Version 2.0

BeanAir

2.4 GHz

SmartSensor

BEANDEVICE® SMARTSENSOR

DOCUMENT			
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DIFFUSION

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Contents

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Such changes will, nevertheless be incorporated into new editions of this document.

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).

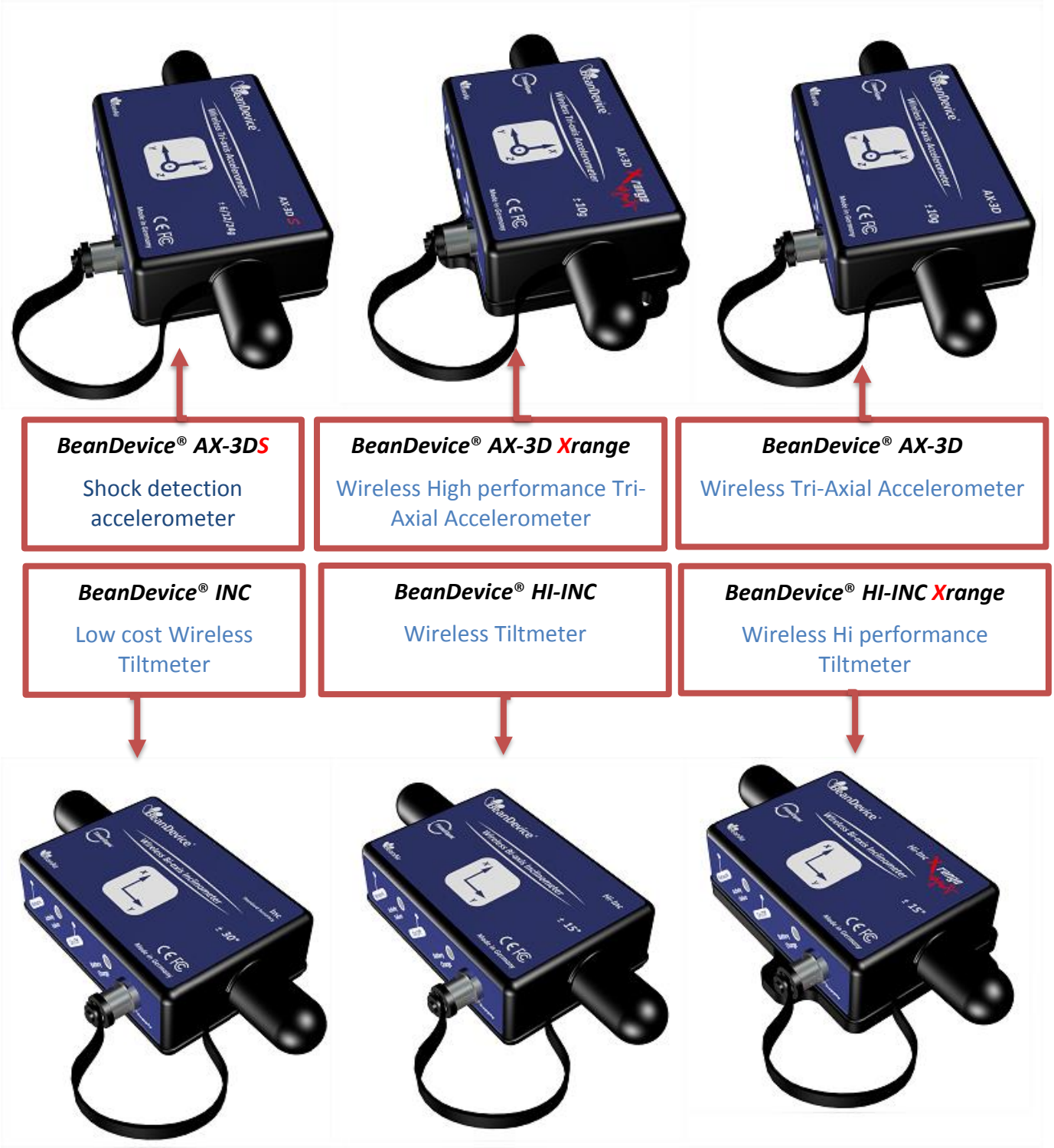
Our aim is to make this user manual as helpful as possible. Please keep us informed of your comments and suggestions for improvements. BeanAir appreciates feedback from the users.

2. VISUAL SYMBOLS DEFINITION

Symbols	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. PRODUCT OVERVIEW

SmartSensor® range is composed by different wireless sensors for embedded measurement and structural health monitoring :



