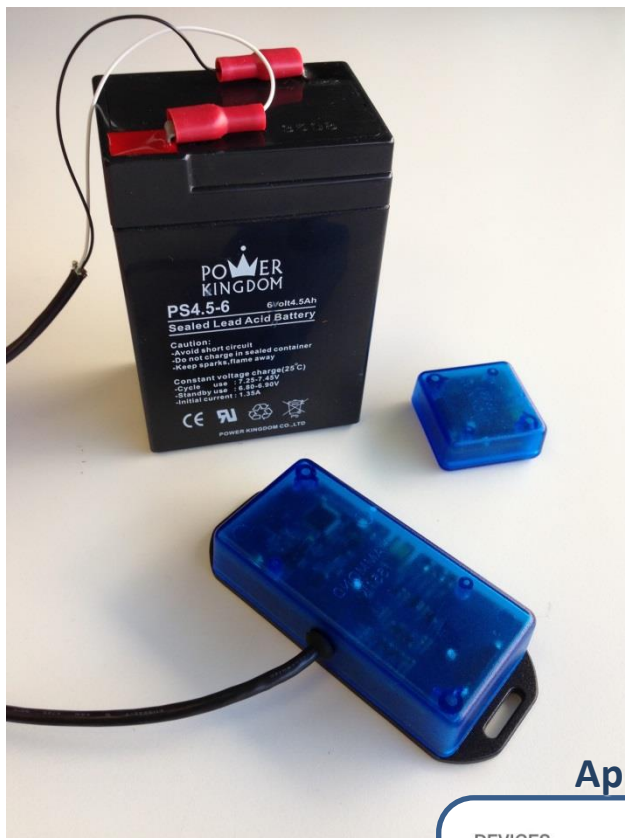




Multi-Input BLE Sensor Tag

Following on the heels of the BLE Sensor Tag, Etse Electronics has developed a Bluetooth Low-Energy Tag with multiple inputs, allowing further merging of BLE connectivity & telemetry applications.

The original BLE Sensor Tag is available in two flavours: a cost-effective iBeacon implementation, or an AltBeacon implementation with the option of a variety of onboard sensors. The **new multi-input BLE Sensor Tag** has two inputs which can be used to measure either voltages, sensor outputs or logic states.



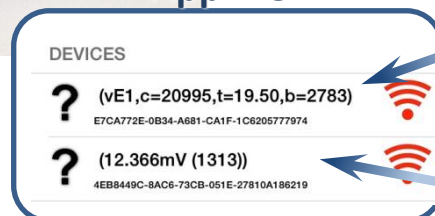
The photo on the left shows our "basic" Etse BLE tag (top) along with the new "multi-input" BLE tag (below).

The new tag is larger in order to accommodate two batteries for longer operating life. The photo shows the voltage measurement of a lead acid battery.

Also shown is a typical view of the data on a mobile app. The first device is the "basic" tag with incremental counter and temperature

The second device is the "multi-input" tag with lead acid battery voltage measurement and incremental counter.

App View



Basic Sensor Tag

Multi-Input Sensor Tag Data

Quick Facts – Etse Multi-Input BLE Sensor Tag

- **Size** - 75 mm X 35 mm X 20 mm
- **Battery life** - Typically 3 years or more
- **Typical Applications** – Measurement of battery health, temperature, door open/close etc.

Bluetooth Low Energy Sensor Tag development

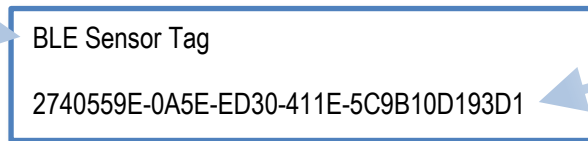


Bluetooth Low Energy (BLE), marketed as *Bluetooth Smart* or *Bluetooth 4.0*, provides considerably reduced power consumption compared to Classic Bluetooth. It was merged into the main Bluetooth standard in 2010.

As with Classic Bluetooth, the BLE device broadcasts a **MAC address** and a **"Friendly name"**. When searching for a device with a mobile phone, one will typically see the following:



"Friendly Name"



Unique MAC Address

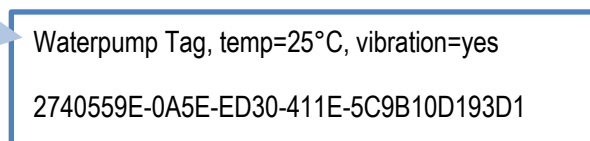
It is then possible to then connect with the BLE device to send and receive data from it.

The Etse BLE Sensor Tags

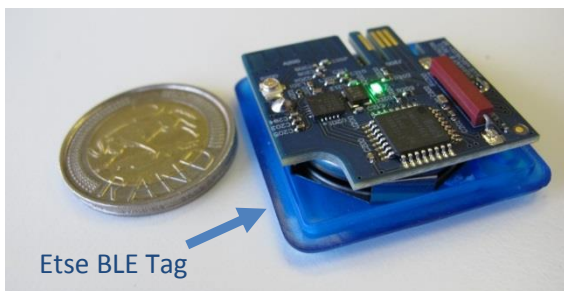
Etse Electronics is currently developing BLE sensor tags that utilize the unsolicited advertising mode in order to transmit user-specific data. This allows for the periodic transmission of e.g. sensor data at low device cost and power consumption, while using a protocol that is supported by a wide range of mobile platform and software development tools.

The ETSE BLE sensor tags can measure and transmit data from a range of sensors, including **temperature, movement, orientation, atmospheric pressure** and **magnet proximity**. A BLE temperature tag will typically transmit the following data periodically:

Sensor data



Standard simple tags are available (e.g. for use in unique asset identification), but the tag hardware and software can be customized to a user specification.



Quick Facts – Etse BLE Tag

- **Size** - 35 mm X 35 mm X 15mm
- **Battery life** - Typically 2 years or more
- **Cost** – Starting at \$17 for large volumes (dependent on sensor arrangement)