BeanAir
WIRELESS IIOT SENSORS

IOT

Wilow® IOT GATEWAY with 4G Connectivity

Wilow

3G
4G LTE

MADE IN GERMANY

2year Warranty

WiFi CERTIFIED ®

R 001-A08148

CE FC

PRODUCT VIDEO

USER GUIDE

QUICK START

MECHANICAL DRAWING

STEP FILE

300 mm
250 mm
200 mm
10Kg

OVERVIEW AND MAIN FEATURES

IOT Gateway with 4G connectivity compatible with Wilow® IOT Sensors.

- 4G Connectivity CAT4 up to 150 Mbps
- 4G Antenna (2x2 MIMO)
- WIFI connectivity (IEEE 802.11 b/g/n) 2.4GHz with WDS (Wireless Distribution System) with WIFI AP/ Station / Bridge available
- High Gain and Waterproof omnidirectional antenna - 9dBi
- UPS Battery (Lead Acid Battery 12Ah)
- Waterproof (IP66 | Nema 6) steel casing (LxWxh: 30x25x20cm, 10 Kg)
- Operating temperature (-15°C to +50°C)

Wilow® IOT GATEWAY with 4G Connectivity

A RUGGEDIZED OUTDOOR IOT GATEWAY FOR YOUR MONITORING SITE

The Wilow® IOT Gateway is a ruggedized outdoor (IP67) IOT gateway designed for Structural Health Monitoring and Land surveying applications.

It integrates both WIFI and 4G wireless protocols, and allows a very easy connection to our Wilow® IOT sensors. Thanks to WDS (Wireless Distribution System) function, user can quickly setup a wireless bridging with other WIFI Bridges/Repeaters.

The combination of MQTT protocol and 4G connectivity enable effortless data transmission from the sensor to the cloud. The BeanScape® Wilow®, a supervision software dedicated to IOT sensors, can display in real-time all the collected data from the monitoring site.

The Wilow® IOT Gateway is power supplied from an external AC Power supply (90 ~ 264VAC) and comes with UPS Battery. The internal Lead-acid battery provides instantaneous protection from external power supply interruptions, the wireless sensors activities are maintained during this time.