BeanDevice® AX-3DS

Shock detection accelerometer

BeanDevice® AX-3D Xrange

Wireless High performance Tri-Axial Accelerometer

BeanDevice® AX-3D

Wireless Tri-Axial Accelerometer

BeanDevice® INC

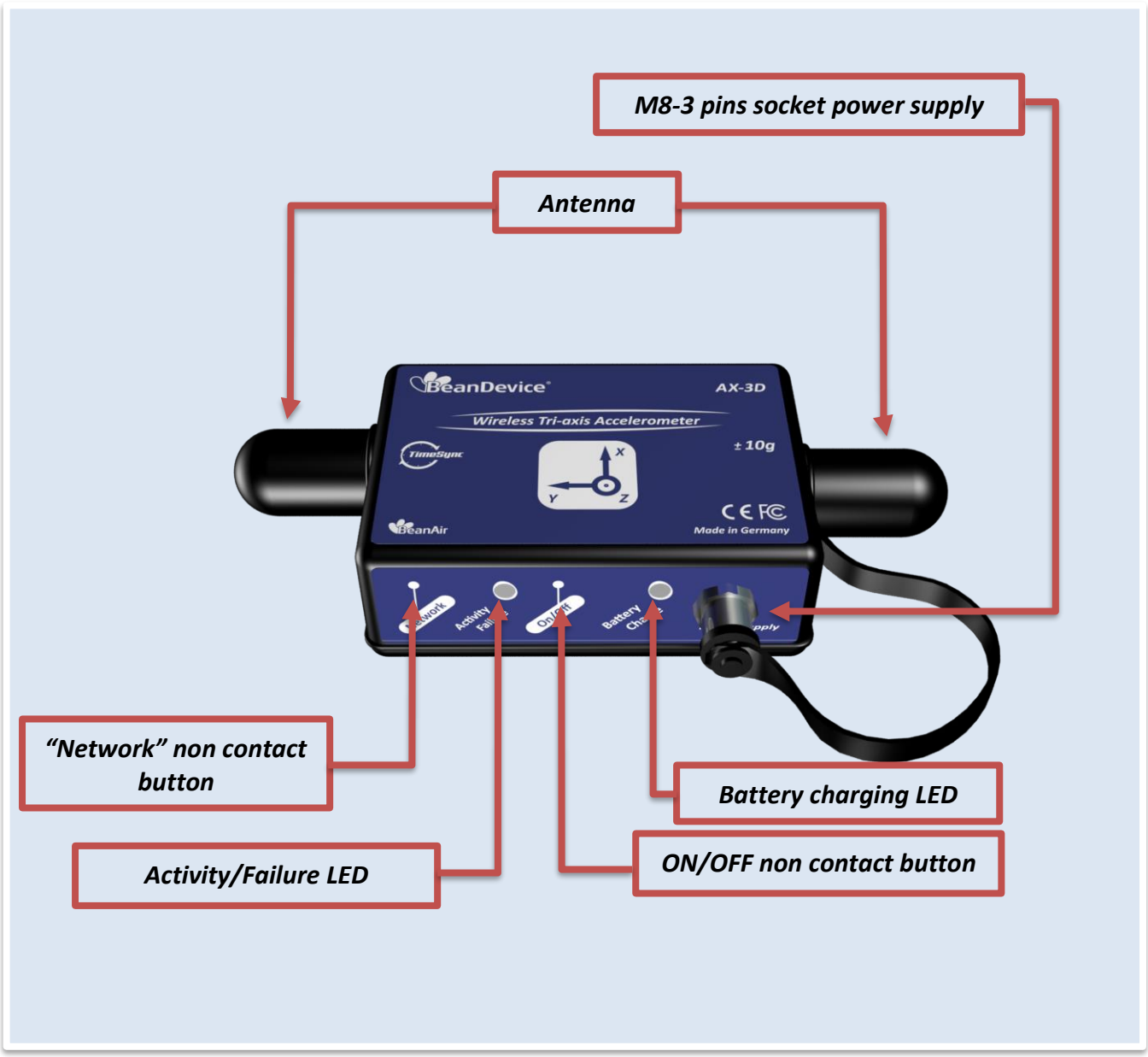
Low cost Wireless Tiltmeter

BeanDevice® HI-INC

Wireless Tiltmeter

BeanDevice® HI-INC Xrange

Wireless Hi performance Tiltmeter



Watch our video : Wireless accelerometer (Beandevice AX 3D) for Industrial Internet of Things (IIOT)

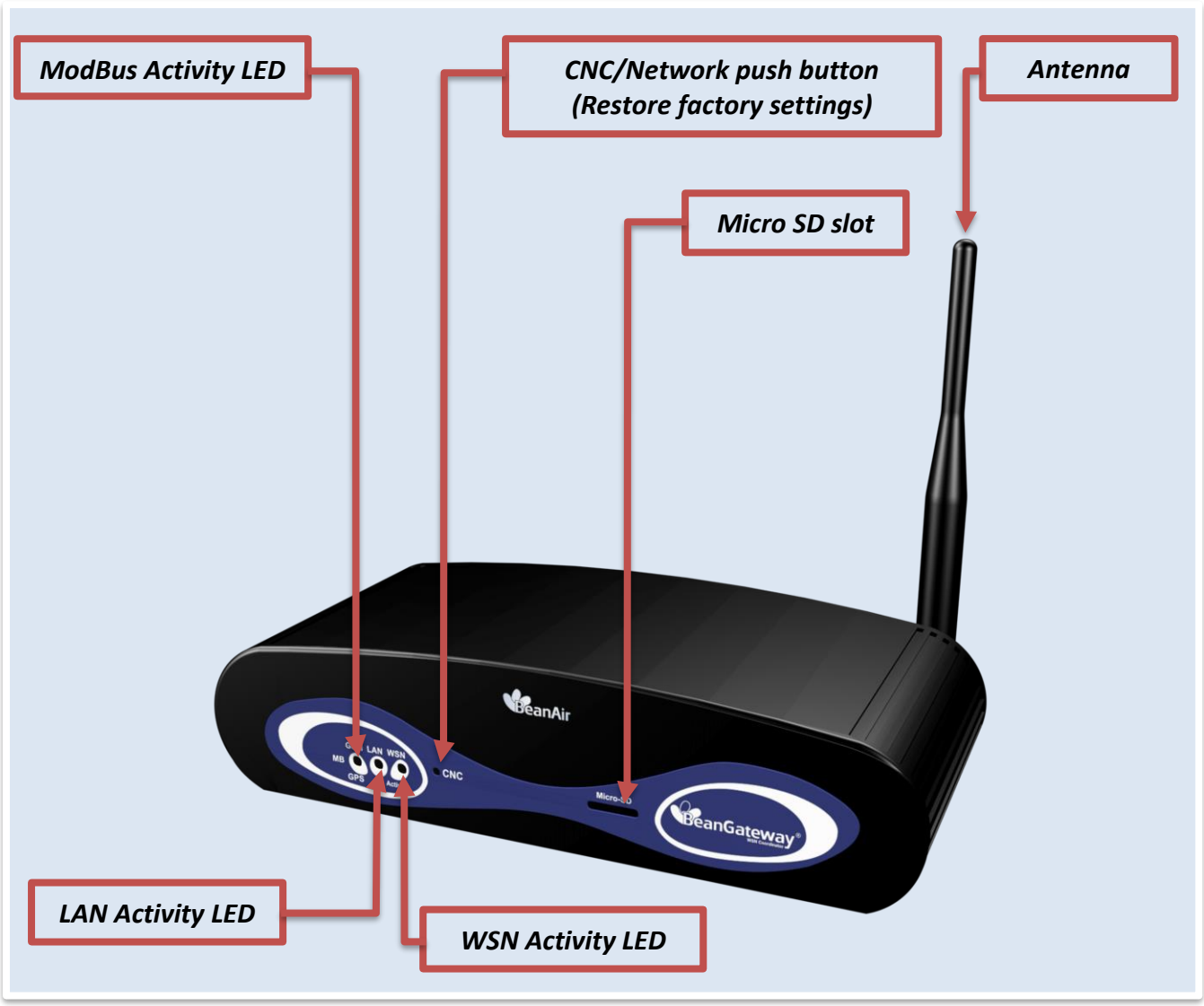
Watch our video : Wireless Inclinometer & Tiltmeter (BeanDevice HI-INC)

