

FEATURES

- Bluetooth® Low Energy 5.1 AoA (Angle-of-Arrival) demo system consisting of one locator and a tag.
- Operating frequency range: 2400-2483 MHz
- **CoreHW CHW1010-ANT1** AoA antenna array board
 - CoreHW CHW1010 SP16T Bluetooth AoA/AoD antenna switch
- **CoreHW IPS Main board**
 - Nordic Semiconductor nRF52833 BLE SoC
 - Max. +8dBm conducted output power
 - ST Microelectronics STM32H7 MCU
 - Ethernet, Micro-USB, and HW-UART interfaces for configuration and angle data or I/Q data
 - SPI interface for angle data
 - 5V DC input
 - SWD Debug interfaces for nRF52833 and STM32 (Requires separate nRF/Segger J-Link and ST-LINKv3 debuggers)
- Locator assembly dimensions 193mm x 193mm x 49mm
- Nordic Semiconductor nRF52833 BLE chip DK board as a tag
- Windows PC SW for angle and position measurements developed for demo purposes
- GUI for configurability and tag tracking demonstration

APPLICATIONS

- Bluetooth 5.1 Angle-of-Arrival, radio direction finding
Support for development of Bluetooth indoor positioning systems

CONTENT

- 1 x CHW1010-LOCN2 locator with a mount plate and a power supply
- 1 x nRF52833 DK board used as a tag
- 4-port USB hub
- 2 x 10m USB extension cables
- 1 x micro USB to USB-A cable for a tag (0.5m)
- 1 x micro USB to USB-A left angle cable for a locator
- USB Stick which includes PC SW, Demo System User Guide and PC SW guide (AoA_Matlab_Demo_Guide)

GENERAL DESCRIPTION

CoreHW CHW1010-EVKN4 Angle-of-arrival (AoA) light reference design system for the CoreHW SP16T AoA/AoD Antenna Switch provides a hardware environment for demonstration and testing of BT5.1 AoA indoor positioning accuracy.

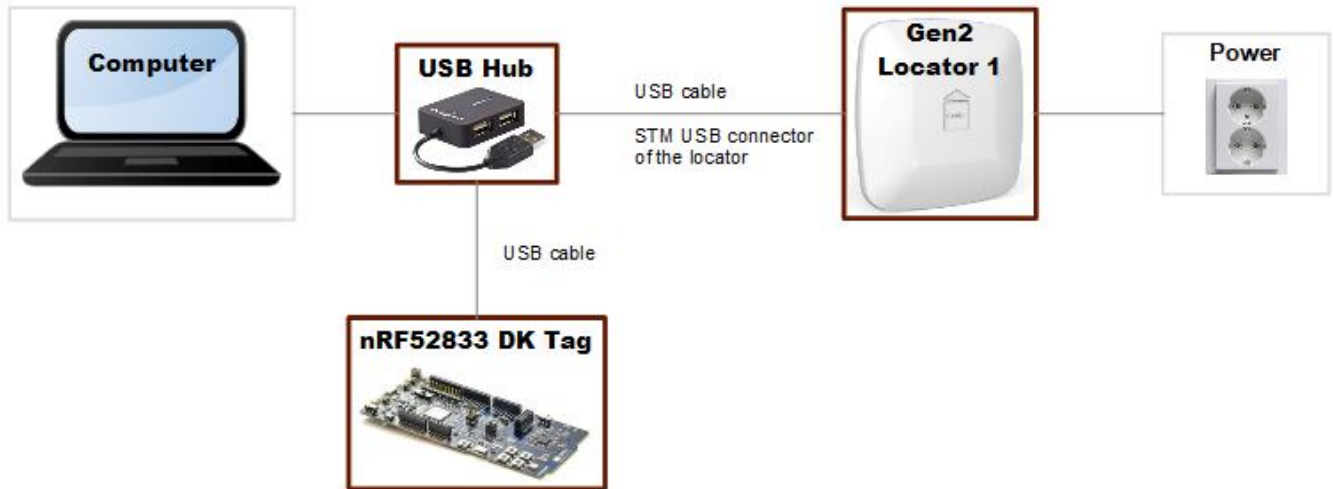
The CHW1010-EVKN4 light reference design system contains one CoreHW CHW1010-LOCN2 locator and one tag. CoreHW firmware is used in the tag and locator to enable AoA measurement. Ethernet, Micro-USB, HW-UART and SPI Interfaces can be used to connect the locator to Windows PC which has position engine SW with user interface (GUI).

The demo system is not developed for production usage and PC SW does not support all features needed for mitigation of e.g. interferences and multi-path reflections. The system can be used for laboratory tests and for initial testing in real use case scenarios. It provides support to locator product development and development of final end-to-end RTLS solution.

