

BeanDevice® 2.4GHz

ONE-T

Wireless IOT temperature sensor  
built-in datalogger



ONE-TH

Wireless IOT Temperature & humidity sensors  
built-in datalogger



ONE-Tir

Wireless IOT Sensor | IR(Infrared)  
temperature sensor  
built-in datalogger

2.4 GHz





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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](mailto: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](http://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

Symbols	Definition
	Caution or Warning – Alerts the user with important information about BeanAir® wireless IOT Sensors. 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 IOT Sensors.

### 3. ACRONYMS AND ABBREVIATIONS

AES	Advanced Encryption Standard
CCA	Clear Channel Assessment
CSMA/CA	Carrier Sense Multiple Access/Collision Avoidance
GTS	Guaranteed Time-Slot
kSps	Kilo samples per second
LDCDA	Low duty cycle data acquisition
LLC	Logical Link Control
LQI	Link quality indicator
MAC	Media Access Control
PER	Packet error rate
POE	Power Over Ethernet
RF	Radio Frequency
SD	Secure Digital
UPS	Uninterruptible power supply
USB OTG	USB On The Go
WDAQ	Wireless DAQ
WSN	Wireless Sensor Networks

## 4. Beandevicé® 2.4GHz ONE-T/ONE-TH/ONE-TIR

### 4.1 UNBOX YOUR BeanDevice®

Open the BeanDevice® box



Figure 1 : BeanDevice® Box

The BeanDevice® is provided with a waterproof antenna 2.2dBi and a magnet.



Figure 2 : BeanDevice® ONE-TH

Use the magnet to:

- Power ON/Power OFF the BeanDevice®
- Pair the BeanDevice® to your BeanGateway®

## 4.2 PRODUCT OVERVIEW

EcoSensor® sensor series is suitable for Environmental Monitoring, Test & measurement and structural health monitoring (SHM) :

### BeanDevice® 2.4GHz ONE-T Ambient Temperature



BeanDevice® 2.4GHz ONE-T-ST



BeanDevice® 2.4GHz ONE-T-HA



BeanDevice® 2.4GHz ONE-T-HAEY



BeanDevice® 2.4GHz ONE-T-ST-CL



BeanDevice® 2.4GHz ONE-T-STCORE

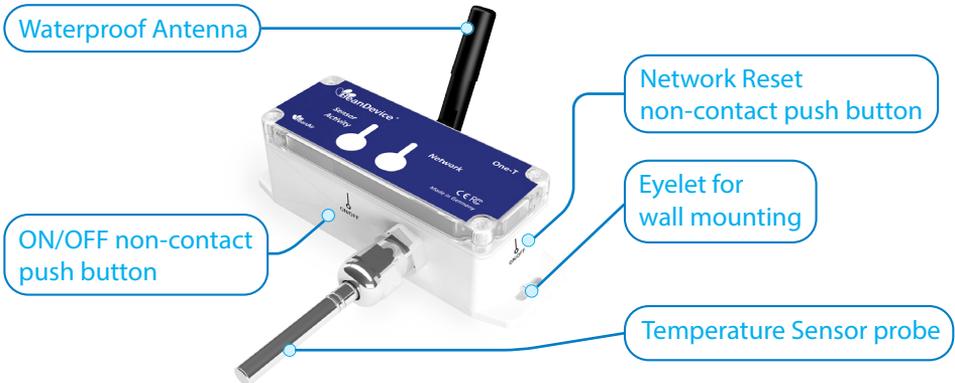
BeanDevice® 2.4GHz ONE-TH  
Temperature, Humidity & Dew point



