# TEKTELIC BREEZE

A LoRaWAN® connected CO2 Monitoring Solution

The TEKTELIC BREEZE Is a member of our Smart Room Sensor family and integrates practical functionality into a very small form factor. With two variants options, it is an ideal solution for holistically monitoring ambient indoor environments. BREEZE measures and reports real-time CO2 levels, temperature, humidity and light in its surrounding environment, while the BREEZE-V also has additional PIR for motion detection.

- Smart Home & Office
- Schools & Universities
- Retail
- Public Buildings
- Ambient Air Quality Monitoring
- Indoor Environment Monitoring
- Facility Management
- HVAC Optimization
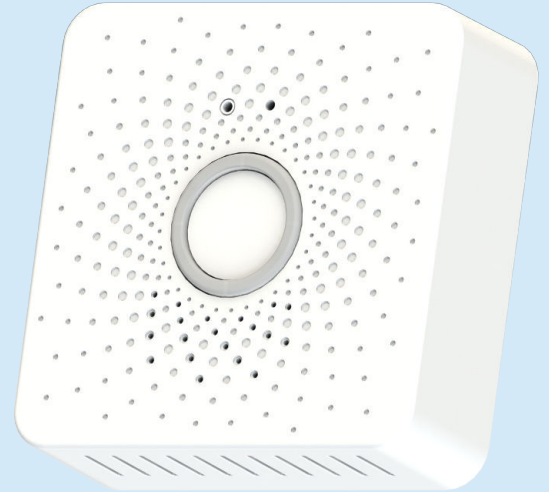
Features

»	User Configurable Parameters and Thresholds
»	Designed for Optimal Battery Life
»	Pairable with E-Ink Display
»	Wall, Ceiling or Table Mount Configurations
»	Simple Deployment
»	Sleek and Unobstructed Design
»	Ambient Indoor Environment Monitoring

Applications

»	Temperature
»	Humidity
»	Light
»	Barometric Air Pressure
»	CO2 Concentration

TEKTELIC BREEZE

A LoRaWAN® connected CO2 Monitoring Solution

Technical and Functional System Specifications

General System Parameters

Operational Temperature	0°C to 60°C
Storage Temperature	-40°C to 60°C
Relative Humidity-Operational	5% - 95% Non-Condensing (Operational)
Ingress Protection	IP30
Size	80 x 80 x 31 mm (with mounting clip)
	80 x 80 x 28 mm (without mounting clip)
Weight (including batteries)	91g (with Battery)
Battery	2x AA LTC

Wireless Parameters

	LoRa	BLE
RF Power	15 dBm	0 dBm
RF Sensitivity	-137dBm	-94.8dBm (1Mbps)
Radio	SX1261	EFR32BG13 (MCU)
Supported ISM Bands	All Regions Identified by LoRa Alliance	2.4GHz ISM
Antenna	Internal	Internal
LoRa Device Class	A	/

Sensing Functions

Temperature: 0-60C +/- 0.3C
Humidity: 5-95% +/- 4%
Light: 5-1000 lux
Barometer: 300 -1200 hPa +/- 1hPa
CO2: 400-5000ppm +/- 30ppm +3% of reading

Optimized Battery Life

Operational Temperature	15-25°C
Tx Power	LoRa: 15dBm BLE: 0dBm

Battery Life in Years

Report Frequency	SF 10	SF 7	
Every 5 mins (active) Every 1hr (Inactive)	4.9	8.4	Active: 10 hours during weekdays
Every 5 Minutes (active) Every 30 mins (Inactive)	4.3	7.6	Inactive: Rest of the week outside of active hours

Regulatory Compliance

Safety	IEC 60529-1
Regulatory	ETSI EN 300 220 -1/-2
	ETSI EN 301-489-1/-3
	FCC 15.247 FCC 15.209
	ICES-003, RSS-247, RSS-Gen

Specifications subject to change without notice*.

80 mm   80 mm   31 mm

E-Ink Display Tablet

BLE connected Display to Visualize Measurements and Data

TEKTELIC's Multi-Purpose E-Ink Display Tablet is ideal for visualization of data measurements collected from our BREEZE CO2 solution. Deploy in schools, retail, healthcare facilities, laboratories and office spaces. Combining the low power technologies of LoRaWAN, BLE and E-Ink, accommodates a low powered consumption solution. The E-Ink display tablet is fully wireless and can be mounted on a table or wall.

General Specifications

Item	Specification
Model	T0007851
Dimension (L x W x H)	100 x 50 x 23mm
Screen Area	67 x 30 mm
Display Pixels	296 128 (37,888)
Dots per Inch (DPI)	112
Display Type	E-Ink
Orientation	Landscape

