FEATURES

- Bluetooth® Low Energy 5.1 AoA (Angle-of-Arrival) Locator
- 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 sepatate nRF/Segger J-Link and ST-LINKv3 debuggers)
- Locator assembly dimensions 193mm x 193mm x 49mm

APPLICATIONS

· *Bluetooth 5.1 Angle-of-Arrival, radio direction finding*

· *Bluetooth indoor positioning systems*

GENERAL DESCRIPTION

CoreHW Gen2 Locator is a Bluetooth AoA development kit locator device intended for indoor positioning system providers. The locator includes CoreHW Gen2 AoA antenna array board and CoreHW IPS Main Board.

Gen2 antenna array board contains 8 dual linear polarized patch antennas and CoreHW CHW1010 SP16T Bluetooth AoA/AoD capable antenna switch for Bluetooth AoA CTE sampling.
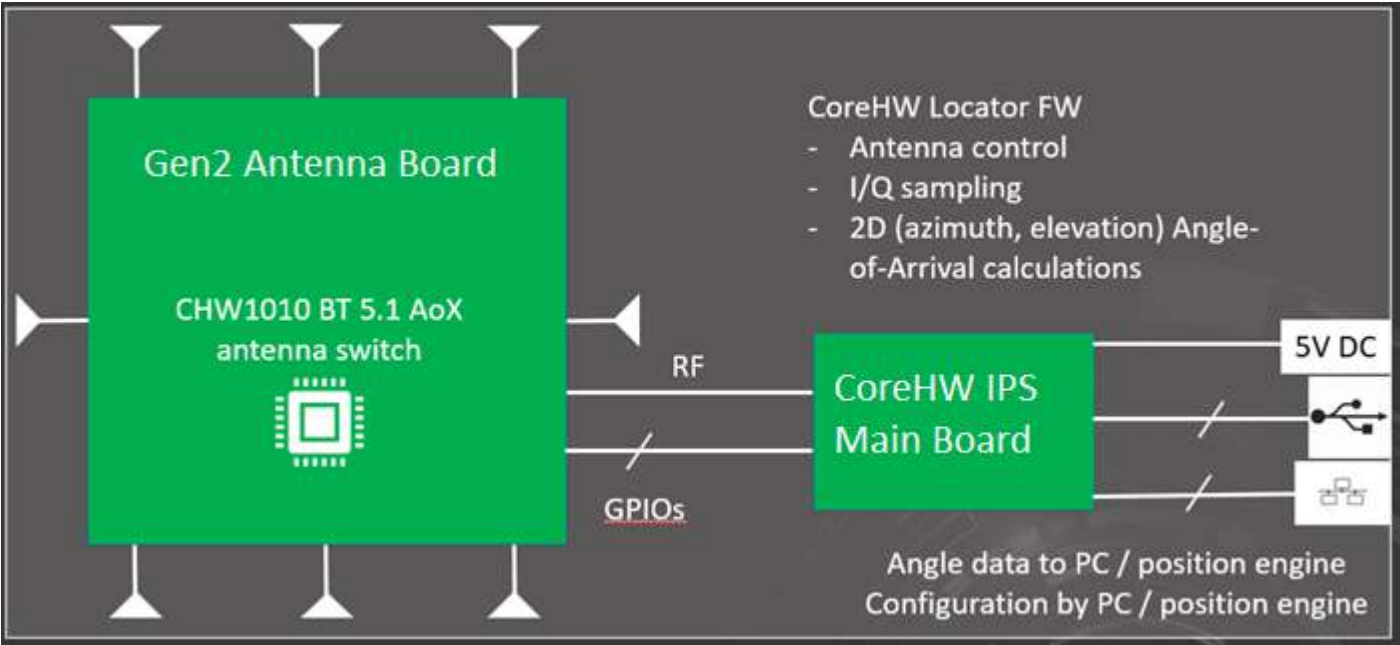
CoreHW IPS Main Board, contains Nordic Semiconductor nRF52833 BLE SoC, which controls CoreHW 1010 AoA antenna switch and performs I/Q-sampling of CTE advertising packets sent by compatible Bluetooth AoA Tags. The main board also contains ST Microelectronics STM32 MCU, which runs CoreHW proprietary angle estimation algorithm to calculate 2D Angle-of-Arrival (Azimuth & Elevation) estimates for AoA Tags. Calculated angle data can then be passed for further processing on positioning system via Ethernet, USB (virtual serial port), HW UART, or SPI interfaces.

