



ProcessSensor

BEANDEVICE® PROCESSSENSOR





Ready for Industrial Internet of Things ?

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BeanDevice® WiLow® Quickstart

DOCUMENT

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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

<i>Symbols</i>	<i>Definition</i>
	<i><u>Caution or Warning</u> – 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.</i>
	<i><u>Danger</u> – This information MUST be followed if not you may damage the equipment permanently or bodily injury may occur.</i>
	<i><u>Tip or Information</u> – Provides advice and suggestions that may be useful when installing BeanAir Wireless Sensor Networks.</i>



3. PRODUCT OVERVIEW

BeanDevice® *ProcessSensor* AN-XX is a wireless data acquisition system with an embedded datalogger. This product is fully dedicated to analog sensor with 4-20 mA, Voltage or Low voltage outputs. Three different models are available: BeanDevice® AN-420 (current loop 4-20 mA), BeanDevice® AN-mV (low voltage +/- 20 mV), BeanDevice® AN-V (+/-5V and +/-10V).



BeanDevice® AN-420

Wireless Analog Data Acquisition System with 4-20mA current loop inputs

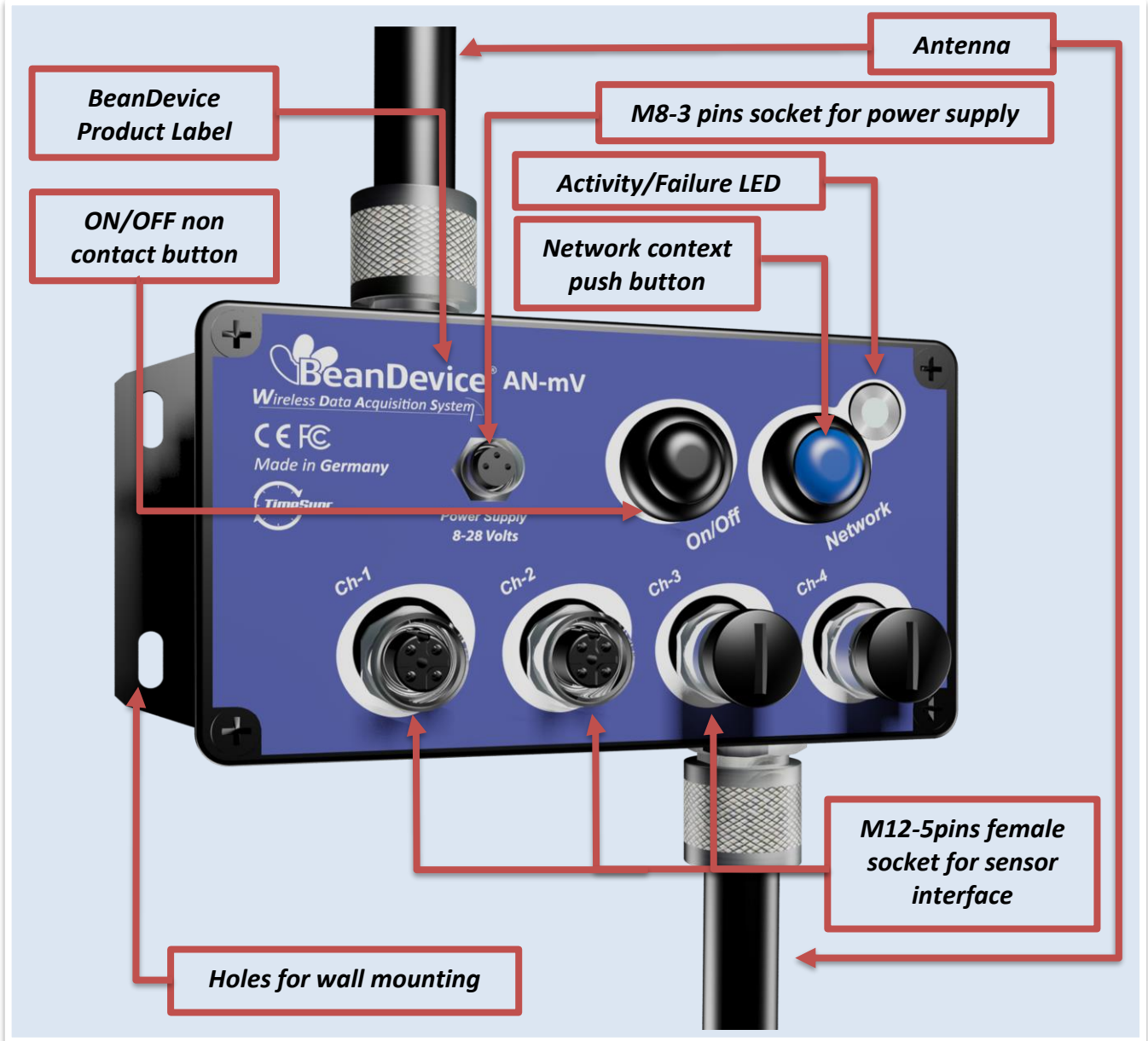
BeanDevice® AN-V

Wireless Analog Data Acquisition System with analog voltage inputs ($\pm 5V$ ou $\pm 10V$)

BeanDevice® AN-mV

Wireless Analog Data Acquisition System with analog voltage inputs ($\pm 20mV$)





