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Pozyx system offers

1. Localizations
 - a. Indoor 3D position with centimeter accuracy
2. Motion sensing
 - a. Comes with accurate motion sensors (accelerometers, gyroscopes, magnetometer, and a pressure sensor)
3. Communication
 - a. Wireless message communication
 - b. Enables automation and communication for Arduino projects
4. Compatibility
 - a. Can function alone
 - b. Can function as an Arduino shield
 - c. Examples provided in Arduino C and Python libraries

Ultra-wideband (UWB) - radio technology that uses very low energy levels for short-range, high bandwidth communications over a large portion of the radio spectrum. Formerly known as pulse radio.

Applications of UWB

- Target sensor data collection
- Precision locating
- Tracking applications

Properties of UWB

- Unlike spread spectrum
- Transmissions don't interfere with conventional narrowband and carrier wave transmission in the same frequency band
- Technology for transmitting information spread over a large bandwidth (> 500 MHz)
- In theory, allows spectrum to be shared with other users

Features

Indoor ranging and 3D positioning

Ultra-wideband (UWB) technology is the key to accurate ranging and positioning. However, the UWB-module itself only provides accurate timestamps. We have implemented state-of-the-art algorithms to obtain the most accurate range and positioning information.

Automatic anchor calibration

3D positioning requires at least 4 anchors to be within range (3 for 2D positioning). In general the position of these anchors must be known in advance. Our shield provides the feature to obtain the anchor positions with a single push of a button. No manual measuring required!

Remote control

With the use of ultra-wideband wireless technology, messages can be transmitted over the air. These messages can be text or user data, but also commands to control remote pozyx modules. We made it possible to remotely turn on LEDs, toggle pins, read out sensor data, and much more.

9-axis sensor fusion

Pozyx is equipped with an accelerometer, gyroscope and magnetometer. With these sensors it is possible to obtain the orientation of the device. However, separately these sensors all have their flaws. For example, the accelerometer is noisy and the gyroscope is biased. Together these flaws can be mitigated. Pozyx offers 9-axis sensor fusion (3 axes for every sensor) to get the best possible measurements.

Firmware updates

Our team keeps on working on the Pozyx system and we provide free firmware updates to fix issues, to improve positioning and to add new features. New firmwares can be uploaded easily and in no time using the USB interface.

Source:pozyx.io