

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 Gen2 PCB4 V2.1L** 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 boards as 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

- Four CoreHW Gen2 locators with mount plates and power supplies
- Two nRF52833 DK boards used as tags
- Ethernet router and ethernet switch
- 4 x 20m, 1 x 1m, 1 x 2m and 1 x 5m ethernet cables
- USB hub and 2 x 10m USB extension cables
- 2 x micro USB to USB-A cables for tags (0.5m)
- 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

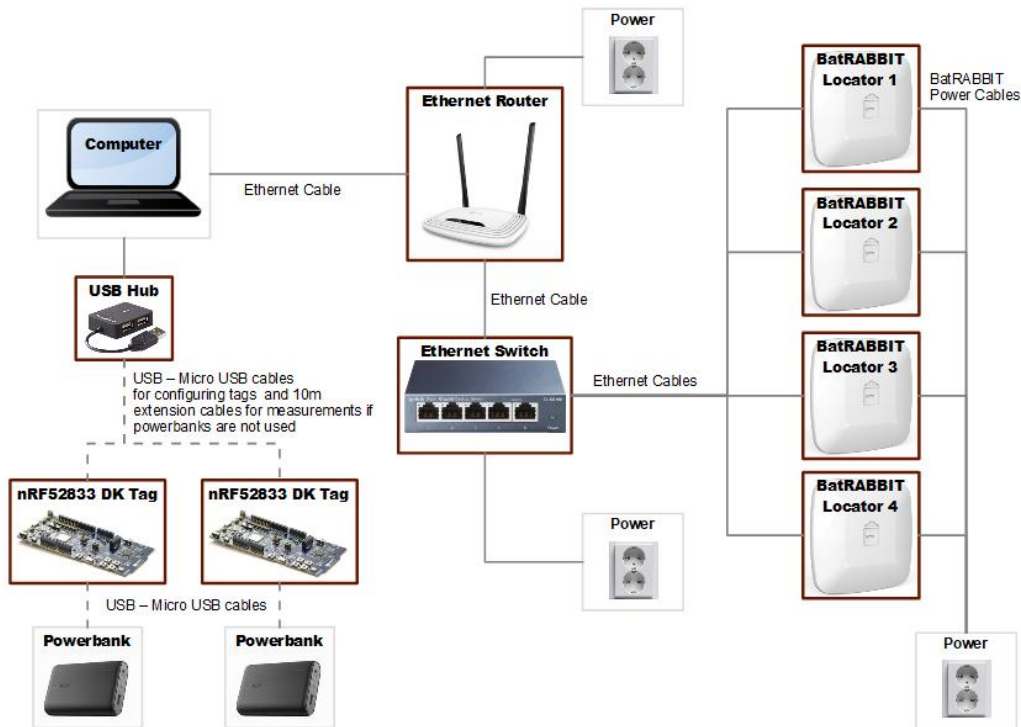
CoreHW Gen2 Angle-of-arrival (AoA) Demo System for the CoreHW SP16T AoA/AoD Antenna Switch provides a hardware environment for demonstration and testing of BT5.1 AoA indoor positioning accuracy. The demo system is not developed for production usage and PC SW does not support all features needed for mitigation of e.g. interferences and multi-path reflections. The system can be used for laboratory tests and for initial testing in the real use case scenarios. It provides support to locator product development and development of final end-to-end RTLS solution.

The AoA demo system contains four CoreHW Gen2 locators and two tags. CoreHW firmware is used in the tags and locators to enable AoA measurement. The demo system uses ethernet interfaces to connect locators to Windows PC which has position engine SW with user interface (GUI).