WILOW IOT GATEWAY

WIFI ANTENNA

4G ANTENNA

Wilow® IOT GATEWAY with 4G Connectivity

APPLICATIONS

Structural Health Monitoring

Ground Vibration Monitoring

Land Surveying

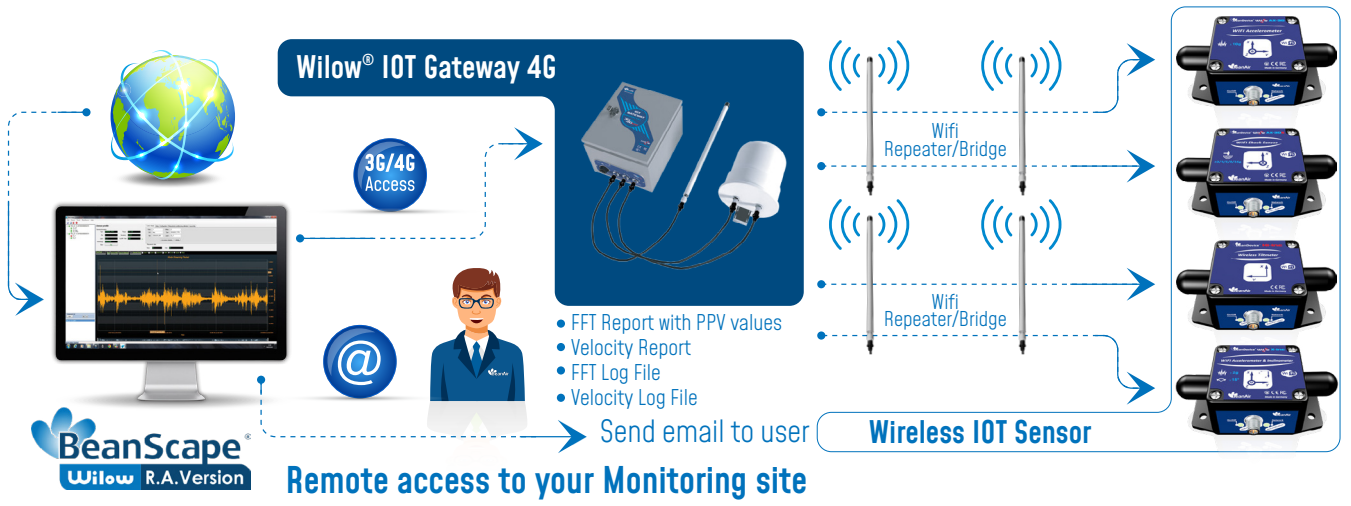## REMOTE ACCESS TO YOUR MONITORING SITE

Ready for IOT (Internet of things) applications, WiLow® devices integrates MQTT (Message Queuing Telemetry Transport) data frame, a lightweight and open-source Internet of Things protocol. User can quickly setup an affordable and scalable IOT application.

Our new Wilow® IOT Gateway comes with 4G connectivity and can be remotely connected to our supervision software BeanScape® WiLow®.

Wilow® IOT Gateway 4G

3G/4G Access

- FFT Report with PPV values
- Velocity Report
- FFT Log File
- Velocity Log File

Send email to user

Remote access to your Monitoring site

BeanScape® Wilow R.A.Version

Wifi Repeater/Bridge

Wifi Repeater/Bridge

Wireless IOT Sensor

- FFT Report with PPV values
- Velocity Report
- FFT Log File
- Velocity Log File

Wireless IOT Sensor

Wifi Repeater/Bridge

Wireless IOT Sensor

Wifi Repeater/Bridge

3G/4G Access

Wilow® IOT Gateway 4G

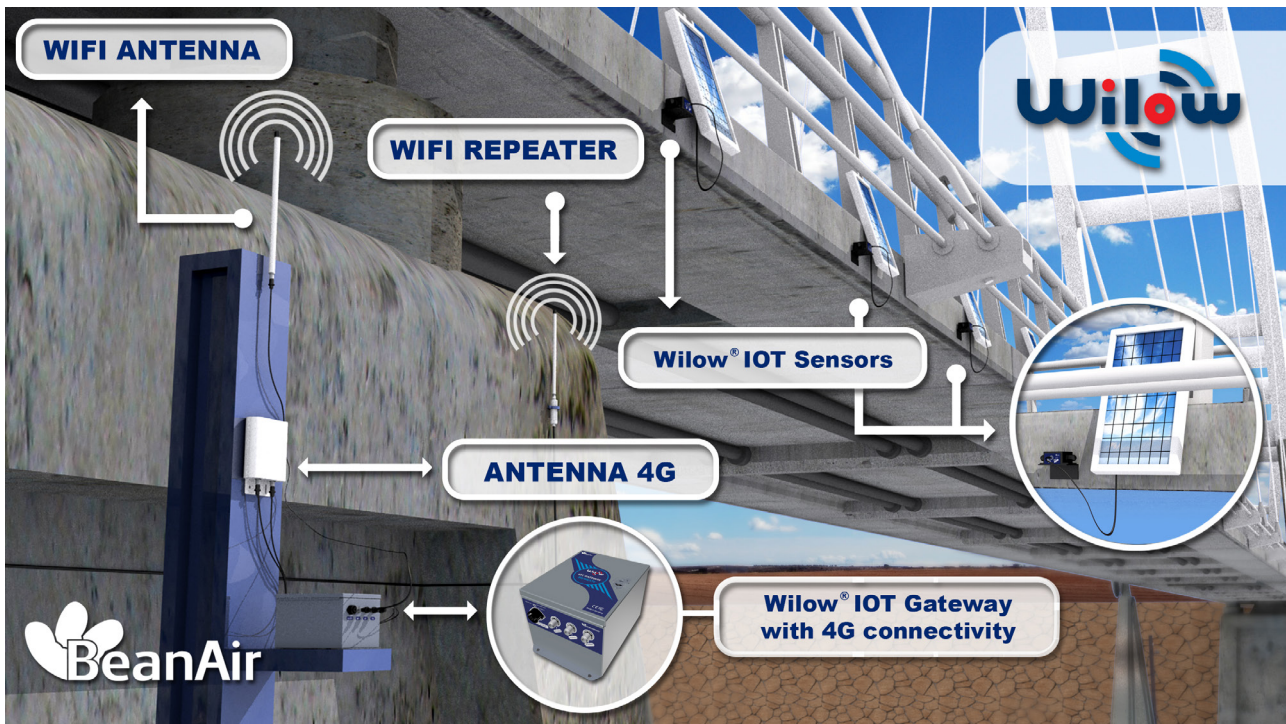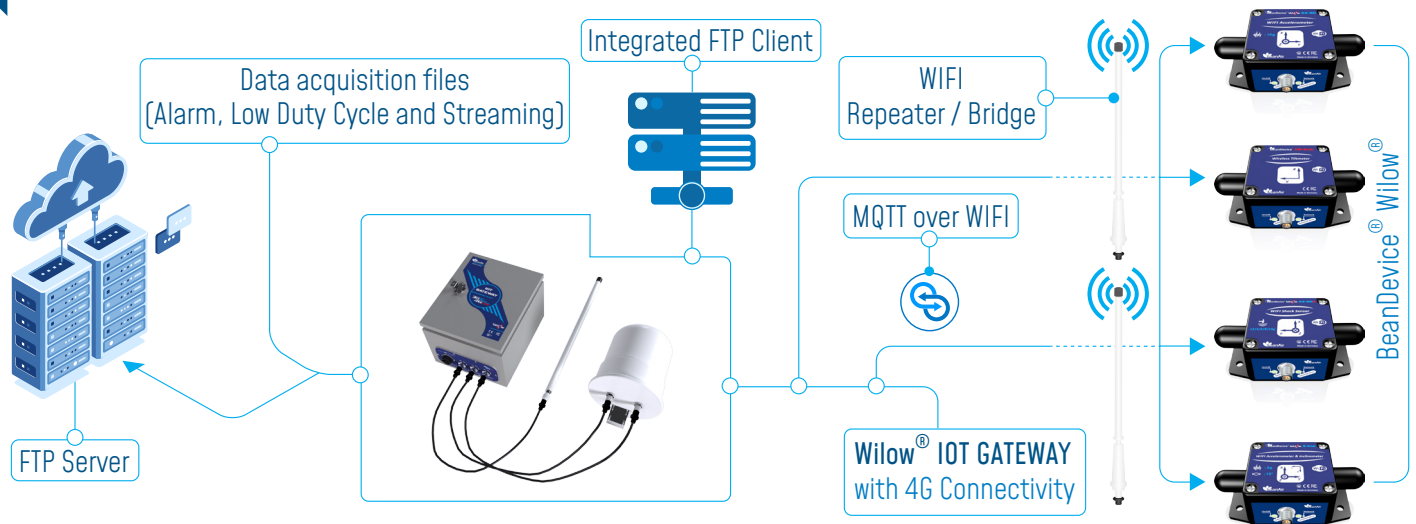**Wilow® IOT Gateway 4G**