BeanDevice® 2.4GHz ONE-TIR  
IR Temperature



### 4.3 NON-CONTACT BUTTONS AND LEDS DESCRIPTION



## 4.4 OPERATIONS ON NON-CONTACT BUTTONS AND LEDS

Operating status	Network LED	Sensor Activity LED
The BeanDevice® is power off	LED OFF	<p><b>Green LED ON :</b> Measurement is OK</p> <p><b>Red LED ON :</b> Measurement is not OK [ sensor failure]</p>
The BeanDevice® is power on with wireless TX/RX activity	<p><b>Green LED :</b> Wireless Network Activity</p> <p><b>Red LED :</b> Wireless transmission failure</p>	
The BeanDevice® is power on	<b>Green LED</b> blinks twice	
The BeanDevice® is power off [was power on before]	<b>Red LED</b> ON during 2s	
The BeanDevice® is power on & a network Reset is performed by holding the magnet on Network Push Button during 2s	<p><b>Red LED</b> ON during 2s then</p> <p><b>Green LED</b> ON during 2s then</p> <p><b>Green LED</b> blinks constantly until connection to <b>BeanGateway®</b></p>	
The BeanDevice® is power on & waits for a network activity	<b>Green LED</b> blinks	

## 5. WIRELESS COORDINATOR ( BEANGATEWAY® )

The BeanGateway® is a wireless coordinator used to build and manage Beanair® Wireless IOT Sensors. It supports the conversation of data exchanged, compression and IP connectivity with the network thereby reducing the intelligence required in these platforms, maintenance and therefore the associated cost.

The BeanGateway is available in two versions : Indoor (IP40) and Outdoor (IP67)

### 5.1 UNBOX YOUR BEANGATEWAY® OUTDOOR

Open the BeanGateway® Outdoor box



Figure 3 : BeanGateway® Outdoor Box

The BeanGateway® Outdoor is provided with a wall plug-in power supply, a power adapter for your country, a N-Type antenna, a Wall mounting kit and an Ethernet cable.



Figure 05 : BeanGateway® accessories

## 5.2 UNBOX YOUR BEANGATEWAY® INDOOR

Open the BeanGateway® box



Figure 05 : BeanGateway® Indoor Box



Figure 12 : BeanGateway® Indoor version

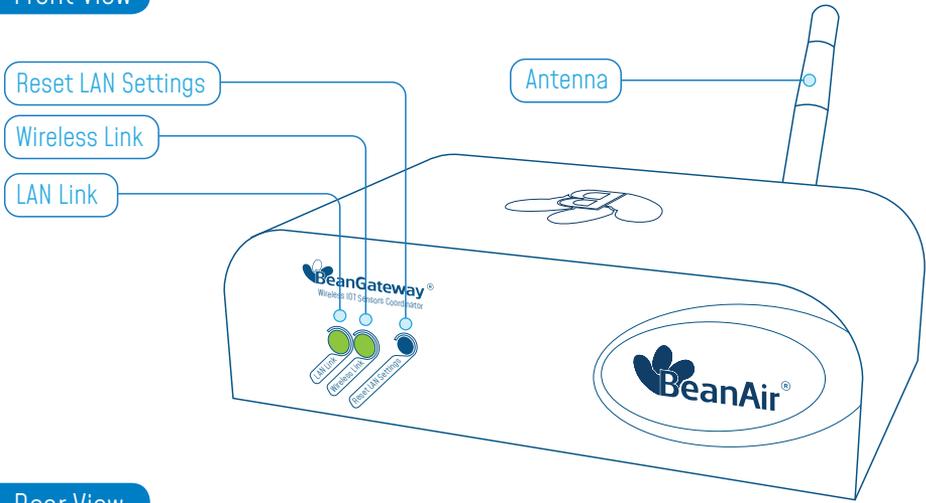
The BeanGateway® Indoor is provided with a wall plug-in power supply, a power adapter for your country, a RPSMA antenna and an Ethernet cable.