[Watch our video on BeanDevice AN-XX](#)

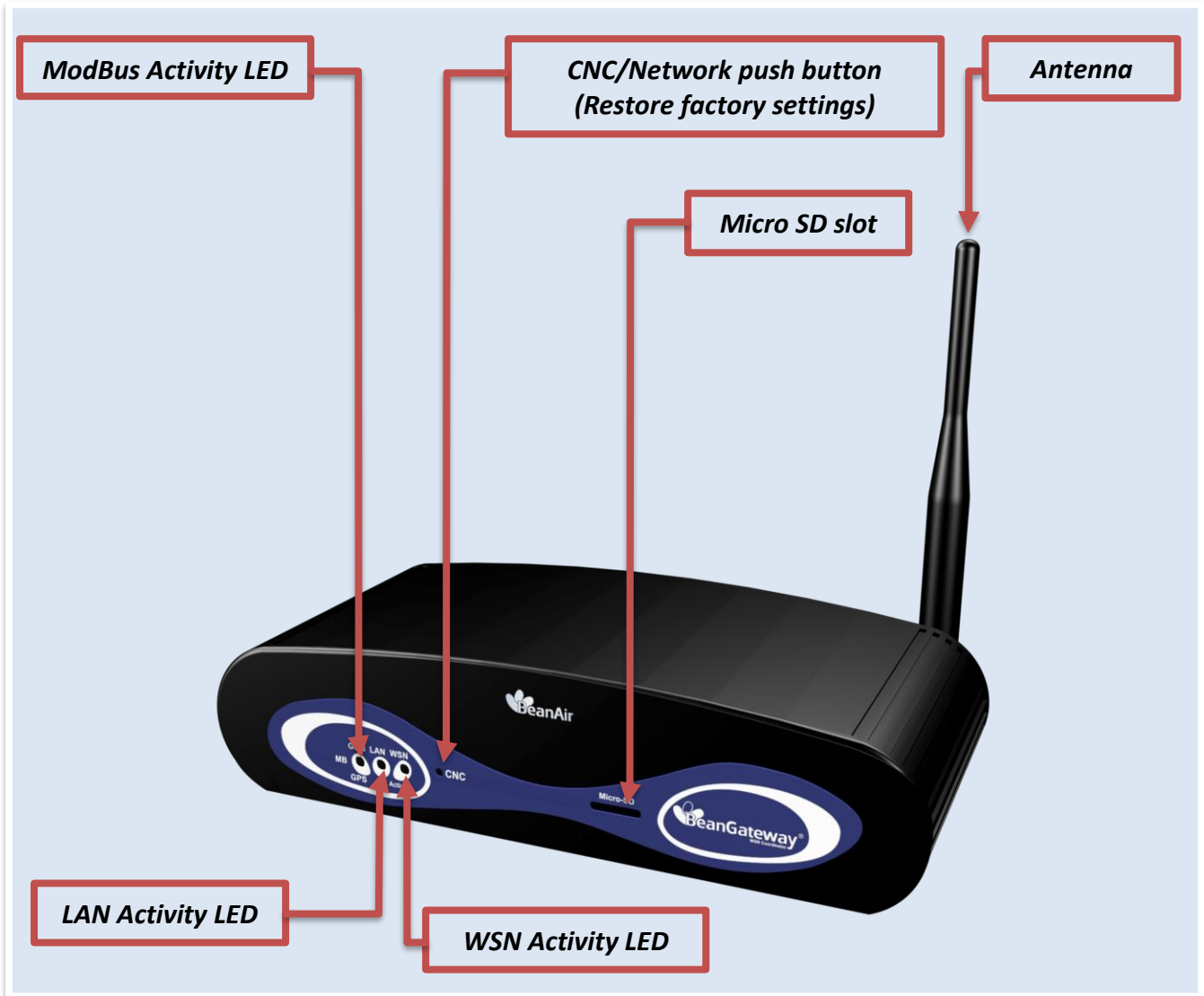


4. WSN COORDINATOR (BEANGATEWAY®)

The BeanGateway® ,an essential component of the WSN manages and coordinates the wireless sensor network. Its role is to build and oversee the entire network of wireless sensors. It has the ability to identify and verify by authorizing the network access.