Viewing Angle	> 180˚
Operating Temperature Range	0˚C to 50˚C
Storage Temperature Range	-20˚C to 70˚C
Mounting	Wall or Table
Weight	160g
Communications	Bluetooth 5.0, 2.4GHz
Battery	2x AA LTC, 3.6V 2600mA
Battery Life	5 years, 8 months (102 refresh per day)
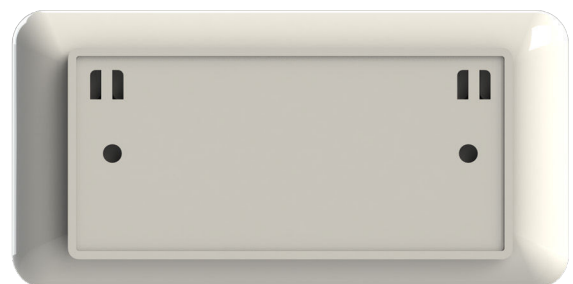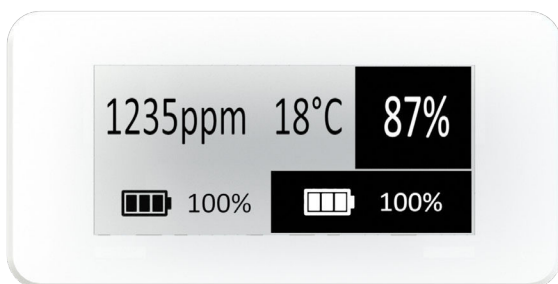
KONA Micro IoT Gateway

Enterprise LoRaWAN® Gateway for Mission Critical Deployments

The KONA Micro IoT Gateway is designed for enterprise and lightweight industrial applications that require "Always On" connectivity. Configured with an internal 3G/4G modem and a built-in battery backup, the KONA Micro IoT gateway continues to operate and transmits sensor data to the network even when the main site has lost power.

- Smart Home & Office
- Smart Buildings
- Warehouses
- Smart Greenhouses

- Facility Management
- Safety & Security
- Schools & Universities
- Retail

Key Product Differentiators

» Enable critical enterprise IoT applications with 'Always On' connectivity. Battery backup and an integrated 3G/4G modem.

» Reduce set up costs with plug-n-play installation using a custom provisioned factory image.

» Improve coverage and service resulting in increased IoT application adoption and customer satisfaction.

» Simplify management with the KonaFT OAM tool.

» Operational status indicated with multi-function LED.

» Fully integrated with the broader eco-system of LoRa™ network servers and sensors.

Key Features

» NA 915, EU868, AUS923, JP920 ISM Bands

» Four Hour Battery Backup

» Time Duplex 8 Rx / 1 Tx

» Integrated Cellular 3G/4G Modem

» External LoRa Antenna

» Operational Status LED

» 27 dBM Tx Power

» Plug - n - Play Operation

» Factory Image for Mass Deployment

» In-Service Updates

KONA Micro IoT Gateway

Enterprise LoRaWAN® Gateway for Mission Critical Deployments

Technical and Functional System Specifications

Mechanical Parameters

MTBF	830,000 hours
DC Power Consumption	< 7 W
Operational Temperature	0°C to +40°C
Operational Humidity	5% to 95% Condensing
Ingress Protection	IP30
Size	115 x 115 x 40 mm
Weight	350 g (<200 g without battery)

LoRa Radio Parameters

ISM Bands	NA915, EU868, AS923, JP920, CH779
Tx Power	14 dBm to 27 dBm
Rx Sensitivity	-139.5 dBm (SF12, 293 bits/sec)
Rx Noise Figure	3.5 dB
Rx Linearity	-10 dBm
Rx Dynamic Range	70 dB Analog, 100+ dB Digital

Software and Management

Tools	Access Control List managment
	3G/4G Parameter Configuration
	System Health Monitor
	Radio Configuration and Control
	Remote Software Upgrade
	Active and Passive image management
	Factory image provisioning
	Field Configuration Tool
Networking	DHCPv4 client
	TFTP server
	HTTP server
	Firewall and Access Lists

Interfaces

|	
Ethernet Backhaul	RJ-45 (10/100 BaseT)
Cellular Backhaul (3G/4G)	(internal antenna)
LoRa Antenna	SMA-RC
Power	12V / 1A Adapter

Regulatory Compliance

Safety	IEC 60950-1 (CE)
Environmental	ETSI EN 300 019-2
Regulatory	ETSI EN 55022 Class B
	ETSI EN 55024
	ETSI EN 300 489-1/-3

Cellular Carrier Certifications

Verizon
AT&T
T-Mobile
Sprint
PTCRB

115 mm

40 mm

115 mm

TEKTELIC
communications
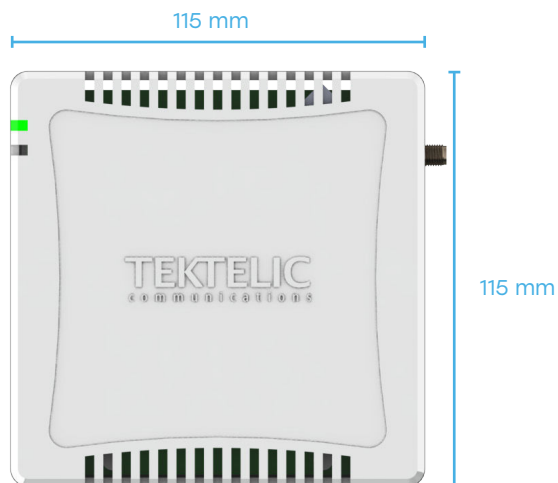
TEKTELIC Communications is a premier supplier of best-in-class LoRaWAN® IoT Gateways, Sensors, and custom applications. These elements combined provide a powerful end-to-end solution that can be easily, quickly, and cost effectively deployed to address the most demanding IoT challenges.

For more information please visit www.tektelic.com