Watch our video : Wireless Accelerometer (BeanDevice AX-3DS)

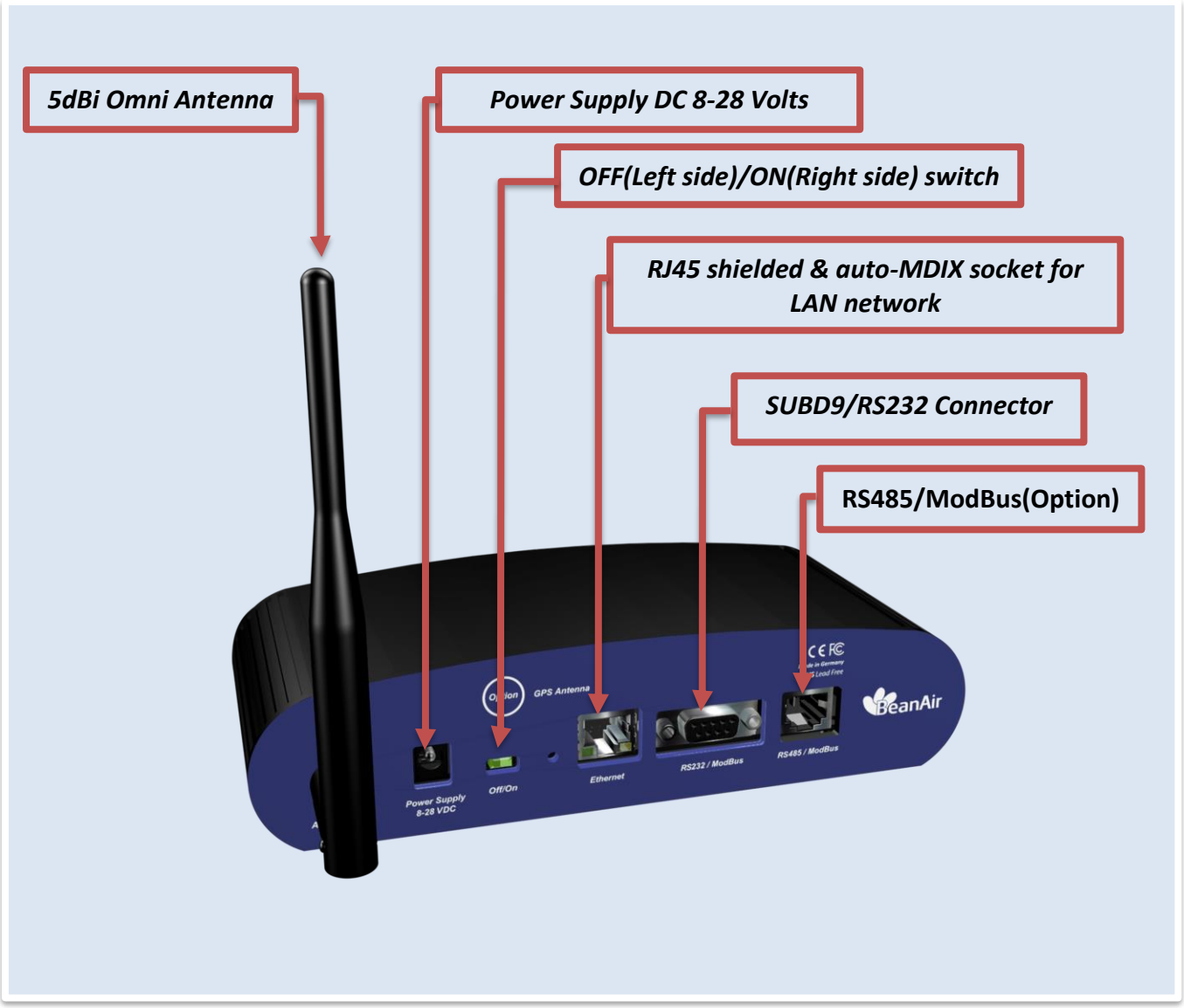
4. WSN COORDINATOR (BEANGATEWAY®)