EXTEND YOUR WIRELESS RANGE BY DEPLOYING A MULTI-HOP WIRELESS IIOT SENSORS

Need to deploy a wireless sensor network on a 3 or 4 spans bridge ? No worry, you can easily extend your wireless range by deploying a multi-hop wireless network.

Our Wilow® product line is compatible with WIFI Bridge/Repeater, user can connect up to 7 WIFI Repeater/ Bridge with a wireless range up to 2km between each WIFI Repeater/Bridge.

WIFI ANTENNA

WIFI REPEATER

Wilow® IOT Sensors

ANTENNA 4G

Wilow® IOT Gateway with 4G connectivity

AN EMBEDDED MQTT TO FTP CLIENT

Data acquisition files (Alarm, Low Duty Cycle and Streaming)

Integrated FTP Client

WIFI Repeater / Bridge

MQTT over WIFI

FTP Server

Wilow® IOT GATEWAY with 4G Connectivity

BeanDevice® Wilow®

TECHNICAL SPECIFICATIONS

PRODUCT REFERENCE
WILOW-IOT-GATEWAY-4G-REG-NET-PWR
REG : LTE Region Option EU for Europe - US for North America - JP for Japan
NET: Network option for WDS function - wireless distribution system (not available if you choose Solar Power Supply)
PWR – External Power supply
*MPWR : Mains power supply with UPS Battery (Input: 90 to 264VAC) *SOLAR - Solar Power supply (not compatible with WDS function)
Example 1 : WILOW-IOT-GATEWAY-4G-EU-MPWR, LTE Europe Region , Mains Power supply Example 2 : WILOW-IOT-GATEWAY-4G-JP-WDS-MPWPR, LTE Japan Region, WDS function, Mains power supply Example 3 : WILOW-IOT-GATEWAY-4G-US-SOLAR, LTE US Region, Solar Power Supply

