

# BOX827 IoT Tag, Quick Start Guide

## Operation Monitoring

### 1 Introduction

The BOX827 sensor tag can be used to measure the on-time of electrical machines. The measurements are uploaded to the cloud over the mobile network. This document shows how to set up the BOX827 for measurements on an electrical fan. The product name BOX827 or the generic “tag” will be used throughout this document.

### 2 Hardware needed

The picture below shows the hardware needed to setup the Box827.

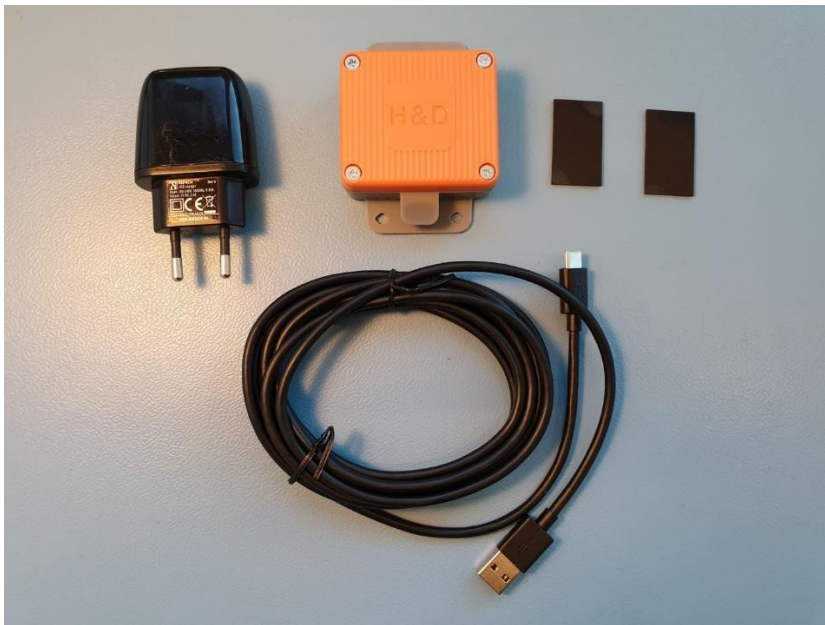


Figure 1. BOX827 and accessories.

The BOX827 comes in two different housings: one with screw holes and one without. The version with screw holes is shown here, but the setup is valid for both versions. Besides the BOX827, a USB-A to USB-C cable, a USB charger, and a pair of double-sided adhesive pads of good quality are needed. These are optional equipment to run or charge BOX827 that has a rechargeable battery.

For BOX827 with a primary battery these are not needed.

Please note that the cable should be for USB 2.0. Using a cable capable of USB 3.0 may affect the function of the tag under certain circumstances, since the connector on the box does not

follow the USB standard. Chargers come with different charge current ratings, please select one capable of delivering a current of 2.0A or more.

### 3 BOX827 Setup

Follow the steps below to get the tag started.

#### 3.1 Mount adhesives

Turn the box upside down and attach the double-sided adhesives under the tag, e.g. as shown below. Place the adhesives so the tag can stick to the required surface as firmly as possible.



Figure 2. Example of attached adhesives.

#### 3.2 Mount the tag

Remove the covers of the adhesive pads and place the tag on the electric motor. Make sure that the surface is clean, so the tag doesn't fall off. Connect the USB-C part of the cable to the tag and the USB-A side to the charger and place it in an electrical outlet.

