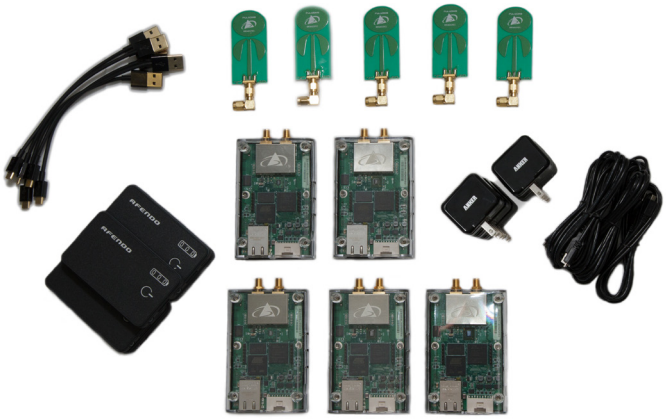
HUMATICS

KinetIQ™ 100

RANGING & LOCALIZATION DEVELOPMENT KIT



Centimeter-scale distance measurement and positioning for research and education

Using Ultra Wideband (UWB) pulsed signaling optimized for two-way time-of-flight (TW-TOF) ranging and communications, the Humatics KinetIQ 100 development board provides wireless distance measurements with 2 cm precision.

The boards excel even in the most challenging environments (indoors, in tunnels, in very cluttered environments, in low visibility or harsh weather), places where traditional location-based technologies like GPS or LiDAR struggle or sometimes don't work at all.

Measuring ranges with cm-scale accuracy allows you to create very precise tracking and navigation networks. RangeNet, Humatics' localization software suite for research and education, builds upon TW-TOF ranging with a complete ranging network and a location engine to support navigation and tracking applications. Network coordination happens automatically on the KinetIQ 100 development board without the need for a connected host.

The software logs waveform scan data, provides bias adjustment and includes a patented range quality metric informing the user of blocked or compromised measurements. A feature-rich API with sample C and MATLAB code allows users to build their own custom interfaces.

FEATURES & BENEFITS

- Centimeter-scale precision over hundreds of meters
- High performance in high multipath, RF-noisy environments
- Collected waveform data logged to MATLAB-compatible files
- Range error estimation provided
- Ranging network with TDMA and ALOHA scheduler options
- Location engine supporting:
- Auto-survey of anchor node positions
- Extended Kalman Filtering for mobile nodes
- Detailed API with sample C and MATLAB code
- Ideal for mobile ad hoc applications

APPLICATIONS

- Peer-to-peer ranging for collision avoidance
- Indoor / GPS-denied navigation and tracking
- Automated vehicle following & convoying
- Autonomous vehicle guidance
- Dynamic test measurement systems

KIT ELEMENTS

- 5 KinetIQ 100 dev boards in protective enclosures
- 5 Broadspec UWB antennas
- 5 Rechargeable USB batteries with chargers
- RangeNet software (with license supporting networks of up to 10 nodes; additional license options available)

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