

Aistin Owl Hoot BT-LE Sensor Node (BUB212)

This coin-cell battery operated small sensor unit can be placed almost anywhere. It is based on the famous Nordic Semiconductor's nRF51822 microcontroller with integrated Bluetooth-LE (Low Energy), making possible to reach a year and beyond operating time.

The unit has integrated 3D-accelerometer, barometer and humidity sensor with temperature measurement. In addition, board includes three sets of red, green and blue indication leds, placed circularly. For storing measurements, there is also 256 kbit EEPROM and as with all Aistin hosts, more sensors can be added using Bus24 add-on boards.

You can use Aistin BUB212 instantly with a smartpone supporting Bluetooth-LE (Bluetooth Smart) by Aistin Sensor Reader application *. Another way is to use Aistin BT-LE gateway to connect the unit to internet.

Technical Overview



Dimensions: Ø 27 mm x 7 mm (+ add-on board)

nRF51822 Bluetooth LE, with antenna

16 MHz clock speed

256 kbit EEPROM (32 kbytes)

Aistin Bus24 Host Connector **

Coin cell powered with CR2032 battery slot

Accelerometer and Air Pressure Sensor

Humidity with Temperature Sensor

9 x Programmable LEDs, 3 x R, 3 x G, 3 x B

* Android 5 and onwards supported

** iprotoxi.fi/index.php/aistin-bus24

BUB212

Technical Details

BUB212 sensor node is powered by the Nordic Semiconductor's nRF51822 system-on-chip. There's 16 MHz ARM processor core, integrated Bluetooth-LE radio circuitry, 256 kbytes of program flash and 32 kbytes of RAM. Aistin Bus24 host connector is placed on the top of the device, making possible to use compatible add-on boards. At the bottom there is CR2032 battery holder and three sets of red, green and blue LEDs. The features of the integrated sensors are described in the table below.

	BUB212
Humidity Sensor (SI7013-A10-GM1)	0 to 100% RH Range, $\pm 3\%$ RH (max), 0–80% RH
Temperature (SI7013-A10-GM1)	-10 to 85 °C Temperature Range, ± 0.4 °C (max),
Air Pressure Sensor (LPS25H)	260 to 1260 hPa Absolute Pressure Range
3-axis Accelerometer (LIS2DH12)	$\pm 2g/\pm 4g/\pm 6g/\pm 8g/\pm 16g$

BUB212 can be used as a mobile phone accessory, or it can be connected to an Aistin CPU2x2-based BT-LE gateway to function as an Internet-of-Things device. The pre-loaded firmware supports both of the operating modes. Configuration parameters include measurement interval, sensor reaction and logging thresholds, and alarming limits. This way, things like knocking, door opening, temperature dropping or humidity limit exceeding can be detected.

If the provided firmware is not enough for a specific application, it is also possible to use free software tools (SDK) to develop a fully custom application. Mostly, over-the-air programming should work, but in some cases you may need extra hardware for flashing (for more information, see www.nordicsemi.com).

