

APPLICATION NOTE

Confidex Viking™ Classic battery lifecycle simulations

CONTENTS:

1	General information.....	2
2	Applicable products	2
3	Battery Life depending on advertising period and Temperature	3
4	Battery Life depending on advertising period and Power	3
5	Battery Life depending on advertising period and Broadcast Format.....	4
6	Battery Life depending on advertising period and Sensor Format	4
7	Battery Life depending on accelerometer data sampling rate	5

1 General information

This document presents simulated results of the battery lifetime that can be used to estimate Viking Classic lifetime in different applications and use cases in the field. Beacon lifetime is highly affected by operating mode parameters, accelerometer usage and operation temperature. Configured TX power level and advertisement interval have also a significant influence on lifetime. These results should be used only as indicative estimations and is not binding Confidex in anyway.

Simulated battery lifecycle curves were evaluated with the following input parameters:

- **Product:** Confidex Viking™ Classic / Confidex Viking™ Tough
- **Firmware version:** v1.6.x
- **Advertising period:** From 0, 1 second to 10 seconds
- **Advertising power:** -8 dBm and + 4dBm
- **Battery capacity :** capacity of 2000mAh with 10% discount and 2% self-discharge every year

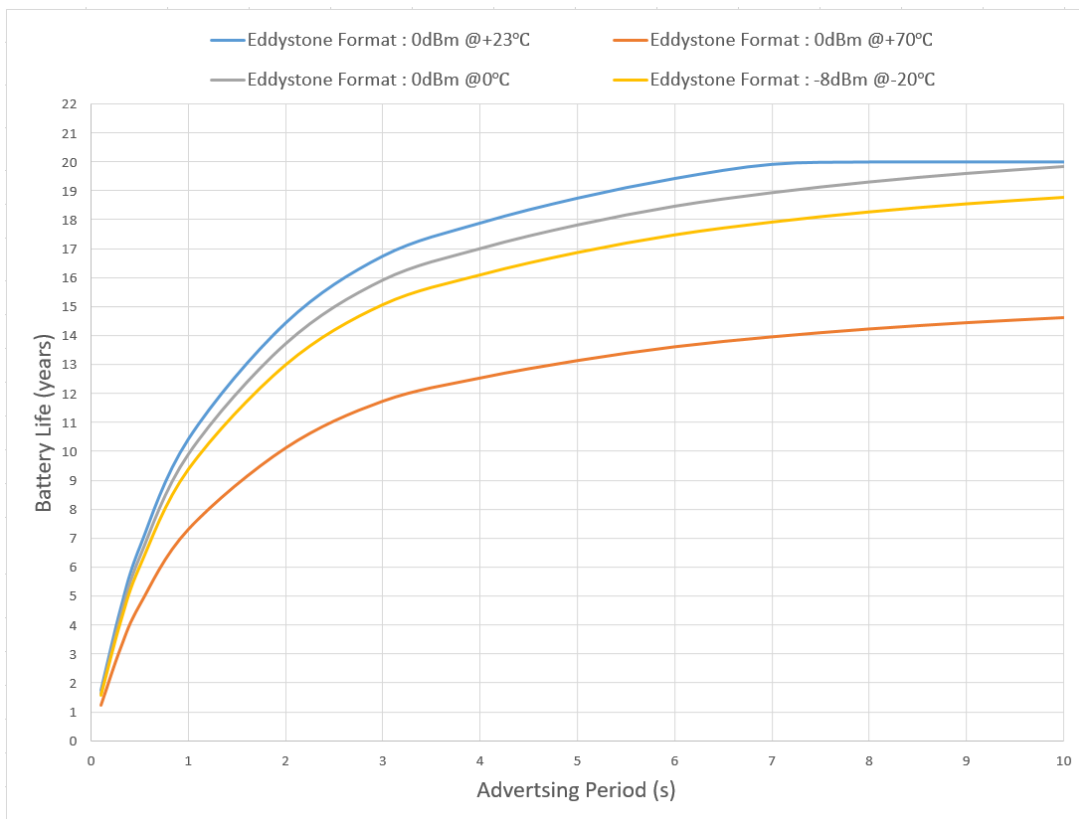
The self-discharge of the battery and the intrinsic lifetime of its chemical content limits its use to 20 years, even in storage condition.