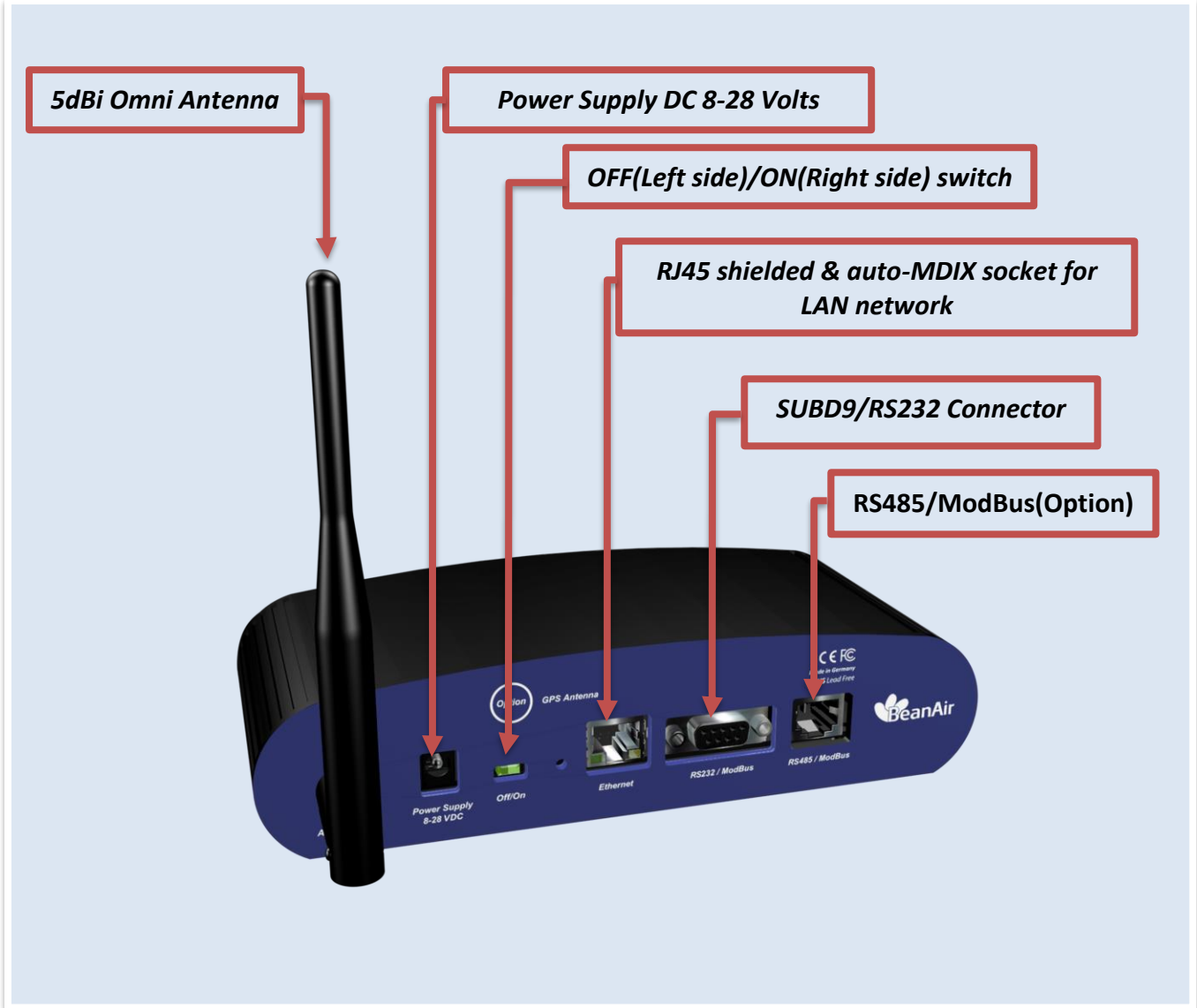
It deals with the exchanged data by means of compressing and connecting them to the IP of the network, thereby reducing the necessary precision in these platforms for maintenance and consequently the associated cost. The BeanGateway® enclosure comes in two versions:

1. Indoor Version :



Front View





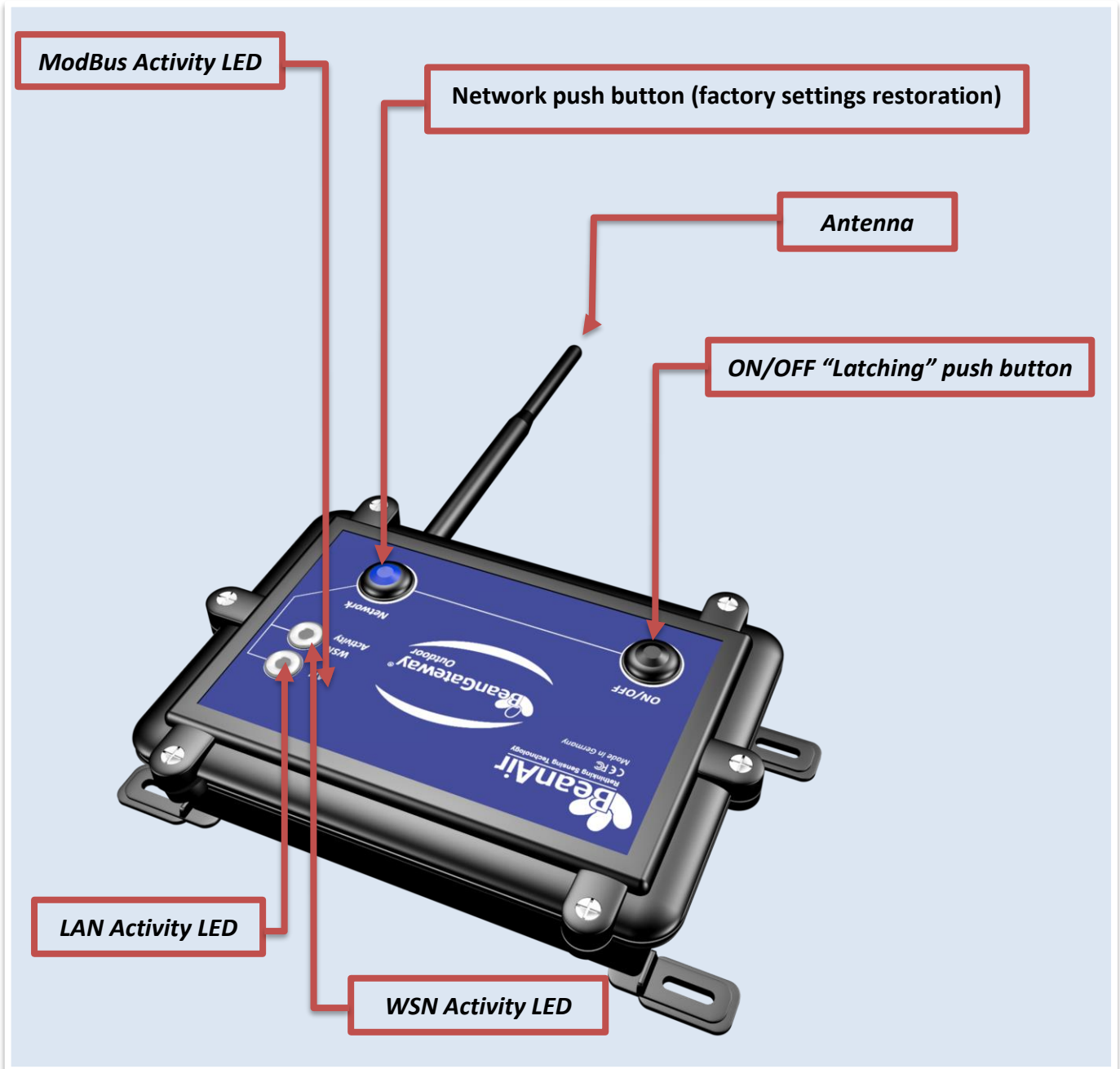
Rear View



[Watch our Video Sensor Network coordinator\(BeanGateway indoor\) video on youtube](#)

