BeanAir
WIRELESS IIOT SENSORS

BeanGateway® 2.4GHz 3G/4G/LTE

Wireless IIOT Sensors Coordinator 4G Connectivity

PRODUCT VIDEO

USER GUIDE

QUICK START

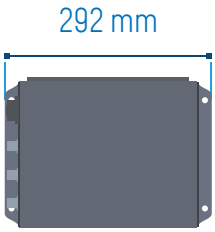
MECHANICAL DRAWING

STEP FILE

2year Warranty

MADE IN GERMANY

CE FC R 207-132085



MAIN FEATURES

- Wireless IIOT 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 IIOT Sensors
- Advanced Wireless IIOT Sensors diagnostic tool
- Data Organization from the various Wireless IIOT Sensors
- Data exchange with the BeanScape® (Wireless IIOT 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: 65x59x35mm, 9 Kg) with anti-thief protection
- Industrial operating temperature (-15°C to +50°C)
- Two power-supply versions: Mains power supply and solar panel (50W)

BeanGateway® 2.4GHz 3G/4G/LTE

APPLICATIONS

Structural Health Monitoring

Ground Vibration Monitoring

Land Surveying

BeanGateway® 2.4GHz 3G/4G/LTE

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 IIOT Sensors.

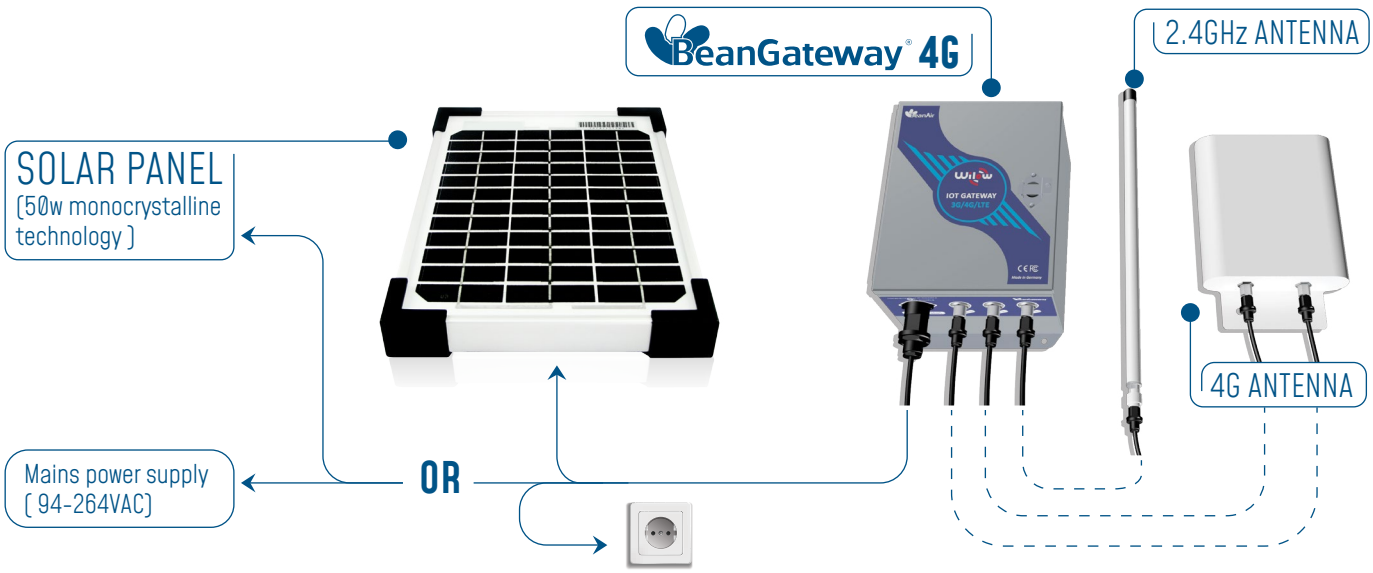
The BeanGateway® 2.4GHz 4G comes with two power supply versions:

