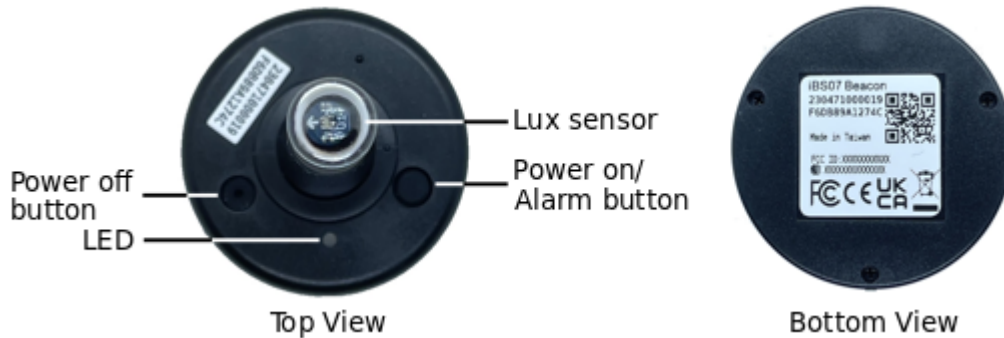# INGICS TECHNOLOGY

iBS07 User Guide

Introduction

The document is a guide for iBS07. To quickly verify it, please download INGICS iBS01 Tag Utility APP from below link(Android only): https://play.google.com/store/apps/details?id=com.ingics.tag.igstagconfig

Overview

Top View — Power off button, LED, Lux sensor, Power on/Alarm button

Bottom View

Operation

Basically, iBS07 will always transmit BLE payload in the configured time interval in the background after power on. The transmitted BLE payload/message is then received and uploaded to the internet/cloud server by the beacon gateway, such as iGS01S or iGS03W/M/E. Besides background transmission, button or sensor status change will also trigger an immediate BLE transmission for monitoring the sensor in real time.
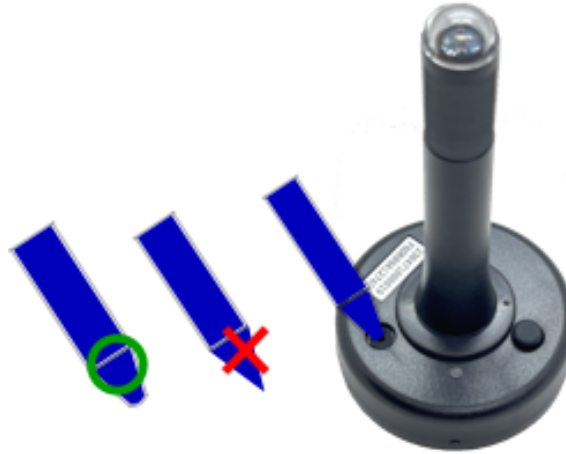
Power on

iBS07 is in standby mode at shipping. You can power on it by pressing the front button. The LED will flash "Red" to indicate it is powered on. After power on, the button becomes the alarm button.

Power off

When necessary, users can power off iBS07 by applying a pencil with a blunt tip to the rubber button on the bottom side. The LED will flash "Orange" to indicate it is powered off and entering the standby mode.