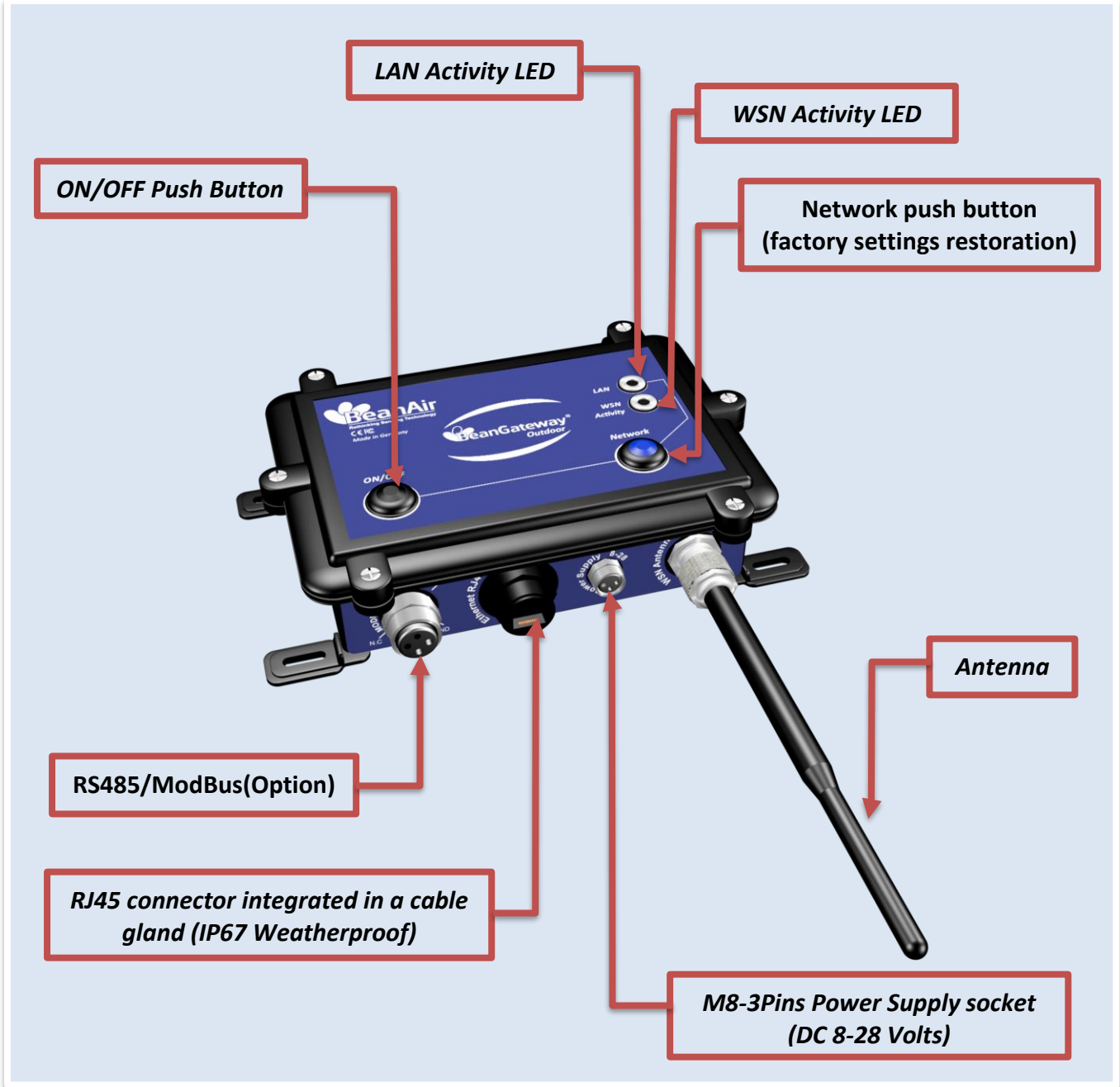


3. Outdoor Version :



Front View





Rear View



5. POWER SUPPLY

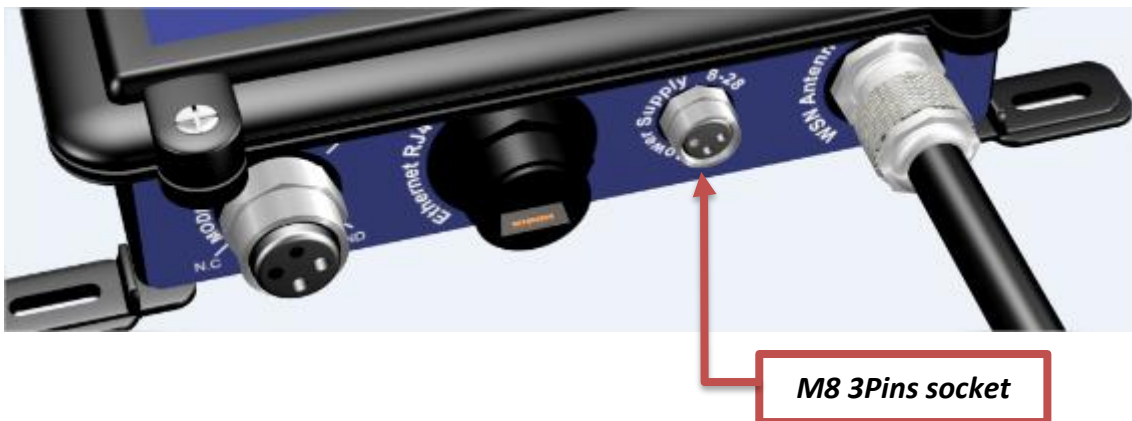
The BeanGateway® is delivered with a 100-240V AC to DC Wall Plug-in power supply of 12V with M8-3 Pins



To ensure uninterrupted functioning of the BeanGateway, it must be always connected to an external power source.

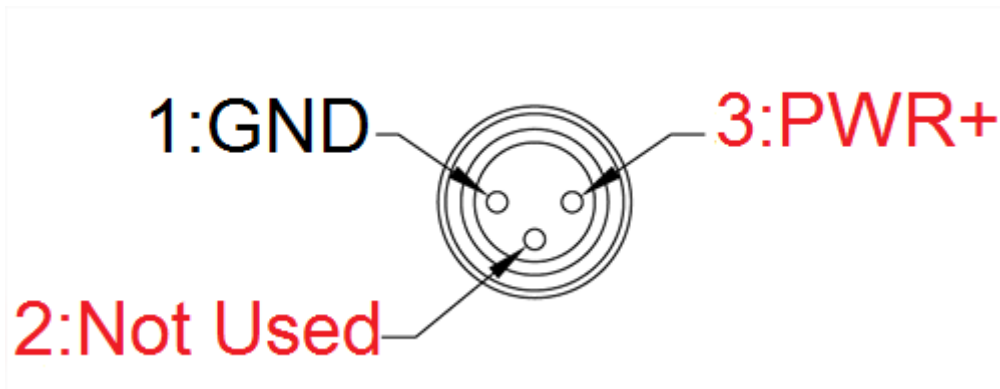
An integrated rechargeable battery with a capacity of 950mAh is used as an UPS battery (uninterruptible power supply). The internal battery provides instantaneous protection from external power supply interruptions.

The Beangateway® Outdoor version integrates a M8-3P socket. The AC-DC power supply adapter is provided with a M8-3P plug.



M8 3Pins socket





M8-3pins socket



For the indoor version of BeanGateway® It's highly recommended to use it with the DC power supply bloc provided from BeanAir®.



6. BEANGATEWAY® MOUNTING

- For a better wireless link, we recommend to mount the BeanGateway® on a wall/mast above 2-3 meters from the ground.
- If your WSN is deployed on the same floor, the RF antenna should be mounted vertically.



- If your WSN is deployed on a different levels, the RF antenna should be configured horizontally, for a better RF signal quality

