Technical Data

CHW1010-EVKN5-1.0

FEATURES

- Bluetooth® Low Energy 5.1 AoA (Angle-of-Arrival) demo system consisting of four locators and two tags.
- Operating frequency range: 2400-2483 MHz
- **CoreHW Gen3** 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 sepatate nRF/Segger J-Link and ST-LINKv3 debuggers)
- Locator assembly dimensions 193mm x 193mm x 49mm
- CoreHW Gen3 AoA tags
- 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

- 4 x Gen3 locators with mount plates and power supplies
- 2 x CoreHW Gen3 tags (batteries not included, CR2032)
- Ethernet router and ethernet switch
- 4 x 20m, 1 x 1m, 1 x 2m and 1 x 5m ethernet cables
- Cable ties for securing and arranging strain relief for cables
- USB Stick which includes PC SW, Demo System User Guide and PC SW guide (AoA_Matlab_Demo_Guide)

GENERAL DESCRIPTION

CoreHW Gen3 Angle-of-arrival (AoA) reference design system provides hardware environment for demonstration and testing of BT5.1 AoA indoor positioning accuracy. The CoreHW Gen3 technology is designed to work reliably in real reflective multipath environments.

The AoA reference system contains CoreHW Gen3 locators and CoreHW Gen3 tags. The locators include CoreHW AoA antenna array boards and CoreHW IPS Main Boards. The antenna elements are controlled with CoreHW CHW1010 SP16T Bluetooth AoA/AoD capable antenna switch for Bluetooth AoA CTE sampling.

CoreHW firmware is used in the tags and locators to enable AoA measurements. Ethernet, Micro-USB, HW-UART and SPI Interfaces can be used to connect locators to Windows PC which has position engine SW with user interface (GUI). The reference system uses ethernet connection.

The reference design 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 solutions.