CoreHW offers an AoA demo system with CoreHW firmware and Windows PC positioning engine SW with user interface (GUI). The demo system contains four Gen2 locators. The demo system can be used for laboratory tests and for initial testing in real use case scenarios.
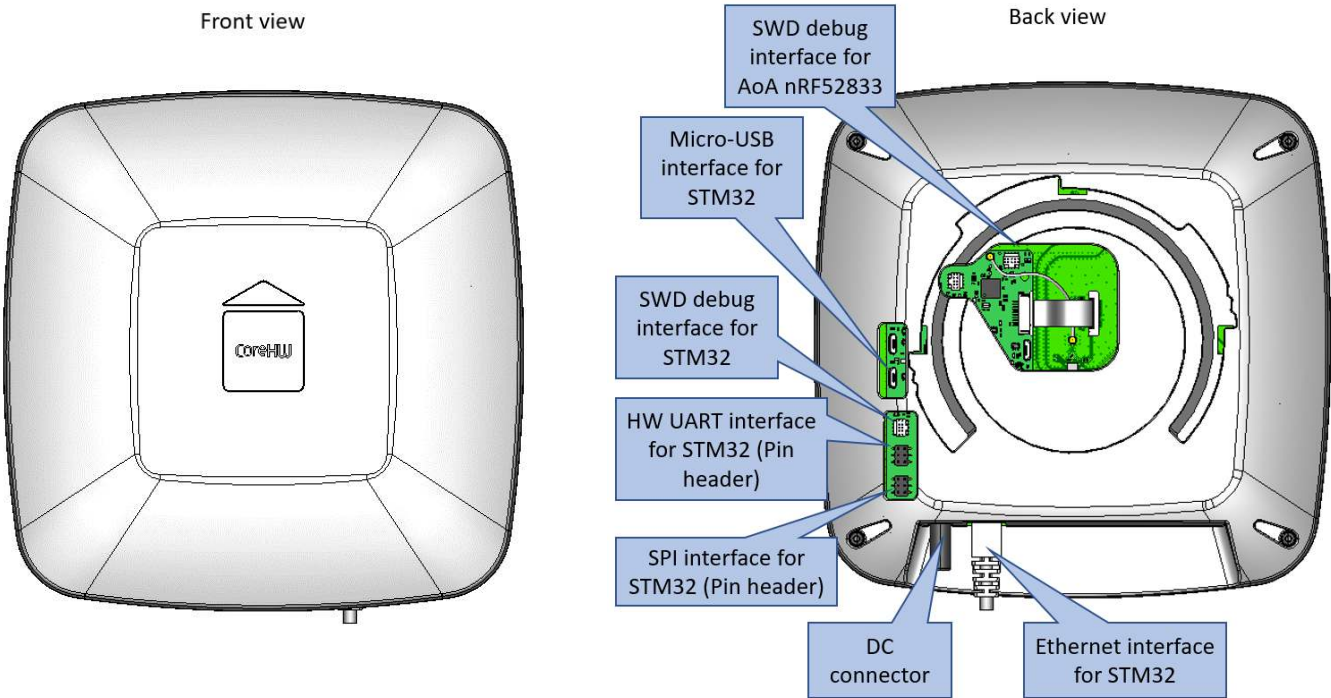
www.corehw.com