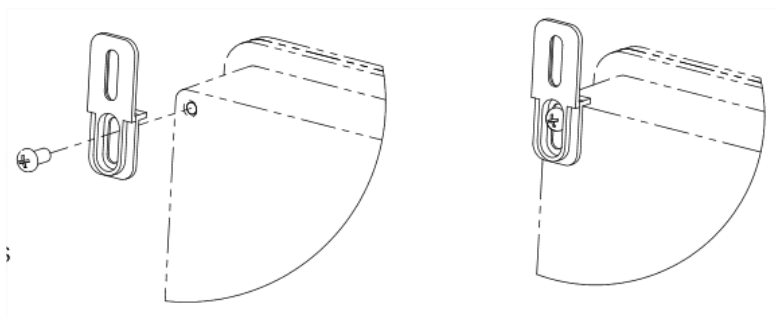
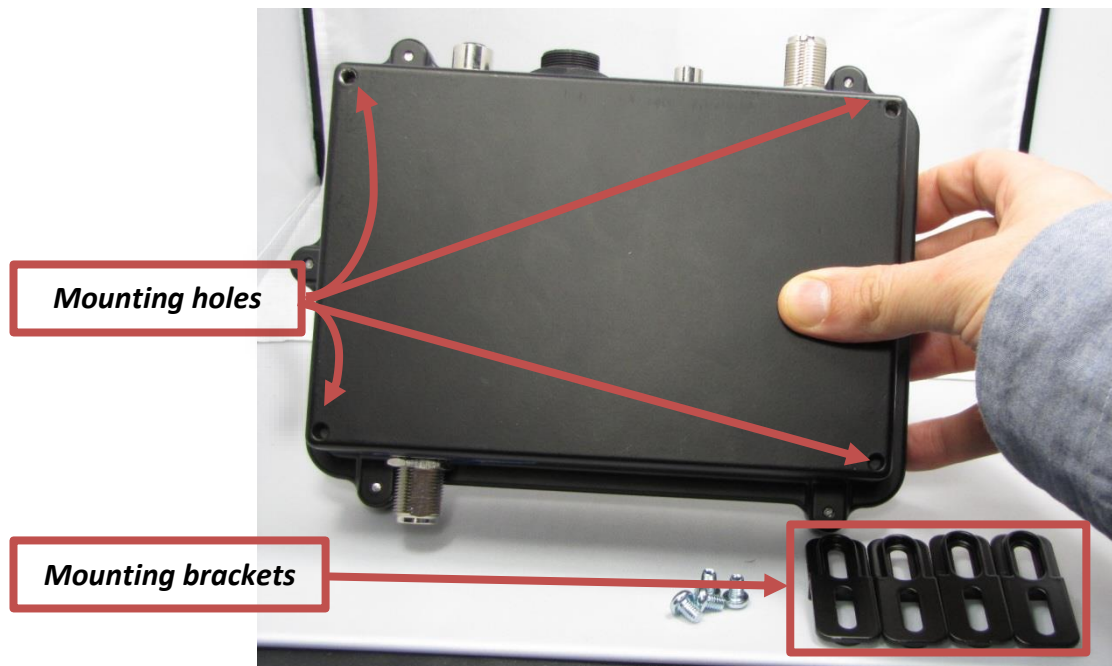


Walls and other obstacles will decrease the signal quality



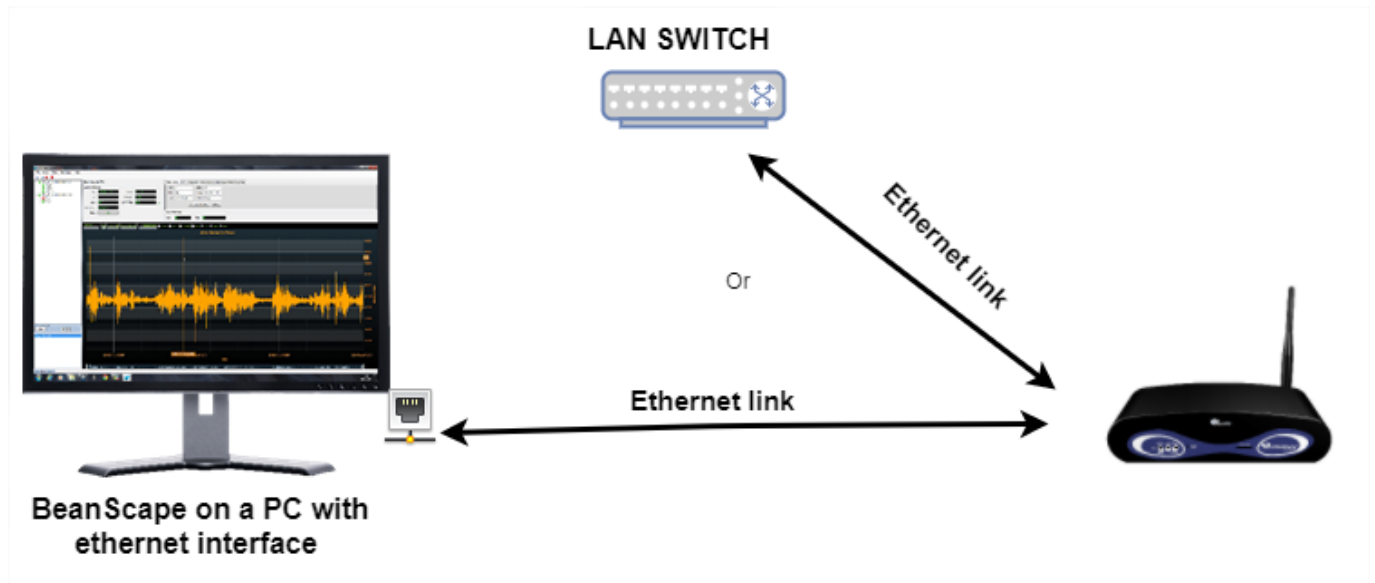
6.1 WALL MOUNTING KIT FOR THE BEANGATEWAY® OUTDOOR

The BeanGateway® outdoor is provided with mounting brackets (4 x brackets and 4 x M5 attaching screws).these brackets enable the BeanGateway® outdoor to be wall or panel mounted without opening the box.



