

WIRELESS IOT SENSORS COORDINATOR 4G CONNECTIVITY

MADE IN GERMANY

2year  
Warranty

001A-08148

CE FC

PRODUCT VIDEO



USER GUIDE



QUICK START



MECHANICAL DRAWING



STEP FILE



MAIN FEATURES

- Wireless IOT Sensors Coordinator
- Ultra-Power and license-free 2.4Ghz radio technology (IEEE 802.15.4E)
- Remote access to monitoring site thanks to the integrated 3G/4G/LTE Router (4G Connectivity CAT4 up to 150 Mbps)
- Configuration and supervision of Beanair Wireless IOT Sensors
- Advanced Wireless IOT Sensors diagnostic tool
- Data Organization from the various Wireless IOT Sensors
- Data exchange with the BeanScope® (Wireless IOT Sensors supervision software)
- Robust, Waterproof (IP67) and High Gain antennas:
  - 3G/4G/LTE antenna (2x2 MIMO) with 12dBi of Gain
  - 2.4GHz antenna with 9dBi of Gain
- Advanced UPS (Uninterruptible power supply) with lead-acid battery (capacity: 12Ah)
- Ruggedized and watertight (IP66 | Nema 4) steel casing (LxWxh: 30x25x20cm, 10 Kg) with anti-theft protection
- Industrial operating temperature (-15°C to +50°C)
- **Two power-supply versions** : Mains power supply and solar panel (50W)
- **Auto-Reboot** : Periodic reboot at a specified time interval

APPLICATIONS



STRUCTURAL HEALTH MONITORING



GROUND VIBRATION MONITORING



LAND SURVEYING

## OVERVIEW

The **BeanGateway® 2.4GHz 4G** is a ruggedized outdoor wireless coordinator (IP66) designed for **Structural Health Monitoring**, Ground vibration monitoring and Land Surveying applications.

Integrating both 2.4GHz and 3G/4G/LTE wireless protocols, it is used build and manage Beanair® Wireless IOT Sensors.

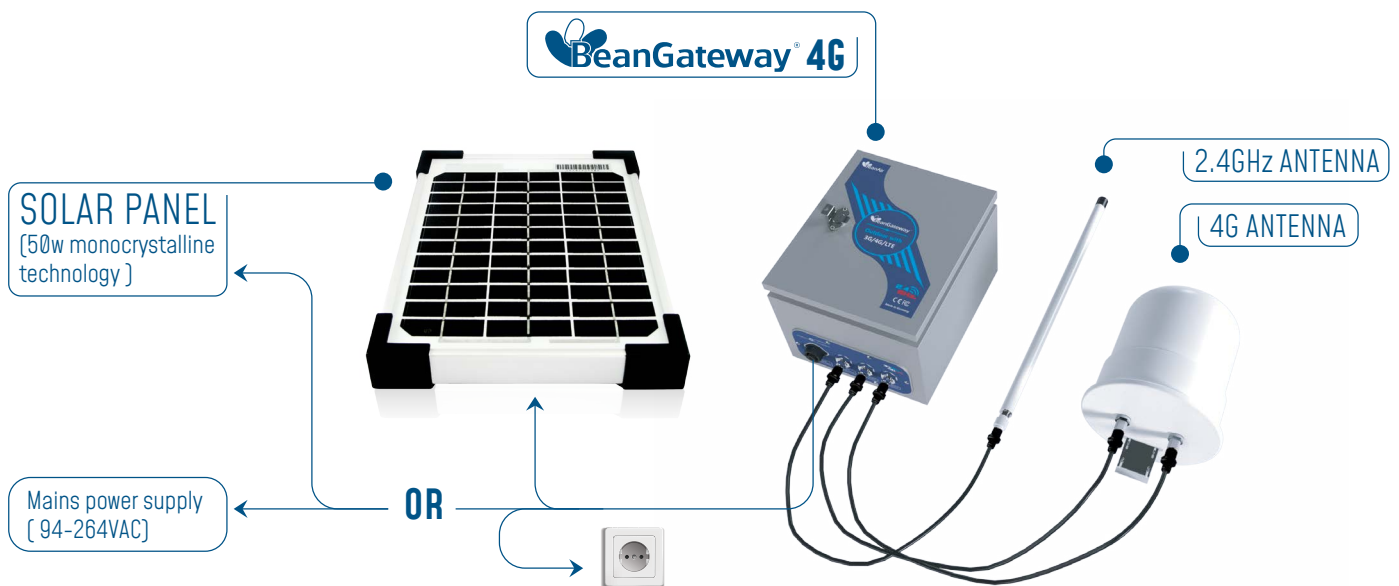
The **BeanGateway® 2.4GHz 4G** comes with two power supply versions:

- Solar Panel (50W Monocrystalline Technology)
- Mains power supply (94-264VAC)

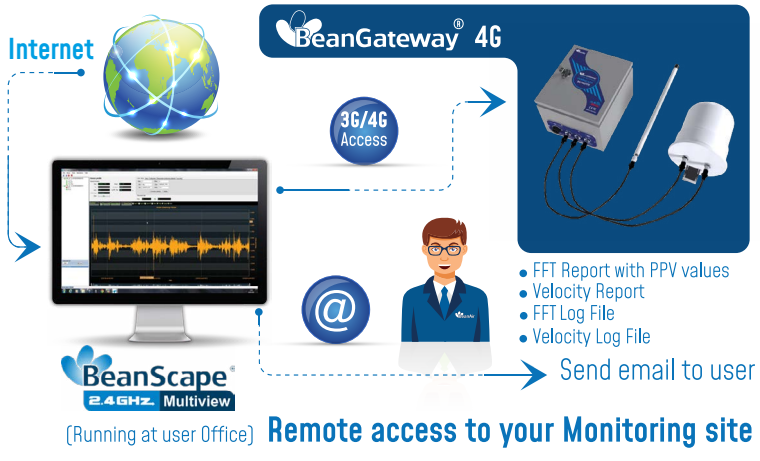
An integrated rechargeable Lead-acid battery with a capacity of 12Ah is used as an UPS battery (uninterruptible power supply). It provides instantaneous protection from external power supply interruption; the wireless sensor networks & 3G/4G/LTE activities are maintained during this time.

Users looking for a safe deployment on a remote site will appreciate our powerful Wireless IOT Sensors mapping management:

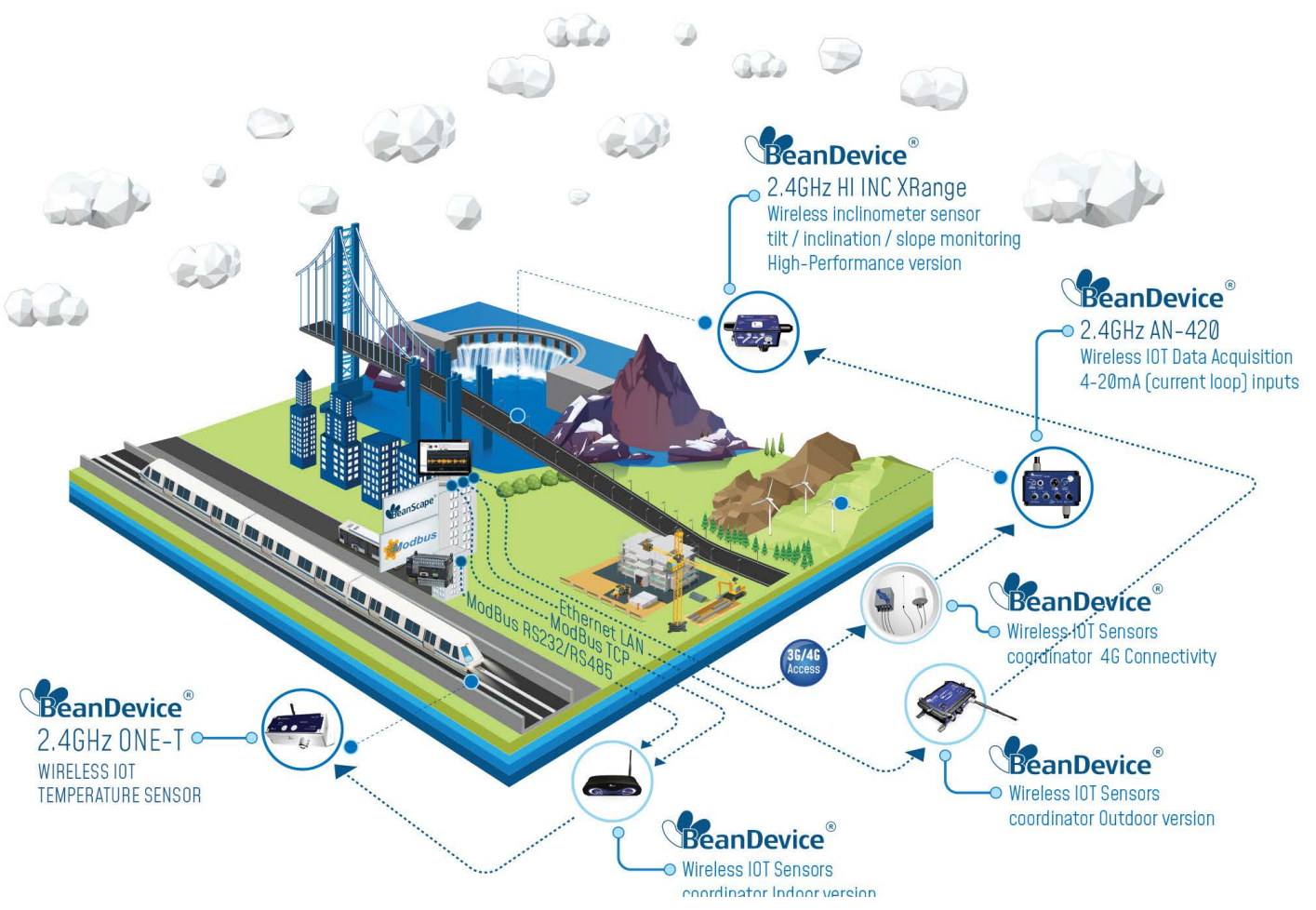
- Automatic backup on both flash memory and **BeanScape® 2.4GHz** Wireless IOT Sensors supervision software.
- Export/Import function on others **BeanGateway® 2.4GHz**