WIFI CONNECTIVITY SPECIFICATIONS	
Wireless Protocol	IEEE 802.11 b/g
WIFI confguration	Wireless AP, If WDS option is selected: Station and Bridge with WDS (Wireless Distribution System) As WDS function is extremely energy-greedy, it's not supported on Solar Power Supply version.
Operating frequency	2412-2462 MHz
Sensitivity	-74dBm to -90 dBm
DataRate	6 to 24 Mbps
Output power	If WDS option is selected: 28 dBm If WDS option is not selected: 20dBm
High Gain Ominidrectionnal WIFI Antenna	Frequency range 2400-2500MHz Gain: 9dBi, VSWR < 1.2 Impedance 50 Ohm, Polarization Vertical Beamwidth : Vertical plane 15°, Horizontal plane 360° Dimensions : 540x23 mm, Weight : 0.61 kg Connector : N female, Wind load : (170km/h) 11 N

TECHNICAL SPECIFICATIONS

ENVIRONMENTAL AND MECHANICAL	
Casing	Steel enclosure with padlock adapter, Light gray color
Dimensions	30cm 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) . ARIB STD-T66 Ver. 3.6 (Japan) . IC RS210 . ROHS - Directive 2002/95/EC

3G/4G CONNECTIVITY SPECIFICATIONS	
LTE	• LTE FDD (Europe): B1/B3/B5/B7/B8/B20/B28A • LTE FDD (Japan): B1/B3/B8/B18/B19/B26 • LTE FDD (North America): B2, B4, B12, B13 • 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

TECHNICAL SPECIFICATIONS

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

SOLAR PANEL POWER SUPPLY WITH UPS BATTERY (-SOLAR OPTION IS SELECTED)	
Battery	Valve Regulated Lead-Acid (VRLA) Capacity 12Ah
Solar panel technology	Polycristalline 100W, anodized aluminum frame. Surface protection with ESG solarglass. Dimensions (LxWxH): 540 x 1200 x 35mm
Solar charging controller	Maximum Input current: 10A 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

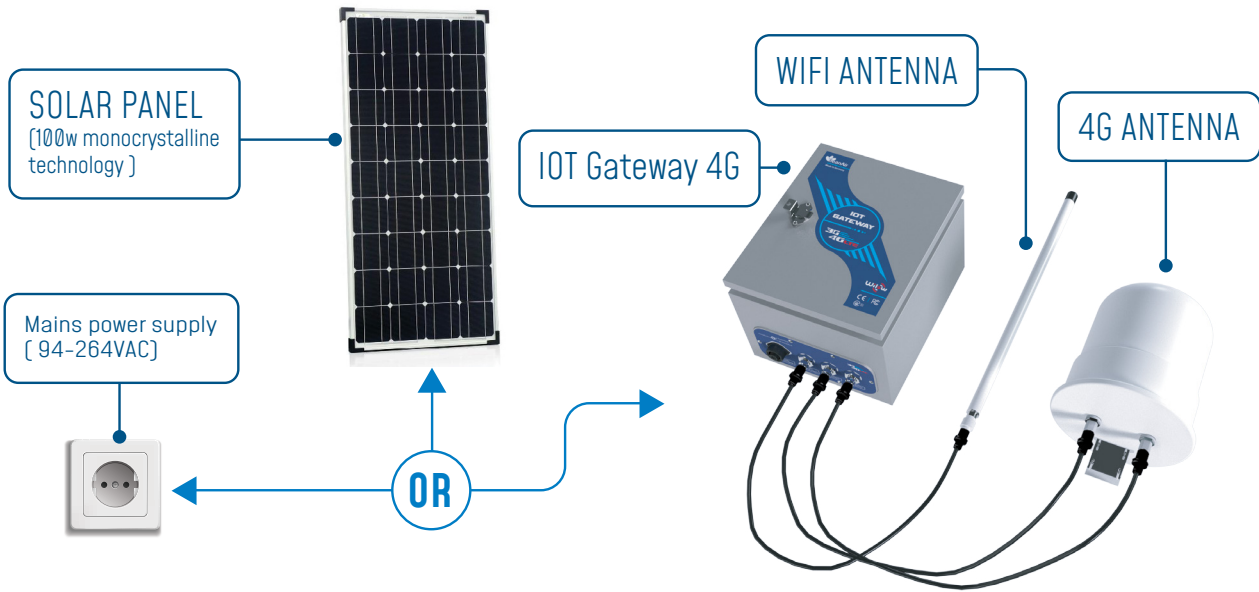| REMOTE ACCESS AND FTP CLIENT	
MQTT Broker	Integrated MQTT Broker , Default Port Number 1883 (Configurable from LTE Router)
Compatiblity with BeanScape® Wilow® software	Only comaptible with BeanScape® Wilow® RA
Embedded FTP Client	Embedded MQTT to FTP Client converter Compatible with Alarm and Low Duty Cycle Data Acquisition Mode
SMS Alarms	SMS Alarms , compatible with Alarm Data Acquisition only