Alarm Button

After power on, the front button acts as an alarm button. As pressing the button, the LED will light up "green" and trigger an immediate BLE transmission with the button activation event. As the back end server received this status change, it can be used as a warning or alarming.
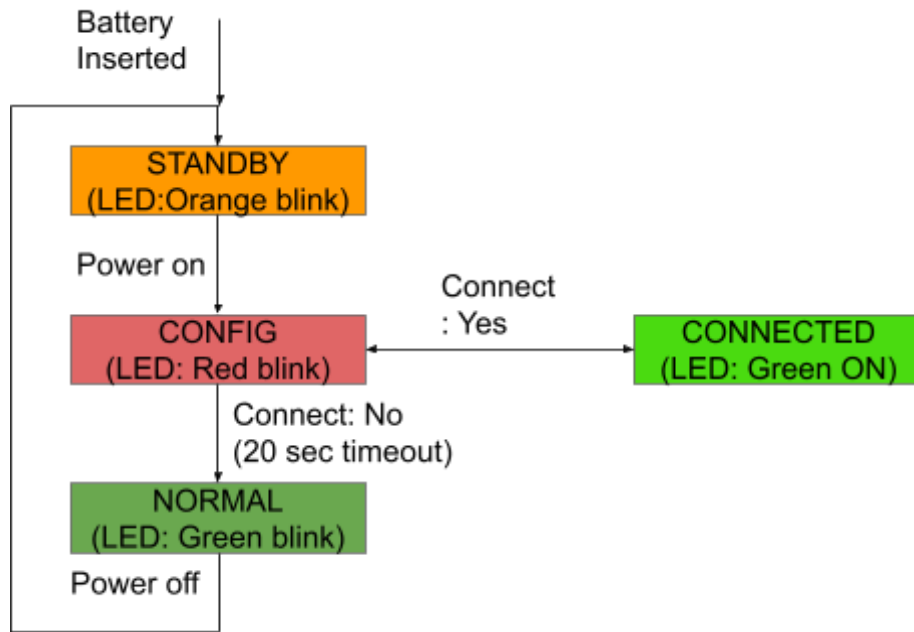
Setting ADV Interval

ADV interval is configured by switch. The ADV interval table as:

B1	B0	ADV Interval
L	L	1 min
L	H	5 min
H	L	15 min
H	H	30 min

LED

Power on(Start of Config mode)	Red blinking
End of Config mode	Green blinking
Alarm Button	Green on when pressed
Battery inserted/Power off	Orange blinking

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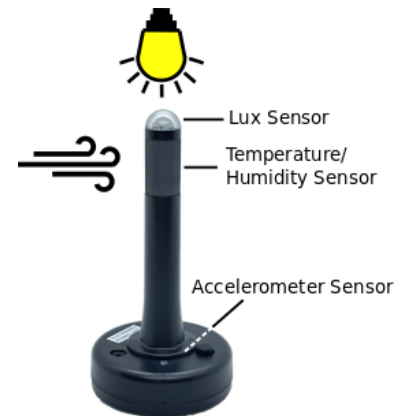
Working Mode

Lux Sensor

Inside iBS07, there is a lux sensor that can be used to detect lux of an environment.

Accelerometer

iBS07 reports raw accelerometer readings in x,y,z axles..

Temperature/Humidity Sensor

iBS07 is always monitoring the environment temperature and transmitting the temperature value in the configured time interval .

Verifying

1. Power on iBS07
2. Open iBS01 Tag Utility APP and Press "START SCAN".
3. Wait for a while, you should see the BLE payload of iBS07 received by the APP.

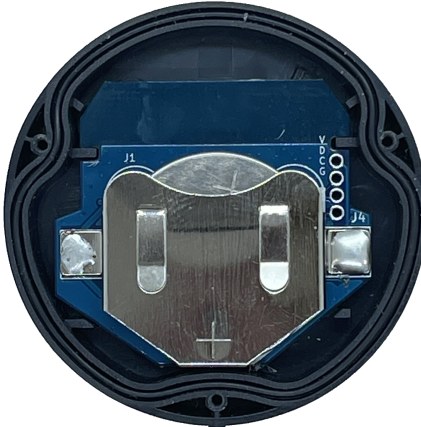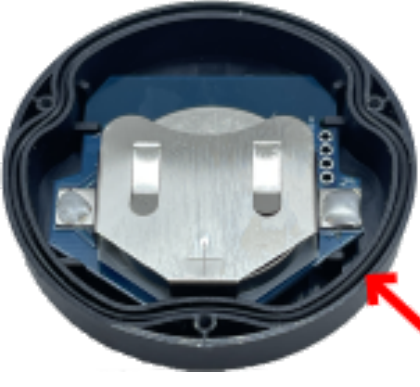Below is an explanation of the payload shown in the APP.