www.corehw.com

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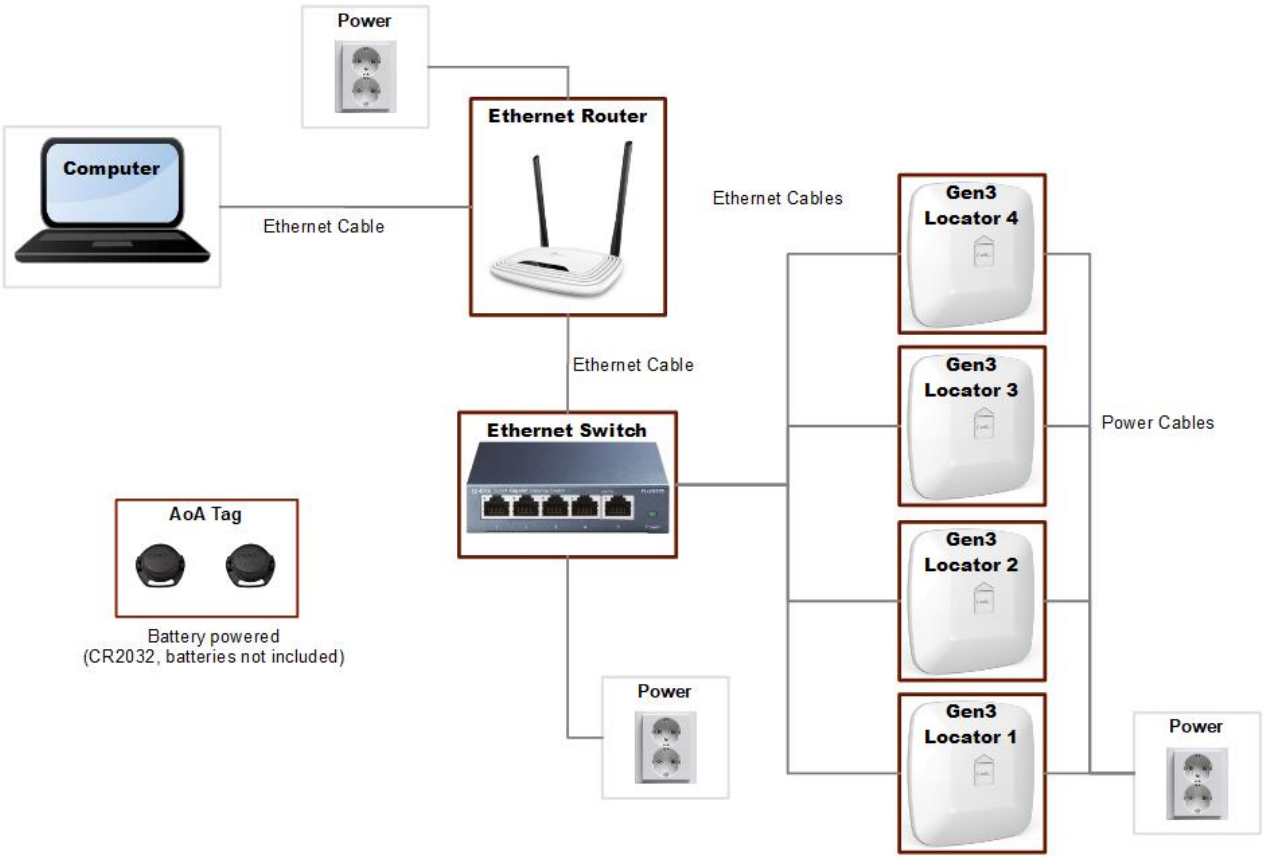
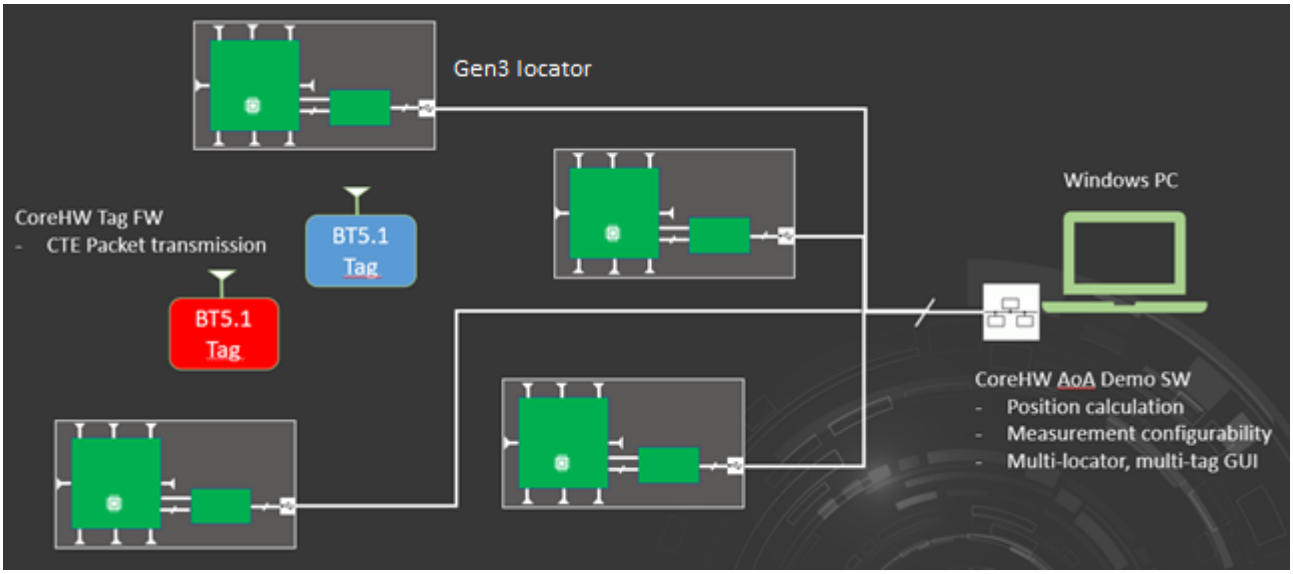
CoreHW AoA Demo Block Diagram





