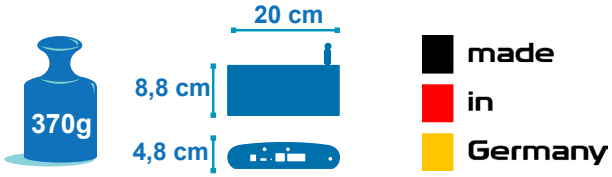
# WIRELESS SENSOR NETWORKS (WSN) COORDINATOR - IEEE 802.15.4 & ETHERNET / INDOOR VERSION


made in Germany

## //APPLICATIONS

### FEATURED VIDEO

BeanGateway® (Indoor Version) main presentation video

### TECHNICAL NOTE

TN-RF-009 – «BeanGateway® management on LAN infrastructure»

### USER MANUAL

BeanGateway® user manual

### MECHANICAL DRAWING

BeanGateway® (Indoor Version)

### APPLICATIONS

- Process Monitoring
- Indoor Application

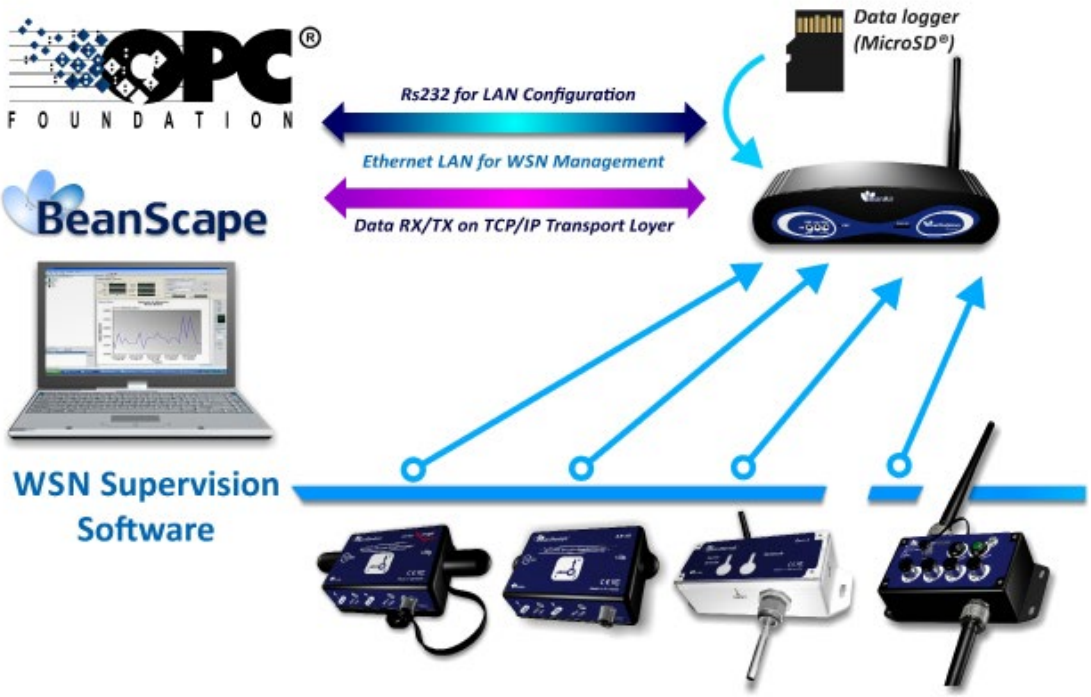
## HOW DOES IT WORK ?


## // MAIN FEATURES

- Wireless technology IEEE 802.15.4
- Ethernet/LAN interface with a server
- Advanced UPS (Uninterruptible power supply) with integrated rechargeable Lithium battery
- Data logger based on Micro-SD® (option)