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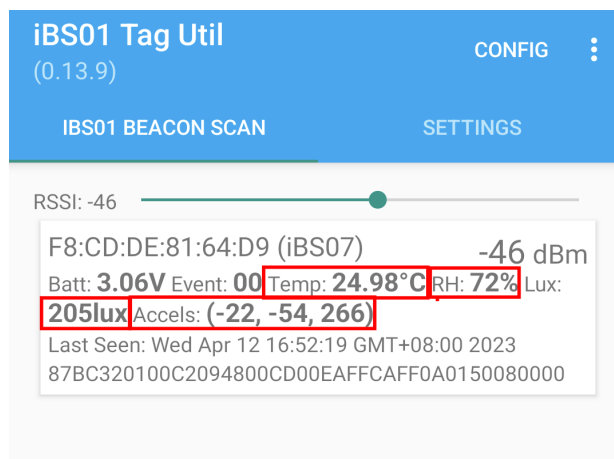
Battery

Level

iBS07 uses a CR2450 coin battery as the power source. It consumes only a little power and keeps working for a long time. Below is a suggestion for translating the battery voltage to the remaining capacity at room temperature.

Capacity	Voltage
High	>2.9V
Middle	>2.7V
Low	>2.6V
Change battery	<=2.6V

Remember, a proper filtering on the voltage is necessary. When iBS07 works in a low temperature environment, the battery voltage will be lower. For example, in -20 ° C, the voltage should be adjusted to 0.1V~0.3V lower.
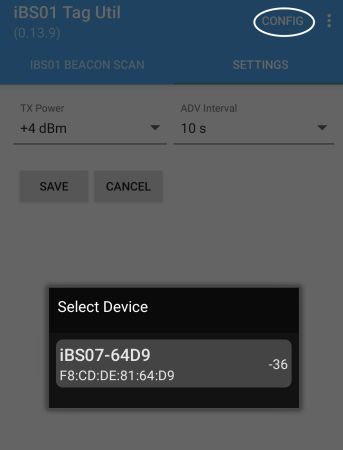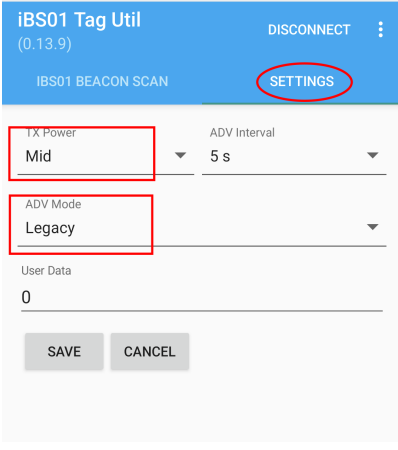
Changing Battery

1. Remove the 3 screws and open the bottom case.	It is very important that without the enclosure protection	2. You can now remove the battery and change a new battery
	The internal of iBS07 is sensitive to electrostatics. **Before opening the bottom cover, please make sure the proper procedure is executed to avoid any electrostatic damage to iBS07**	
3. Before closing the bottom cover, please make sure the O-ring is in the proper position	4. Close the bottom cover	5. Fix the 3 screws

Configuration

When powered on, iBS07 will be in configuration mode for 20 sec. Users can use iBS01 Tag Utility to scan and connect iBS07 to configure the transmit power and ADV(advertising) interval.

Steps

1. Power on iBS07 (if iBS07 is already powered on, please power off it first then power on again)	2. Press the CONFIG icon on the up-right corner of the utility **within 20 secs.** Select iBS07 for configuration.	3. In the SETTING page, you can configure TX power and ADV Mode. After configuring, press SAVE and DISCONNECT for the parameters to take effect.

Parameters

In iBS07, there are two parameters that can be configured.
- a. TX power: High(+4 dBm), Mid(0 dBm, default), Low(-4 dBm).
- b. ADV mode: Legacy, Coded Phy

Certification

TBD

Statement

Federal Communication Commission Interference Statement

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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

NCC 警語

「取得審驗證明之低功率射頻器材，非經核准，公司、商號或使
用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射
頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應
立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理
法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及
醫療用電波輻射性電機設備之干擾。」

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Revision History

DATE	REVISION	CHANGES
Apr 12, 2023	0a	Initial release
Jun 6, 2023	0b	Updated FCC and NCC statement