

PRODUCT User Manual

Confidex Viking™ Slim



Reliable industrial grade Bluetooth® Low Energy beacon for industrial identify, sense and locate applications.

ELECTRICAL SPECIFICATION

Device type

Bluetooth® Low Energy beacon, Battery powered

Wireless interface protocol

Bluetooth® 4.2

NFC: ISO/IEC 14443A

Compliance (Declaration of Conformity)

Europe (CE), USA (FCC), Canada (IC), Japan (MIC), Australia/New Zealand (ACMA), South-Korea (KC), Russia (EAC), Ukraine (UkrSEPRO), Brazil (ANATEL)

Operational frequency

ISM: 2401 - 2481 MHz

NFC: 13,56 MHz

System-on-Chip

Nordic Semiconductor NRF52832

Memory configuration

512 kB FLASH, 64 kB RAM

Configuration interface

Over NFC interface with Confidex Runestone™ mobile app (available for android mobile phones in Google Play store)

Sensors*

Built-in temperature sensor (integrated on SoC)

Sensitivity

-96 dBm sensitivity (Bluetooth® Low Energy)

Read range**

Up to 200 m / 650 ft. Measured on and off metal.

Battery type (total capacity)

Replaceable CR2477 (1000 mAh) coin battery

Lithium Manganese Dioxide chemistry

Applicable surface materials

Can be attached to any surface

* Temperature sensor is located inside the plastic housing, which limits real time measurement of the ambient temperature. Sensor calibration is available as additional service.

** Read ranges are measured in laboratory environment and there can be some variation in real application.

MECHANICAL SPECIFICATION

Encapsulation

IP68, high quality PC/ASA

Weight

50g

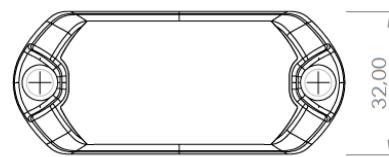
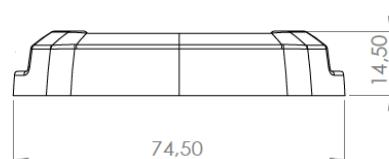
Delivery format

Single, 50 units per box

(delivered radio OFF due to IATA regulations)

Tag dimensions

74,5 x 32 x 14,5 mm / 2.95 x 1.26 x 0.57 in (M5 size hole)



ENVIRONMENTAL RESISTANCE

Operating temperature

-20°C to +60°C / -4°F to +140°F

EN 60068-2-14: 2009, Test N: Change of temperature

Water resistance

Good, tested 5 hours in 1m deep water (IP68)

Vibration resistance

EN 60068-2-6: 2008, Test Fc: Vibration, 10G

EN 60068-2-27: 2009, Test Ea: Shock, 20G

ESD immunity

±8 kV according to EN 61000-4-2 (air discharge)

±4 kV according to EN 61000-4-2 (contact discharge)

Chemical resistance ***

No physical or performance changes in:

- 168h Motor oil exposure
- 48h Salt water (salinity 10%) exposure
- 48h Sulfuric acid (10%, pH 2) exposure
- 48h NaOH (10%, pH 13) exposure

Generally good resistance with moderate concentrations of acids, alcohols, alkalies, detergents, and cleaners.

Acetone should be avoided.

Expected lifetime****

3-4 years with typical operating parameters

***Values are the best recommendations; resistance against environmental conditions depends on the combination of all influencing factors, exposure duration and chemical concentrations. Thus, product's final suitability for certain environmental conditions is recommended to be tested. Contact Confidex for more specific information.

**** Beacon lifetime is optimized for long term use, and is highly affected by operating mode parameters, accelerometer usage and ambient temperature. Configured TX power level and advertisement interval have influence on lifetime.

OPERATING MODES



Eddystone



iBeacon



Confidex Viking™ beacon utilizes Eddystone™ open standard frame format and/or iBeacon protocol ensuring straightforward implementation on a wide range of Bluetooth® Low Energy devices.

Confidex Viking™ Classic comes with standard parameters by default. It can be factory configured with customer specific parameters to support any 3rd party system. Confidex™ Viking can also be personalized with a custom label to ease the tag identification in the field.

Following Eddystone™ frame types are supported:

- **Eddystone™-UID** frame broadcasts 16-byte Beacon ID composed of a 10-byte namespace and a 6-byte instance.
- **Eddystone™-URL** frame broadcasts a URL using a compressed encoding format.
- **Eddystone™-TLM** frame broadcasts telemetry information, like battery voltage and temperature.
- **Eddystone™-EID** frame broadcasts an encrypted ephemeral identifier that changes periodically. Eddystone™-EID frame operating mode requires service for resolving the ephemeral ID. Please contact Confidex for more information.
- **iBeacon** advertise 16 bytes UUID, 2 bytes Major, and 2 bytes Minor.

INSTALLATION INSTRUCTIONS

Confidex Viking™ can be attached with several fixing methods:

1. Mechanical fixing – Screw

Mechanical fixing is recommended to be used in every application that includes risk for high mechanical stress or low temperature during tag fixing. Screw size M5 is to be used for fixing.

2. Mechanical fixing – Cable tie

Plastic or metallic cable ties can also be used for fixing Confidex Viking™. Maximum width of cable tie is 4 mm.

3. High performance acrylic adhesive

When mounting the tag with adhesive, clean and dry the surface for obtaining the maximum bond strength. Ideal application temperature is from +21°C to +38°C (+70°F to +100°F), bond strength can be improved with firm application pressure and moderate heating from +38°C to +54°C (+100°F to +130°F). Installation at temperatures below +10°C (+50°F) is not recommended.

ORDER INFORMATION

300XXXX Confidex Viking™ Lite

- With default configuration and parameters

300YYYY Confidex Viking™ Classic, pre-configured

- With customer specific configuration and parameters (see the personalization form for more details)

300ZZZZ Confidex Viking™ Classic Sample Kit

- Contains 5 pcs of 300XXXX

Availability: Please contact Confidex Smart Industries Sales at www.confidex.com/contact-us

For additional information and technical support, please contact us in contact.BLE@confidex.com

DISCLAIMER

THE MATERIALS, PRODUCTS AND SERVICES ARE SOLD SUBJECT TO ITS STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, CONFIDEX MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN CONFIDEX STANDARD CONDITIONS OF SALE, CONFIDEX AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.

Each user bears full responsibility for making its own determination as to the suitability of Confidex products, materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished systems incorporating Confidex products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Confidex.

CAUTION

- Professional equipment;
- Equipment for use in locations where it is unlikely that children will be present.



Federal Communications Commission (FCC) Statement (USA)

FCC PART 15 STATEMENTS FOR USER'S MANUAL
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS. (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

This device meets the FCC and IC requirements for RF exposure in public or uncontrolled environments.

Canada: Industry Canada (IC) Statement

IC Notice to Users English/French in accordance with RSS GEN Issue 3:

This device complies with Industry Canada license exempt RSS standard(s).

Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avec Industrie Canada RSS standard e empts de licence s . Son u lisa on est soumise Les deu condic ons suivantes:

1. cet appareil ne peut pas provoquer d'interferences et . cet appareil doit accepter Toute interf rence, y compris les interf rences qui peuvent causer un mauvais fonctionnement du dispositif
This Class B digital apparatus complies with Canadian ICES-003. Cet appareil num rique de la classe B est conforme la norme NMB-003 du Canada.