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

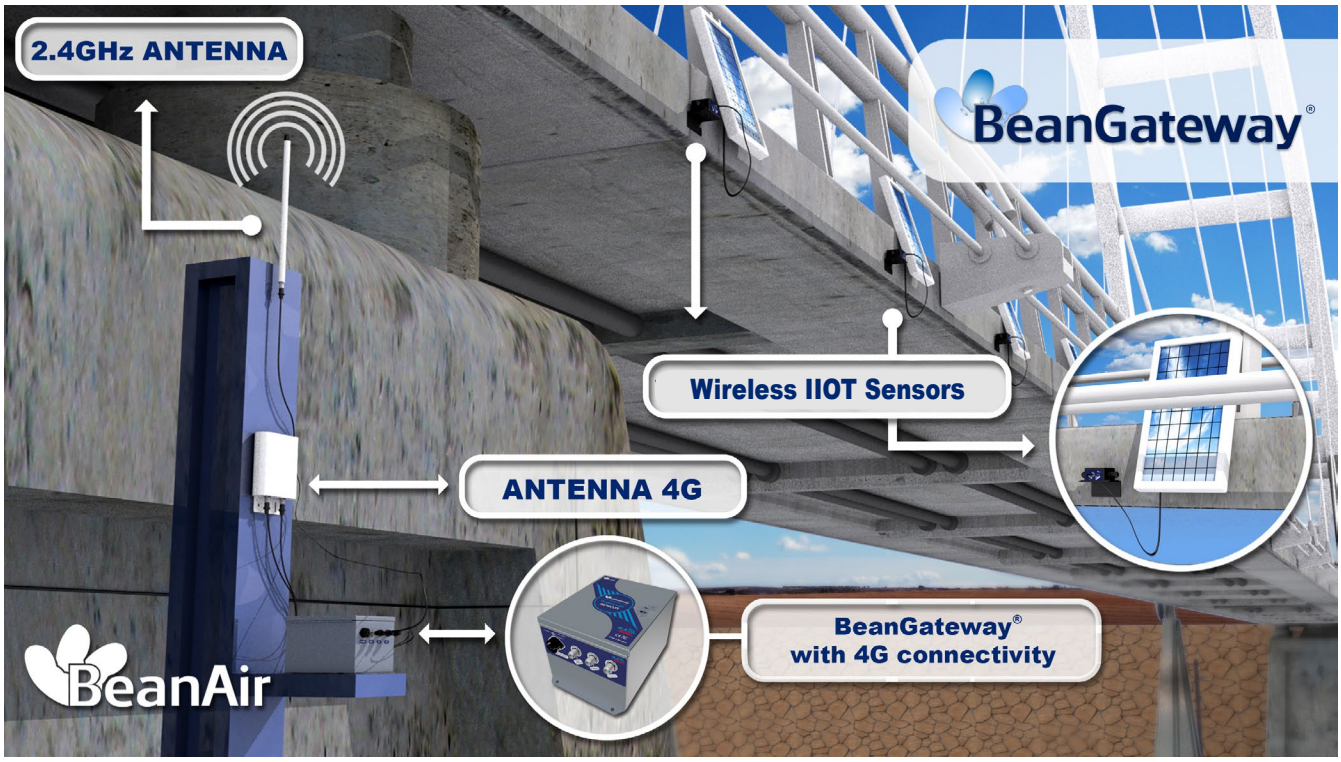
An integrated rechargeable Lead-acid battery with a capacity of 12Ah is used as an UPS battery (uninterruptible power supply). It provides instantaneous protection from external power supply interruption; the wireless sensor networks & 3G/4G/LTE activities are maintained during this time.

