Overview

The Ubisense Tag Module Research Package is an out-of-the-box, Real-time Location System (RTLS) that can be used to track and locate assets and personnel to an accuracy of 15cm* in 3D in real-time. It is an all-inclusive solution for RTLS system development or an entry level pilot system.

The research package has been put together to enable a fast-track into applications and systems design where location accuracy, reliability and scalability will be key to delivering industrial strength operational systems. It includes tag modules which can be used to incorporate precise location tracking functionality into other devices.

As part of our commitment to academic success, the Tag Module Research Package is also available to provide qualified students, faculty, and accredited institutions of higher learning a research and development system at a discounted price. Please contact Ubisense for more details.

Operation

Ubisense tags transmit ultra-wideband (UWB) pulses of extremely short duration which are received by the sensors and used to determine where the tag is located using a unique combination of Time-Difference-of-Arrival (TDoA) and Angle-of-Arrival (AoA) techniques. The use of UWB together with the unique AoA and TDoA functionality ensures both high accuracy and reliability of operation in challenging environments.

Sensors are grouped into cells with additional sensors being added to a cell depending on the geometry of the area to be covered. In each cell a master sensor coordinates the activities of the other sensors and communicates with all the tags whose location is detected within the cell. By designing overlapping cells, it is possible to cover very large areas.

*Dependent on system configuration and environment.
Sensors

Four Ubisense Series 7000 sensors are included in the research package. The sensors detect ultra-wideband pulses transmitted by Ubisense tags which are used to accurately determine tag locations. The sensors have an array of four UWB receivers enabling them to measure both Angle-of-Arrival (AoA) and Time-Difference-of-Arrival (TDoA) of tag signals, to generate accurate 3D tracking information even when only two sensors can detect the tag. The sensors and tags also support two-way conventional RF communications permitting dynamic changes to tag update rates and enabling interactive applications.

Series 7000 Compact Tags and Tag Modules

Ubisense Series 7000 Compact Tags and Tag Modules are included in the research package. The Series 7000 Compact Tags are small, rugged devices that are designed for use in a variety of different environments. In addition to tracking capabilities, they include features such as an LED for easy identification, a motion detector to instantly activate stationary tags and a push button to trigger events.

The Ubisense Series 7000 Tag Modules provide the precise tracking capabilities of the standard Ubisense tag together with the ability to easily integrate that functionality into other devices. They are supplied with a 20-way (2 x 10) 1.27mm pin header, which provides for power supply, general input / output and serial data communication, enabling increased integration flexibility.

The Ubisense Tag Module has received certification as a plug-in radio device, simplifying emissions testing of finished products into which the module has been designed.

Software

Software supplied with the research package includes the distributed location processing software platform supporting visualization, system customization and application integration via an industry-standard API.

The research package software also includes Ubisense Developer software which extends the Location Platform with a Motion Simulator for testing and demonstrating location-aware applications without needing a sensor system and also a Data Dictionary editing tool that enables the development of new application-specific data models.

A Data Client graphical user interface application is also supplied which allows the user to send, receive and view data that is being sent to a tag module/accessory.

Training

Ubisense provides a three day installation and training program for one user, which covers the fundamentals of the Ubisense RTLS system. The training course is usually held at a Ubisense regional office and consists of tutorial, demonstrations and hands-on practice sessions.

Maintenance and support

One year’s system maintenance and support is provided with the package which covers bug fixes and basic functionality updates.

For further information please contact: enquiries@ubisense.net