2 Applicable products

Product family	Product name	Item number
Confidex Viking™	Confidex Viking™ Classic	3002063
	Confidex Viking™ Classic personalized	3003597
	Confidex Viking™ Classic (with acc.)	3001896
	Confidex Viking™ Classic personalized (with acc.)	3003600
	Confidex Viking™ HERE (Eddystone)	3003242
	Confidex Viking™ HERE (iBeacon)	3003551

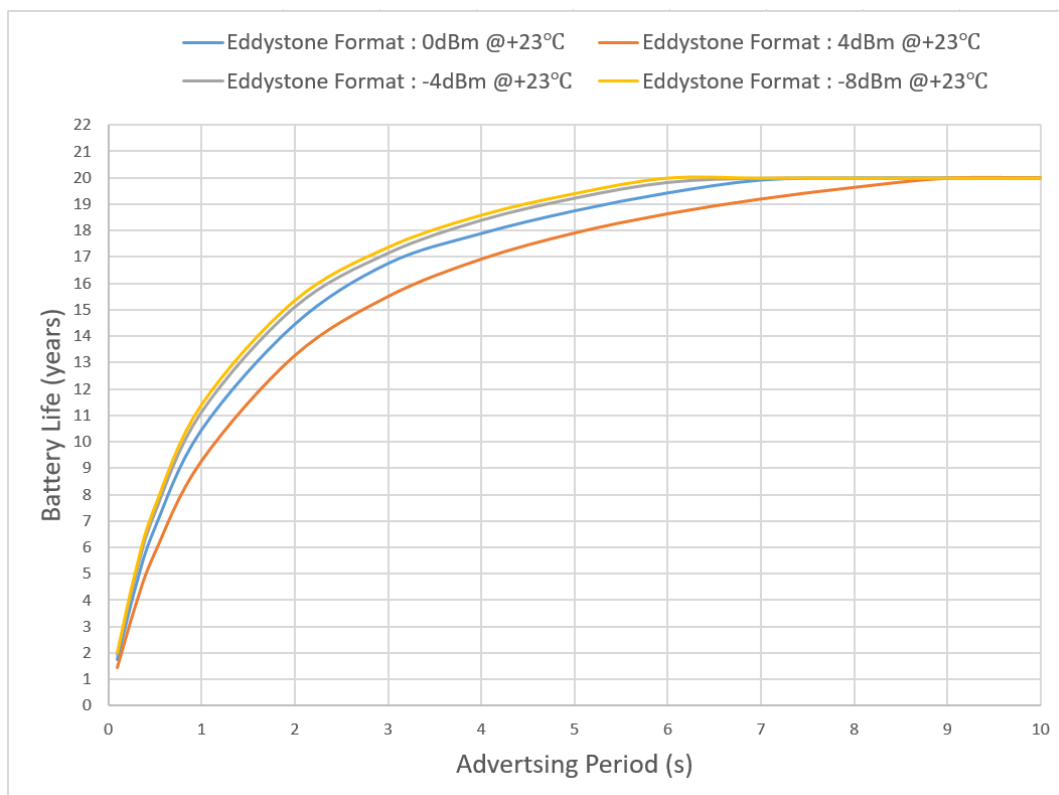
3 Battery Life depending on advertising period and Temperature

Viking Classic without accelerometer, advertise Eddystone UID with different period, TLM every 60s.