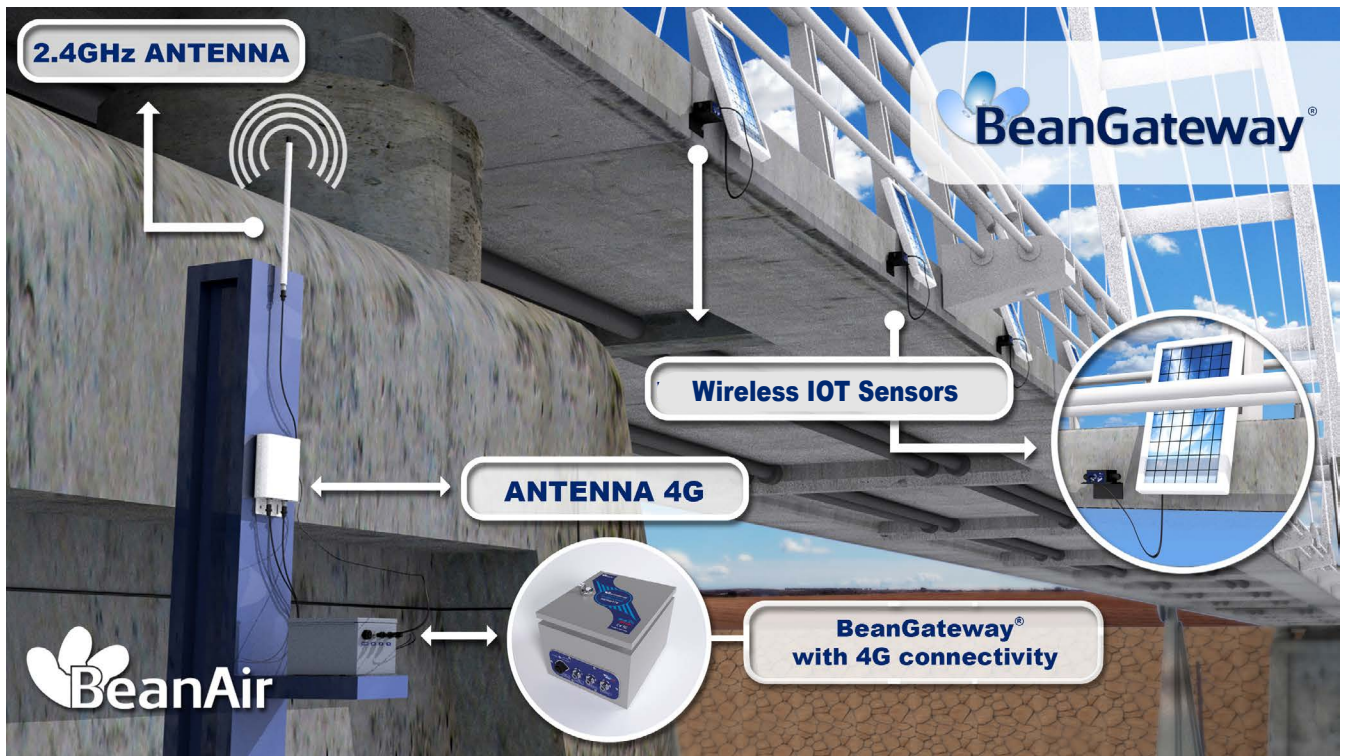


**REMOTE ACCESS TO YOUR MONITORING SITE**



**Wireless IOT Sensors**





**TECHNICAL SPECIFICATIONS**

**PRODUCT REFERENCE**

BGTW-2.4GHz-4G-PWR-OUT  
PWR - External Power supply

BeanGateway Outdoor with 3G/4G/LTE Connectivity  
SOLAR - Power Supplied from external solar panel  
MPWR - Mains power supply with UPS Battery  
(Input: 90 to 264VAC)

Examples

BGTW-4G-SOLAR-OUT , BeanGateway Outdoor with 3G/4G/LTE connectivity, Power supplied from solar panel  
BGTW-4G-MPWR-OUT, BeanGateway Outdoor with 3G/4G/LTE connectivity, Mains Power Supply

**WIRELESS SENSOR NETWORK COORDINATOR**

Wireless Technology	Ultra-Power and license-free 2.4Ghz radio technology (IEEE 802.15.4E)
WSN Topology	Peer-to-peer/ Star
Raw data rate	250 Kbits/s
RF Characteristics	ISM 2.4GHz – 16 Channels
RF Transmit power	+18 dBm
Receiver sensitivity	-104 dBm
Maximum Radio Range	1 km (Line of Sight) , 70-150m (Non Line of Sight)
WSN Diagnostic tool	<ul style="list-style-type: none"> <li>• Energy Scan for choosing a suitable RF Channel</li> <li>• BeanDevice® PER (Packet Error Rate) calculation</li> <li>• LQI (Link Quality Indicator) between the BeanGateway® and the BeanDevice®</li> <li>• RF channels Blacklist</li> </ul>

