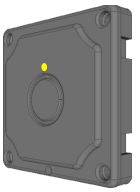
Guide
Ver.01b

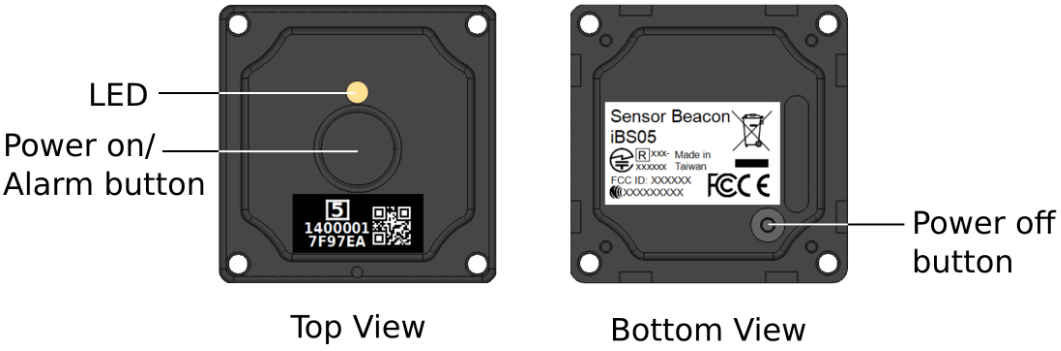
iBS05 User Guide

Introduction



The document is a guide for iBS05/iBS05G/iBS05H/iBS05T. 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

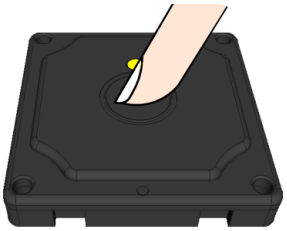


Operation

Basically, iBS05 will always transmit BLE payload in the configured time interval(by default, iBS05/05G is 5s and iBS05H/05T is 30s) 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.

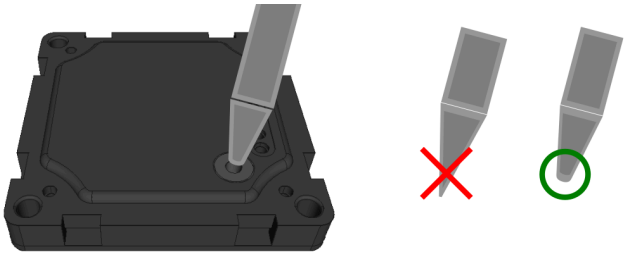
Power on

iBS05 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 iBS05 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.



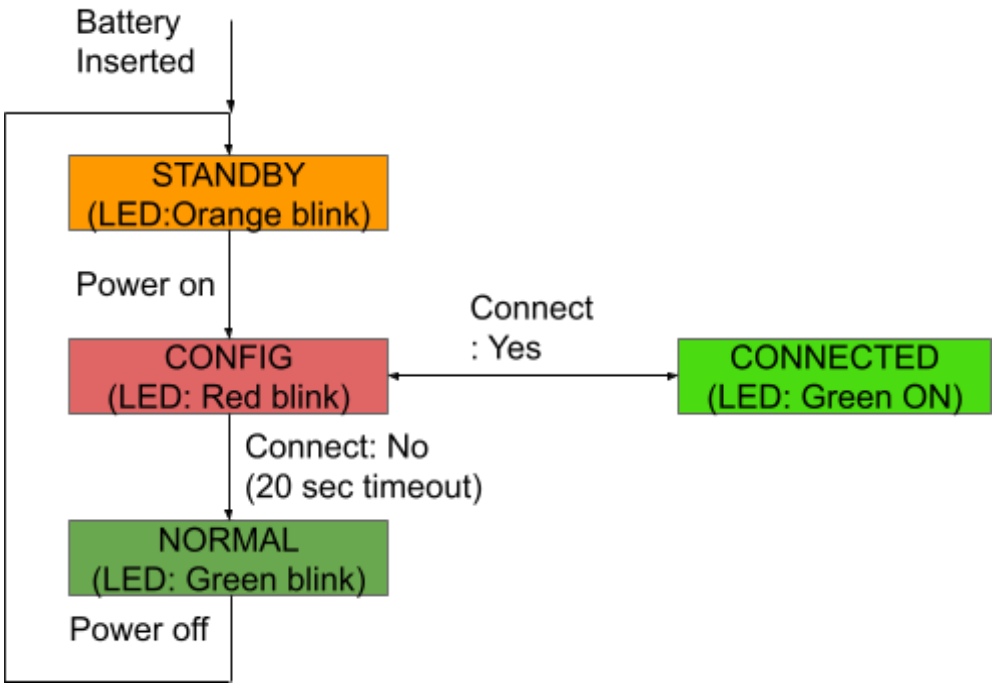
Alarm Button

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.