TECHNICAL SPECIFICATIONS

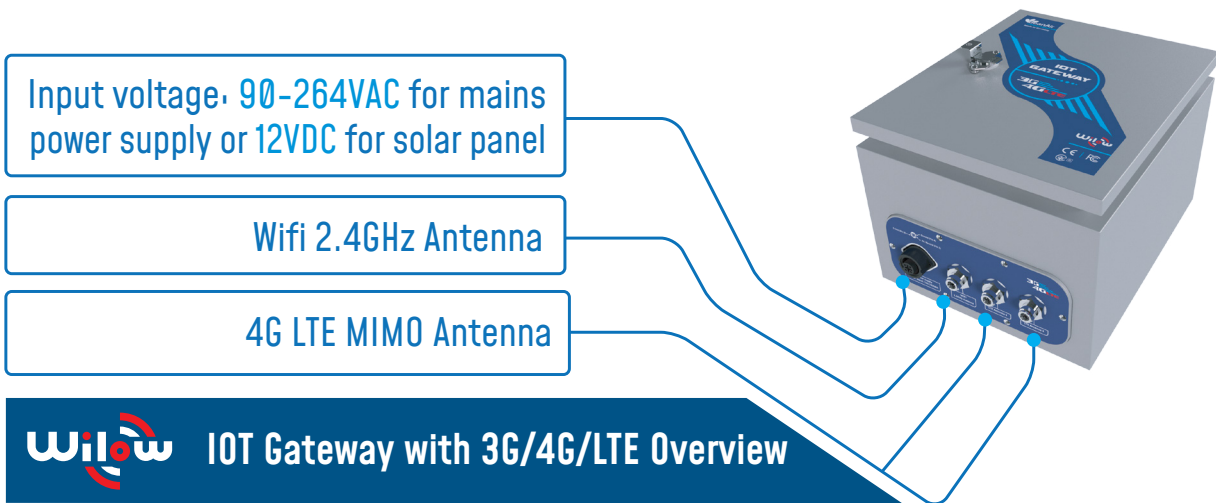| AC POWER SUPPLY WITH UPS BATTERY (REF: BGTW-4G-MPWR-OUT ONLY)	
Battery	Valve Regulated Lead-Acid (VRLA) Capacity 12Ah
Battery protection	Overvoltage/Overload/Short circuit/Battery low/Battery reverse polarity
AC Voltage Range (Input)	90 to 264VAC
AC Range (Input)	0.75A/115VAC 0.5A/230VAC
Frequency 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: HG-4G-OMNI-ANT-12DBI
WIFI Antenna	1 x High Gain Wifi Antenna 9dBi - with pole mounting kit Ref: HG-OMNI-OUT-9DBI
External cable for WIFI Antenna	1 x N-Type cable, Cable Length: 1 meter Ref: CBL-ANT-2M
External cable for LTE Antenna	2 x N-Type cable, Cable Length: 1 meter Ref: CBL-ANT-2M
Waterproof Plug for AC Power Input (-MPWR option is selected)	1 x Circular Connector Hisrchmann CA 3LS, Waterproof IP67 Ref: PWR-CA3LS-PLUG

SOLAR PANEL
(100w monocrystalline technology)

Mains power supply (94-264VAC)

IOT Gateway 4G

WIFI ANTENNA

4G ANTENNA

OR

WILOW® IOT GATEWAY FRONT VIEW

Input voltage: 90-264VAC for mains power supply or 12VDC for solar panel

Wifi 2.4GHz Antenna

4G LTE MIMO Antenna

IOT Gateway with 3G/4G/LTE Overview

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