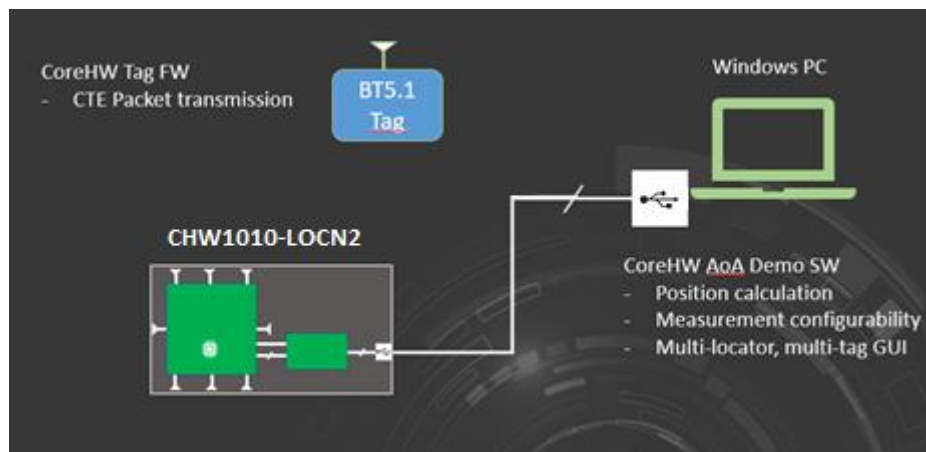
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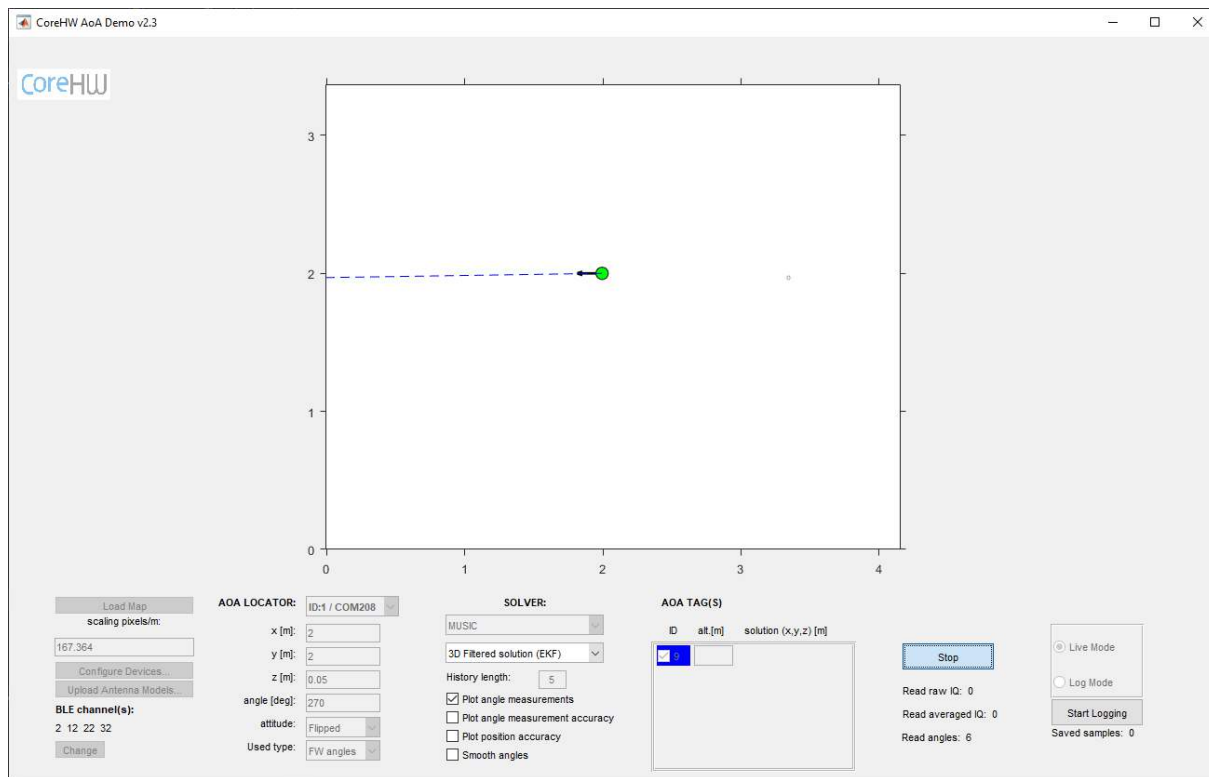
CHW1010-EVKN4 Demo System Block Diagram