7. START YOUR APPLICATION

1. Connect BeanGateway® Ethernet cable directly to your computer or through a LAN switch



For further information about LAN Network configuration:


Read the following technical note: [TN_RF_009 – « BeanGateway® management on LAN infrastructure »](#)

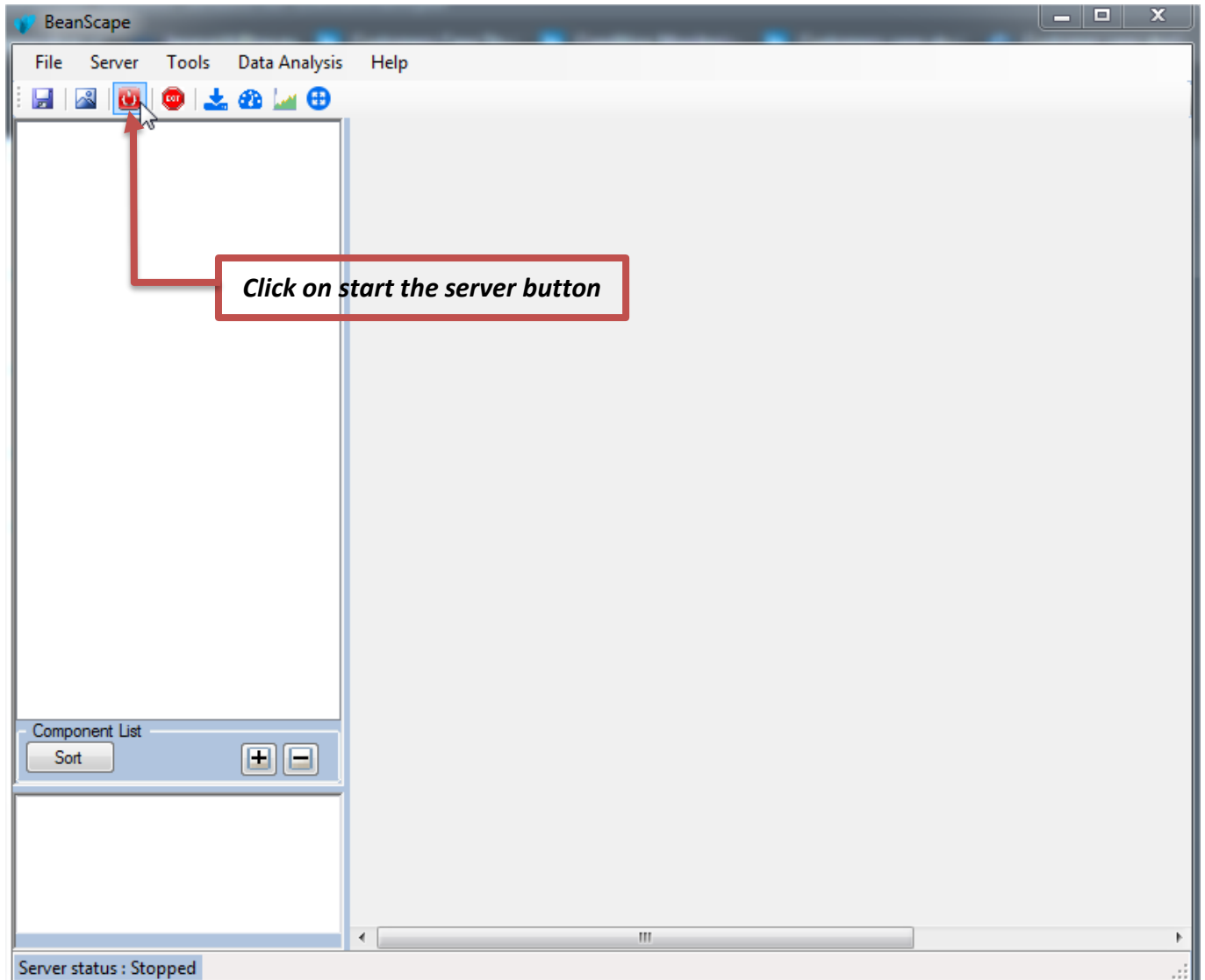
2. Make sure BeanScape® is installed on your PC and run it



3. Turn on the BeanGateway®



4. Click on “Start” to start the server 



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



Make sure no antivirus/firewall is blocking the Network activity between the BeanGateway® and the Beanscape®



- 5. 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 .