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 :**



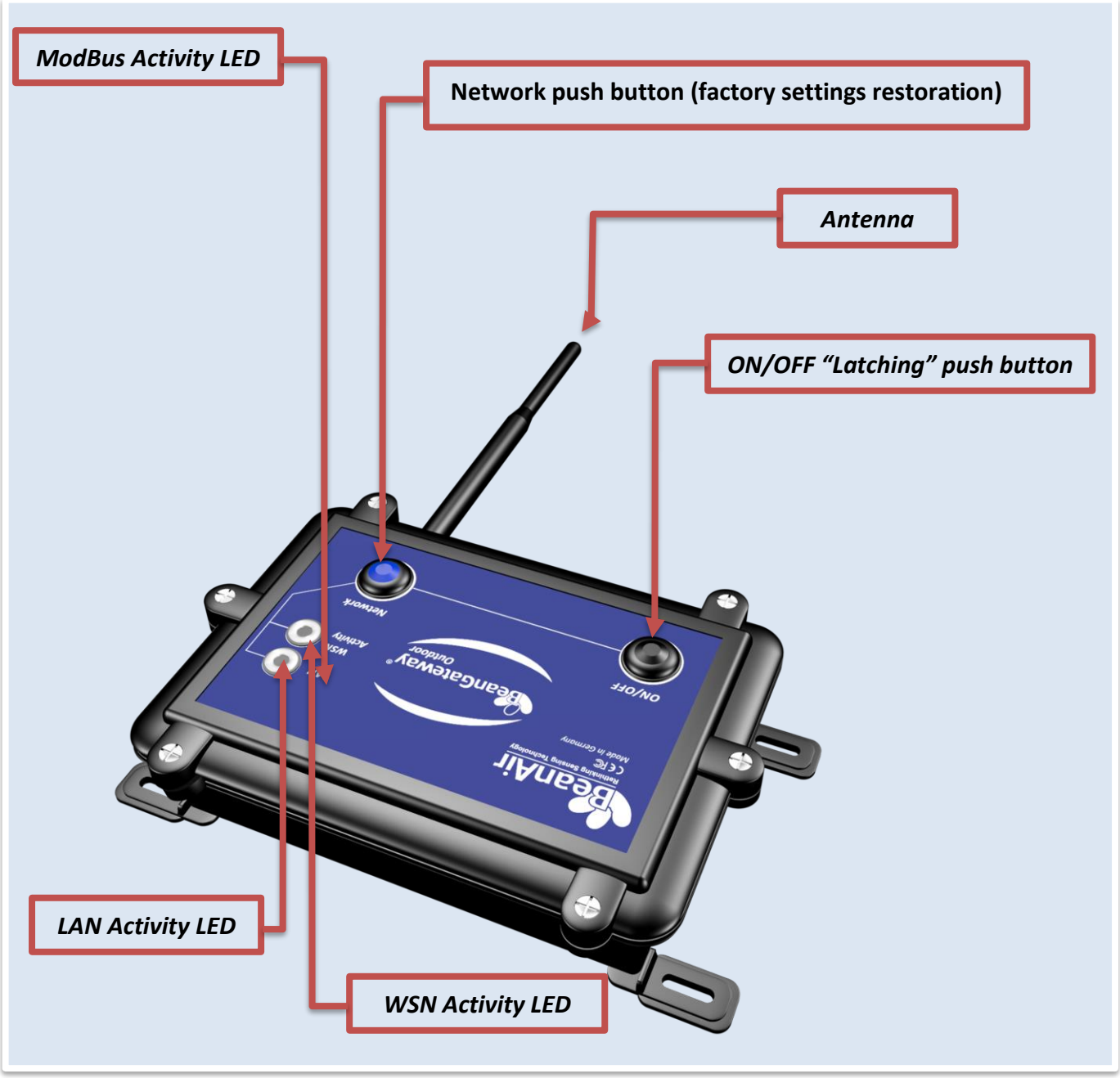
Front View



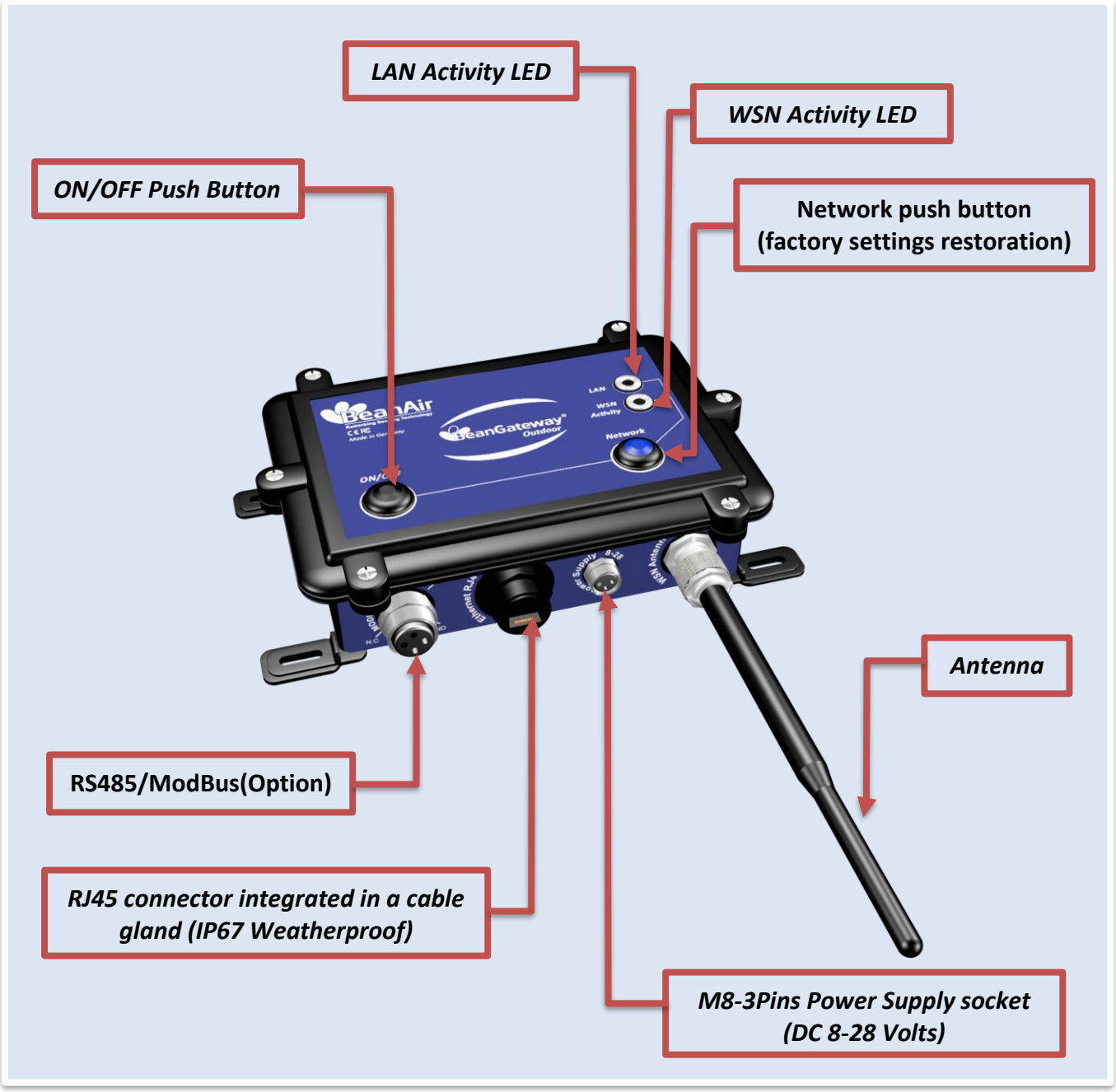
Rear View

Watch our Video Sensor Network coordinator(BeanGateway indoor) video on youtube

3. Outdoor Version :



Front View


LAN Activity LED
WSN Activity LED
ON/OFF Push Button
Network push button
(factory settings restoration)
Antenna
RS485/ModBus(Option)
RJ45 connector integrated in a cable
gland (IP67 Weatherproof)
M8-3Pins Power Supply socket
(DC 8-28 Volts)
BeanAir
BeanGateway
Outdoor
LAN
WSN
Activity
Network

