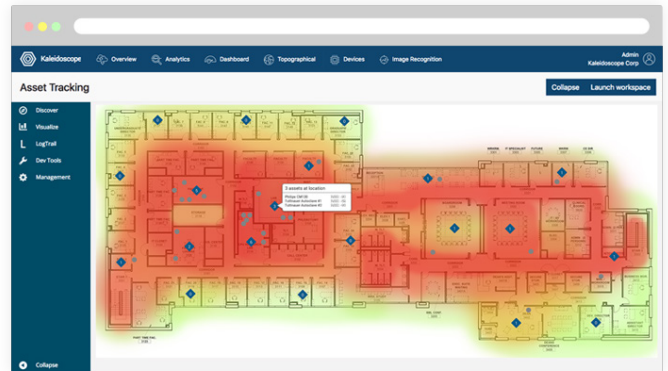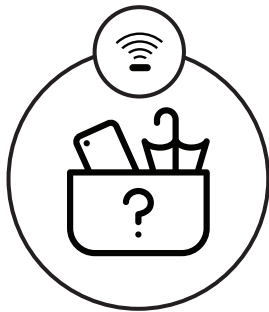# Low-Energy Proximity Beaconing With Kaleidoscope BLE

Enterprise Proximity Beaconing for Cloud

Kaleidoscope enables enterprises to locate assets and personnel by using our BLE proximity beaconing solution. By leveraging a combination of our Bluetooth supported SBC's and beaconing tags, the Kaleidoscope platform provides an end-to-end solution for secure proximity tracking and asset management.
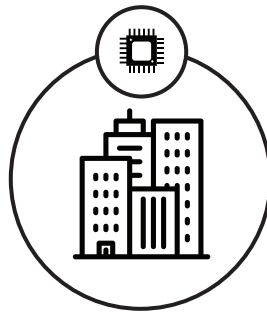
How Our Low-cost End-to-end Tracking Works

Attach BLE Tags

Our low-energy Bluetooth beacon tags can be attached to your critical assets and personell.

Install SBC's in Building

Install Kaleidoscope SBCs (Single Board Computers) in your facility to detect signals from our BLE tags.

Track & Locate Assets

View the real-time location & historical data from all BLE tags via the Kaleidoscope Cloud.

Recommended Deployment Facilities & Markets

Shopping Malls

Hospitals

Airports & Train Stations

Stadiums

Corporate Offices

Casinos

Industrial Facilities

Museums & Exhibitions

SBC-1P-BLE

Lightweight Single Board Computer for BLE

The Kaleidoscope SBC-1P is a leightweight Chloud-managed Single Board Computer engineerd for large scale deployments, used in conjunction with Bluetooth Low Energy devices such as BLE beaconing tags and location / visitor analytics (Kaleidoscope Fingerprinting) via it's 802.11 chipset.

Features & Specifications

Radios:

2.4 GHz 802.11 a/b/g spectrum analysis, Location analytics & fingerprinting radio.

5 GHz network bridge/access radio.

2.4 GHz Bluetooth radio with Bluetooth Low Energy (BLE) and Beacon receiving support.

Concurrent operation of radios.

Supported frequency bands:
  - 2.412 - 2.484 GHz
  - 5.160 - 5.825 GHz

Antenna:

Integrated omni-directional antennas (5 dBi gain at 2.5 GHz & 5 GHz) for Location analytics & fingerprinting radios.

External 5 dBi SMA antenna for network bridge/access radio.

Individual antenna elements for each radio.

Power:

IEEE 802.3af/at Power-over-Ethernet (37 - 57v).

Integrated 110-240v auto-switching AC power input (IEC 60320-1, C8 connector inlet).

Power consumption: 2W max.

Interfaces:

1x 10/100 Base-T Ethernet (RJ45).

1x USB 2.0 Type A.

1x AC power connector (C8 connector).

LED Indicators:

Multi-function status indicator LED.

Mounting:

Desktop, ceiling, and wall mount capable.

Environment:

Operating temperature: 2 °C to 40 °C.

Humidity: 5 to 90% non-condensing.

Analytics & Low-energy Proximity Beaconing:

Location analytics reporting and device tracking (Kaleidoscope Fingerprinting Service) supported.

BLE broadcast scanning support for Kaleidoscope proximity beaconing tags.

Warranty:

12 month hardware replacement warranty with Kaleidoscope "replace in advance" program optionally available for large scale deployments.

Kaleidoscope Cloud:

End-to-end support with device registration in Kaleidoscope Cloud, and Kaleidoscope Edge Computing Support for Over the Air Updates. Data ingress and Kaleidoscope Cloud services billed separately.

Color Options:

Available in White, and Black.

BLE-T1

Bluetooth Low Energy Proximity Tags for Assets

The Kaleidoscope BLE-T1 is a leightweight low energy proximity beaconing tag that can be used in conjunction with Kaleidoscope BLE supported SBC's to allow the tracking of assets in real-time through our Cloud platform.

Features & Specifications

Chipset:

nRF51822 32-bit ARM chipset with embedded SoftDevice support for S110, S120, and S130.

Range:

Up to 30 meters.

Power:

1.8 - 3.6V DC operating voltage.

Powered via replacable CR2016 coin battery.

Battery life time up to 2 years.

Antenna:

50 Ohm integrated omni-directional antenna.

10mA (maximum) transmission power.

Color Options:

Available in White, other colours made-to-order.

Transmit Rate:

200 - 1,000ms (configurable, defaults to 700).

Mounting:

3M high-strength adhesive wall or asset mounting.

Physical Dimensions:

36x23x4mm, 4.5g excluding battery weight.

Environment:

Operating temperature: 2 °C to 40 °C.

Humidity: 5 to 90% non-condensing.

Warranty:

Kaleidoscope DoA Replacement warranty.

BLE-T2

Bluetooth Low Energy Proximity Keychain Tag

The Kaleidoscope BLE-T2 is a low energy proximity beaconing tag that is designed to be attached to a keychain, and can be used in conjunction with Kaleidoscope BLE supported SBC's for real-time asset or attendance tracking through our Cloud platform.

Features & Specifications

Chipset:

TI CC2640 32-bit ARM chipset with Ultralow-power sensor controller & Bluetooth 5.0 support.

Range:

Up to 50 meters.

Power:

1.8 - 3.6V DC operating voltage.

Powered via built-in CR2032 coin battery.

Battery life time 1 - 1.5 years, 2+ years standby.

Antenna:

2dBi integrated omni-directional antenna.

5dbM (maximum) transmission power.

Color Options:

Available in White, Green, Black, & Pink. Other colours made-to-order.

Transmit Rate:

100 - 1,000ms (configurable, defaults to 700).

Mounting:

Keychain mount hole.

Physical Dimensions:

36x32x7.2mm, 6.4g including battery weight.

Environment:

Operating temperature: -10 °C to 55 °C.

Humidity: 5 to 90% non-condensing.

Ingress Protection: IP51.

Warranty:

Kaleidoscope DoA Replacement warranty.