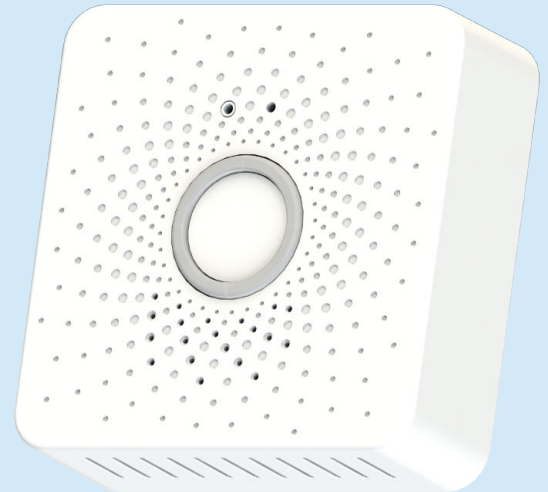


# TEKTELIC BREEZE

## 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

- » NDIR (Non-Dispersive Infrared) Technology is used for CO2
- » 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 30 mm (with mounting clip)
	80 x 80 x 26 mm (without mounting clip)
Weight (including batteries)	91g (with Battery)
Battery	2x AA LTC

#### 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 min (active), Every 1 hr (inactive)	5.0	8.4	Active: 10 hours during weekdays
Every 5 min (active), Every 30 min (inactive)	4.3	7.6	Inactive: Rest of the week outside of active hours
Always reports every 15 minutes	5.2	8.8	

#### Wireless Parameters

##### LoRa

##### BLE

RF Power	15 dBm	0 dBm
RF Sensitivity	-137dBm	-96 dBm (1 Mbps)
Radio	SX1261	STM32WB
Supported ISM Bands	All Regions Identified by LoRa Alliance	2.4GHz ISM
Antenna	Internal	Internal
LoRa Device Class	A	/

#### 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, FCC 15.109
	ICES-003, RSS-247, RSS-Gen

Specifications subject to change without notice\*.

#### Sensing Functions

Temperature	0-60C +/- 0.3C
Humidity	0-100% +/- 4%, 20-80% +/- 2%
Light	5-1000 lux
Barometer	300 -1200 hPa +/- 1hPa
CO2 (using NDIR Sensor)	400-5000ppm +/- 30ppm +3% of reading



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](http://www.tektelic.com)

# E-Ink Display Tablet

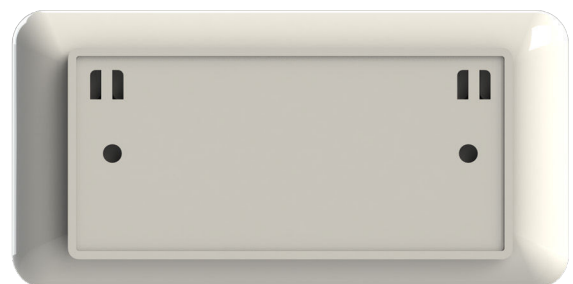
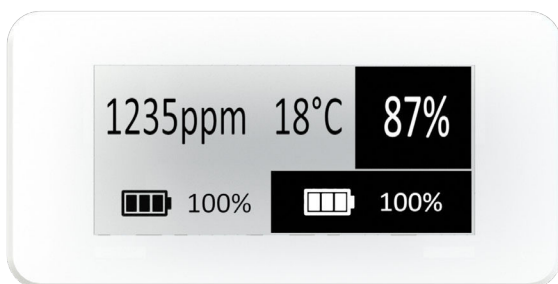
## BLE connected Display to Visualize Measurements and Data

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	Item	Specification
Model	T0007851	Viewing Angle	> 180°
Dimension (L x W x H)	100 x 50 x 23mm	Operating Temperature Range	0°C to 50°C
Screen Area	67 x 30 mm	Storage Temperature Range	-20°C to 70°C
Display Pixels	296 128 (37,888)	Mounting	Wall or Table
Dots per Inch (DPI)	112	Weight	160g
Display Type	E-Ink	Communications	Bluetooth 5.0, 2.4GHz
Orientation	Landscape	Battery	2x AA LTC, 3.6V 2600mA
		Battery Life	5 years, 8 months (102 refresh per day)



# KONA Micro IoT Gateway

## Indoor 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

- » US915, EU868, AU915, AS923 ISM Bands
- » Time Duplex 8 Rx / 1 Tx
- » Integrated Cellular 3G/4G Modem
- » External LoRa Antenna
- » Four Hour Battery Backup
- » 27 dBm Tx Power
- » Operational Status LED
- » Plug & Play Operation
- » Factory Image for Mass Deployment
- » In-Service Updates

# KONA Micro IoT Gateway

## Indoor LoRaWAN® Gateway for Mission Critical Deployments

### Technical and Functional System Specifications

#### Mechanical Parameters

MTBF	830,000 hours
DC Power Consumption	4.5 W (Typical)
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	US915, EU868, AU915, AS923, IL917, JP920 ISM Bands
Tx Power	14 dBm to 27 dBm
Rx Sensitivity	-141 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

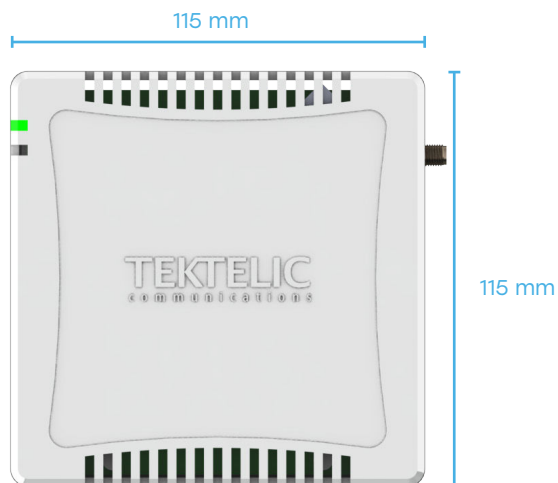
Tools	Access Control List management
	3G/4G Parameter Configuration
	System Health Monitor
	Radio Configuration and Control
	Remote Software Upgrade
	Active and Passive image management
	Factory image provisioning
	Field Configuration Tool
Networking	DHCPv4 client
	TFTP server
	HTTP server
	Firewall 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	UL / CSA / EN / IEC 62368-1
Regulatory	FCC: 15.247, 15.109, 15.209
	ISED: RSS - 247, RSS - Gen
	CE: RED 2014/53/EU



#### Cellular Carrier Certifications

Verizon
AT&T
T-Mobile
Sprint
PTCRB

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