LED

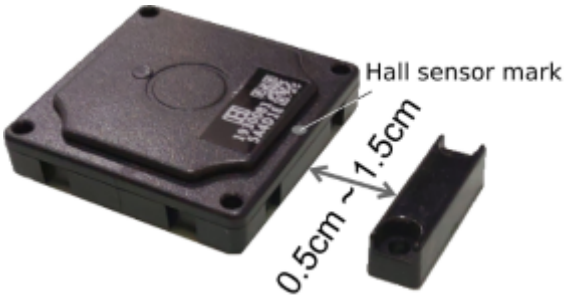
Power on(Start of Config mode)	Red blinking
End of Config mode	Green blinking
Alarm Button	Green on when pressed
Battery inserted/Power off	Orange blinking

Working Mode



Hall Sensor (iBS05H)

Inside iBS05H, there is a hall sensor that can be used to detect if a magnet is in range or not. Depending on the strength of the magnet, the active range is around 0.5cm~1.5cm. The sensor position is marked on the enclosure. A typical usage is to put an iBS05 and magnet on the door(or window) and door frame. When they are close to the active range, iBS05 will trigger an immediate BLE transmission. On the other hand, when they are far away from a close state, it will also trigger an immediate BLE transmission.

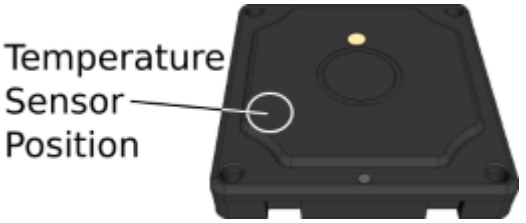


Accelerometer (iBS05G)

The accelerometer will be active when its status changes. It includes from motion to still or from still to motion. An immediate BLE transmission with status change will be triggered as active.

Temperature Sensor (iBS05T)

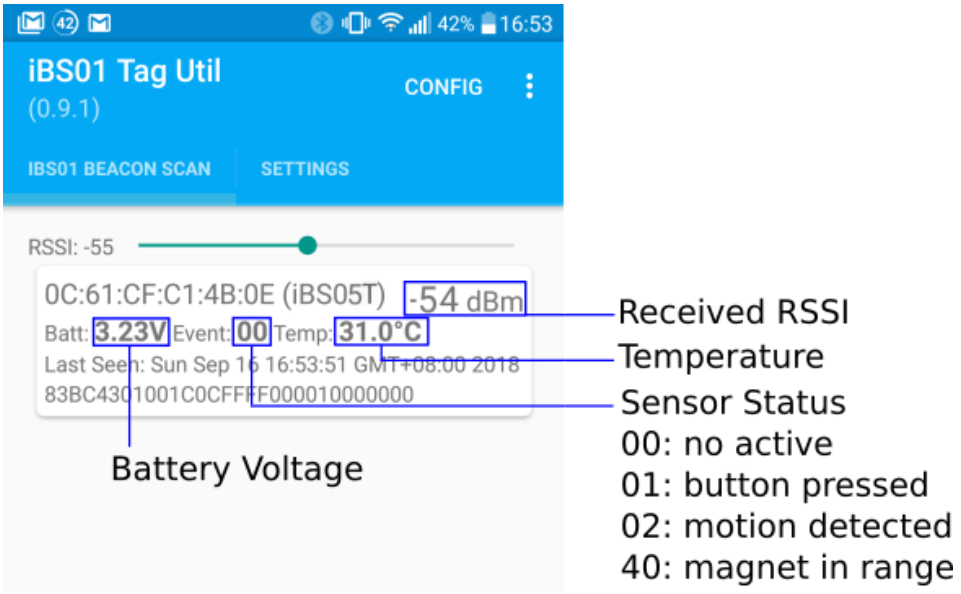
iBS05T is always monitoring the environment temperature and transmitting the temperature value in the configured time interval .