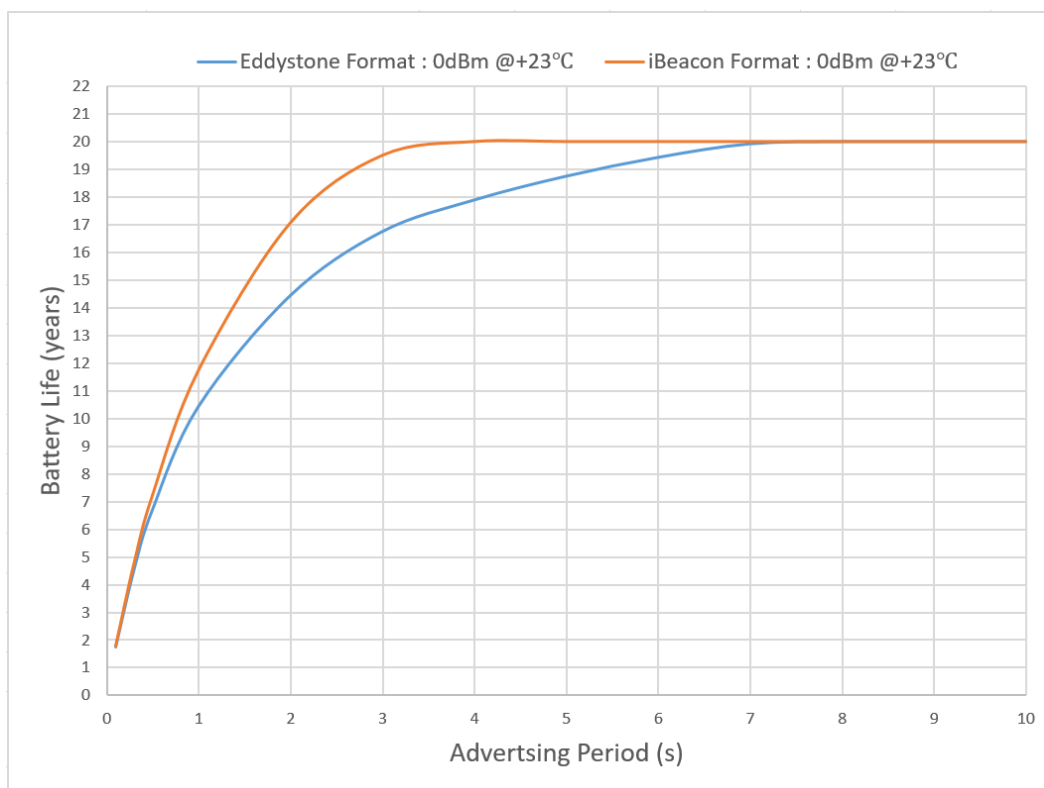
4 Battery Life depending on advertising period and Power

Viking Classic without accelerometer, advertise Eddystone UID with different period, TLM every 60s.



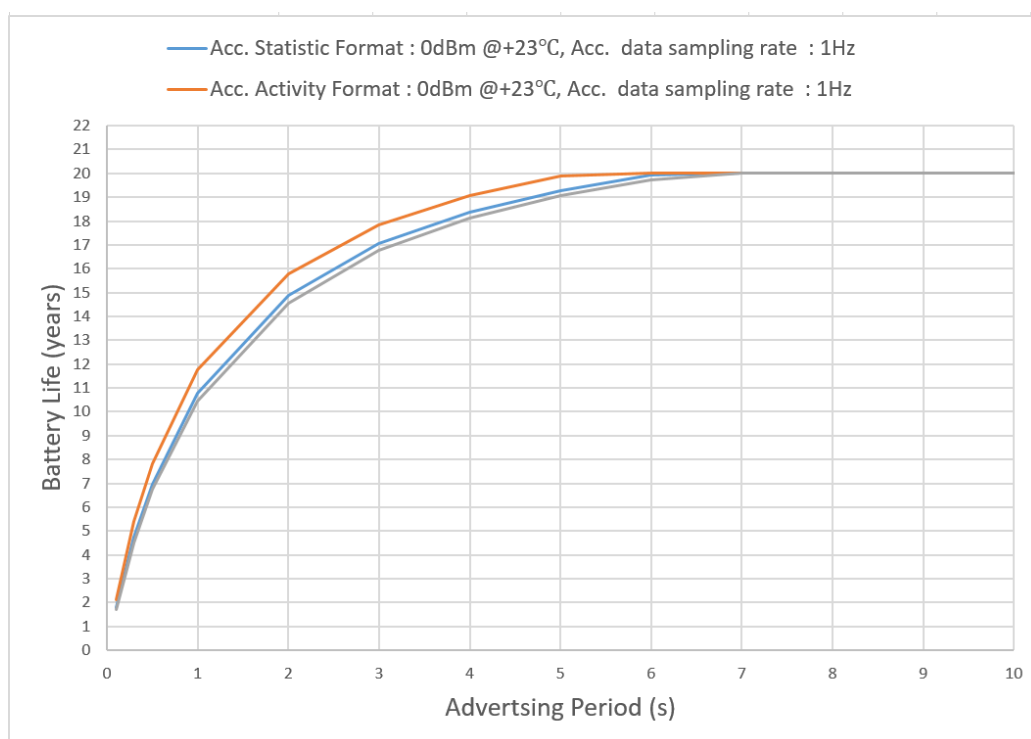
5 Battery Life depending on advertising period and Broadcast Format