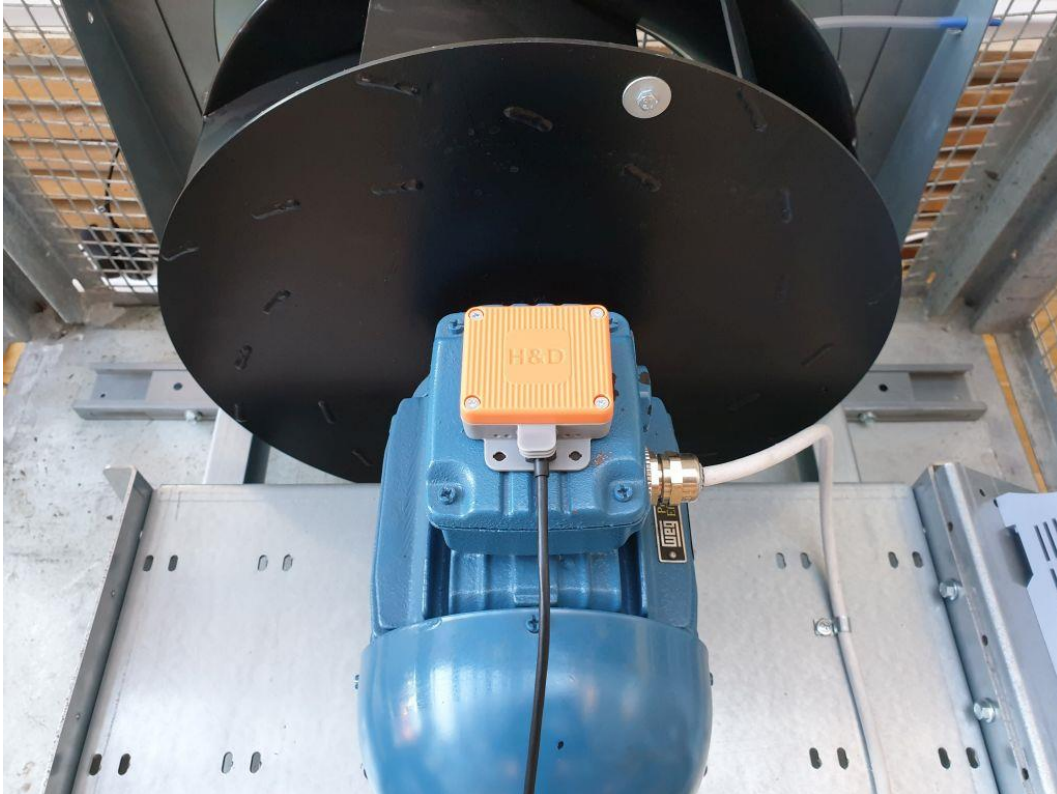


Figure 3. BOX827 mounted on an electric fan.

As soon as the tag has power it will connect to the mobile network and start measuring the usage time of the fan. It normally takes less than a minute before the tag has logged on to the network and can start sending data. The data is uploaded to the cloud server at specified intervals.

## 4 Griffin IoT App

The Griffin IoT App is required to configure and start the BOX827, it is available both for Android and iPhone.

### 4.1 Android

If you have not received the app via email, ask you contact at H&D Wireless for a link to download the App.

### 4.2 iPhone

The iPhone app is in beta release distributed by Apples Testflight App

When you are invited to test the Griffin IoT app, you will be prompted to install the TestFlight app from the App Store on your iPhone, iPad, iPod touch, or Apple TV if you don't already have it installed. The TestFlight app makes installing betas simple, and you don't need to keep track of UDIDs or provisioning profiles.

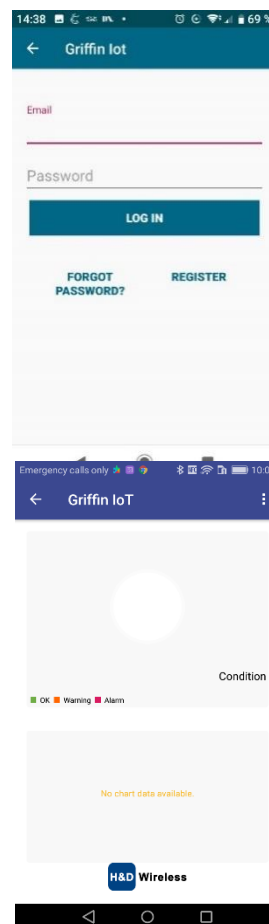


After installing the Testflight App you install the Griffin IoT app from Testflight.

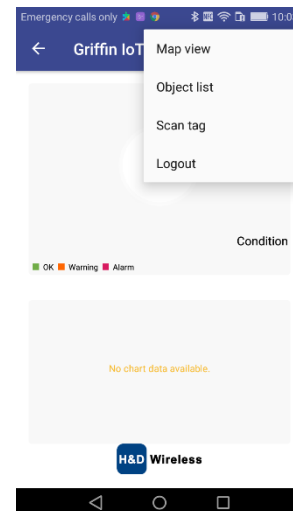
### 4.3 Login

Use the email address and password you used at registration to login. If you have forgot your password, you can request a new by tapping "forgot password"

After you have logged in the start screen is shown. Here you will see a summary of all your objects, but initially there are no data.



