

# BeanDevice® 2.4GHz ONE-Tir

Wireless Industrial IOT Infrared Temperature Sensor | built-in datalogger

APPLICATION VIDEO



USER GUIDE



QUICK START



MECHANICAL DRAWING



STEP FILE



MADE IN GERMANY



35 mm



119 mm

35 mm



## MAIN FEATURES



• Embedded data logger : up to 1 million data points



• Waterproof IP67 polycarbonate enclosure  
Weight : 120g / Size (LxHx) : 119x35x35mm



• Ultra-low power technology IEEE 802.15.4  
(up to 7-year battery life) Max wireless range:  
300m (L.O.S.)



• Primary cell capacity: 2200 mAh (AA size)  
Lithium-thionyl chloride technology



• High precision non-contact temperature  
measurement ( $\pm 0,5^{\circ}\text{C}$ )

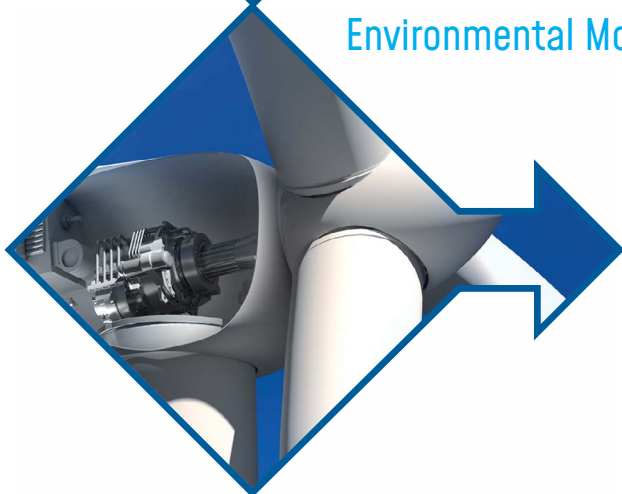
BeanDevice® 2.4GHz ONE-Tir

APPLICATIONS



structural Health Monitoring

Environmental Monitoring

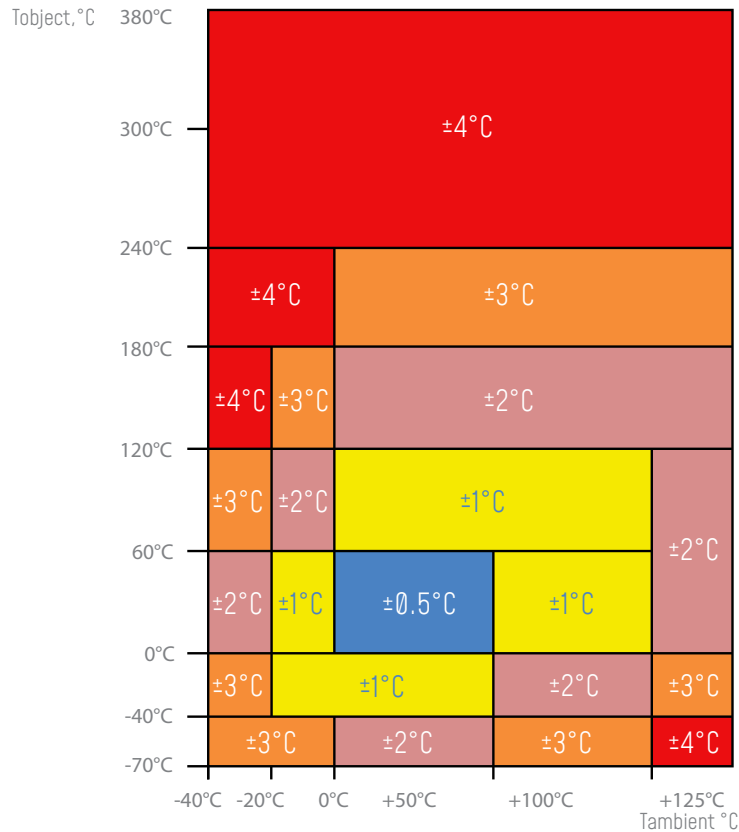


Condition Monitoring

ADVANTAGES

- Rapid Analysis of the target system
- Highly operational in system with very high temperature
- Adapted for working in Hazardous /Sensible environment
- No risk of contamination and mechanical effect on the target
- High measurement accuracy
- Easy integration

IR TEMPERATURE SENSOR ACCURACY



EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The BeanDevice® 2.4GHz ONE-TIR integrates an embedded datalogger, which can be used to log data when a Wireless IIOT Sensors can not be easily deployed on your site. All the data acquisition are stored on the embedded flash and then transmitted to the BeanGateway® 2.4GHz when a network is established.

The dataLogger function is compatible with all the data acquisition mode available on your BeanDevice® 2.4GHz ONE-TIR :

- LowDutyCycle Data Acquisition
- Survey

EXAMPLE : TEMPERATURE MONITORING ON PIPE

- In standalone operation, the BeanDevice® 2.4GHz ONE-TIR stores all the measurements on its embedded datalogger. Thus, a direct connection with the BeanGateway® 2.4GHz is not needed.
- When the the truck starts moving, the local temperature is monitored and all the acquired measurements are stored on datalogger.
- Data logs can be transmitted to the BeanGateway® 2.4GHz on request. Once a successful transmission is done, the user can choose to erase automatically the logs from the datalogger memory, so new ones can be stored.

