Specification
Ver.0a

iBS08 Specification

iBS08 Human Detection Sensor

iBS08 is a BLE beacon with a thermal sensor which is used for human detection. The BLE is a very low power 2.4G radio that can transmit the beacon information efficiently. iBS08 supports **Bluetooth® Low Energy(BLE)** in Bluetooth 5. iBS08 is a rugged design for working in tough conditions.The typical beacon battery life is around 1.2~ 1.9 years in default settings.(30s ADV interval).

Features

General

- ARM Cortex™-M3 32-bit processor
- Support BLE 4.2 and BLE 5 long range
- Powered with 1XCR2450 battery
- Android APP for configuration
- Power on/off switch(internal)
- Main unit Size:
  43mmx43mmx31.2mm(iBS08L)
  43mmx43mmx21.6mm(iBS08S)
- Operating temperature:
  0°C to 30°C(iBS08L) (TBD)
  0°C to 28°C(iBS08S) (TBD)

Sensor

- Thermal sensor

RF

- 2.4GHz frequency band
- Maximum transmit power +5dB
- Receiver sensitivity: -97 dBm @1Mbps, 0.1% BER
- On board PCB antenna
- >100M range in open space

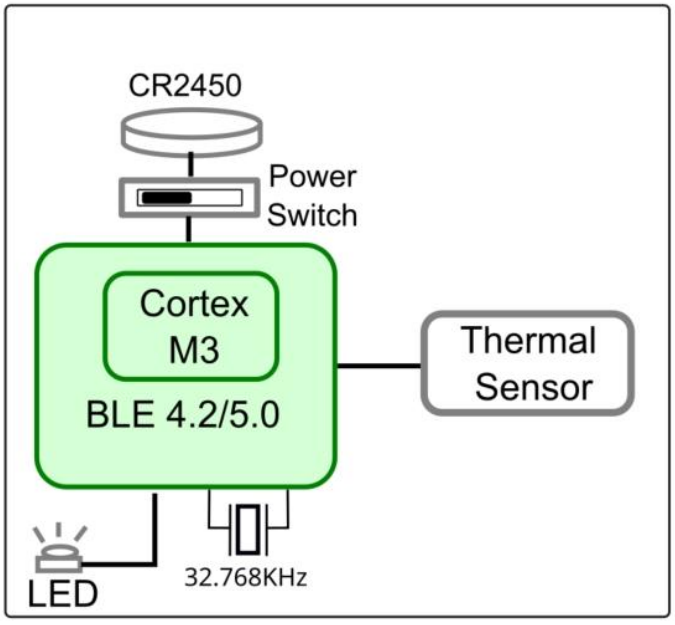
Certification

- Bluetooth
- FCC/IC/TELEC
- CE(scheduled in 2024 Q1)

Applications

- Occupancy detection
- Human detection
- Animal detection

Block Diagram



Models

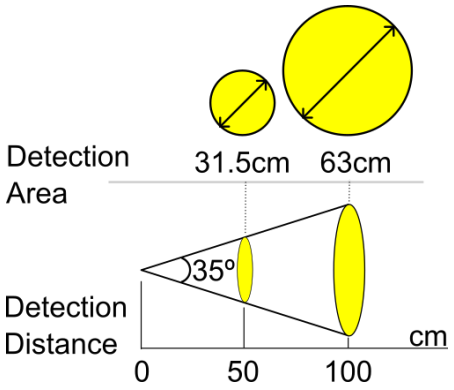
Model	iBS08S	iBS08L
		
FOV	35º	10º
Detection distance*	50-100cm	100cm-260cm

* It's possible to detect humans in shorter or longer distances. A detailed verification has to be performed during installation.

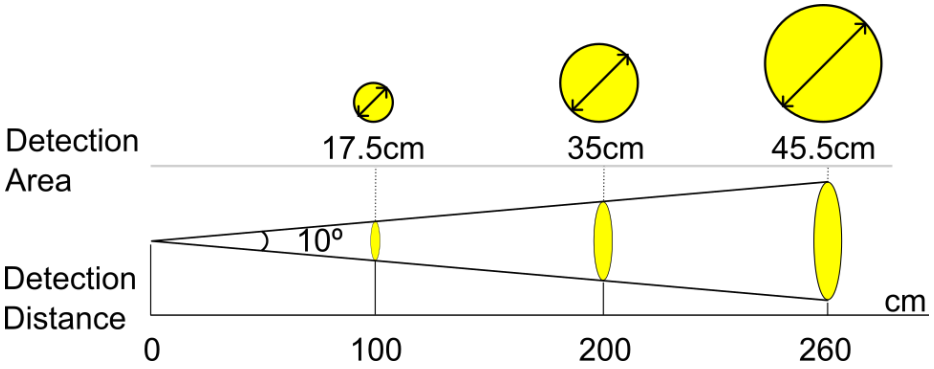
FoV

iBS08 comes with 2 angles, iBS08S provides wide FOV(35 degree) and iBS08L provides narrow FOV(10 degree) for different use cases. iBS08S is suitable for shorter distance applications and iBS08L is suitable for longer distance applications.