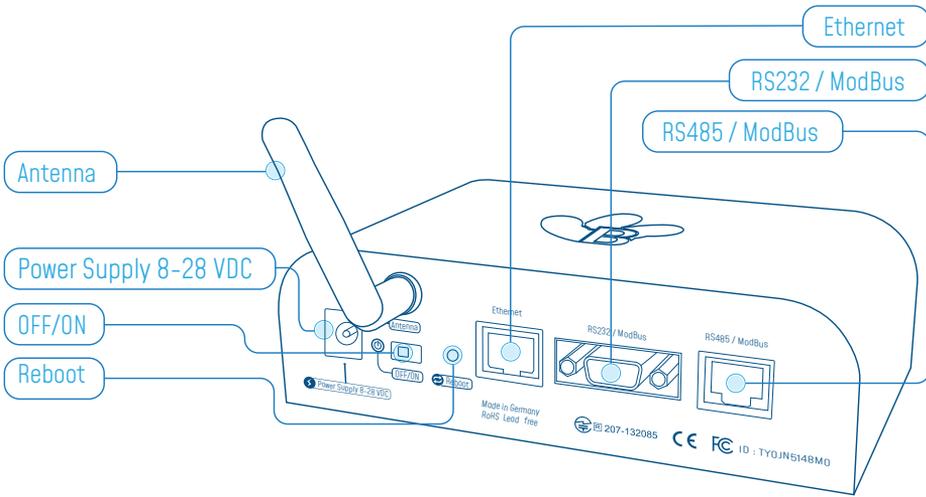
Figure 13 : BeanGateway® Indoor Accessories