Viking Classic without accelerometer, advertise Eddystone UID with different period, TLM every 60s.
 Viking Classic without accelerometer, advertise iBeacon UID with different period, no TLM advertised.



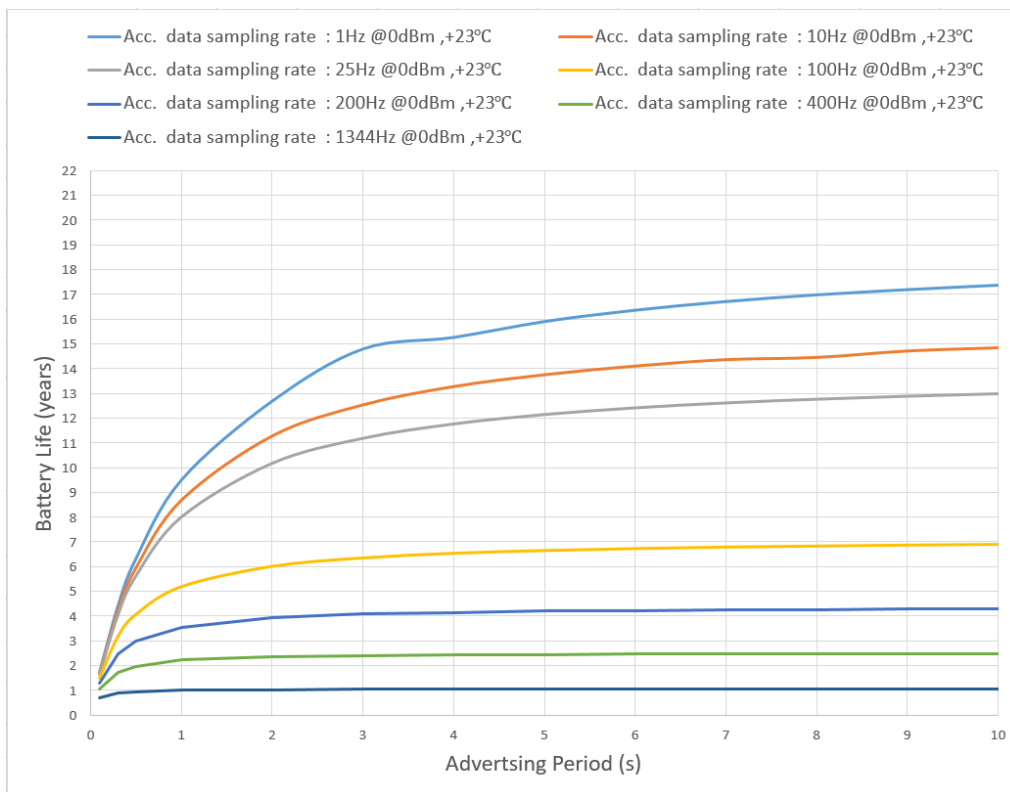
6 Battery Life depending on advertising period and Sensor Format

Viking Classic with accelerometer, only advertising acc. statistic frame , or activity frame, no eddystone frame interleaving. Fixed accelerometer data sampling rate to 1Hz.



7 Battery Life depending on accelerometer data sampling rate

Viking Classic with accelerometer, only advertising acc. statistic frame, no eddystone frame interleaving.



Viking Classic with accelerometer, advertising accelerometer statistic frame with fixed Eddystone UID advertising every 1 seconds, TLM every 60 seconds.