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

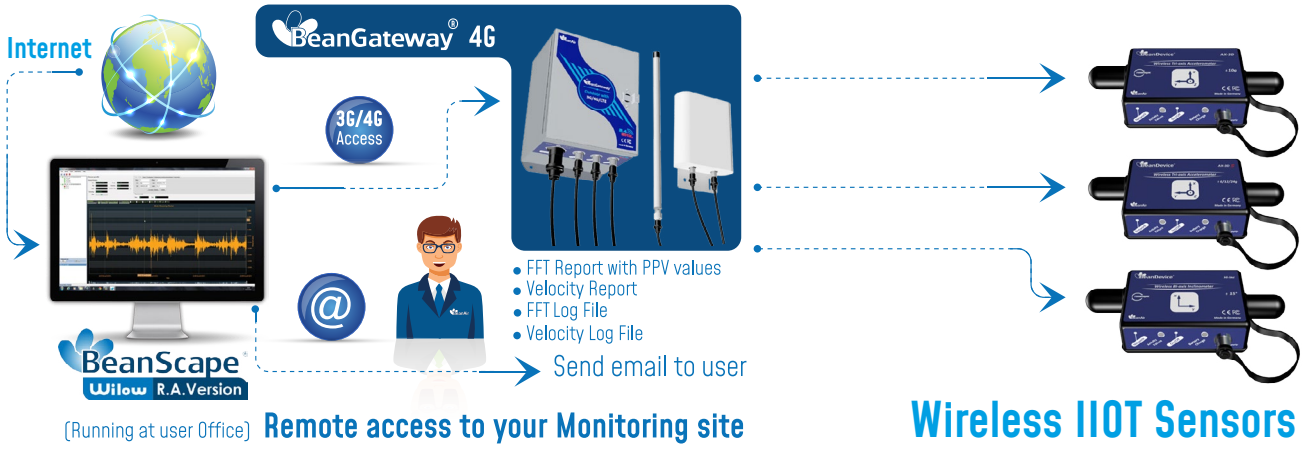
- Automatic backup on both flash memory and BeanScape® 2.4GHz Wireless IIOT Sensors supervision software.
- Export/Import function on others BeanGateway® 2.4GHz



BeanGateway® 2.4GHz 3G/4G/LTE



REMOTE ACCESS TO YOUR MONITORING SITE



TECHNICAL SPECIFICATIONS

PRODUCT REFERENCE	
BGTW-2.4GHz-4G-PWR-OUT	BeanGateway Outdoor with 3G/4G/LTE Connectivity
PWR - External Power supply	SOLAR - Power Supplied from external solar panel MPWR - Mains power supply (Input: 90 to 264VAC)
Examples	BGTW-2.4GHZ-4G-SOLAR-OUT , BeanGateway Outoor with 3G/4G/LTE connectivity, Power supplied from solar panel BGTW-2.4 GHZ-4G-MPWR-OUT, BeanGateway Outoor with 3G/4G/LTE connectivity, Mains Power Supply

WIRELESS IIOT SENSORS 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	· Energy Scan for choosing a suitable RF Channel · BeanDevice® PER (Packet Error Rate) calculation · LQI (Link Quality Indicator) between the BeanGateway® and the BeanDevice® · RF channels Blacklist

TECHNICAL SPECIFICATIONS

3G/4G CONNECTIVITY SPECIFICATIONS	
LTE	- LTE FDD: B1/B3/B5/B7/B8/B20 - LTE TDD: B38/B40/B41 - LTE CAT4 up to 70 Mbps DL - LTE CAT4 up to 50 Mbps UL - Class 3 (23dBm±2dB) for LTE FDD - Class 3 (23dBm±2dB) for LTE TDD
UMTS/DC-HSPA+	- 850/900/2100 MHz - DC-HSPA+ mode: Max 42Mbps (DL) Max 5.76Mbps (UL) - UMTS mode: 384 kbps DL, 384 kbps UL - TD-SCDMA: Max 4.2Mbps (DL) Max 2.2Mbps (UL) - Power Class 3 (24dBm +1/-3dB) for UMTS bands - Class 3 (24dBm+1/-3dB) for TD-SCDMA
GSM/GPRS/EDGE	- 900/1800 Mhz - GPRS/EDGE Multi-slot Class 12 - Power Class E2 (27dBm ±3dB) for GSM 900 - Power Class E2 (26dBm +3/-4dB) for DCS 1800 - Power Class 4 (33dBm ±2dB) for GSM 900 - Power Class 1 (30dBm ±2dB) for DCS 1800
Omnidirectionnal 4G Antenna	Omnidirectional 4G Antenna (2x2 MIMO) Weather-resistant and UV-resistant plastic / PVC enclosure VSWR < 1.8 Impendance: 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

TECHNICAL SPECIFICATIONS

PHYSICAL & ENVIRONMENTAL	
Casing	Steel enclosure with padlock adapter, Light gray color
Dimensions	25.4 cm x 20.3 cm x 15.24 cm
IP|NEMA Rating	IP66 | Nema 6
Weight	9.3 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	Monocristalline 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

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

BeanGateway® 2.4GHz 3G/4G/LTE

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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