### 5.3 INDOOR VERSION

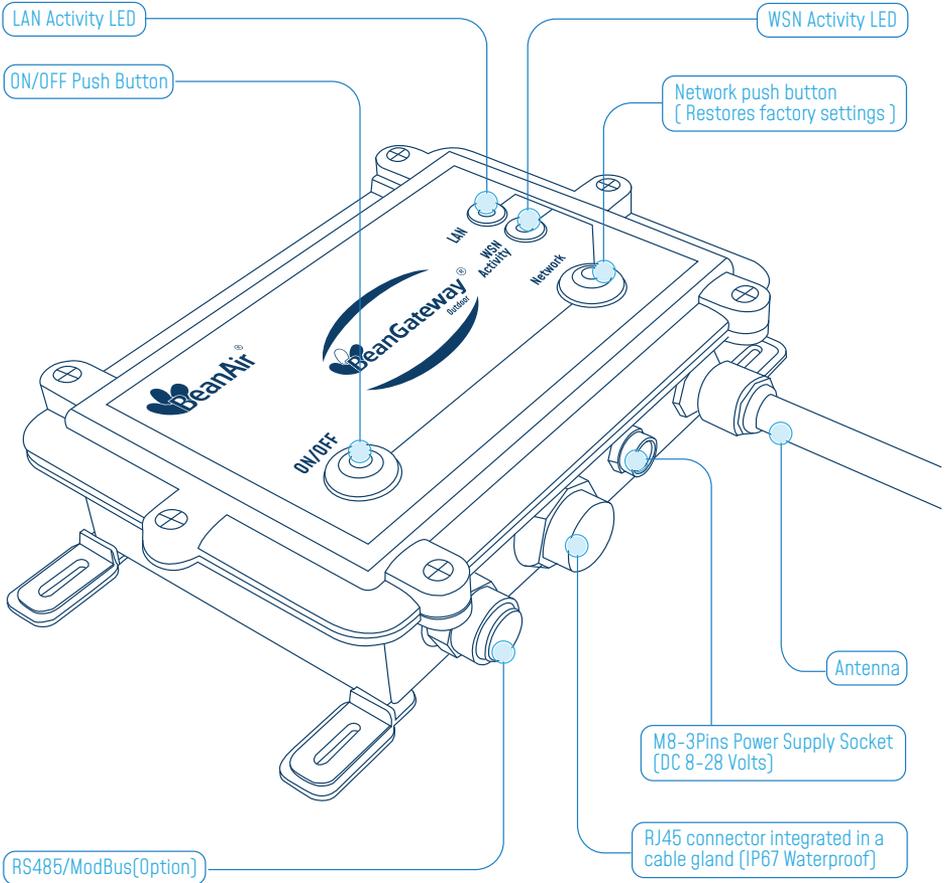
#### Front View



#### Rear View

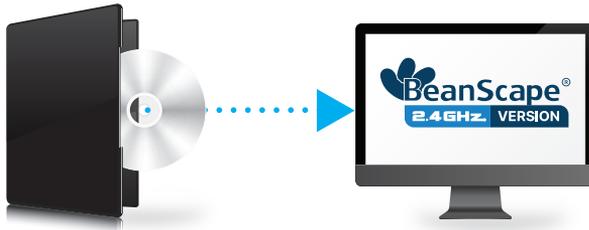


### 5.4 OUTDOOR VERSION



## 6. START YOUR APPLICATION

1. Insert the BeanScope® 2.4GHz DVD in your DVD drive then follow the installation instructions.



2. Connect your Beangateway® directly to your PC or to your WIFI/LAN router by using an Ethernet cable.



If you connect your BeanGateway® to your WIFI/LAN router, you can go for Static or Dynamic IP. If your Beangateway® is directly connected to your PC, Static IP should be selected as there is no DHCP server hosted on your PC.

### Direct connection :

The BeanGateway® comes with the default IP address 192.168.4.123  
 Assign manually a static IP address to your PC with the same subnet as your BeanGateway®, 192.168.4.2

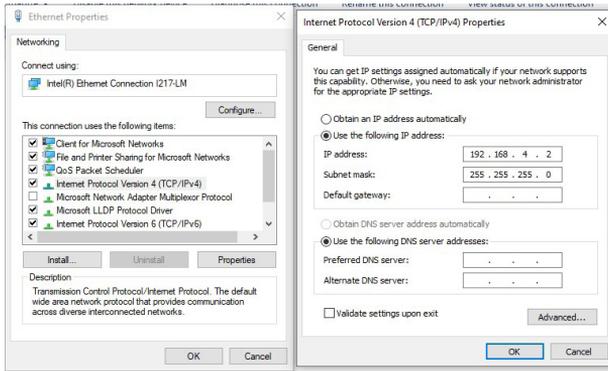


Figure 8 : Static IP allocation on your PC

### Via LAN Router connection :

You can go for Dynamic IP address on both PC and BeanGateway®

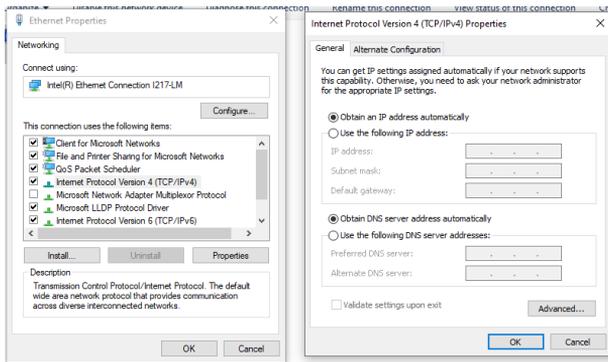


Figure 9 : Dynamic IP allocation on your PC

3. Make sure that your Beanscape® software is already installed on your PC and running.
4. Turn on the BeanGateway® by pushing on the ON/OFF button if you are using the outdoor version or slide the ON/OFF button to the right side if you are using the indoor version.



Figure 10 : Turn on the BeanGateway®

Localize your BeanGateway® on your LAN

5. Go to **Tools** tab then select BeanGateway® Ethernet/LAN Config. and select your PC IP address from the scroll down menu then click on localize, your BeanGateway® MAC ID will appear on a scrolling list, select it then click on validate.