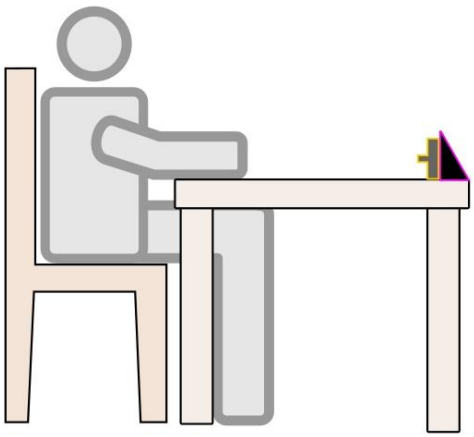
iBS08S(FOV 35º)



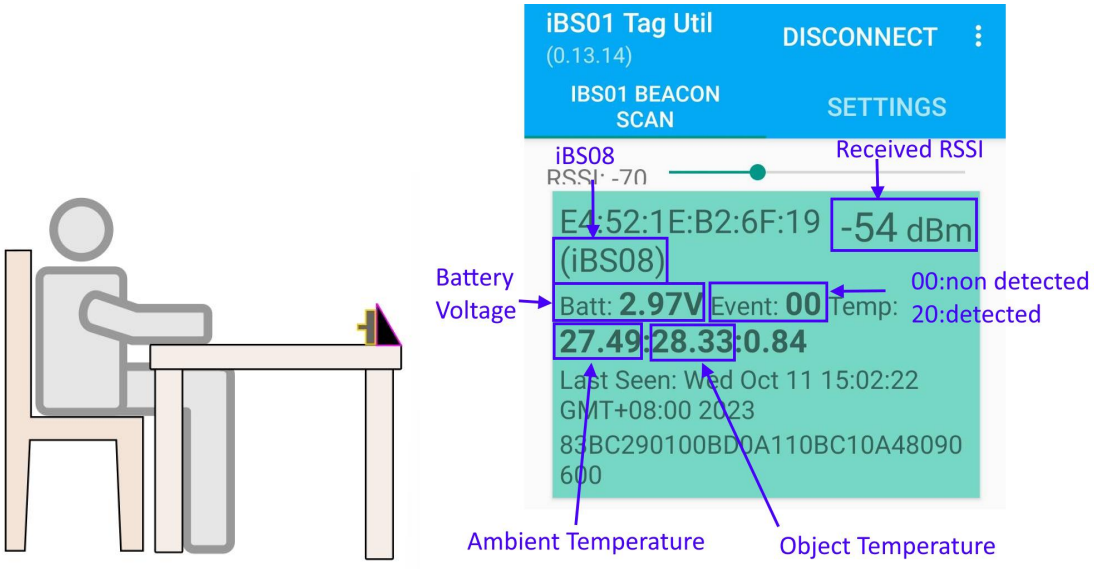
iBS08L(FOV 10º)