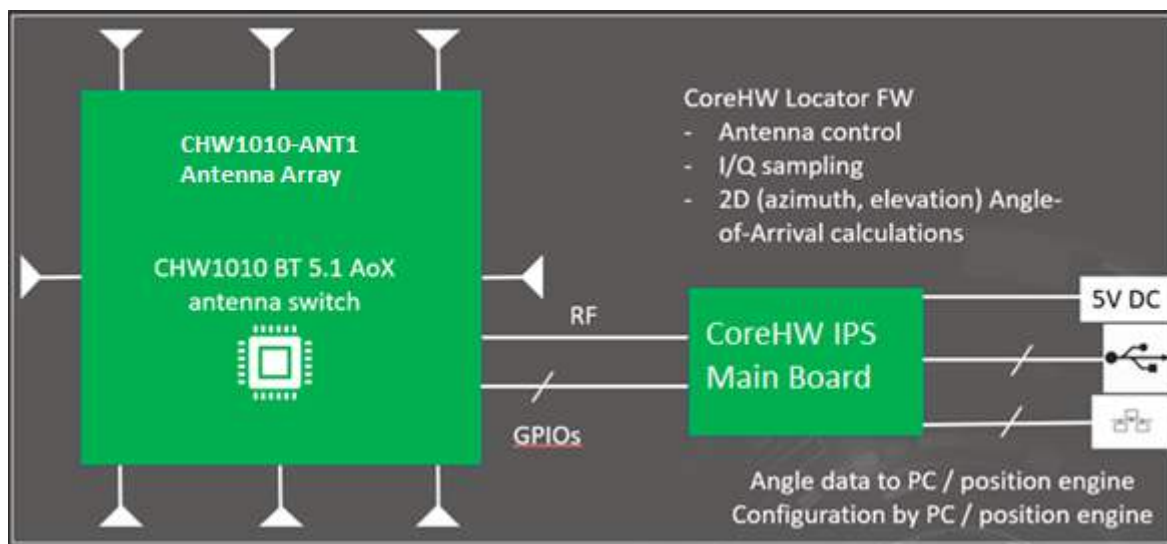
The locator can be installed e.g. on ceiling (mounting on floor, wall, 45 degrees from floor and 45 degrees from ceiling are also supported) of a room and connected via Ethernet to Windows 10 PC running proprietary CoreHW AoA Demo software. PC Demo software can be used to demonstrate AoA Tag position estimation based on Angle-of-Arrival data.



CoreHW AoA Reference System PC Software GUI:

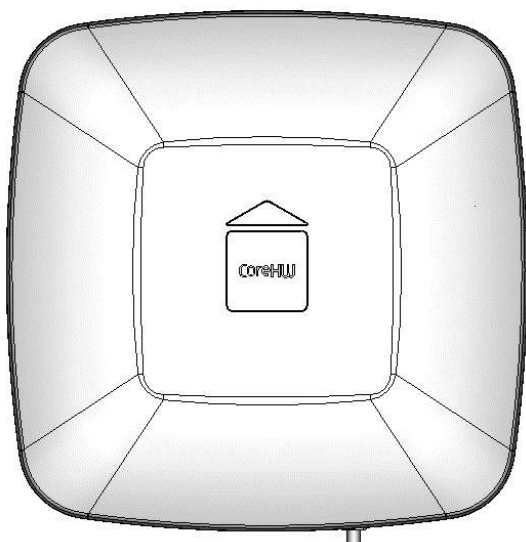


CHW1010-LOCN2 Locator Overview

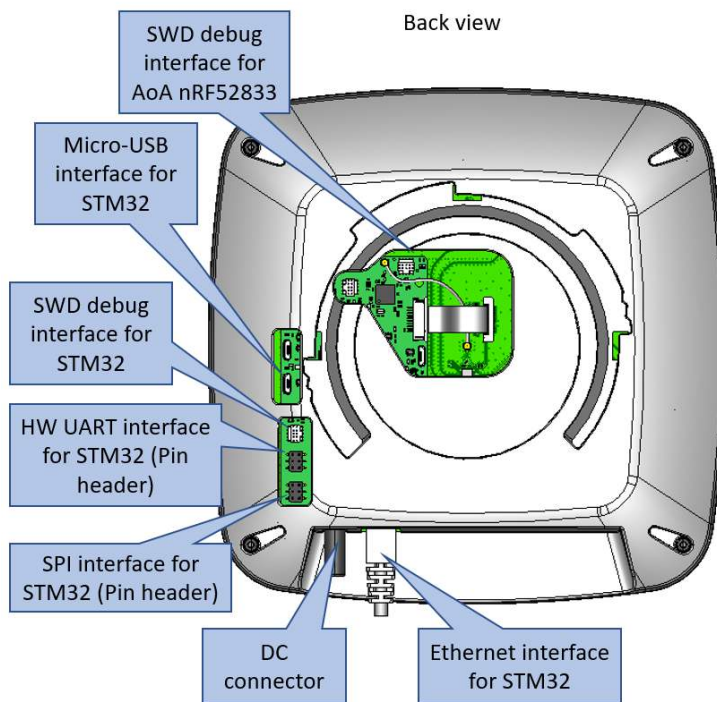


Gen2 Locator Assembly

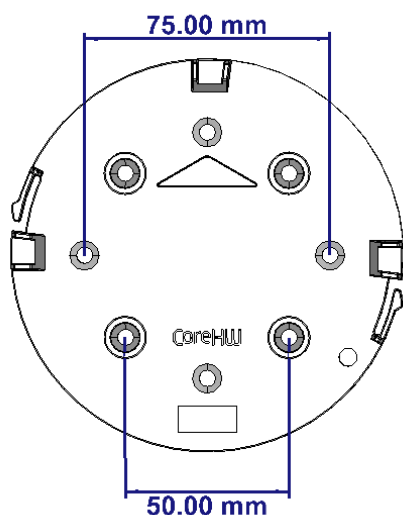
Front view



Back view



Mount plate



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