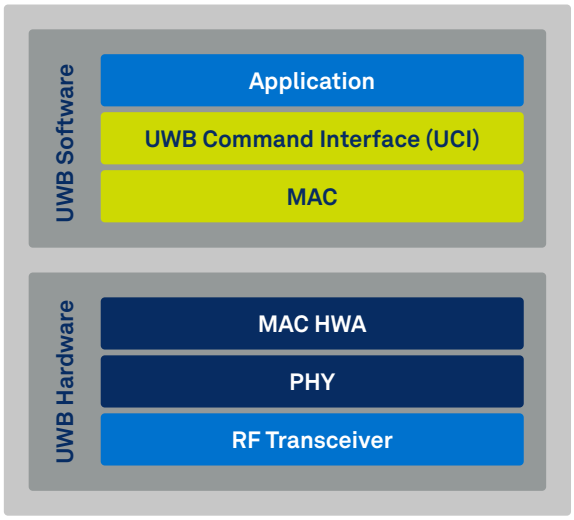
RivieraWaves UWB

Low power ultra-wideband IP for Mobile, Automotive, Consumer and IoT applications

RivieraWaves UWB is a low power ultra-wideband (UWB) MAC and PHY solution based on 802.15.4 HRP and the FiRa Consortium requirements.

The RivieraWaves UWB platform IP delivers secure, centimeter-level accuracy and robust location information through Time-of-Flight (ToF) ranging and Angle-of-Arrival (AoA) processing. Addressing a wide range of use-cases, The RivieraWaves UWB platform IP is architected for seamless integration with the RivieraWaves Bluetooth IP in multi-mode low power wireless SoCs for smartphones and battery-powered accessories.

RivieraWaves UWB architecture



Key Benefits

- Standards-based IP that accelerates time-to-market adoption of UWB in next generation multi-mode low power wireless SoCs
- Delivers secure, precise and robust location information
- Suitable for a broad range of applications in smartphones, accessories and other consumer and IOT devices
- Designed for enhanced performance in a realistic multi-path environment
- Available separate or in combination with the RivieraWaves Bluetooth IP

Main Features

- MAC and PHY for IEEE 802.15.4 HRP in accordance with the FiRa Consortium requirements
- Supports enhanced ranging, direction finding and security based on IEEE 802.15.4z
- Portable MAC layer software, with hardware offloading for encryption/authentication (CCM AES) and key management, autonomous ACK handshaking and other real-time-critical operations
- Low power hardware PHY, implementing a high sensitivity coherent receiver with power optimized synchronization
- Supports secured data transfer up to 27Mbps using pulse based ultra-wideband communication with 500 MHz bandwidth
- Supports centimeter level accuracy ranging and AoA estimation based on multiple antennas
- Flexible low power modes applicable to FiRa ranging scenarios
- FiRa standard UWB Command Interface (UCI) simplifies the interface to the application level software
- Flexible digital radio interface, designed to accommodate various radios

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