6. Power on the Beandevic: press the ON/OFF button .the LED will turn on green.



[Watch our Video on Youtube](#)

7. for the first use, perform a Network context deletion operation to restore default parameters. Press the Network button until the LED turns on red





[Watch our Video on Youtube](#)

8. Click on the BeanDevice® that showed up on the left side pane

The screenshot shows the BeanScope software interface. The main window is titled 'BeanScope' and has a menu bar with 'File', 'Server', 'Tools', 'Data Analysis', 'BeanDevice', and 'Help'. The interface is divided into several sections:

- Left Pane:** A tree view showing a folder 'AN-V' containing four channels: 'Ch_mA_1', 'Ch_mA_2', 'Ch_mA_3', and 'Ch_mA_0'. Below this is a 'Component List' section with a 'Sort' button and a list showing 'PAN ID : 0 x 3901'.
- BeanDevice System Profile:** A section with 'Identity' (Mac Id: 00158D0000AE560, Pan Id: 3901, Net. Id: 0001, Label: AN-V), 'Version' (Hard. vers.: V1R8, Soft. vers.: V6R9), and 'BeanDevice' (Platform: AN mV).
- BeanDevice:** A section with 'Network Diagnostic' (Network quality: LQI, PER: NA %), 'Power Supply Diagnostic' (Temperature: NA °C, Power supply: Bat, Power mode: active, Battery voltage: NA V, Battery level: NA, DiagDate: NA), and 'Data Logger' (Status: Ready, Memory option: SC recording, Memory used: NA %).
- DAQ Info:** A section with 'Meas. Range' (-40.000 / +40.000 Volt.com), 'Polarity' (Bipolar mode), 'Excitation' (5.000 V), 'Pre-proc' (40 ms), and 'Sensitivity' (2.000 mV/V Disabled).
- System:** A section with 'Diagnostic cycle' (00:00:50 ddd, hh:mm:ss) and 'Listening ratio' (5 00:00:50).
- Listening Mode Status:** A section with 'Config. frame is' (Waiting, Sent, Deleted) and 'Current data acquisition mode' (Data Acq. mode: LowDutyCycle, Data Acq. cycle: 00:00:10 ddd, hh:mm:ss, Sampling rate: NA Hz, Data Acq. duration: NA ddd, hh:mm:ss).
- Custom display:** A section with 'Type' (PLATFORM_TYPE), 'Reference' (PLATFORM_REF), 'Label' (AN-V), and 'Log folder' (AN-V). A 'Validate' button is present.

At the bottom left, the 'Server status' is 'Started'.

Now you can see the screen for monitoring and configuring the Beandevice and its sensors.

7.1 TECHNICAL NOTES AND VIDEOS

In addition to this quickstart paper, please consult the user guide of the BeanDevice® SmartSensor and all related technical notes and videos





Document name (Click on the web link)	Related product	Description
<u>ProcessSensor Wireless sensor user manual</u>	2.4GHz products line	Process Sensor® user manual
<u>TN RF 013 – « OPC configuration »</u>	BeanScope® Premium+	The aim of this document is to help deploying the OPC DA and all associated services.
<u>TN RF 012– « BeanDevice® battery life in streaming mode »</u>	2.4GHz products line	The aim of this document is to describe the autonomy performance of the BeanDevice® SmartSensor® and ProcessSensor® product line in streaming packet mode.
<u>TN RF 011 – « Coexistence of Beanair WSN at 2.4GHz »</u>	2.4GHz products line	This document aims to highlight the issues affecting co-existence of Beanair WSN (IEEE 802.15.4) in the presence of interference.
<u>TN RF 010 – « BeanDevice® Power Management »</u>	2.4GHz products line	This technical note describes the sleeping & active power mode on the BeanDevice®.
<u>TN RF 009 – « BeanGateway® management on LAN infrastructure »</u>	BeanGateway®	BeanGateway® integration on a LAN infrastructure
<u>TN RF 008 – “Data acquisition modes available on the BeanDevice®”</u>	2.4GHz products line	Data acquisition modes available on the BeanDevice®
<u>TN RF 007 – “BeanDevice® DataLogger User Guide ”</u>	2.4GHz products line	This document presents the DataLogger feature on the BeanDevice®
<u>TN RF 006 – “WSN Association process”</u>	2.4GHz products line	Description of the BeanDevice® network association
<u>RF TN 003- “Aggregation capacity of wireless sensor networks”</u>	2.4GHz products line	Network capacity characterization of Beanair Wireless Sensor Networks
<u>RF TN 002 V1.0 - Current consumption in active & sleeping mode</u>	2.4GHz products line	Current consumption estimation of the BeanDevice in active and sleeping mode
<u>RF TN 001 V1.0- Wireless range benchmarking</u>	2.4GHz products line	Wireless range benchmarking of the BeanDevice®





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Beanair video link (Youtube)	Related products
<u>Company Presentation</u>	2.4GHz products line
<u>BeanGateway® - Ethernet Outdoor version introduction</u>	BeanGateway® - Ethernet Outdoor version introduction
<u>BeanGateway® – Ethernet Indoor version presentation</u>	BeanGateway® Ethernet Indoor version
<u>BeanDevice® AN-XX wireless range demonstration</u>	BeanDevice® AN-XX & BeanDevice® AN-XX Extender
<u>BeanDevice® AN-XX presentation</u>	BeanDevice® AN-XX & BeanDevice® AN-XX Extender
<u>BeanDevice® AX-3D presentation</u>	BeanDevice® AX-3D
<u>BeanDevice® HI-INC presentation</u>	BeanDevice® HI-INC
<u>BeanDevice® AX-3DS presentation</u>	BeanDevice® AX-3DS
<u>BeanScape® – WSN supervision software</u>	BeanScape®
<u>BeanGateway® Ethernet/LAN Configuration, directly connected to the Laptop/PC</u>	BeanGateway®
<u>Wireless sensors profile deletion from the BeanGateway® Database</u>	2.4GHz products line



[All the videos are available on our YouTube channel](#)



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