Verifying

1. Power on iBS05
2. Open iBS01 Tag Utility APP and Press “START SCAN”.
3. Wait for a while, you should see the BLE payload of iBS05 received by the APP.

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



Battery

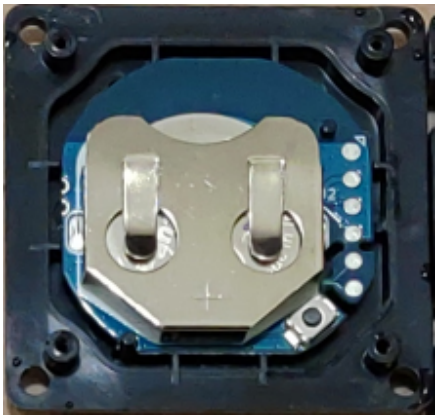
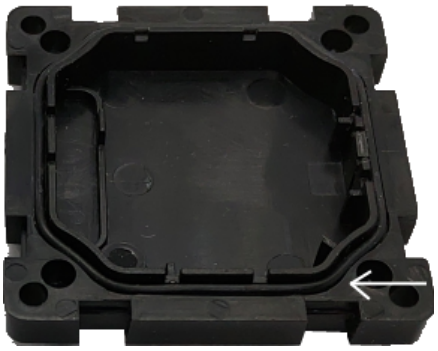
Level

iBS05 uses a CR2032 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 iBS05 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

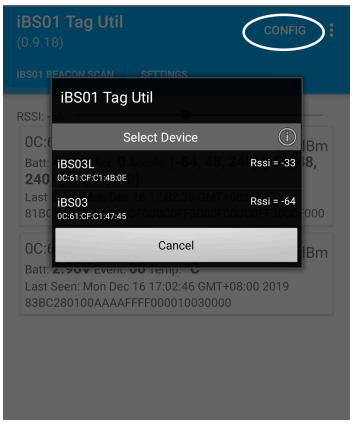
1. Remove the 4 screws and open the bottom case.	It is very important that without the enclosure protection	2. You can now remove the battery and change a new battery
	**The internal of iBS05 is sensitive to electrostatics. Before opening the bottom cover, please make sure the proper procedure is executed to avoid any electrostatic damage to iBS05** 	
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 4 screws
		

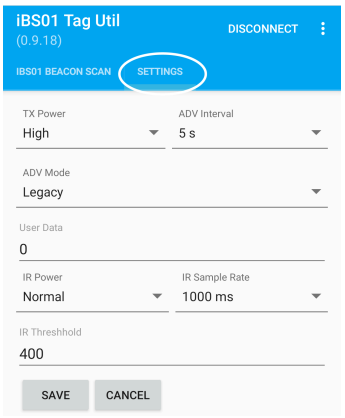
Configuration

When powered on, iBS05 will be in configuration mode for 20 sec. Users can use iBS01 Tag Utility to scan and connect iBS05 to configure the transmit power and ADV(advertising) interval.

Steps

1. Power on iBS05 (if iBS05 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 iBS05 for configuration.	3. In the SETTING page, you can configure TX power and ADV interval. After configuring, press SAVE and DISCONNECT for the parameters to take effect.





Parameters

In iBS05, there are two parameters that can be configured.

a. TX power: High(+4 dBm), Mid(0 dBm, default), Low(-4 dBm).
b. ADV Interval: From 100 ms~60 min.

Waste Electrical and Electronic Equipment Recycling

Our product is compliant with the WEEE directive for re-use/recovery/recycling. This cross-out wheeled-bin symbol is a reminder that this product should not be treated as household waste. Instead hand it over to the appropriate collection point for the recycling of electrical and electronic equipment in accordance with local environmental regulations for waste disposal.

Since our product is not sold directly to the end user and generally it is a part of our customer's solution, our customer is recognized as a professional seller. Our customer has the responsibility to comply with the requirement of the directive too. To help our customers, when necessary, we will provide a WEEE compliant assessment report for registering and communicating with the local authorities and recycling agency.

Certification

Bluetooth SIG Qualification

Model number: iBS05/iBS05H/iBS05T/iBS05G
Declaration ID: D048813
Description: Beacon

Japan MIC Regulatory

201-210714

FCC Regulatory

2AH2IIBS05

NCC Regulatory

iBS05 CCAH21LP6550T2
iBS05H CCAH21LP6552T6
iBS05T CCAH21LP6553T8
iBS05G CCAH21LP6551T4

CE Regulatory

iBS05 series have been tested and complies with the essential requirements of the DIRECTIVE 2014/53/EU, DIRECTIVE 2014/35/EU and DIRECTIVE 2014/30/EU. The copy of the CE Conformity of Declaration is listed in the following page.

