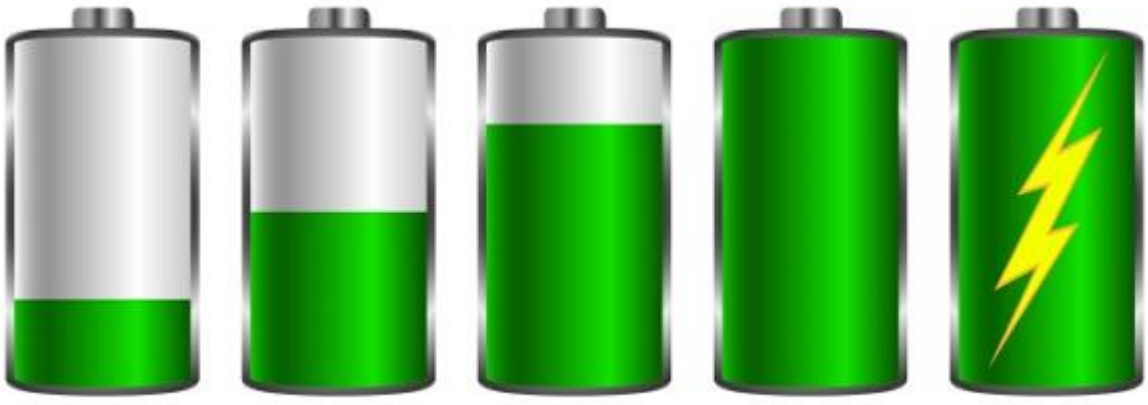
Version 1.1

TECHNICAL NOTE

How to improve the battery life on the BeanDevice® Wilow®



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1.0	26/09/2017	Yosri Jaouadi	First version of the document
1.0.1	24/04/2019	Fahd ESSID	Vocabulary update Chart Update
1.0.2	10/05/2019	Mohamed Bechir Besbes	Weblinks Update
1.1	14/07/2022	Seddik ATTIG	Battery life with Low Duty Cycle Battery life with Streaming Continuous Battery life with Streaming Burst

Contents

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1. TECHNICAL SUPPORT

For general contact, technical support, to report documentation errors and to order manuals, contact ***BEANAIR® Technical Support Center*** (BTSC) at:

tech-support@Beanair.com

For detailed information about where you can buy the Beanair equipment/software or for recommendations on accessories and components visit:

www.Beanair.com

To register for product news and announcements or for product questions contact BEANAIR®'s Technical Support Center (BTSC).

Our aim is to make this user manual as helpful as possible. Please keep us informed of your comments and suggestions for improvements. Beanair appreciates feedback from the users.

2. VISUAL SYMBOLS DEFINITION

Visual	*Definition*
	***Caution or Warning** – Alerts the user with important information about Beanair wireless sensor networks (WSN), if this information is not followed, the equipment /software may fail or malfunction.*
	***Danger** – This information MUST be followed if not you may damage the equipment permanently or bodily injury may occur.*
	***Tip or Information** – Provides advice and suggestions that may be useful when installing Beanair Wireless Sensor Networks.*

3. ACRONYMS AND ABBREVIATIONS

RJ45	Refers to the RJ45 cable. It refers to an Ethernet connection
dBm	The abbreviation for the power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW)
Hz	Hertz

4. AIM OF THE DOCUMENT

The aim of this document is to describe the battery life performance of the BeanDevice® in streaming mode.

This document is not intended to display with an extreme precision the battery life you can expect from our BeanDevice®. However, you will have an estimated battery life of the BeanDevice® operating in an environment with an ambient temperature.

Please note that these computed values could change, depending strongly on your environment.
By the way, you will find information about interferences on other Beanair documents.

5. TEST OVERVIEW

- The BeanDevice® Wilow® battery life is given with:
  - Different data acquisition modes and different sampling rate
  - Data logger feature enabled/disabled
  - Power mode

- An internal High-density Lithium-Ion rechargeable battery with a capacity of **900 mAh** Powers Each BeanDevice® Wilow®.

The BeanDevice® Wilow® used during these tests:

- BeanDevice® Wilow® AX3D ±2g/±10g
- BeanDevice® Wilow® Hi-INC ±15B/±30B
- BeanDevice® Wilow® X-INC ±15B/±30B/±2g/±10g

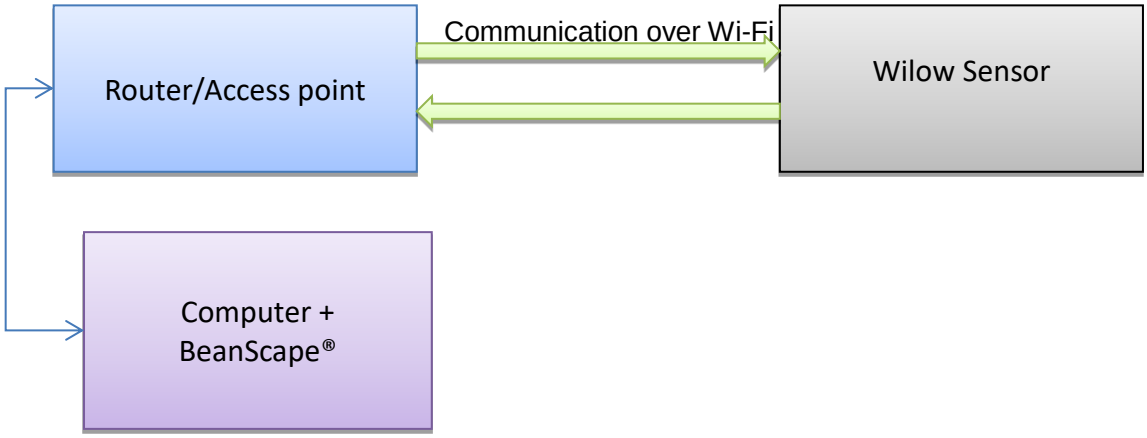

Figure 1: Global presentation of the system

- All the streaming mode tests were performed with continuous monitoring option.