IoT BeanDevice® 2.4GHz ONE-Tir



For further information about data logger, please read the following technical note :  
TN-RF-007 – “BeanDevice® DataLogger User Guide ”

REMOTE CONFIGURATION & MONITORING

BeanScape® 2.4GHz Basic

The BeanScape® 2.4GHz application allows the user to view all the data transmitted by the BeanDevice® 2.4GHz ONE-TIR. With the OTAC (Over-the-Air configuration) feature, the user can remotely configure the BeanDevice® 2.4GHz ONE-TIR

- **Low Duty Cycle Data Acquisition mode (LDCDA)** : the data acquisition is immediately transmitted by radio. The transmission frequency can be configured from 1s to 24h.
- **Survey Mode** : the measured value is transmitted by radio whenever an alarm threshold (fixed by the user) is detected (4 alarms threshold levels High/Low). Meanwhile, the device sends frequently a beacon frame informing its current status.

BeanScape® 2.4GHz Premium+ Add-on

The BeanScape® 2.4GHz Premium+ integrates an OPC DA server (Data Access). OPC DA is particularly well suited for real time measurement and data sharing. Each data/measurement can be associated to a tag or its attributes and shared with one or many OPC clients

BeanDevice® 2.4GHz ONE-Tir



For further information about data logger, please read the following technical note :  
TN-RF-008 – “Data acquisition modes available on the BeanDevice®”

TECHNICAL SPECIFICATIONS

PRODUCT REFERENCE

BND-2.4GHZ-ONE-Tir

IR TEMPERATURE SENSOR SPECIFICATION

Measurement range	-40°C to +85°C for ambient temperature (Ta) -70°C to +380°C for object temperature (To)
Sensor Technology	Thermopile
Emissivity coefficient	0 to 1 (Configurable from the BeanScape®)
Accuracy	CF. IR Temperature Table
Measurement resolution	0.02 °C
Field of View (FOV)	Cf. Type FOV curve

RF SPECIFICATIONS

Wireless Technology	Ultra-Power and license-free 2.4Ghz radio technology (IEEE 802.15.4E)
WSN Topology	Point-to-Point / Star
Data rate	250 Kbits/s
RF Characteristics	ISM 2.4GHz – 16 Channels
TX Power	+18 dBm
Receiver Sensitivity	-95.5 dBm to -104 dBm
Max. Radio Range	300 m (Line of Sight) , 30-80m (Non Line of Sight)
Antenna	Omnidirectional antenna 2.2dBi

## TECHNICAL SPECIFICATIONS

### OVER-THE-AIR CONFIGURATION (OTAC) PARAMETERS

Data Acquisition mode	Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour / Alarm mode: 1s to 24 hour
Emissivity coefficient	0 to 1
Alarm Threshold	2 high level alarms & 2 low level alarms
Power Mode	Sleeping with Network Listening & Active

### EMBEDDED DATA LOGGER

Storage capacity	up to 1 000 000 data points
Wireless data downloading	3 minutes to download the full memory (average time)

### ENVIRONMENTAL AND MECHANICA

Casing	Polycarbonate, Waterproof IP67 – Fire Protection : ULV94 Casing dimensions (LxHxh) : 119 mm x 35 mm x 35 mm Weight (battery included): 120g
Operating Temperature	-40°C to +75°C
Norms	FCC & CE compliant ROHS - Directive 2002/95/EC

### POWER SUPPLY

Current consumption @3.3 Volts	<ul style="list-style-type: none"> <li>· During data acquisition : 20 to 30 mA</li> <li>· During Radio transmission : 60 mA</li> <li>· During sleeping : &lt; 10 µA</li> </ul>
Included primary cell	Lithium-thionyl chloride battery with 1800 mAh capacity (AA size)

### CHOOSE AN ULTRA LOW POWER WIRELESS SENSOR

in minutes	Battery life (temperature room 25°C)
Every 2 minutes	22 months
Every 5 minutes	51 months
Every 10 minutes	102 months



**BeanDevice® 2.4GHz ONE-Tir**

**GETTING STARTED WITH A WIRELESS IIOT SENSORS**

The BeanDevice® 2.4GHz ONE-TIR operates only on our Wireless IIOT Sensors , you will need the BeanGateway® 2.4GHz and the BeanScope® 2.4GHz for starting a Wireless IIOT Sensors.

**BeanDevice**

**2.4GHz One-Tir**



**BeanGateway**

Indoor Version



OR



**BeanScope**

Wireless IIOT Sensors  
Supervision Software



Outdoor Version

**BeanGateway**

**BeanAir**  
Rethinking Sensing Technology

**BEANDEVICE® ONE-TIR OVERVIEW**

Waterproof Antenna

**EcoSensor**

**BeanDevice**

**2.4GHz**  
**ONE-TIR**



Network Reset  
non-contact push button

Eyelet for  
wall mounting

ON/OFF non-contact  
push button

Temperature Sensor probe

# BeanDevice® 2.4GHz ONE-Tir

## ACCESSORIES

### Antenna

2.2 dBi omnidirectional antenna



### Primary Cell

Lithium-thionyl chloride primary cell (Li-SOCl<sub>2</sub>) 2,2 Ah  
Ref: PP2.2DMG

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

## CONTACT US

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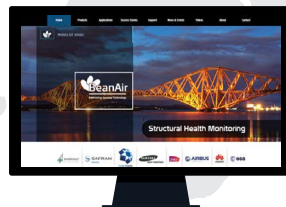
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