

WSN (Wireless Sensor Network) Coordinator

IEEE 802.15.4 & Ethernet



Indoor Version



Outdoor Version

Main Features

- Builds and manages a Wireless Sensor Network (WSN) designed by Beanair®
- Link protocol with a server: TCP/IP/UDP/DNS/DHCP
- Wireless protocol stack : **IEEE 802.15.4**
- Fully autonomous and smart coordinator (can operate on batteries & PC-Less)
- WSN mapping & context is stored on embedded flash
- Radio range : 70 m to 2 km (L.O.S.)
- « **Plug & Play** » installation : no knowledge regarding wireless network is necessary
- Embedded files system for logging all the wireless sensors measurement (backup on **MicroSD®**)
- Integrated Lithium-Ion battery charger with high-precision battery monitoring
- Watertight (IP65) & Robust Aluminium Enclosure (Outdoor version only)
- Standard interface with our WSN Scada Monitor **BeanScope®**

Applications

Outdoor Version

- Outdoor isolated sites (solar & wind energy farm, water/gas pipeline, mountains, water power plant ...)
- WSN in Harsh Industrial Environment

Indoor Version

- Process Industry (DIN rail mounting)
- Indoor application (wall mounting)

WSN Coordinator

The **BeanGateway® Ethernet** is used to build and manage Beanair WSN. It can manage queues for every network element (**BeanDevice®** & **BeanMote®**). 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).

Autonomous and embedded smart software

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 measurement are stored on an external Memory (Micro-SD® card)

Wireless Technology

The wireless technology is based on the IEEE 802.15.4 standard which is entirely dedicated to ultra-low power consumption and short range measurement applications.

The user can build a WSN by adding up to 155 **BeanDevice®** nodes. The entire network is managed by our real time WSN Scada monitor, the **BeanScope®**.



Specifications	Main Features
Power Consumption	110 uA in Idle Mode (Telemetry Mode) 250 mA during wireless RX/TX and Ethernet activated
Embedded File System	All the User data are stored on an external memory (Micro-SD technology): <ul style="list-style-type: none"> • Measurement storage for Wireless Sensor Network (network configuration, measurement, alarms notifications ...); • Maximum storage capacity (2Go) • CSV files management (for exporting data on Excel® and Access®)
External power supply	+9v to +28 v & integrated Lithium-Ion battery charger with high-precision battery monitoring
Power-supply bloc	Wall plug-in, Switchmode power Supply 12V @ 1,25A
Operating temperature	-20 ° C to +75 °C – with Integrated internal temperature sensor (resolution 0.125°C)
Enclosure	Indoor Version: Polycarbonate Enclosure - Protection ULV94/Getex. Provided with a DIN rail/wall mounting kit—Weight : 500g, Dimensions (L x l x h) : 225 mm x 85 mm x 68mm : Outdoor Version: Watertight (IP65) & Robust Aluminium Enclosure (5mm thickness), Weight: 900g, Dimensions (L x l x h) : 200 mm x140 mm x 43 mm
Norms	CE Labeling directive R&TTE (Radio) , ETSI EN 300 328 , ROHS - Directive 2002/95/EC, FCC Part 15 Japan ARIB STD-T66
Battery	Lithium-Ion rechargeable battery 1300 mAh (reference BAT1.3DMG) In case of external power supply failure, the BeanGateway can switch on the internal battery.

Specifications	Wireless Sensor Network Coordinator	
Wireless Stack	IEEE 802.15.4	
WSN Topology	IEEE 802.15.4	Peer-to-peer/ Star
Cryptographie	AES 128 bits (integrated AES coprocessor)	
Data rate	256 Kbits/s	
RF Characteristics	ISM 2.4GHz – 16 Channels	
RF Transmit power	Configurable transmit power: +0,5 dBm to +20 dBm (limited to 12 dBm in indoor).	
Receiver sensitivity	-95,5 dBm to -101 dBm	
Encryption	AES 128 bits (integrated AES coprocessor)	
Radio Range	70 m to 1 km (L.O.S.)	
Antenna	High gain antenna 5,5 dBi V.S.W.R : 1.5 :1 Connector : RPSMA (Indoor) or N-Type (Outdoor)	

Specifications	Ethernet/LAN Network
Network/Transport Protocol	Ethernet : 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 Interface (through RS232)	Offers the possibility to configure DNS & DHCP Network parameters through <i>BeanScope</i> ®