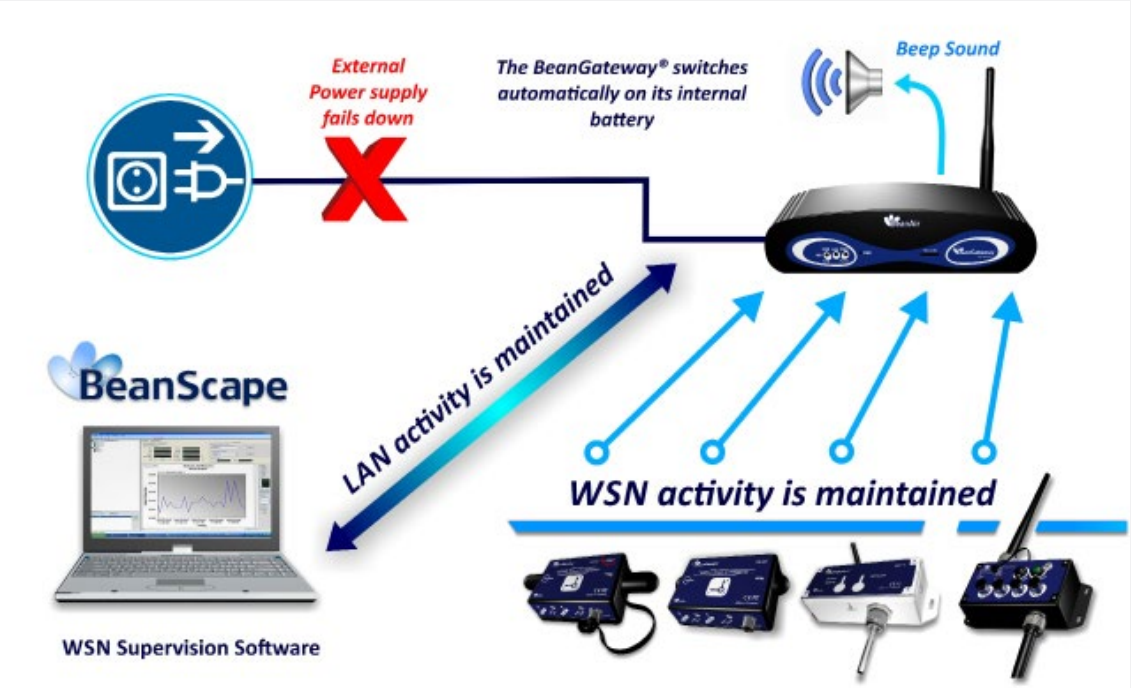
## //A MULTI-PROTOCOL WSN COORDINATOR

The BeanGateway® Ethernet is used to build and manage Beanair® wireless sensor network. It can manage queues for every network element (BeanDevice®). As a gateway, it controls the external access to the network through a highly secured authentication procedure. It supports the conversion 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® Ethernet is also equipped with various communication interfaces with the customers IT infrastructure (RS232, Ethernet - TCP / IP / UDP / DHCP / DNS). With a client application TCP / IP, it can easily connect to a local application server (via the Ethernet).

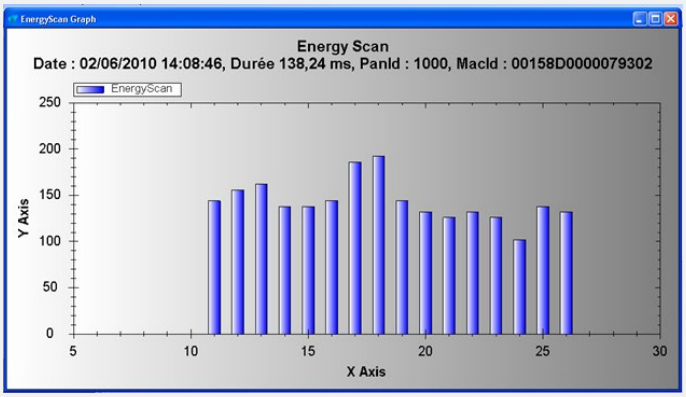



## //ADVANCED UNINTERRUPTIBLE POWER SUPPLY (UPS)

The BeanGateway® Ethernet operates with an external power supply (DC 8-28V). 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 wireless sensor network activity & Ethernet LAN activity are maintained during this time (3h00 to 3h30 approximately). An internal buzzer emits a beep sound every 2 seconds in case the external power supply is disconnected.




## //EMBEDDED WSN DIAGNOSTIC TOOL




The BeanGateway® Ethernet provides a WSN diagnotic tool useful for resolving some common networking troubleshooting :

- Energy Scan for choosing the more appropriate RF Channel
- BeanDevice® PER (Packet Error Rate) calculation
- LQI (Link Quality Indicator) between the BeanGateway® Ethernet and the BeanDevice®

## //AUTONOMOUS AND SMART

The BeanGateway® Ethernet has the capability to backup the WSN mapping & context. Thus the user can operate the WSN without any use of PC or IT server. All the data measurements are stored on an external Memory (Micro-SD® card).

