Specification
Ver.01

iBS04 Specification

iBS04 BLE Beacon

iBS04 is a small and simple BLE Beacon with alarm button. Besides to standard BLE tracking feature, the payload format also includes the battery voltage and alarm button status for easy management. The typical beacon battery life is 2 year in default settings.

Features

General

- ARM Cortex™-M3 32-bit processor
- Support BLE 4.2
- Powered with 1XCR2032 battery
- Long battery life: 2 year in typical beacon setting
- Android APP for configuration
- Panic/alarm button
- Size: 47mmx25mmx6mm
- IPX4
- Operating temperature: -20°C to 60°C
- Certificate: CE/FCC/IC/TELEC/NCC

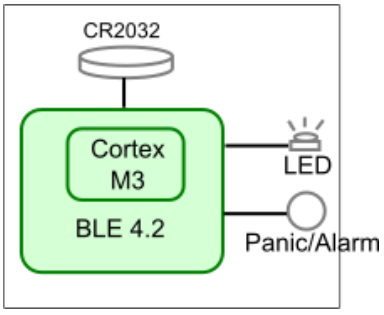
RF

- 2.4GHz frequency band
- Maximum transmit power +5dB
- Receiver sensitivity: -97 dBm @1Mbps, 0.1% BER
- On board chip antenna
- 30M range in open space

Applications

- Location tracking
- Building automation
- Security
- Smart home
- Asset management
- Advertisement

Block Diagram



Models

Model Name	Description	Advertising interval	Note
iBS04	INGICS payload format only	User configurable from 100ms~1 min. Default: 5 s	Normally in black. White case is available for batch order. 

Typical Usage

1. Beacon is always broadcasting message including button status. User can use APP to receive the message. We also have the beacon gateway iGS01S(WiFi) or iGS02E(Ethernet) used as beacon receiver.

2. By using iGS01S or iGS02E beacon gateway to receive the beacon message and send to cloud server, user is able to access and manage the data anytime anywhere.

Specification

Absolute Maximum Rating

Supply Power	CR2032 battery
Storage Temperature	-40° to 85° Celsius

Recommendable Operation Condition

Operating Temperature	-20° to 60° Celsius
Humidity	Max 95%, Non condensing, relative humidity
VDD	+3V by CR2032 battery
IPx4	Protection against splashing of water

Current Consumption

iBS04-5s transmit(default)	Average: 9.11uA*
iBS04-3s transmit	Average: 12.88uA*
iBS04-1s transmit	Average: 31.73uA*

* Measured with Panasonic CR2032 battery.

Battery Life Simulation

iBS04-5s transmit(default)	2.2 yr*

iBS04-3s transmit	1.6 yr*
iBS04-1s transmit	0.5 yr*

* Calculated with one CR2032 battery with 220mAH capacity. Considering the battery discharge characteristic, only 80% of capacity is used for calculation. This value is just for reference and may be varied with component tolerance and different environment.

BLE RF Specification

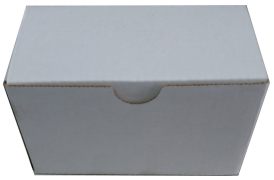
Transmit Power	Max: 5dBm
Receiver Sensibility	-97 dBm @1Mbps, 0.1 %BER
Maximum Received Signal Strength at <0.1% PER	4dBm @1Mbps, 0.1 %BER
Frequency band	2.400 – 2.483 GHz
Frequency Deviation	+-350 kHz @1Mbps
Antenna	on board chip antenna
Range	30M in open space

Dimension

Dimensions L x W x H (mm)	47X25X6
Weight(g)	10, with key ring

Packaging

One packing boxes(size: 11cmX5.5cmx6.5cm) contains 20 units of iBS04.

20X  

Revision History

DATE	REVISION	CHANGES
Sep 17, 2018	0a	Initial release
Sep 25, 2018	0b	Separate two models
OCt 22, 2018	0c	1. Add Black or white option 2. Fix power consumption and battery life simulation
Dec 12, 2019	01	1. Remove iBeacon support.(iBeacon format is by request.) 2. Add regulation part

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

第十二條

經型式認證合格之低功率射頻電機，非經許可，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。

第十四條

低功率射頻電機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。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機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 EU RED - DIRECTIVE 2014/53/EU -

This Declaration that the following designated product

Sensor Beacon
Model No.: iBS04
Multi-listing Model No.: iBS04, iBS04i
Brand Name: INGICS

(Product identification)

complies with the essential requirements of the EU RED - DIRECTIVE 2014/53/EU on the approximation of the laws of the Member States relating to ***Radio Spectrum Matters.***
Assessment of compliance of the product with the requirements relating to radio spectrum matters was based on Annex IV of the Directive 2014/53/EU and the following standard:

EMC	Radio Spectrum	Safety
EN 301 489 -1: V 2.2.0 (2017)	EN 300 328 (V 2.1.1, 2016-11)	EN 60950-1:2006+A11:2009
EN 301 489 – 17: V 3.2.0 (2017)	EN 62479 : 2010	+A1:2010+A12:2011+A2:2013
	EN 50663 : 2017	

(Identification of regulations / standards)

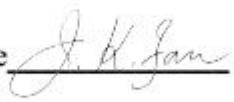
This declaration is issued for

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 produce in correspondence with all requirements according to the Directive 2014/53/EU .

Name:__J.K.Fan_____ Title:____President_____

Signature 

Date: __2019. 8.5_____