

KEA Tracker TECHNICAL SPECIFICATIONS

KEA Tracker is an open-source sensor platform that can measure temperature, relative air humidity and air pressure.

Technical Specifications

- [Nordic Semiconductor nRF52832 System-on-Chip Software Radio](#)
 - ARM® Cortex™-M4F CPU
 - 512kB Flash Memory + 64kB RAM
 - +4 dBm TX power
 - Support for multiple protocols
 - [Bluetooth 5](#) (BLE 4.2 factory firmware default protocol)
 - [Wirepas Connectivity](#) (for B2B)
 - [Mira OS](#) (for B2B)
 - [Quuppa](#) (for B2B)
 - Other 2.4 GHz proprietary
- [STMicroelectronics LIS2DH12 accelerometer](#)
 - 3-axis, $\pm 2\text{ g}$ / $\pm 4\text{ g}$ / $\pm 8\text{ g}$ / $\pm 16\text{ g}$, 1...5300 Hz
 - Freefall and motion detection
- [Bosch BME280 environmental sensor](#)
 - Operating range
 - -40...85 °C, 0...95 % RH (non-condensing), 300...1100 hPa
 - Temperature
 - Typical absolute accuracy $\pm 0.5\text{ °C}$ @ 25 °C, $\pm 1\text{ °C}$ @ 0...65 °C, $\pm 1.25\text{ °C}$ @ -20...0 °C, $\pm 1.5\text{ °C}$ @ -40...-20 °C
 - Output resolution 0.01 °C
 - Relative humidity
 - Typical absolute accuracy tolerance $\pm 3\%$ (20...80 % RH, 25 °C, including hysteresis)
 - Air pressure
 - RMS Noise 0.2 Pa, equiv. to 1.7 cm
 - Offset temperature coefficient $\pm 1.5\text{ Pa/K}$, equiv. to $\pm 12.6\text{ cm}$ at 1 °C temperature change
 - Typical absolute accuracy $\pm 1\text{ hPa}$ (300...1100 hPa, 0...65 °C)
 - Relative accuracy $\pm 0.12\text{ hPa}$ (700...900 hPa, 25...40 °C)
- Embedded NFC™-A tag coil
- 1000 mAh CR2477 Li/MnO2 battery (included)
 - User-replaceable
 - Up to 10 years theoretical battery life (depending on the software used)
 - **CapTemp** firmware that broadcasts 1 Hz @ +4 dBm
 - Real-world up to 3 years
- Max operating temperature: -40...85 °C (electronics and enclosure)
 - Recommended -20...70 °C (above these limits an extended temperature range battery required, not included)
- 2 buttons
- 2 LEDs
- Dimensions
 - 45 mm diameter (circuit board)
 - 52 mm diameter (enclosure)
 - 12.5 mm height (enclosure)
 - 25 g total weight (enclosure and battery included)
- Weatherproof IP67 certified enclosure (included)
 - High-quality & long-lasting polycarbonate
 - WONDERLITE® PC-110, FDA 21 approved material, flame rating V-2
 - [Gore](#) IP67 certified vent membrane
 - Lubricated industrial-grade NBR70 O-ring
- **FIRMWARE**
 - Total designed by CAPTEMP
 - Internal log file for 3'500 samples for Temperature, Humidity and Pressure

Notes: Sensor accuracy information is based on sensor manufacturers' datasheets and information received from the sensor manufacturers. It's not always guaranteed that typical or absolute sensor accuracies will be met in user applications. The sensor manufacturers state that majority of the sensors do fall between the typical values informed on the datasheets. However, some sensor components delivered from the sensor manufacturers' facilities may still have up to three times worse accuracy. Sensors are factory-calibrated before assembled. Sensors are 100% tested but not individually calibrated at Ruuvi's production line. Operating temperature may have an effect to the battery life. Estimates are at room temperature (25 °C). RuuviTag is designed for non-condensing use only.