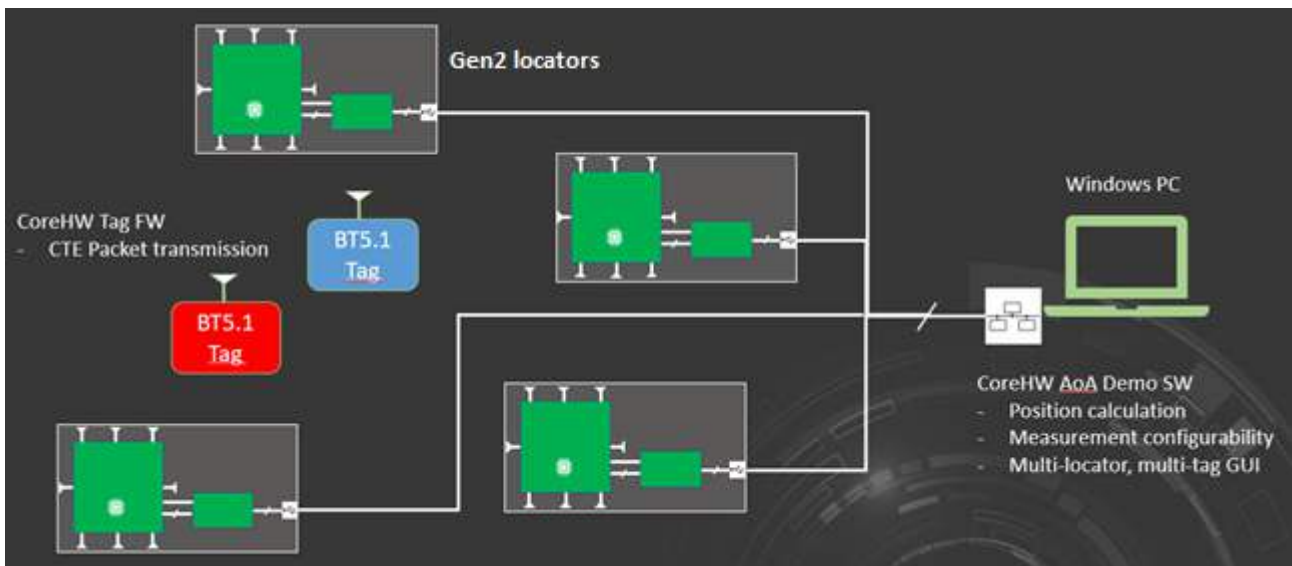
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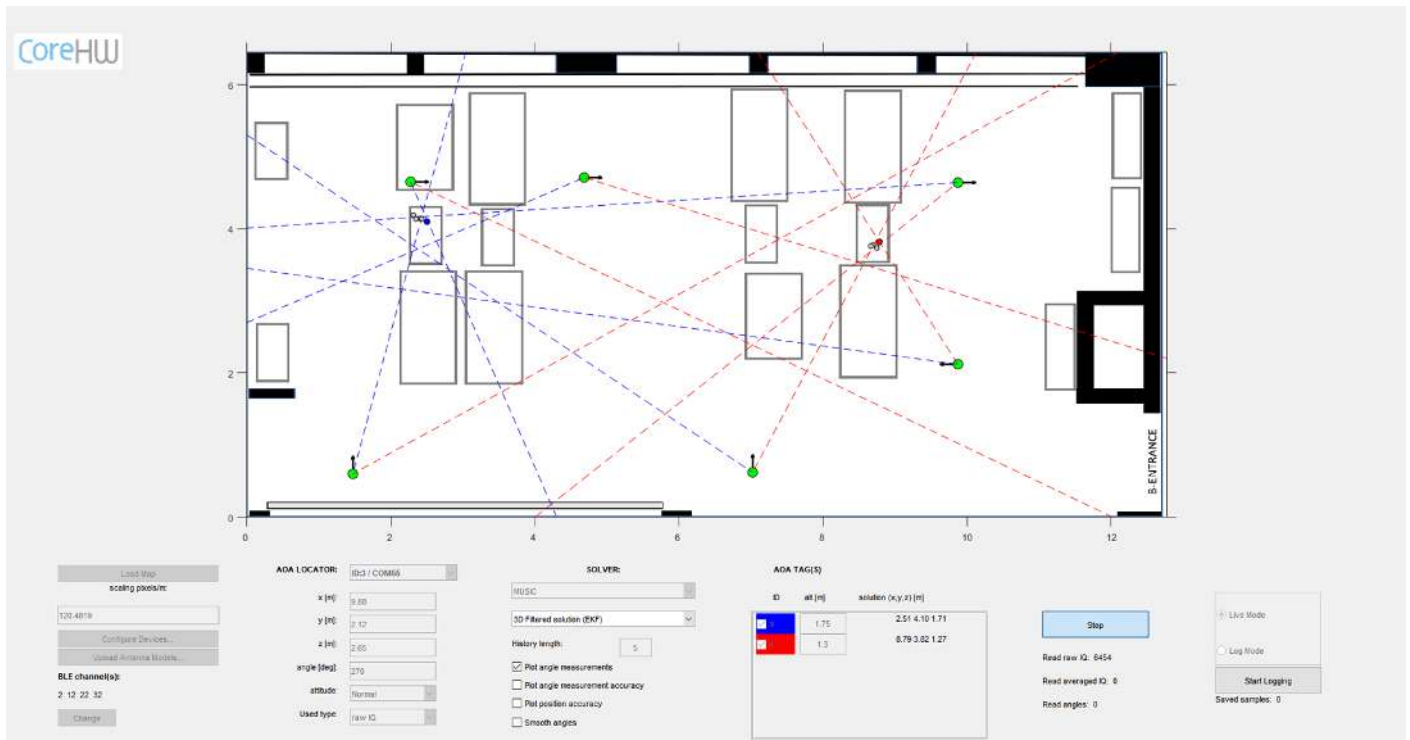
Gen2 Demo System Block Diagram