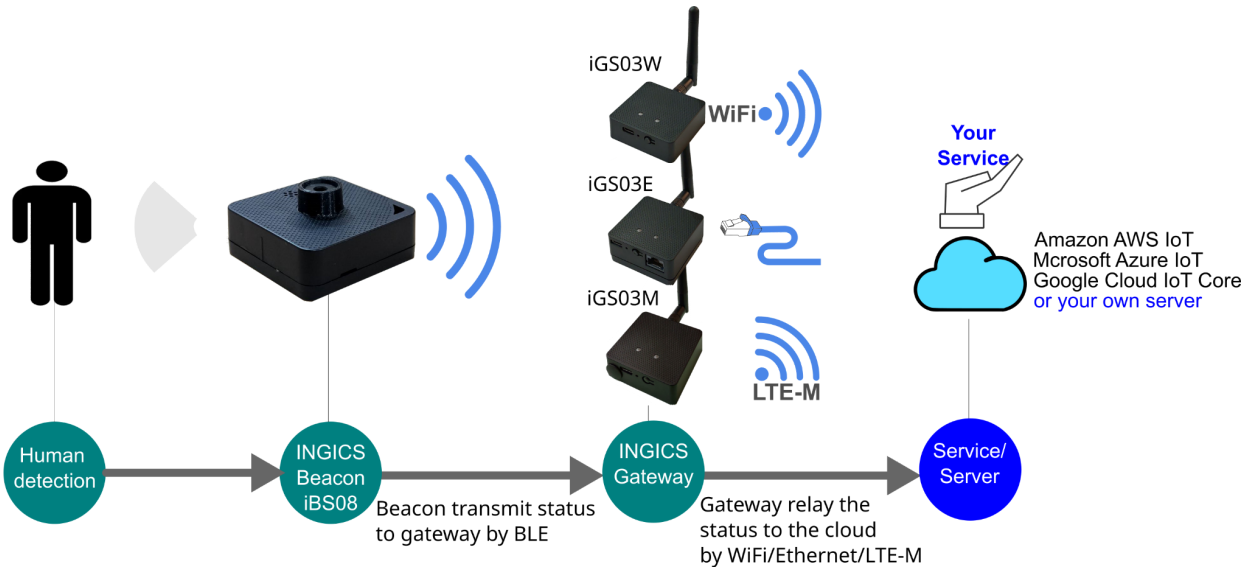
Deployment



Typical Usage



iBS08 can be used for human detection.The information can be received by our gateway(iGS01S, or iGS03W/iGS03M/iGS03E) and then sent to the cloud server. Users can access and manage the data anytime and anywhere.



Specification

Absolute Maximum Rating

Supply Power	CR2450 battery
Storage Temperature	-40° to 85° Celsius

Recommendable Operation Condition

Operating Temperature	0°C to 30°C(iBS08L) (TBD) 0°C to 28°C(iBS08S) (TBD)
VDD	+3V by CR2450 battery

Current Consumption

iBS08-30s	Average: 27.63uA*, in default 30s transmit period.

* Measured with Panasonic CR2450 battery.

Battery Life Simulation

iBS08-30s	1.2~1.9 yr*, in default 30s transmit period.

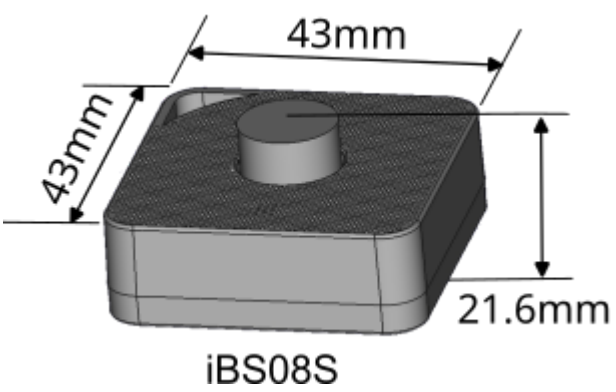
* Calculated with one CR2450 battery with 600mAH capacity. Considering the battery discharge characteristic, only 50%-80% of capacity is used for calculation. This value is just for reference and may be varied with component tolerance and different environments.

BLE RF Specification

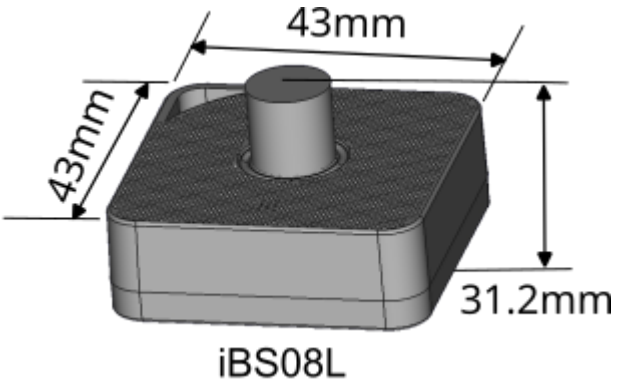
Transmit Power	Max.: +5dBm
Receiver Sensibility	-97 dBm @1Mbps, 0.1 %BER
Maximum Received Signal Strength at <0.1% PER	+4dBm @1Mbps, 0.1 %BER
Frequency band	2.400 – 2.483 GHz
Frequency Deviation	+-350 kHz @1Mbps
Antenna	on board PCB antenna
Range	>100M in open space

Dimension

Dimensions L x W x H(mm)	43mmx43mmx31.2mm(iBS08L) 43mmx43mmx21.6mm(iBS08S)
Weight(g)	27(iBS08S) 28(iBS08L)



iBS08S



iBS08L

Marking

(TBD)

Packaging

iBS08S

One package box(size: 11cmX5.4cmx6.5cm) contains 5 units of iBS08S, 5 pieces of double side tape, and 5 pieces of fixing triangle

5X

iBS08L

One package box(size: 11cmX5.4cmx6.5cm) contains 4 units of iBS08L, 4 pieces of double side tape, and 4 pieces of fixing triangle

4x

Revision History

DATE	REVISION	CHANGES
Oct 16, 2023	0a	Initial release

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: iBS08
Declaration ID: D053258
Description: iBS sensor beacon

Japan MIC Regulatory
211-180707

FCC Regulatory
2AH2IIBM40R2

IC Regulatory
21379-IBM40R2

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.