**TECHNICAL SPECIFICATIONS**

**3G/4G CONNECTIVITY SPECIFICATIONS**

LTE	<ul style="list-style-type: none"> <li>- LTE FDD: B1/B3/B5/B7/B8/B20</li> <li>- LTE TDD: B38/B40/B41</li> <li>- LTE CAT4 up to 70 Mbps DL</li> <li>- LTE CAT4 up to 50 Mbps UL</li> <li>- Class 3 (23dBm±2dB) for LTE FDD</li> <li>- Class 3 (23dBm±2dB) for LTE TDD</li> </ul>
UMTS/DC-HSPA+	<ul style="list-style-type: none"> <li>- 850/900/2100 MHz</li> <li>- DC-HSPA+ mode: Max 42Mbps (DL) Max 5.76Mbps (UL)</li> <li>- UMTS mode: 384 kbps DL, 384 kbps UL</li> <li>- TD-SCDMA: Max 4.2Mbps (DL) Max 2.2Mbps (UL)</li> <li>- Power Class 3 (24dBm +1/-3dB) for UMTS bands</li> <li>- Class 3 (24dBm+1/-3dB) for TD-SCDMA</li> </ul>
GSM/GPRS/EDGE	<ul style="list-style-type: none"> <li>- 900/1800 Mhz</li> <li>- GPRS/EDGE Multi-slot Class 12</li> <li>- Power Class E2 (27dBm ±3dB) for GSM 900</li> <li>- Power Class E2 (26dBm +3/-4dB) for DCS 1800</li> <li>- Power Class 4 (33dBm ±2dB) for GSM 900</li> <li>- Power Class 1 (30dBm ±2dB) for DCS 1800</li> </ul>
Omnidirectionnal 4G Antenna	<p>Omnidirectional 4G Antenna (2x2 MIMO)            Weather-resistant and UV-resistant plastic / PVC enclosure            VSWR &lt; 1.8            Impedance: 50 Ohm            Beamwidth: 360° Horizontal - 20° Vertical            Gain :            8dBi @ 800 MHz            12dBi @ 1800MHz            12dBi @ 2600MHz            Frequency:            791-862 MHz (2G, 4G)            1700 - 2100 MHz (3G, 4G)            2500 - 2700 (4G)            Connectors: 2 x N female            Mounting Kit: U-clamp for 30-50mm diameter handles</p>