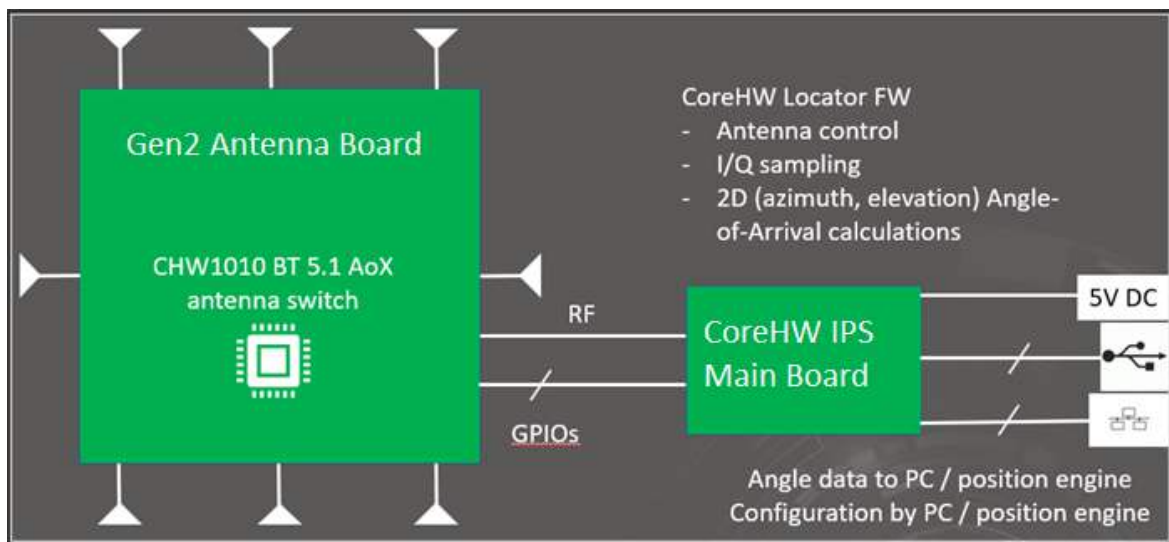
Gen2 locators can be installed e.g. on ceiling (mounting on floor, wall, 45 degrees from floor and 45 degrees from ceiling are also supported) of a room and connected via Ethernet to Windows 10 PC running proprietary CoreHW AoA Demo software. PC Demo software can be used to demonstrate AoA Tag position estimation based on Angle-of-Arrival data.