Tap the three dots at top right and select “Scan tag” to configure the tag and assign it to an object.

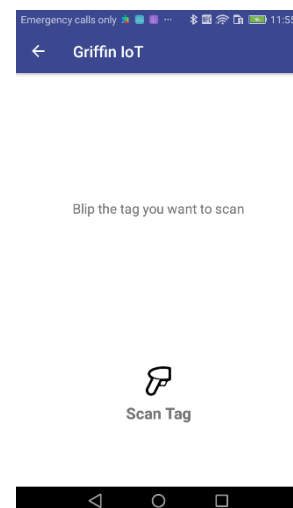


Sweep your phone over the tag until you get a confirmed read.

The App will now register the new BOX827 on the server and ask for which type of equipment the BOX827 is monitoring or if you are replacing a tag. This may take a few minutes, so be patient and wait for the confirmation.

The Tag will beep three times after receiving its new settings.

The App will set up the BOX827 for the specific equipment and start its measurements. The last configuration is to give a location for where the tag is situated. This can be modified later if the tag is moved or to correct the position.



To position the tag in a map. Tap on “Position Tag” in the detail screen.

You have the choice of using the current position of the phone or place the tag on a map. On the map press the pin icon for a long time and drag it to the desired position

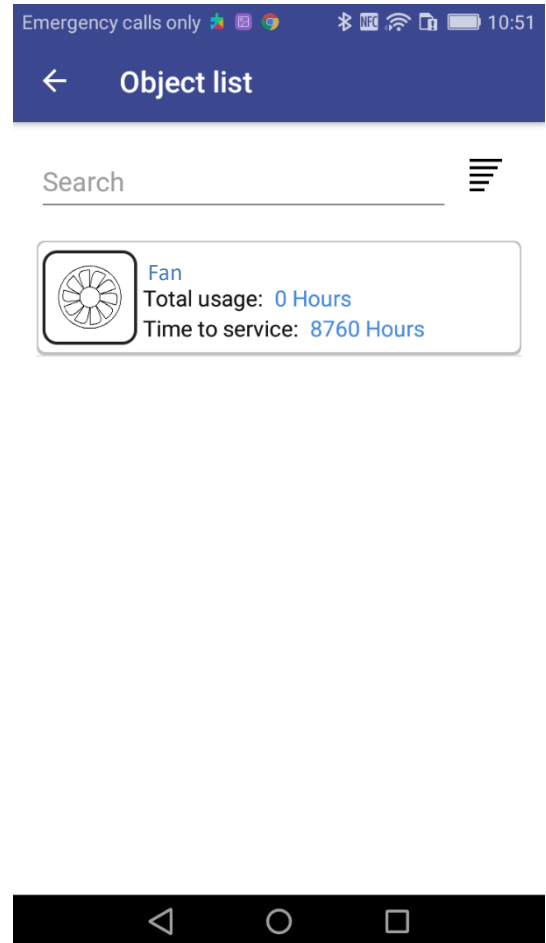
## 4.4 Object List

Tap the Object list button to show the installed base of tags.

In the object list a specific box can be chosen to see its specific details and its latest data.

Note: If there is no data available the graphs will not be shown.

To edit the data for the tag, for example giving it a name or id tap the EDIT OBJECT button to get the the Edit object screen.



## 5 Griffin IoT Visualizer

The Griffin IoT Visualizer allows the data from your sensor tags to be viewed from a regular internet browser.