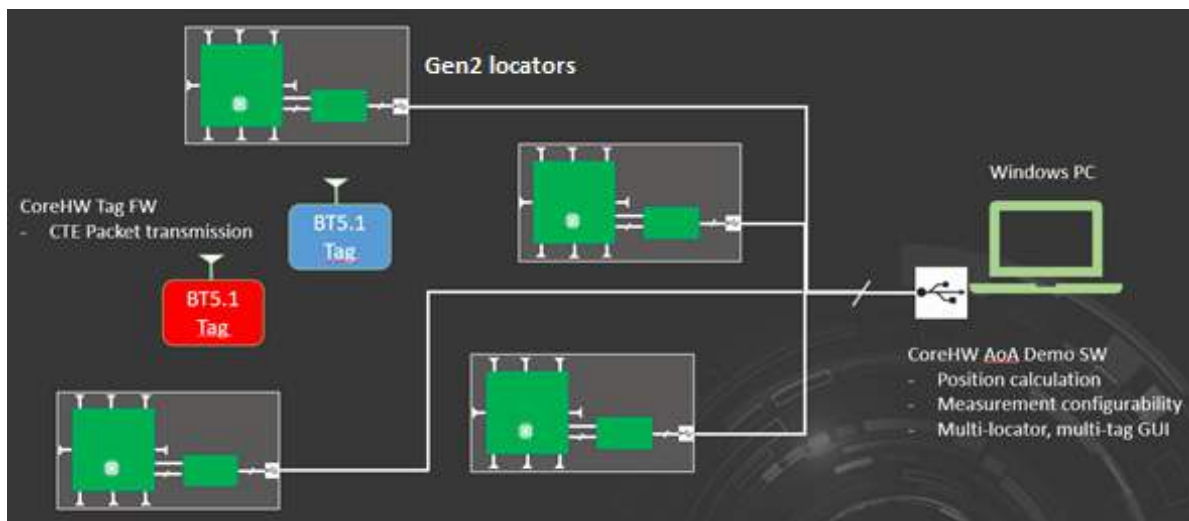## Gen2 Locator

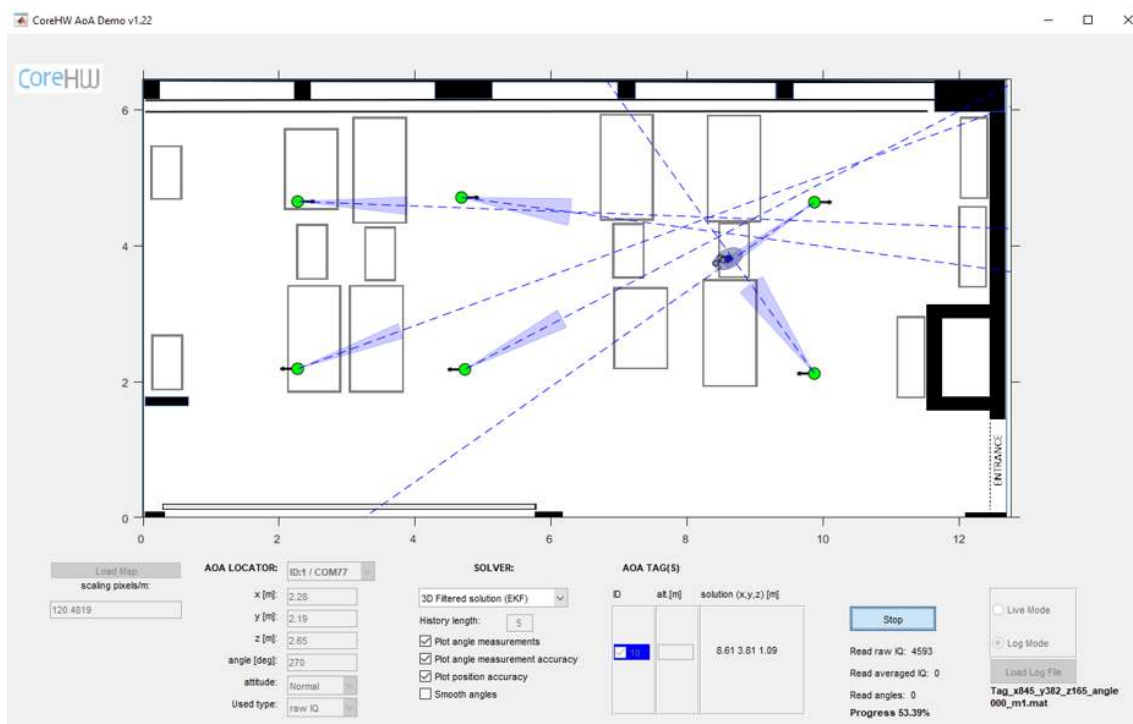Simplified block diagram of Gen2 locator:

Gen2 Locator Assembly

CoreHW AoA Demo

Multiple Gen2 locators can be installed e.g. on the ceiling of a room and connected via USB 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.

Simplified system block diagram of CoreHW AoA Demo Software:

CoreHW AoA Demo PC Software GUI:

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