industrial equipment and products

Internet of Things solutions for the industrial world

Ultra Wideband (UWB) is a low power radio technology that can be used to track the position of any object. It can function inside or outside with centimeter accuracy and precision to monitor anything from cranes and forklifts to personnel and products.

UWB functions similarly to common radio technology like Bluetooth Low Energy (BLE) and Wi-Fi, but boasts significant improvements that set it apart. BLE and Wi-Fi have been used for object tracking since their creation, but the performance and accuracy were never good enough for meaningful data analysis and information collecting. BLE and Wi-Fi use narrowband radio waves that are inherently hard to measure precisely and accurately. UWB was designed to fix many of the problems with narrowband radios.

UWB uses ultra-wideband radio that offer significant improvements when used for positioning. UWB radios send signals in very short bursts with sharp rises and drops; instead of traditional systems like BLE and

Wi-Fi that transmit information by varying power level, frequency, and phase, UWB transmits information by sending signals at specific time intervals. The system uses information like Time of Flight, Time of Arrival, and Time Reflection of Arrival when a UWB signal is sent from one device to another. This allows location information to be determined by methods similar to triangulation (multilateration).

UWB also allows the signals to maintain their structure and integrity in the presence of noise, interference, and reflections. The signal bursts are so short, sharp, and fast, they can be identified even with constant signal noise and interference. Likewise, reflections caused by the signal bouncing off walls and other objects do not overlap the original signal.

The result of all this technology: a highly robust, extremely accurate positioning system superior to those using BLE or Wi-Fi. UWB is a proven solution to all indoor positioning problems.





Increase reliability and efficiency with UWB positioning

Customer use cases

Moxie IoT's UWB positioning and tracking system is an innovative way to monitor your assets, personnel, and equipment all from one location. Our technology provides unique information and data points that make improving industrial operation effortless.

Operations

Our UWB devices are small and modular: no need to replace your existing assets, simply retrofit them with Moxie's UWB hardware and bring them into the 21st century Internet of Things. Every connected asset and piece of equipment provides more data points and information, all combining to form a database of knowledge about your operations - the good and the bad. Study areas of operation that are running at peak efficiency and determine the causes of success; Learn where operations can be improved and what assets or events lead to unwanted performance. All this information can be found in the MoxieWorld app, which provides a single location to monitor every asset and find ways to improve your operations.

Maintenance

Moxie's UWB devices provide real-time maintenance tracking through the app. Connected assets can be tracked in various ways: usage, hours running, hours moving, estimated materials or products moved, and many more. Using the MoxieWorld app, teams can easily document service records and share scheduled maintenance in real-time. The app and UWB devices can also provide insight into a machine's load capacity and capability, and alert users of any vital maintenance needed before an asset fails. Less downtime and more awareness will lead to greater efficiency and production.

Technology

The MoxieWorld app recreates a digital 3D 'twin' of any facility and allows for real-time monitoring and historic metrics through powerful and intuitive visualization. Our software tools are accessible and adjustable, allowing your IT team to build and customize the system to meet your needs, and if you need any help, our support team is ready to help make sure you get the best setup and operating experience possible.

UWB Indoor Positioning is perfect for any company looking to take advantage of the Industrial Internet of Things revolution.



Centimeter accuracy



Works the same inside and out



Increase productivity and efficiency



Moxie IoT Ultra Wideband device technical specs

MOXIE ANCHOR

UWW System	nRF52810 Cortex M4F (BLE MCU) UWB TWR Transceiver
Network	2.4 GHz Wi-Fi LTE CAT-M1 (Hologram)
Power Options	100-277 VAC dedicated power 5-24 VDC, 12-24 VAC
Enclosure	Polycarbonate, IP67, UL508A, 80C
Sensors	UWB - DW1000 Transceiver IMU Motion Detection

MOXIE TAG

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Power Options	100-277 VAC dedicated power 5-24 VDC, 12-24 VAC
Enclosure	Polycarbonate, IP67, UL508A, 80C
'Plus One' Options	Encoder (Crane hoist, CNC travel) AC current clamp (non-invasive) Environmental probe (temp, VOC)

Interested in using Moxie IoT's UWB indoor positioning system?

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