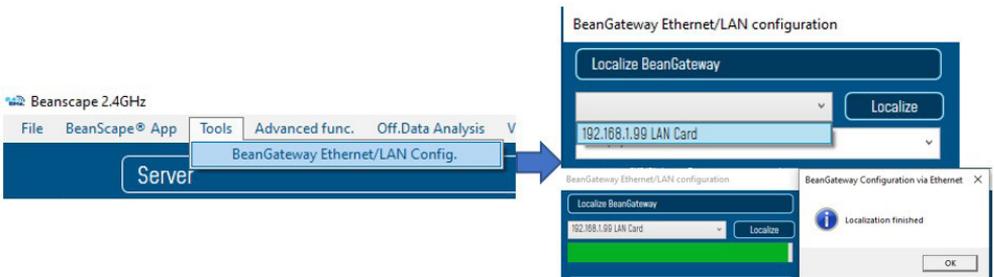


Figure 11 : Localization process

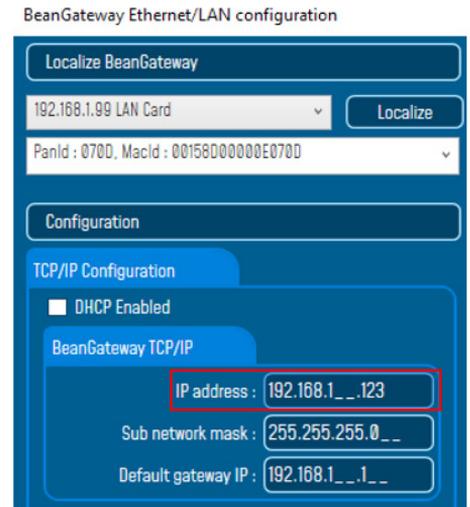
**Via LAN Router connection :**

Make sure that DHCP check box is enabled



**Direct connection :**

Allocate a static IP to your BeanGateway® before to click on validate



If the BeanGateway® scroll down menu appears empty, push on the CNC/Network push button for 10s until the network LED turns to red color. You will restore LAN settings from the factory (static IP address: 192.168.1.123) then redo the localization process.



Make sure you have no antivirus/firewall blocking the network activity between the BeanGateway® and the BeanScope® software.

6. Click on "Start" to start the server  or click on BeanScope® App tab

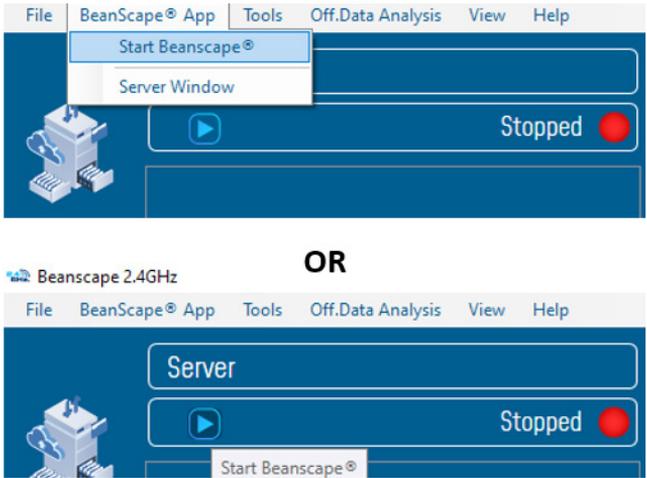


Figure 12 : Start the Server

The Beanscape® launches, and creates a mapping of the BeanGateway® on the bottom of the left side pane.

Click on the BeanGateway® identified by the PAN ID in the lower left screen, the screen for monitoring and configuring your BeanGateway® will show up.

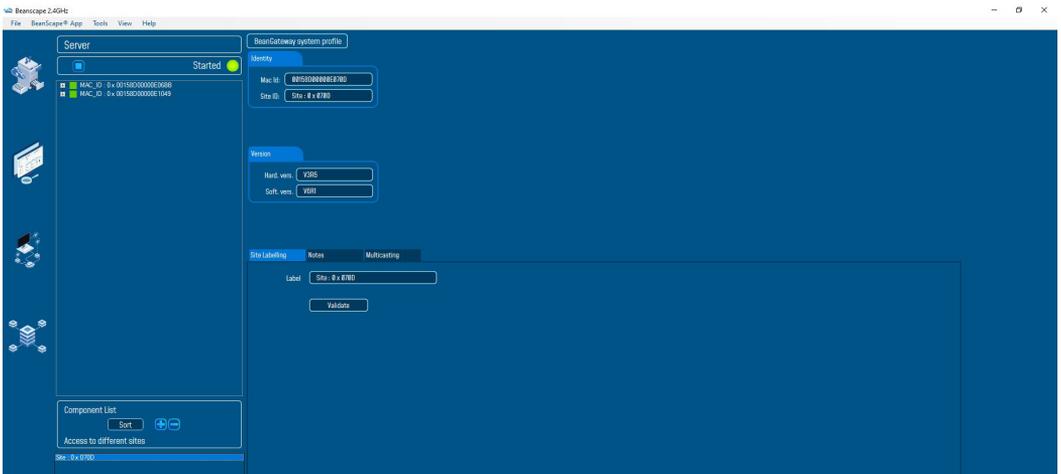
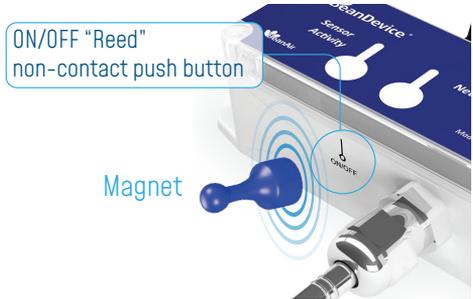


