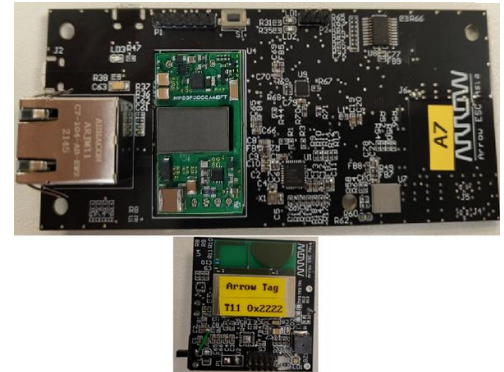


RTLS & Access (UWB) Demo

Description

This reference design represents a solution for high accuracy real time location and access system based on UWB technology. This reference design is commonly used for Access control for building or Car, Asset/people tracking and Indoor Navigation, Industrial safety zone control, Vehicle parking system, even on Mobile VR/AR application. UWB technology uses high frequency signal to combine with AoA, PDoA and TDoA technology to give high accuracy, reliable and secure real time location solution.



Advantages: UWB (Ultra-WideBand) technology can provides high accuracy (up to 10cm), high reliable, high security, low latency and long operation range real time location system and the network scale can be further extended through networking all anchors together for more Tags support.

Features

- RTLS (Real Time Location System) for Access control and indoor navigation.
- UWB (Ultra-WideBand) technology for high accuracy real time location system.
- Secure element used for security application, like payment and car-access application.
- FiRa certified platform is used for interoperability.

Core parts

1. Murata: 2BP UWB module (for Anchor), 2DK UWB module (for Tag), MYBSP0055AABFT (PoE module)
2. NXP: MiMXRT1021CAF4B (MCU), QN9090 (BLE), SE051W and SE050 (secure chip), NTS0308EPW (level shifter)
3. Microchip: KSZ8081MNXIA (Ethernet transceiver)
4. Abracon: ACR0301U (UWB antenna), ARJM11C7-104 (RJ45 connector), ABS07-32.768 (32kHz crystal), ABM10AIG (25MHz crystal), ABM10W (24MHz crystal)
5. ONSEMI: FAN53610AUC33X (5-3.3V DCDC), FAN53611AUC18X (1.8V LDO) & FAN4868UC33X (3-3.3V DCDC)
6. ISSI: IS25LP064A (3.3V QSPI FLASH)

Applications

- People or asset tracking system or indoor navigation system.
- Access control for building and transportation system.
- Intelligence parking system (IPS)
- Guiding system for Museum or shopping mall with AR/VR feature.

Block Diagram