| Product Reference |
|---|
| **BGTW-ETH-IND** |

| Specifications | Wireless Sensor Network Coordinator |
|---|---|
| **Wireless Stack** | IEEE 802.15.4 |
| **WSN Topology** | IEEE 802.15.4 Peer-to-peer/ Star |
| **Antenna Diversity** | Self-managed antenna diversity function |
| **Data rate** | 250 Kbits/s |
| **RF Characteristics** | ISM 2.4GHz – 16 Channels |
| **RF Transmit power** | 18 dBm |
| **Receiver sensitivity** | -95,5 dBm to -101 dBm |
| **Encryption** | AES 128 bits (integrated AES coprocessor) |
| **Maximum Radio Range** | 1 km (L.O.S.) |
| **WSN Diagnostic tool** | · Energy Scan for choosing a suitable RF Channel<br>· BeanDevice® PER (Packet Error Rate) calculation<br>· LQI (Link Quality Indicator) between the BeanGateway® GSM/GPRS and the BeanDevice®<br>· RF channels Blacklist |

| Specifications | Ethernet/LAN Network |
|---|---|
| **Network/Transport Protocol** | Client TCP/IP, UDP, DNS, DHCP |
| **Data Link Protocol** | Ethernet / Fast-Ethernet with auto-uplink (MDI/MDI-X auto) - IEEE 802.3x |
| **IP Addressing** | Dynamic (DHCP) or static |
| **IP configuration** | LAN parameters (DNS, DHCP, Keep Alive…) are configurable from the BeanScape® (RS232 Interface or UDP/Ethernet Interface). |

| Specifications | Physical & Environmental |
|---|---|
| **Dimensions (L x l x h)** | 200 mm x 88 mm x 48 mm |
| **Enclosure/Finish** | · Polycarbonate Enclosure - Protection ULV94/Getex<br>· Provided with wall mounting kit |
| **Weight** | 370g |
| **Operating temperature** | -20 ° C to +75 °C – with Integrated internal temperature sensor (resolution 0.125°C) |
| **Norms** | CE Labeling directive R&TTE (Radio) , ETSI EN 300 328 , ROHS - Directive 2002/95/EC,<br>FCC Part 15 |

| Specifications | Power Supply |
|---|---|
| **Power Consumption** | 250 mA to 300 mA during wireless RX/TX and Ethernet activated |
| **External power supply** | +9V to +28 V , integrated Lithium-Ion battery charger with high-precision battery monitoring |
| **Integrated Lithium-Ion Battery** | Lithium-Ion rechargeable battery 950 mAh (reference BAT0.95DMG)<br>In case of external power supply failure, the BeanGateway® can switch on the internal battery. |

| Specifications | Accessories |
|---|---|
| **2.4 GHz Antennas** | · High gain antenna 5 dBi<br>· V.S.W.R : 1.5 :1<br>· Connector : RPSMA |
| **Ethernet Cable** | · RJ45 Male<br>· Cable length: 2 meters |
| **Wall plug-in power supply** | Wall plug-in, Switchmode power Supply 12V @ 1,25A |

*Product specifications are subject to change without notice. Contact Beanair for latest specifications.*

| Specifications | Option(s) |
|---|---|
| **Embedded File System on Micro-SD®** | All the User data are stored on an external memory (Micro-SD® technology):<br>· Measurement storage for Wireless Sensor Network (network configuration, measurement, alarms notifications …) ;<br>· Maximum storage capacity (2Go)<br>· CSV files management (for exporting data on Excel® and Access®) |

## //BEANGATEWAY REAR VIEW


## //ACCESSORIES

**Omnidirectional antenna 5.5 dbi for indoor use only | Ref:** HG_OMNI_5_5_DBI

. Freq Range 2400 - 2485 MHz
. Ver Beamwidth : 90° Deg
. VSWR : 1.5:1
. Input Power: 10 W
. Connector: SMA Male
. Weight: 26 gr

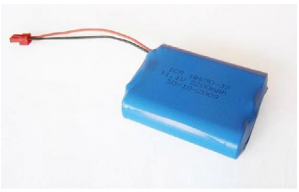
. Gain @ 2400 MHz 5.5 dBi
. Hor Beamwidth : 360° Deg
. Impedance : 50 Ohm
. Operating Temp: -10 +60 Deg C
. Dimensions: 210 x 10D mm

**Omnidirectional antenna 9dBi for indoor use only | Ref:** HG_OMNI_9_DBI

. Freq Range 2400 2485 MHz
. Ver Beamwidth 90°
. VSWR 1.5:1
. Input Power 10 W
. Connector RP-SMA Plug
. Weight 60 gr

. Gain @ 2400 MHz 9 dBi
. Hor Beamwidth 360°
. Impedance 50 Ohm
. Operating Temp -10 +60 Deg C
. Dimensions 380 x 10D mm

**RJ45 2m CAT5 Cable**



**Lithium-ion Rechargeable battery 2,2 Ah with polyswitch protection | Ref:** BAT2.2DMG

## //CONTACT US

### FOR MORE INFORMATIONS :

***sales@beanair.com***
Visit our website : ***www.beanair.com***
Visit our blog : ***www.industrial-wsn.com***

### OUR YOUTUBE CHANNEL :

Watch our featured videos on Youtube

### VISIT OUR WEBSITES

VISIT US !