Figure 13 : BeanGateway® Dashboard

- Power on the Beandevic<sup>®</sup>: hold the magnet next to ON/OFF non-contact push button for more than 2 seconds. The Activity/Failure Led will blink in green color.

Figure 14 : Power on your Beandevic<sup>®</sup>



- For the first use, you need to pair your Beandevic<sup>®</sup> to your BeanGateway<sup>®</sup>. Hold the magnet on the label Network for more than 2 seconds until that Activity/Failure Led blinks in Red color. Default factory parameters will be restored.

Figure 15 : Connect the Beandevic<sup>®</sup> to the BeanGateway<sup>®</sup>



- Click on the Beandevic<sup>®</sup> that showed up on the left side pane

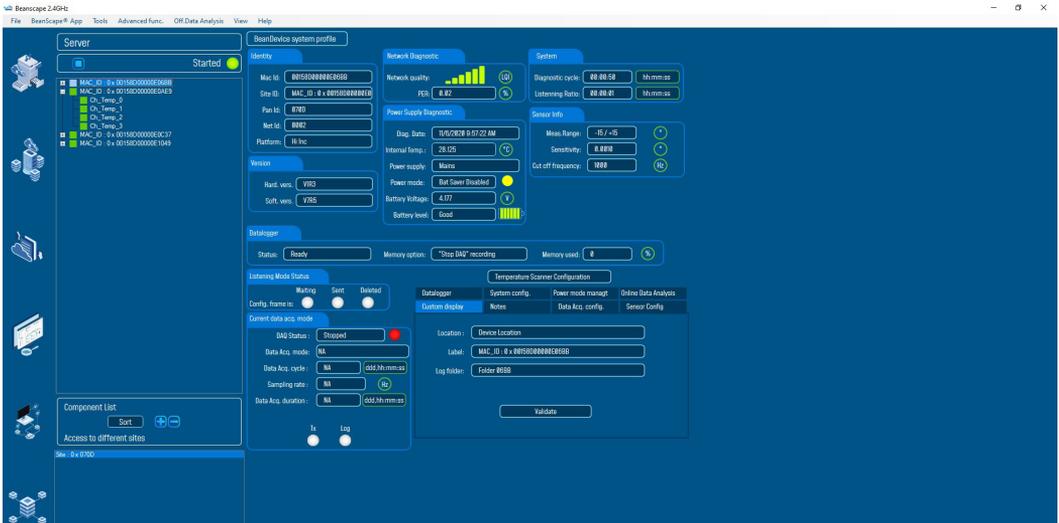


Figure 16 : Add to Firewall

Now you can see the screen for monitoring and configuring the Beandevic<sup>®</sup> and its related sensor channels.

## 7. A QUICK SETTINGS OVERVIEW

### 7.1 DATA ACQUISITION CONFIGURATION

- From View tab change the view from Standard view to Expert view by entering the right serial key provided with your BeanScope® DVD