Rear View

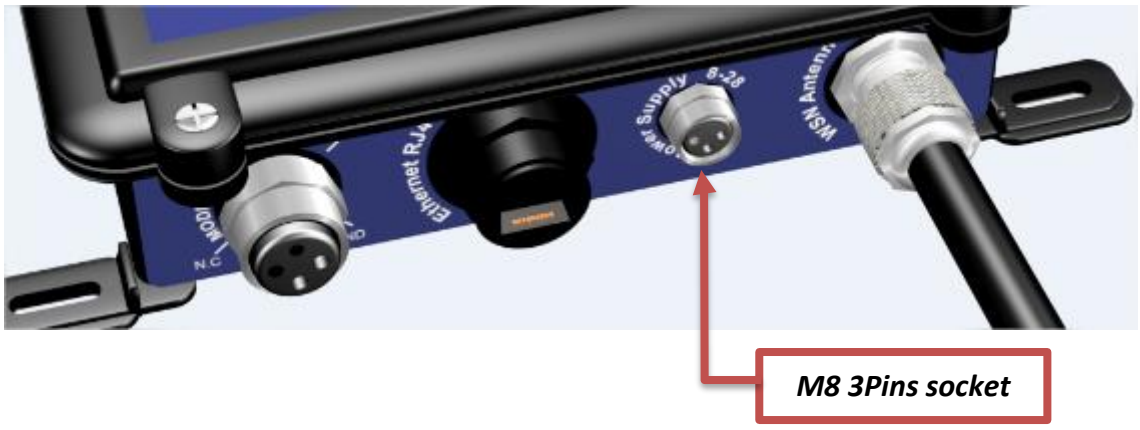
5. POWER SUPPLY

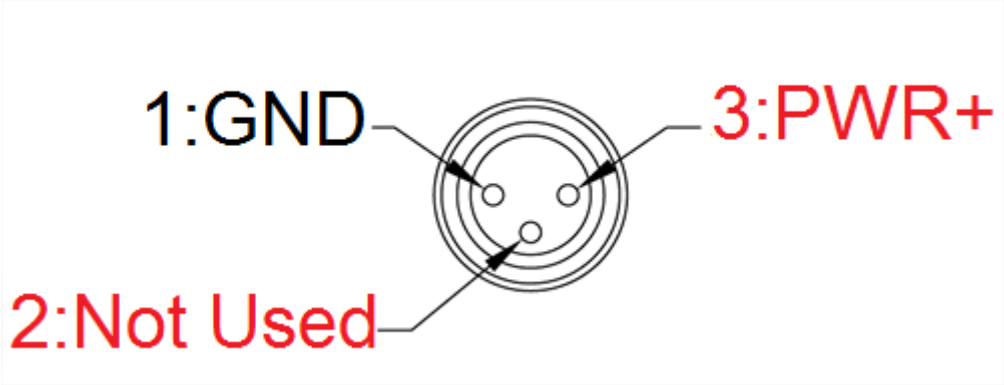
The BeanGateway® is delivered with a 100-240V AC to DC Wall Plug-in power supply of 12V with M8-3 Pins

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

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 2-3meters from the ground.

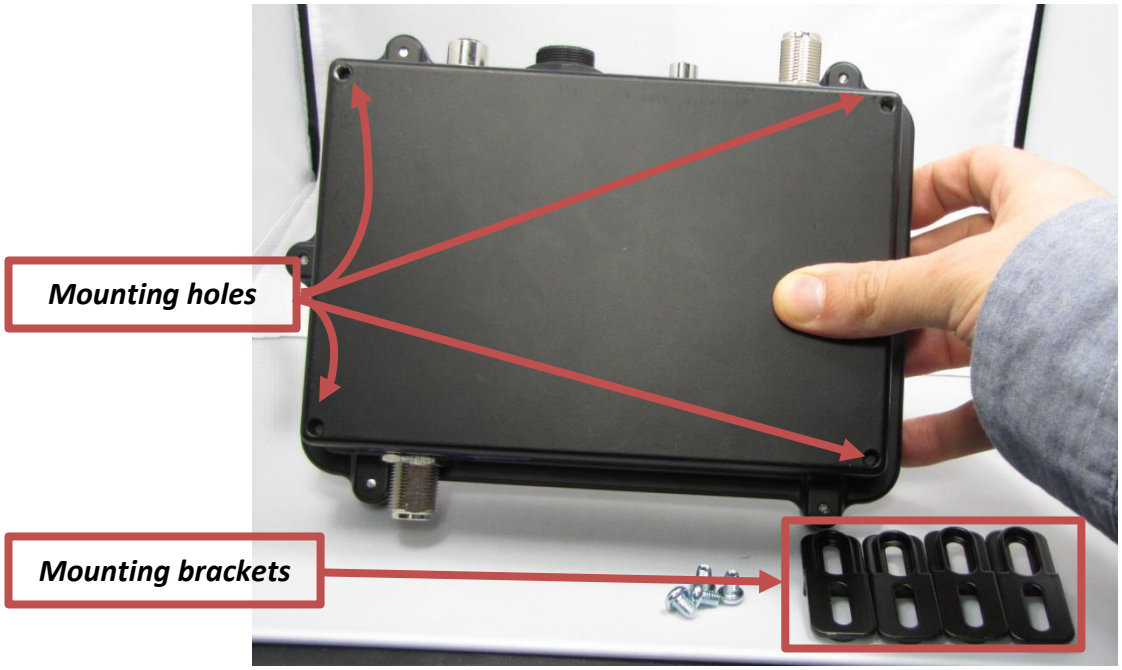
- If your WSN is deployed on the same floor, the RF antenna should be mounted vertically.