Open the page: <http://griffin.hd-wireless.com>

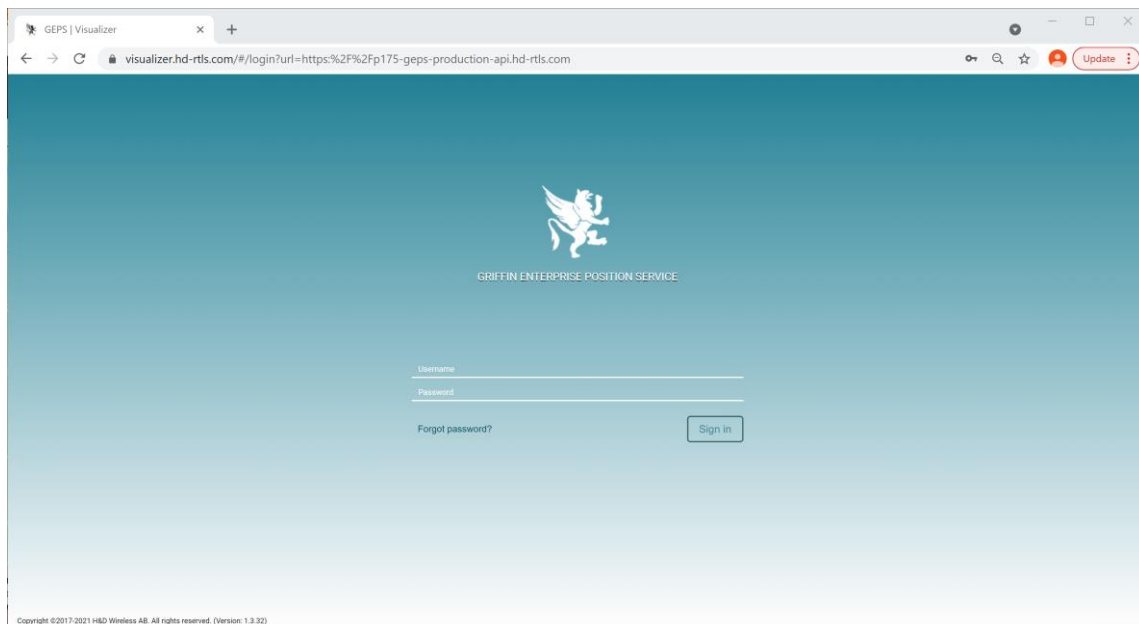


Figure 4: Griffin Visualizer login page

Login with the same credentials as for the app.

There are two main tabs in the Visualizer, the List view and the Map view.

### 5.1 List view

List view as the name implies, presents a list of all your equipment with sensor tags on them.

GEPS | Visualizer

visualizer.hd-rtls.com/#/listview?url=https:%2F%2Fp175-geps-production-api.hd-rtls.com

GEPS™ Map view List view Welcome fandemo@hd-wireless.com

Refresh Last Updated: 8/19/2021, 1:31:54 PM

Listing: 10 Objects Show objects on Map view Filtered (viewable) objects Selected objects

Select	Map	Identifier	Type	Status	Serial no.	Department	Comment	Service interval[h]	Total runtime[h]	Runtime since service[h]
<input type="checkbox"/>		00000003	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000004	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000092	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000093	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000094	Ventilation Fan	OK	Serial no.	Department	Comment	8760	5	5
<input type="checkbox"/>		00000095	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000096	Ventilation Fan	OK	Serial no.	Department	Comment	8760	96	96
<input type="checkbox"/>		00000097	Ventilation Fan	OK	Serial no.	Department	Comment	8760	1	1
<input type="checkbox"/>		00000098	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000099	Ventilation Fan	OK	Serial no.	Department	Comment	8760	897,405,400,555,556	897,405,400,555,556

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When you select an object by clicking on its row, the objects properties is shown in a fold in panel on the right.

GEPS | Visualizer

visualizer.hd-rtls.com/#/listview?url=https:%2F%2Fp175-geps-production-api.hd-rtls.com

GEPS™ Map view List view Welcome fandemo@hd-wireless.com

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<input type="checkbox"/>		00000093	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000094	Ventilation Fan	OK	Serial no.	Department	Comment	8760	5	5
<input type="checkbox"/>		00000095	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input type="checkbox"/>		00000096	Ventilation Fan	OK	Serial no.	Department	Comment	8760	96	96
<input type="checkbox"/>		00000097	Ventilation Fan	OK	Serial no.	Department	Comment	8760	1	1
<input type="checkbox"/>		00000098	Ventilation Fan	OK	Serial no.	Department	Comment	8760	0	0
<input checked="" type="checkbox"/>		00000099	Ventilation Fan	OK	Serial no.	Department	Comment	8760	897,405,400,555,556	897,405,400,555,556

Selected Asset Properties

Type: Ventilation Fan  
Status: OK  
Box associated with object: #10  
This object has an old position.