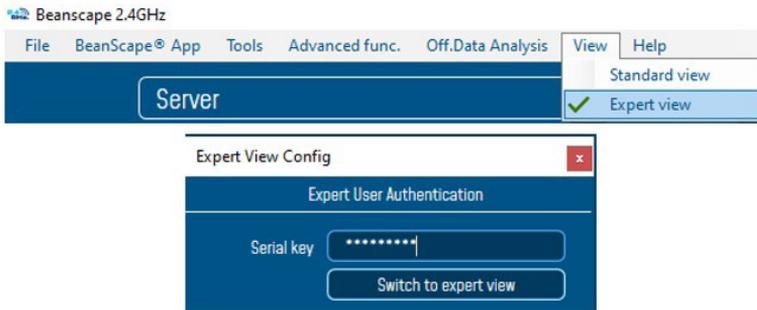


Figure 17 : Expert View

- Go to the configuration frame and select Data Acq. Config tab



Figure 18 : DAQ frame

### 3. Setup your Acquisition mode



Figure 19 : DAQ Configuration

### 4. Click on the sensor channel to see real-time measurement graph



Figure 20 : Real-Time Graph



Find more info on the different data acquisition modes available on the BeanDevice® 2.4GHz :  
<http://www.wireless-iot.beanair.com/files/TN-RF-008-Data-acquisition-modes-available-on-the-BeanDevice.pdf>

## 7.2 USING THE DATALOGGER

The BeanDevice® 2.4GHz EcoSensors comes equipped with embedded datalogger of up to 1 million data points [with events dating] in the Xrange version.

You can start the datalogging from the previously demonstrated data acquisition tab : you can select **Log only** as data acquisition option for only using the embedded datalogger without transmitting data to BeanScope® or you can select **TX & LOG** for jointly save data on your BeanScope® Host computer and also in the datalogger at the same time.

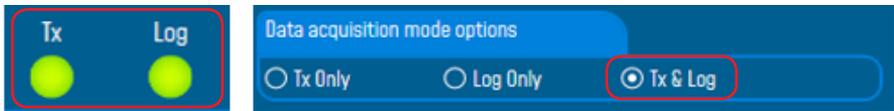


Figure 21 : DataLogger Options

From this status frame, you can monitor the Datalogger status, Memory option when the Datalogger is full and percent of memory used.



Figure 22 : DataLogger Status

These settings can be changed from the DataLogger tab present on configuration panel :

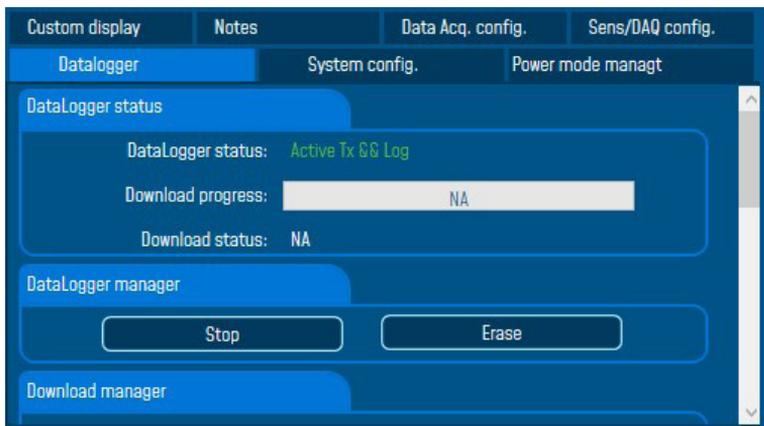


Figure 23 : DataLogger tab

Brief information on the status of the datalogger and download progress can be seen on the tab

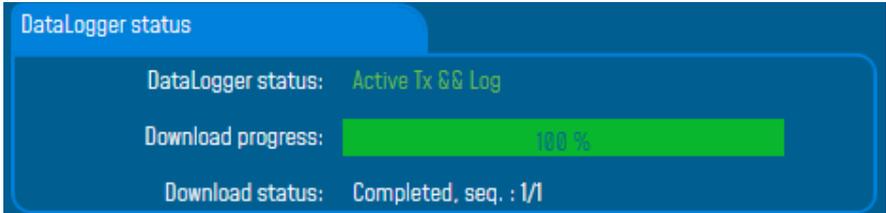


Figure 24 : DataLogger status

Four status are available:

- o **Ready**: the Datalogger is ready to register data
- o **Active logs only**: Data acquisition is logged only
- o **Active TX and Log**: Data acquisition is logged & transmitted by Radio
- o **Stopped**: Datalogger is stopped