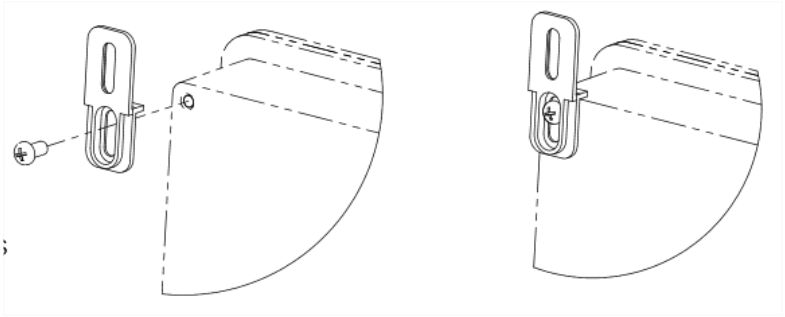
- If your WSN is deployed on a different levels, the RF antenna should be configured horizontally, for a better RF signal quality

Walls and other obstacles will decrease the signal quality

6.1 WALL MOUNTING KIT FOR THE BEANGATEWAY® OUTDOOR

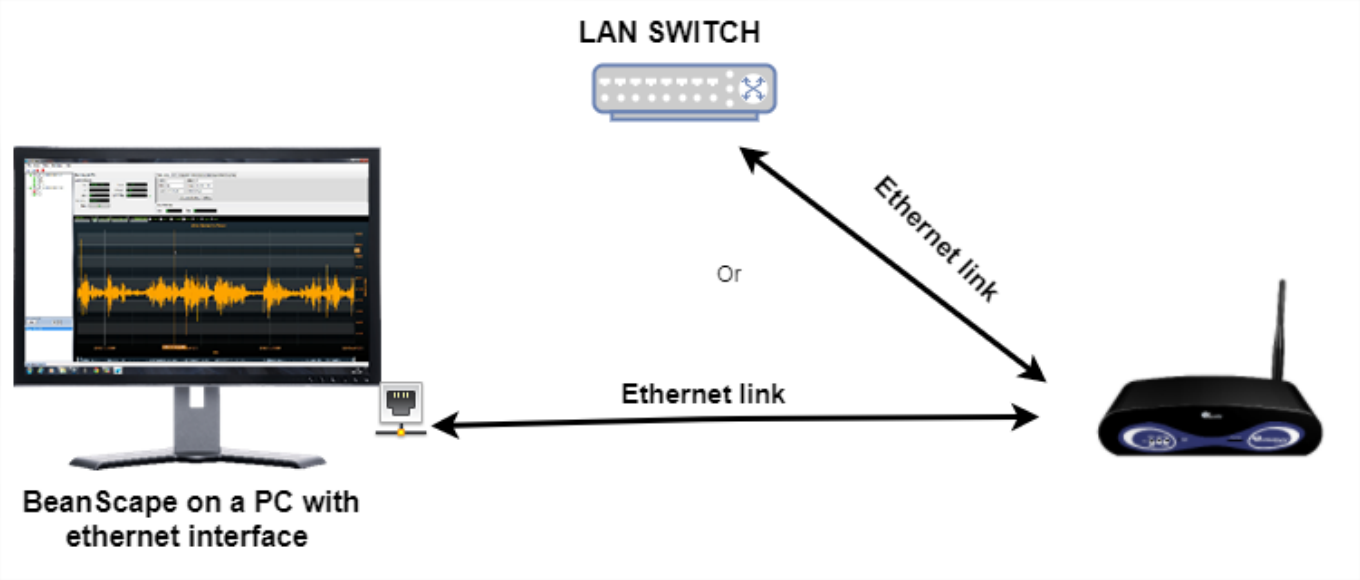
The BeanGateway® outdoor is provided with mounting brackets (4 x brackets and 4 x M5 attaching screws).these brackets enable the BeanGateway® outdoor to be wall or panel mounted without opening the box.





7. START YOUR APPLICATION

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



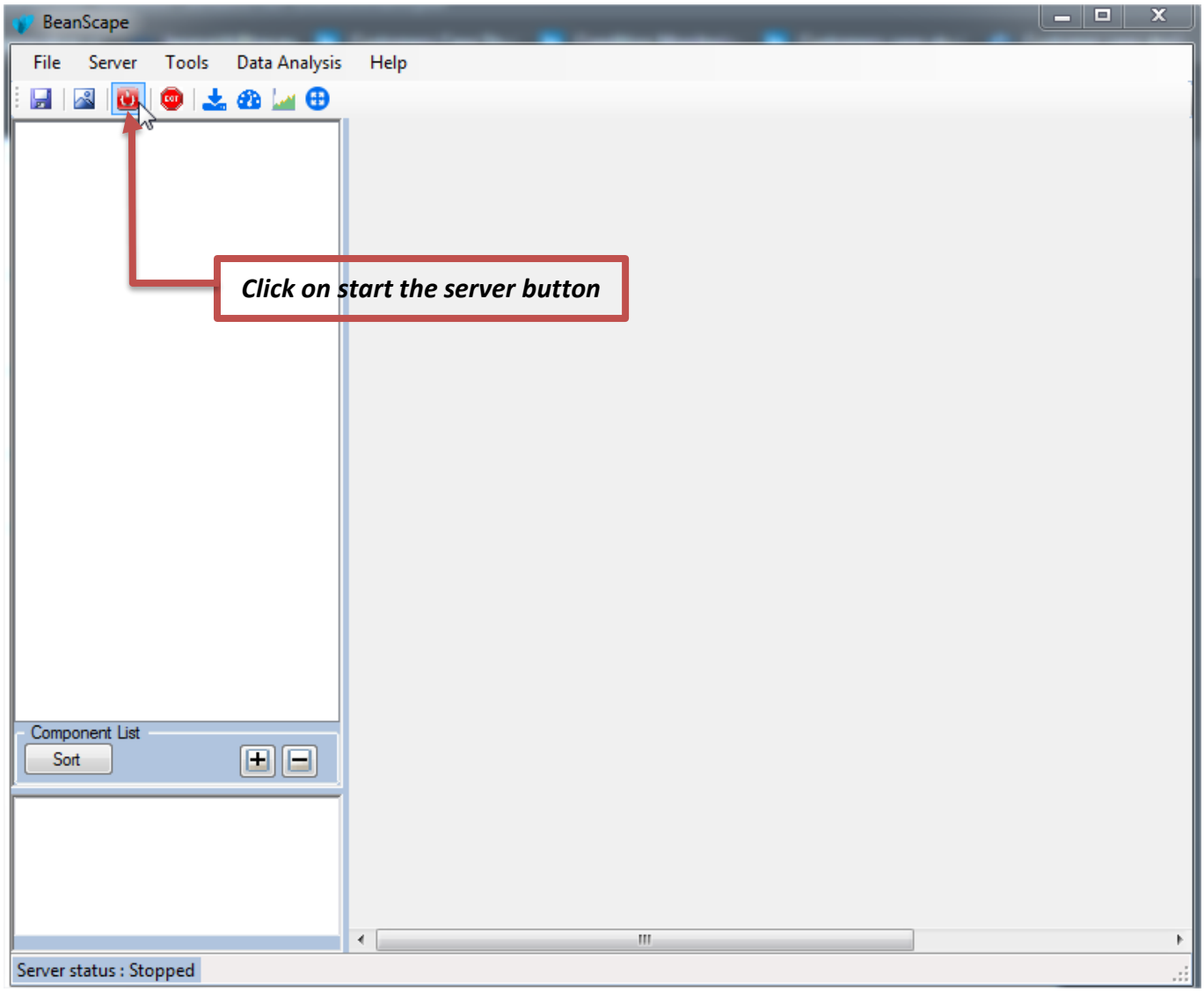
For further information about LAN Network configuration:

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®

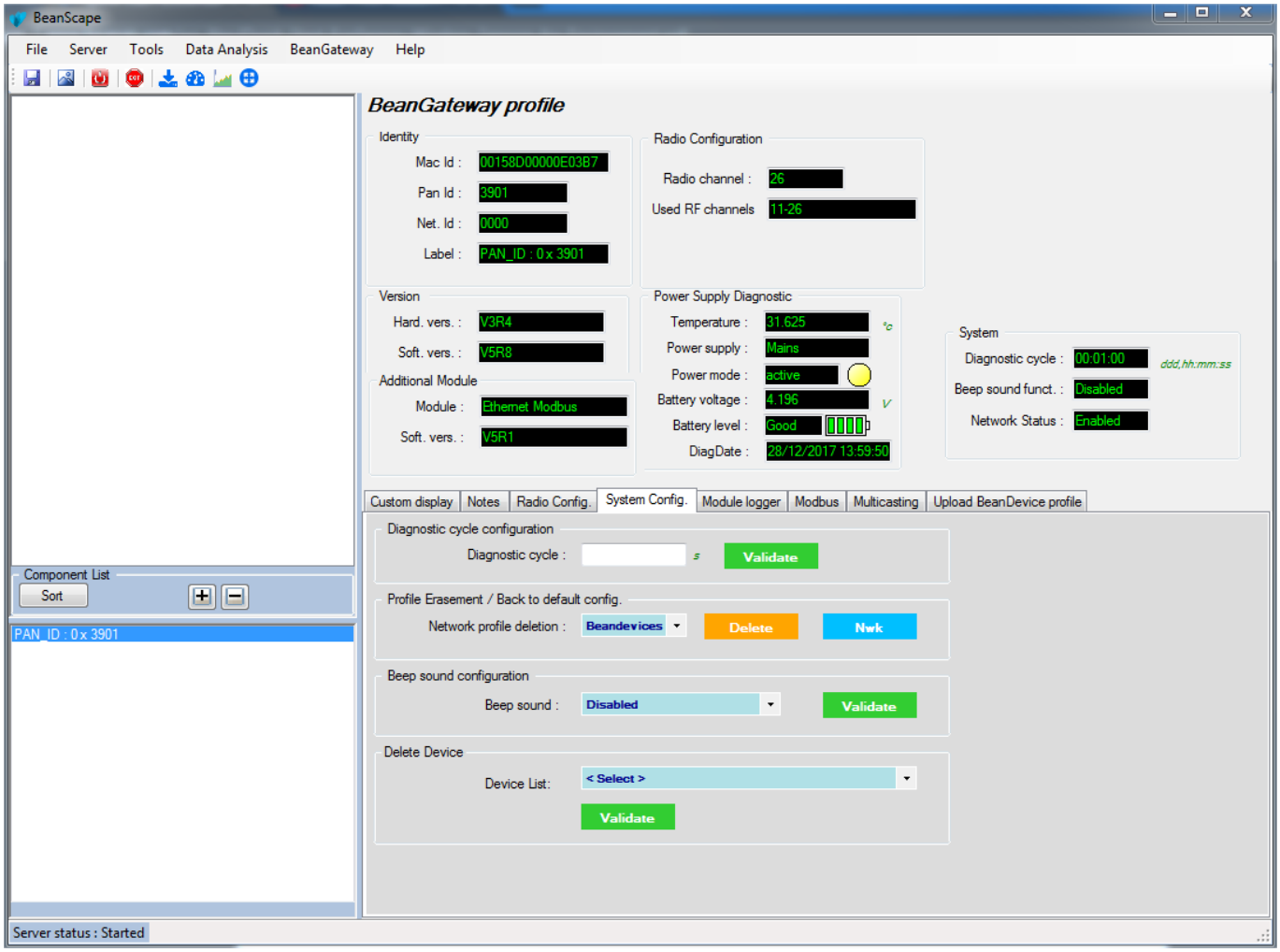
4. Click on “Start” to start the server 



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 .