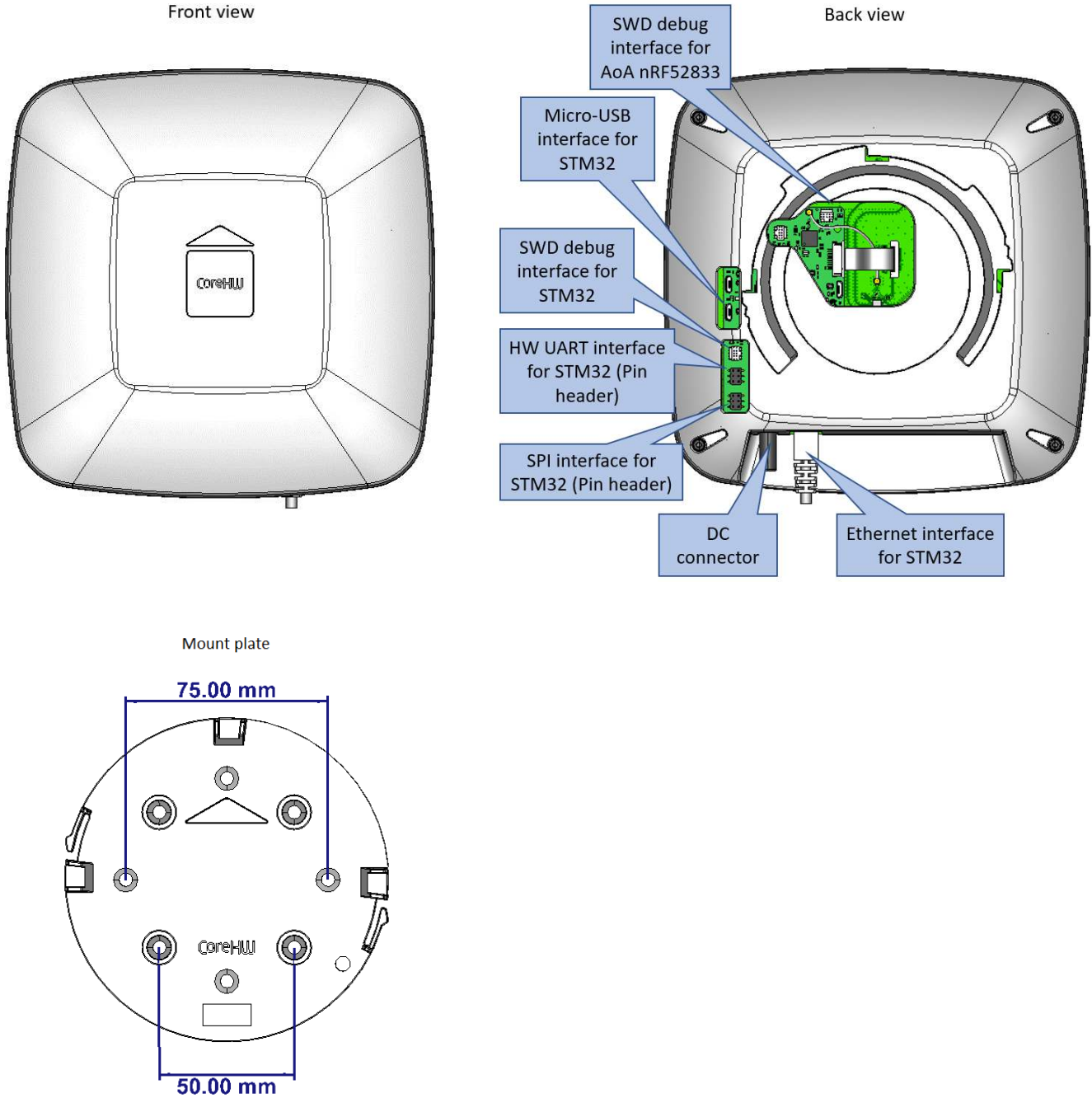
CoreHW AoA Demo PC Software GUI:



Gen2 Locator Overview



Gen2 Locator Assembly



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