Hours between service: 8760  
Warning Level: 200  
Alarm Level: 100  
Total run time: 897,405,400,555,556  
Usage since last service: 897,405,400,555,556

Usage

Last impact

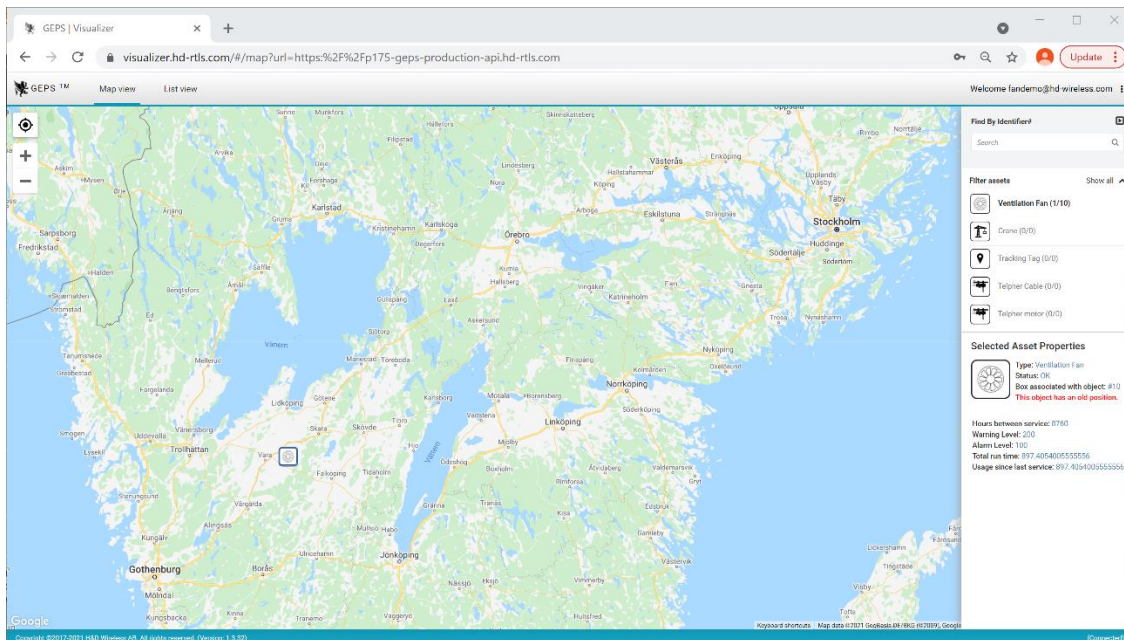
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## 5.2 Map View

Map view shows the location for all your objects, if they have been given a position in the app.



- The visibility of different object types can be controlled on the panel to the right.
- You can search for a specific object in the search window.
- When selecting an object its properties is shown in the lower portion of the panel.

## 6 Notices

Country	Approval authority	Regulatory	
USA	FCC	FCC ID: XO2-BOX827 Contains FCC ID: 2ANPO00NRF9160	
Canada	IC	IC ID: 8713A-BOX827 Contains IC: 24529-NRF9160	
Europe	National	ETSI/EN	

Table 5.1: Regulatory standards

### 6.1 European Union Directive conformance statement

This equipment complies with:

2014/30/EU EMC Directive

2014/53/EU Radio Equipment Directive

### 6.2 Federal Communications Commission (FCC) statement

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 interference to radio and television reception, which can be determined by turning the equipment off and on, 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.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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 undesired operation.

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

## 6.3 ISED CANADA Statements

Le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Canada Class B statement

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## 6.4 Wireless notice (SAR)

This equipment complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet appareil est conforme aux limites d'exposition aux rayonnements de l'ISDE pour un environnement non contrôlé. L'antenne doit être installée de façon à garder une distance minimale de 20 centimètres entre la source de rayonnements et votre corps. L'émetteur ne doit pas être colocalisé ni fonctionner conjointement avec à autre antenne ou autre émetteur.