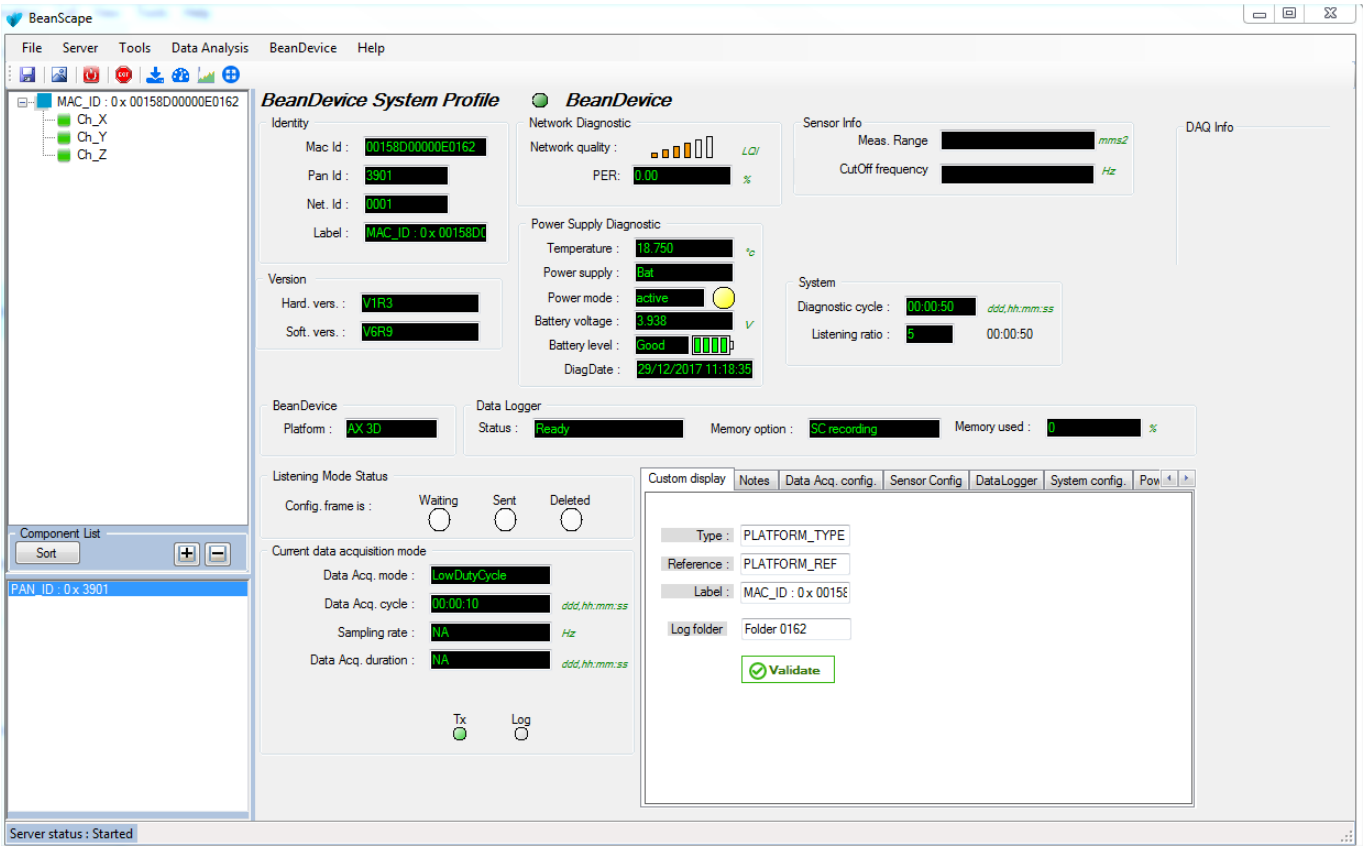
6. Power on the Beandevice: hold the magnet next to ON/OFF non-contact push button for more than 2 seconds.

Watch our Video on Youtube

7. for the first use, perform a Network context deletion operation to restore default parameters. Hold the magnet on the button network ("Network") for more than 2 seconds.

Watch our Video on Youtube

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



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
SmartSensor Wireless sensor user manual	2.4GHz products line	BEANDEVICE® WILOW® user manual
TN_RF_013 – « OPC configuration »	BeanScape® Premium+	The aim of this document is to help deploying the OPC DA and all associated services.
TN_RF_012– « BeanDevice® battery life in streaming mode »	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.

TN_RF_011 – « Coexistence of Beanair WSN at 2.4GHz »	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.
TN_RF_010 – « BeanDevice® Power Management »	2.4GHz products line	This technical note describes the sleeping & active power mode on the BeanDevice®.
TN_RF_009 – « BeanGateway ® management on LAN infrastructure »	BeanGateway ®	BeanGateway ® integration on a LAN infrastructure
TN_RF_008 – "Data acquisition modes available on the BeanDevice®"	2.4GHz products line	Data acquisition modes available on the BeanDevice®
TN_RF_007 – "BeanDevice® DataLogger User Guide "	2.4GHz products line	This document presents the DataLogger feature on the BeanDevice®
TN_RF_006 – "WSN Association process"	2.4GHz products line	Description of the BeanDevice® network association
RF_TN_003- "Aggregation capacity of wireless sensor networks"	2.4GHz products line	Network capacity characterization of Beanair Wireless Sensor Networks
RF_TN_002 V1.0 - Current consumption in active & sleeping mode	2.4GHz products line	Current consumption estimation of the BeanDevice in active and sleeping mode
RF_TN_001 V1.0- Wireless range benchmarking	2.4GHz products line	Wireless range benchmarking of the BeanDevice®

Beanair video link (Youtube)	Related products
Company Presentation	2.4GHz products line
BeanGateway ® - Ethernet Outdoor version introduction	BeanGateway ® - Ethernet Outdoor version introduction
BeanGateway ® – Ethernet Indoor version presentation	BeanGateway ® Ethernet Indoor version

BeanDevice® AN-XX wireless range demonstration	BeanDevice® AN-XX & BeanDevice® AN-XX Extender
BeanDevice® AN-XX presentation	BeanDevice® AN-XX & BeanDevice® AN-XX Extender
BeanDevice® AX-3D presentation	BeanDevice® AX-3D
BeanDevice® HI-INC presentation	BeanDevice® HI-INC
BeanDevice® AX-3DS presentation	BeanDevice® AX-3DS
BeanScape® – WSN supervision software	BeanScape®
BeanGateway ® Ethernet/LAN Configuration, directly connected to the Laptop/PC	BeanGateway ®
Wireless sensors profile deletion from the BeanGateway ® Database	2.4GHz products line

All the videos are available on our YouTube channel