- BeanDevice® Wilow® battery life is valuated at a room temperature of 25°C.

6. BATTERY LIFE DURING LOW DUTY CYCLE DATA ACQUISITION

All the testes are done at 25°C with battery saver mode enabled and Listening Cycle of 65535 seconds.

6.1.1 BeanDevice® Wilow® AX-3D (±2g/±10g)

BeanDevice® Wilow	*Measurement Cycle (min 2s, max 86400s)*	Battery life with self-discharge 5% (nbr of days)
AX3D ±2g/±10g	2s	**2.42**
	600	**80.36**
	7200s	**89.15**
	86400	**89.98**

6.1.2 BeanDevice® Wilow® HI-INC® (±15 B/±30B)

BeanDevice® Wilow	*Measurement Cycle (min 2s, max 86400s)*	Battery life with self-discharge 5% (nbr of days)
Hi-INC ±15B/±30B	2s	**1.62**
	600	**76.21**
	7200s	**89.15**
	86400	**89.94**

6.1.3 BeanDevice® Wilow® X-INC 15B/30B/2G/10G

BeanDevice® Wilow	*Measurement Cycle (min 2s, max 86400s)*	Battery life with self-discharge 5% (nbr of days)
Hi-INC ±15B/±30B	2s	**1.46**
	600	**74.93**
	7200s	**89.15**
	86400	**89.92**

7. BATTERY LIFE DURING STREAMING CONTINUOUS MODE DATA ACQUISITION

All the testes are done at 25°C with battery saver mode enabled and Listening Cycle of 65535 seconds.

7.1.1 BeanDevice® Wilow® AX-3D (±2g/±10g)

BeanDevice® Wilow	*Sampling rate (min 10Hz, max 2000Hz)*	Battery life (hh:mm)
AX3D ±2g/±10g	10	**21h:11m**
	100	**19h:46m**
	500	**14h:50m**
	1000	**13h:41m**
	2000	**11h:52m**

7.1.2 BeanDevice® Wilow® HI-INC® (±15 B/±30B)

BeanDevice® Wilow	*Sampling rate (min 10Hz, max 2000Hz)*	Battery life (hh:mm)
Hi-INC ±15B/±30B	10	**17h:48m**
	100	**16h:28m**
	500	**13h:41m**
	1000	**12h:32m**
	2000	**11h:07m**

7.1.3 BeanDevice® Wilow® X-INC 15B/30B/2G/10G

BeanDevice® Wilow	*Sampling rate (min 10Hz, max 2000Hz)*	Battery life (hh:mm)
X-INC 15B/30B/2G/10G	10	**16h:10m**
	100	**15h:36m**
	500	**11h:24m**
	1000	**10h**
	2000	**9h:10m**

8. BATTERY LIFE DURING STREAMING BURST MODE DATA ACQUISITION

All the testes are done at 25°C with battery saver mode enabled.

In Streaming Burst: Listening Cycle = Data Acquisition Cycle (this is cannot be changed)

8.1.1 BeanDevice® Wilow® AX-3D (±2g/±10g)

BeanDevice® Wilow	*Sampling rate (min 10Hz, max 2000Hz)*	Data acquisition Cycle in seconds (min 2s, max 86400s)	Data acquisition Duration in seconds	Battery life with self-discharge (nbr of days)
AX3D ±2g/±10g	10	7200	20	**57.65**
			600	**9.27**
			3600	**1.74**
	500		20	**49.90**
			600	**6.68**
			3600	**1.22**
	2000		20	**44.87**
			600	**5.42**
			3600	**0.98**

8.1.2 BeanDevice® Wilow® HI-INC® (±15 B/±30B)

BeanDevice® Wilow	*Sampling rate (min 10Hz, max 2000Hz)*	Data acquisition Cycle in seconds (min 2s, max 86400s)	Data acquisition Duration in seconds	Battery life with self-discharge (nbr of days)
Hi-INC ±15B/±30B	10	7200	20	**53.93**
			600	**7.91**
			3600	**1.46**
	500		20	**48.10**
			600	**6.20**
			3600	**1.13**

	2000		20	**43.41**
			600	**5.10**
			3600	**0.92**

8.1.3 BeanDevice® Wilow® X-INC 15B/30B/2G/10G

BeanDevice® Wilow	*Sampling rate (min 10Hz, max 2000Hz)*	Data acquisition Cycle in seconds (min 2s, max 86400s)	Data acquisition Duration in seconds	Battery life with self-discharge (nbr of days)
X-INC 15B/30B/2G/10G	10	7200	20	**51.83**
			600	**7.25**
			3600	**1.33**
	500		20	**43.98**
			600	**5.22**
			3600	**0.94**
	2000		20	**39.09**
			600	**4.25**
			3600	**0.76**