**TECHNICAL SPECIFICATIONS**

**PHYSICAL & ENVIRONMENTAL**

Casing	Steel enclosure with padlock adapter, Light gray color
Dimensions	30 cm x 25 cm x 20 cm
IP/NEMA Rating	IP66   Nema 6
Weight	10 kg
Mounting Process	Screw mounting
Operating Temperature	Battery Charging: -15°C to 50°C Battery Discharging: -20°C to 60°C
Norms & Radio Certifications	. CE Labelling Directive R&TTE (Radio) . ETSI EN 300 328 (Europe) . FCC Part 15.247 (North America) . IC RS210 . ROHS - Directive 2002/95/EC

**SOLAR PANEL POWER SUPPLY WITH UPS BATTERY (REF: BGTW-4G-SOLAR-OUT)**

Battery	Valve Regulated Lead-Acid (VRLA) Capacity 12Ah
Solar panel technology	Monocrystalline 50W, anodized aluminum frame. Surface protection with ESG solarglass. Dimensions (LxWxH): 650mm x 505mm x 30mm
Solar charging controller	Maximum Input current: 6A Power consumption < 2.5mA , Led switch on Nominal voltage :12VDC Led displays: battery full and charging
Socket for Solar Panel Connection	Industrial and Waterproof Socket Circular Socket CA 3 GD - Hirschmann Rated Voltage: 400VA Rated Current: 16A

## TECHNICAL SPECIFICATIONS

### AC POWER SUPPLY WITH UPS BATTERY (REF: BGTW-4G-MPWR-OUT ONLY)

Battery	Valve Regulated Lead-Acid (VRLA) Capacity 12Ah
Battery protection	Overvoltage/Overload/Short circuit/Battery low/Battery reverse polarity
AC Voltage Range (Input)	90 to 264VAC
AC Range (Input)	0.75A/115VAC 0.5A/230VAC
Frequency Range	47 ~ 63Hz
Inrush current	Cold Start 20A/115VAC, 40A/230VAC
Safety and EMC	Safety standards: UL60950-1, TUV EN60950-1 approved Withstand Voltage: I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC Isolation Resistance TANCE: I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C/ 70% RH EMC emission: Compliance to EN55032 (CISPR32) Class B, EN61000-3-2,-3 EMC immunity: Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A
Socket for AC power supply	Industrial and Waterproof Socket Circular Socket CA 3 GD - Hirschmann Rated Voltage: 400VA Rated Current:16A

### INCLUDED ACCESSORIES

4G Antenna	1 x 4G Antenna 12dBi - with pole mounting Ref: <a href="#">WL-4G-HG-ANT-12DBI</a>
WIFI Antenna	1 x High Gain Wifi Antenna 9dBi - with pole mounting kit Ref: <a href="#">HG-OMNI-OUT-7DBI</a>
External cable for LTE Antenna	1 x N-Type cable, Cable Length: 2 meter Ref: <a href="#">CBL-ANT-2M</a>
External cable for LTE Antenna	2 x N-Type cable, Cable Length: 2 meter Ref: <a href="#">CBL-ANT-2M</a>
Waterproof Plug for AC Power Input (Ref: BGTW-4G-MPWR-OUT only)	1 x Circular Connector Hirschmann CA 3LS, Waterproof IP67 Ref: <a href="#">WL-CA3LS-PLUG</a>



BEANGATEWAY 2.4GHZ OUTDOOR WITH 3G/4G/LTE OVERVIEW

BeanGateway 2.4GHz Outdoor with 3G/4G/LTE Overview

Mains power supply (94-264 VAC) or solar panel (50W Monocrystalline technology)

Wifi 2.4GHz Antenna

4G LTE MIMO Antenna



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