Two buttons, one to stop the logging and the other is to erase stored data and initialize the Datalogger



Figure 25 : DataLogger manager

Below, on the download manager frame, different options to control the datalogger are available :

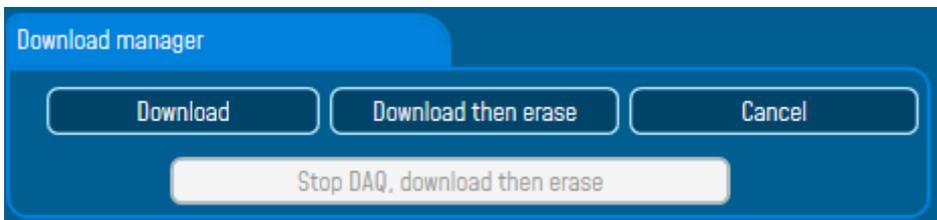


Figure 26 : DataLogger Management

**Download:** Starts to download all the logs on the BeanDevice® flash memory to your computer

**Download then erase:** downloads all the logs and the erase them.

**Cancel:** Stops the download process

**Stop DAQ, download then erase:** stop recording data ,download the data logged then erase it

Below, we can configure the datalogger when it's full.  
Several choices are available :



Figure 27 : DataLogger memory configuration

**"Stop DAQ" recording :** Stop recording when the memory is full

**"stop at end" recording:** Data recording stops when the memory is full

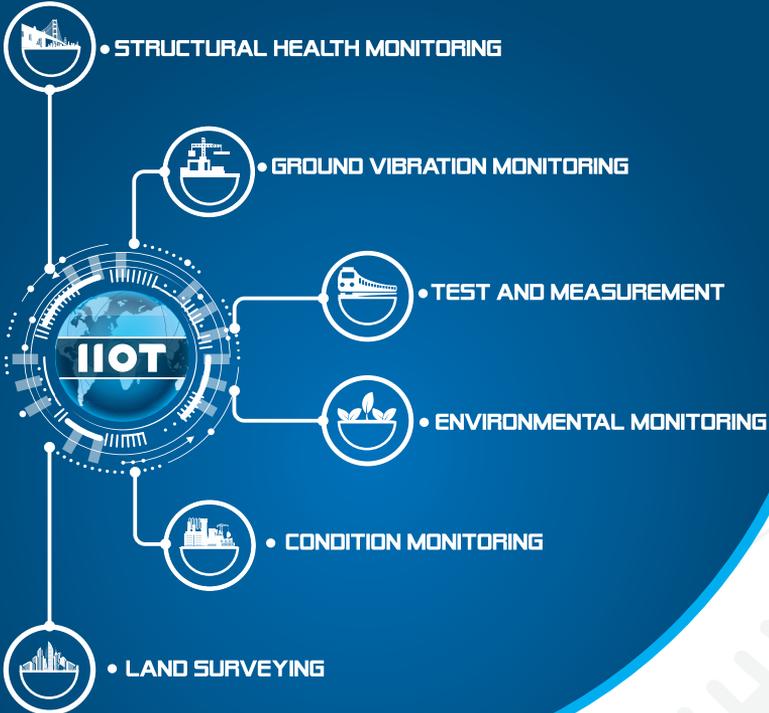
**"Stop DAQ DE"recording:** Stop recording ,Download then erase the stored data

## 8. WHERE TO FIND MORE TECHNICAL INFORMATION ?

- For more technical literature, please visit our White Paper Page:  
<http://beanair.com/wireless-iot-sensors-white-paper.html>
- Please refer to the BeanDevice® 2.4GHz EcoSensors user manual section for more information  
<https://www.wireless-iot.beanair.com/files/UM-RF-03-ENG-EcoSensor-Wireless-Sensors-for-Environment.pdf>
- For detailed information on the available Data Acquisition mode ,please refer to our technical note  
<http://www.wireless-iot.beanair.com/files/TN-RF-008-Data-acquisition-modes-available-on-the-BeanDevice.pdf>

Facing technical problems ?  
Contact our technical support team at :  
[tech-support@beanair.com](mailto:tech-support@beanair.com)





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