UKCA Regulatory

iBS05 series have been tested and complies with the essential requirements of the Radio Equipment Regulation 2017 with reference to the Standards applied listed in the following page.

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 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.

Industry Canada Statement

This device complies with Industry Canada licence-exempt RSS standard. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC Radiation Exposure Statement

This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Cet équipement est conforme aux CNR-102 d'Industrie Canada. Cet équipement doit êtreinstallé et utilisé avec une distance minimale de 20 centimètres entre le radiateur et votrecorps. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec autreantenne ou émetteur. Les antennes utilisées pour cet émetteur doivent être installés etfournir une distance de séparation d'au moins 20 centimètre de toute personne et doit pas être co-située ni fonctionner en conjonction avec une autre antenne ou émetteur.

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。」

DECLARATION OF CONFORMITY

EU RED - DIRECTIVE 2014/53/EU -
EU-LOW VOLTAGE DIRECTIVE 2014/35/EU -

This declare that the following designated product

Sensor Beacon
Model No.: iBS05, iBS05H, iBS05T, iBS05G
Brand Name: INGICS

(Product identification)

complies with the essential requirements of the EU RED - DIRECTIVE 2014/53/EU, EU-LOW VOLTAGE DIRECTIVE 2014/35/EU and meet the limitation of the relevant test standard(s) listed below:

EMC	Radio Spectrum	Safety
EN 301 489-1: V 2.2.3 (2019-11)	EN 300 328 (V 2.2.2, 2019-07)	IEC 62368-1:2014/COR1:2015
EN 301 489-17: V 3.2.4 (2020-09)		and EN 62368-1:2014/A11:2017
		Health
		EN 62479(2010)

(Identification of regulations / standards)

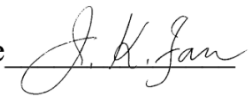
This declaration is issued for

INGICS TECHNOLOGY.
2F., No.15-2, Changshou St.,
Shulin Dist., New Taipei City 238,, Taiwan, R.O.C.

(Name / Address)

Furthermore we declare that our product will be produced in correspondence with all requirements according to the Directive 2014/53/EU and LOW VOLTAGE DIRECTIVE 2014/35/EU

Name:__J.K.Fan_____ Title:____President_____

Signature 

Date: __2021. 10. 28_____

UK DECLARATION OF CONFORMITY (DoC)

Hereby we,

Name of Manufacturer:	**INGICS TECHNOLOGY CO.,LTD.**
Address:	**2F.,No.15-2, Changshou St., Shulin Dist.**
Post Code & City:	**New Taipei City 238**
Country:	**Taiwan(R.O.C)**
Telephone Number:	**+886-2-26868632**

Declare that this DoC is issued under our sole responsibility and that this product:

Product Description:	**Sensor Beacon**
Type Designation(s):	**IBS05, iBS05H, iBS05T, iBS05G**
Trademark:	**INGICS**
Batch / Serial Number:	**After 1C00001**

Is in conformity with the Radio Equipment Regulation 2017 with reference to the following Standards applied:

Radio Equipment Regulations 2017

EN 301 489-1:V 2.2.3(2019-11)

EN 301 489-17:V 3.2.4(2020-09)

EN 300 328(V 2.2.2, 2019-07)

IEC 62368-1:2014/COR1:2015 and EN 62368-1:2014/A11:2017

EN 62479(2010)

Signed for and on behalf of:

_2024. 06.11_____
Date of issue

__J.K.Fan, President_____
Name, Function, Signature

Revision History

DATE	REVISION	CHANGES
May 30, 2021	0a	Initial release
June 2, 2021	0b	Add Waste Electrical and Electronic Equipment Recycling section for appropriate recycling the equipment
Aug 2, 2021	0c	Fix typo, modify LED section, and add Working mode section
Oct 28, 2021	01	1. Update certification section 2. Fine tune the suggested battery capacity versus voltage 3. In hall sensor section , add iBS05H working with magnet figure 4. Add detailed description/figure in “Changing battery” section.
	01a	1. Correct the TX power parameters
Jun 11,2024	01b	Add UK DOC