BIN001 User Manual

Specifications, device installation, compliance and safety information

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CONFIDENTIAL

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Revision History

Name	Date	Description	Version
MARIA	2025/01/14	Create document	1.0

Introduction

The BIN001 system is a smart solution for inventory and stock management. It uses BLE and NFC technologies to track items efficiently and accurately, with a range of up to 80 meters.

This document provides the necessary steps to set up, use, and maintain BIN001, ensuring smooth operation and integration into your workflow.

Specifications

FCC ID	In process
RF specification operating frequency	2402 MHz (low), 2440 MHz (medium), 2480 MHz (high)
Type of modulation	GFSK
RF transmit power	TBD
Radiated output power (EIRP)	+4dBm
Number of channels	3 channels ,advertising channels 37, 38 and 39
Antenna type	Stamped Metal/PIFA
Antenna gain	3.2dBi BIN001-1 / 3.0dBi BIN001-2
Specialty	Bluetooth Low Energy
Function	Bluetooth Low Energy
Power supply	N/A
Power cord	N/A
Battery	A CR2477 lithium metal cell batteries rated at 1000mAh
Size:	1.1”L x 5.5”W x 0.87”H (30.mmL x 140.mmW x 22mmH)
Lifetime	3 years
Temperature Range:	-20˚C to +40˚C
IP Rating	IPX0
Weight	15 grams
Bluetooth Sensitivity:	-95dBm
Transportation:	Meets IATA Dangerous Goods Regulations 2015-2016 Edition (UN3091) Exemption Requirements PI 970 Section 2. Less than 4 lithium metal cells encased in equipment. No declaration required.
Power Consumption - Max:	TBD
Power Consumption - Sleep:	TBD

Compliance

FCC Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.

– Increase the separation between the equipment and receiver.

– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

– Consult the dealer or an experienced radio/TV technician for help.

RF exposure statement

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

Safety

Per FCC KDB 784748, Section A.8: To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 cm from all persons. Please maintain at least a 20 cm spacing from the antenna and device.

BIN001

Production versions of the tag come in a sealed case with the batteries installed. They are already powered on and ready for installation. The tags pass through a quality assurance phase to ensure they are fit for purpose. This includes a range test to ensure the tag performs well at a distance.

Operating Instructions

Please review safety information before installation to avoid injury to yourself or others.

The BIN001 system is embedded within the TwinBin case to enhance stock management efficiency. The TwinBin operates by visually indicating stock levels through its two-compartment design: the upper section holds reserves backup stock the active stock, while the lower section the active stock. Once the active stock is depleted, users can easily access the reserve stock by sliding it down. This system ensures that inventory levels are always visible, making it easier to monitor and refill as needed. BIN001 seamlessly integrates into this process by providing real-time tracking and management capabilities, improving accuracy and reducing manual effort.

Installation:

- Prepare the TwinBin Case

Ensure the TwinBin case is clean and fully assembled. Verify that the compartments for both active and reserve stock are securely in place and functioning properly.

- Install the BIN001 System

Insert the BIN001 module into its designated slot within the TwinBin case. Make sure it fits snugly and is firmly seated to prevent any movement during operation.

- Power On and Configure

Remove the battery tab to power on the device. The LED will begin blinking blue, followed by either green or red, depending on the system state.

Follow the setup instructions to pair the BIN001 system with your management software or network using Bluetooth or NFC.

- Operation

Once the TwinBin is filled with material, the flag remains down and a green LED will blink every minute, indicating normal operation.

When the active stock is depleted, pull the divider to release the backup material. This will raise the flag and the red LED will start blinking, signalling the need for replenishment.

The operator should then scan the tag using NFC to assign the material that will be replenished. The blue LED will blink, indicating the process is underway.

After the bins have been replenished and the operator lowers the flag/tag, the LED will return to green blinking, confirming normal status.

Usage

The BIN001 system is designed to simplify and enhance inventory management by seamlessly integrating with the TwinBin case. It monitors stock levels in real-time, using BLE and NFC technologies to ensure accurate tracking of active and reserve stock compartments. As stock is consumed, BIN001 updates the system, providing alerts when it’s time to replenish. This reduces manual checks, minimizes errors, and streamlines stock management workflows, making BIN001 an essential tool for maintaining efficient operations.