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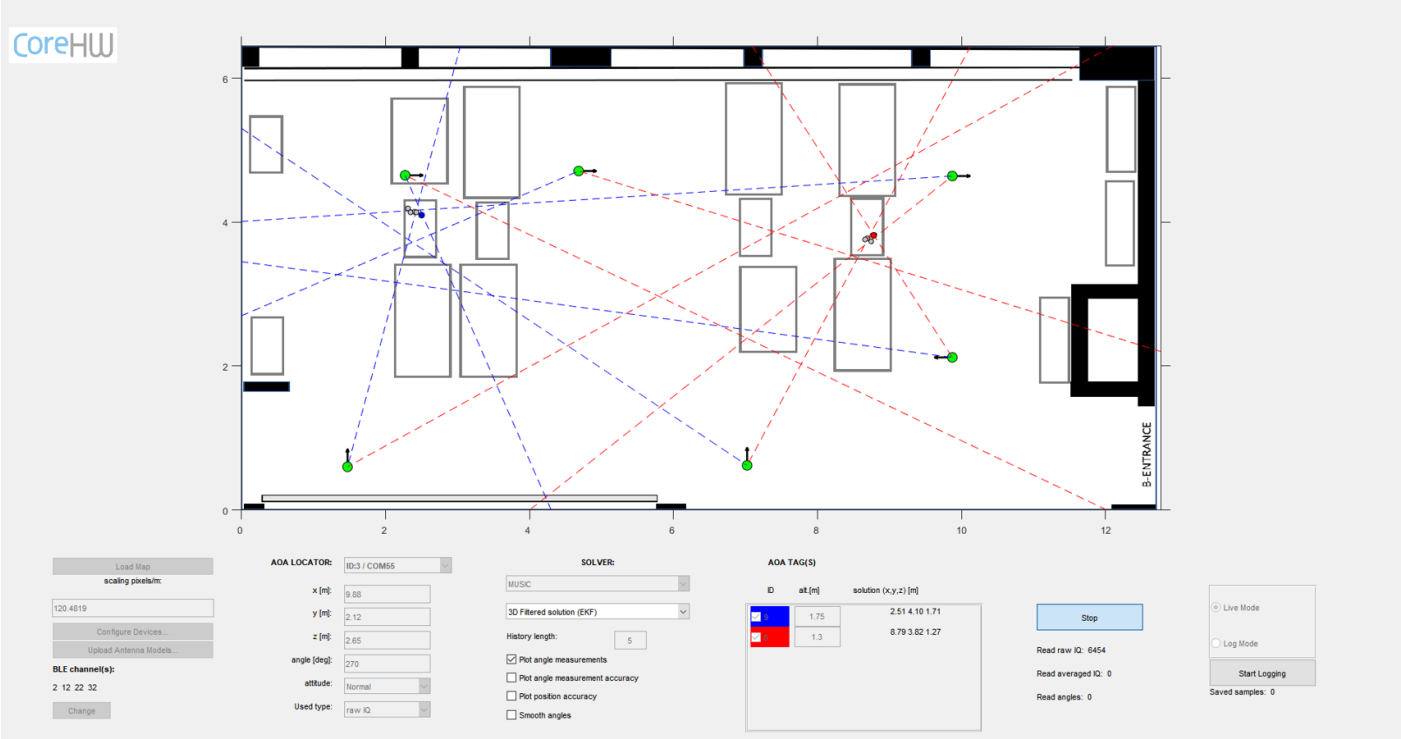
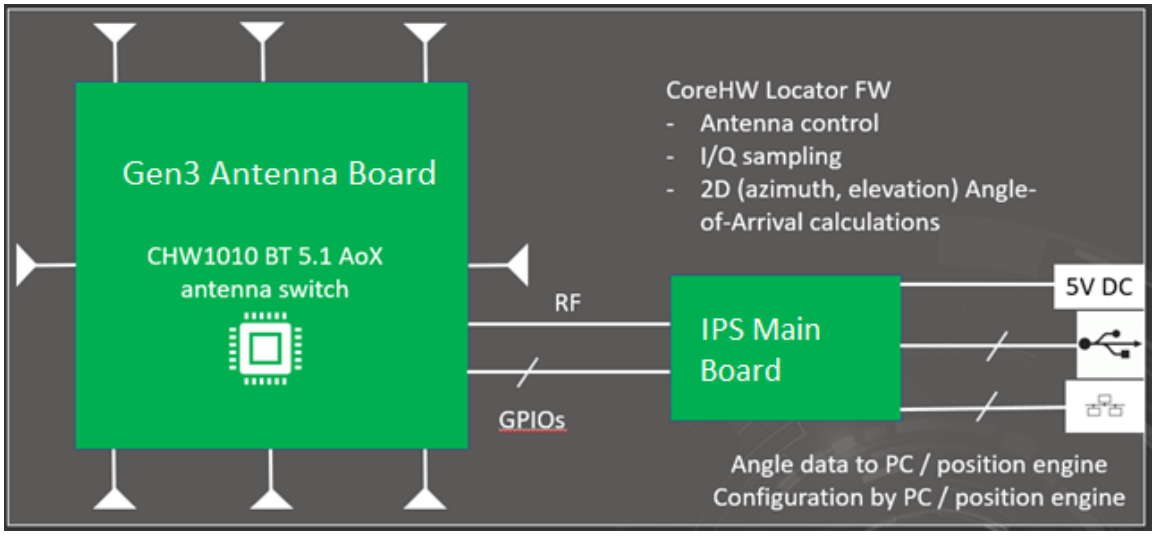
CoreHW AoA Demo PC Software GUI:



Gen3 Locator Overview



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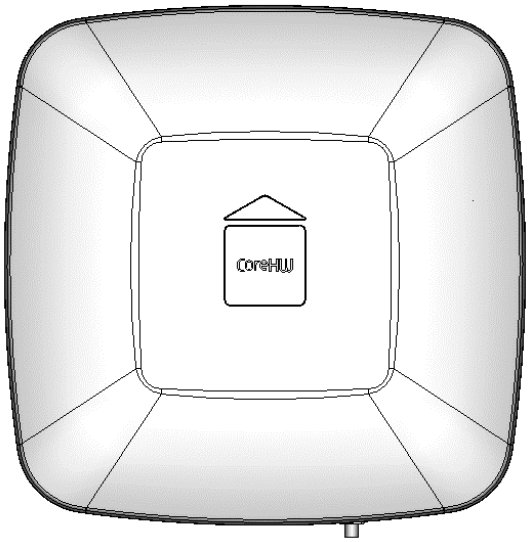
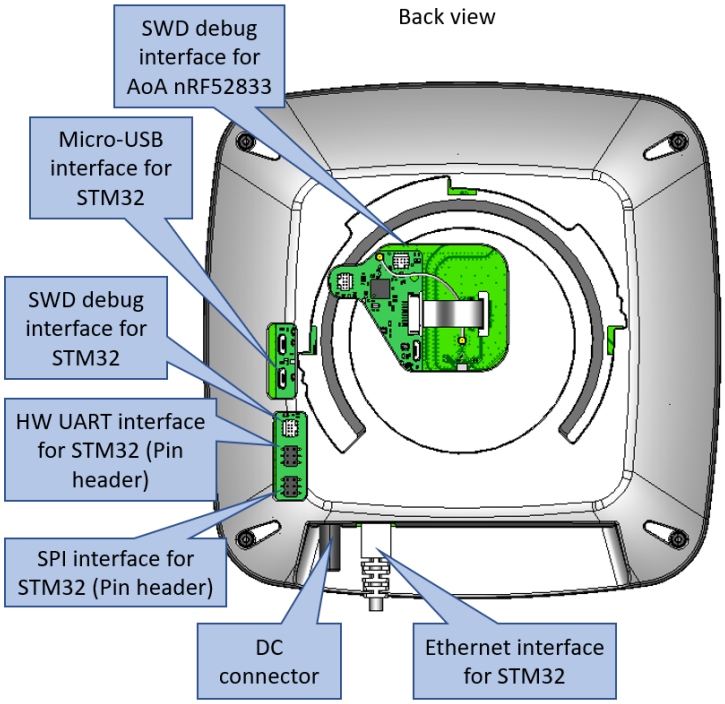
Gen3 Locator Assembly

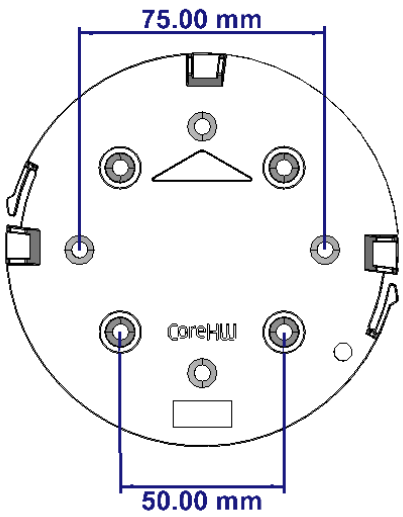
Front view



Back view



Mount plate



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