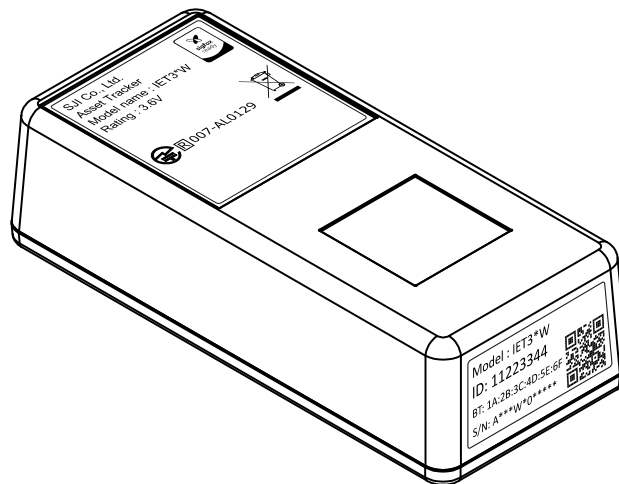


# IET30W / IET31W

## Asset Tracker Datasheet



Aug. 2023

**SJIT Co., Ltd.**

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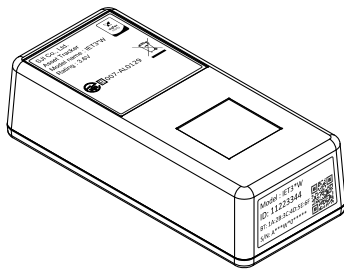
## 1. Revision history

Date	Version	Name	Description
June 15, 2023	1.0		First release product description
Aug 18, 2023	1.1		Add "How to Use"

## 2. Derived model description

Model Name	Accelerometer	Description
IET30W	X (Not mounted)	The model name(IET30W/IET31W) is determined depending on whether acceleration IC is installed.
IET31W	O (Mounted)	

### 3. Features



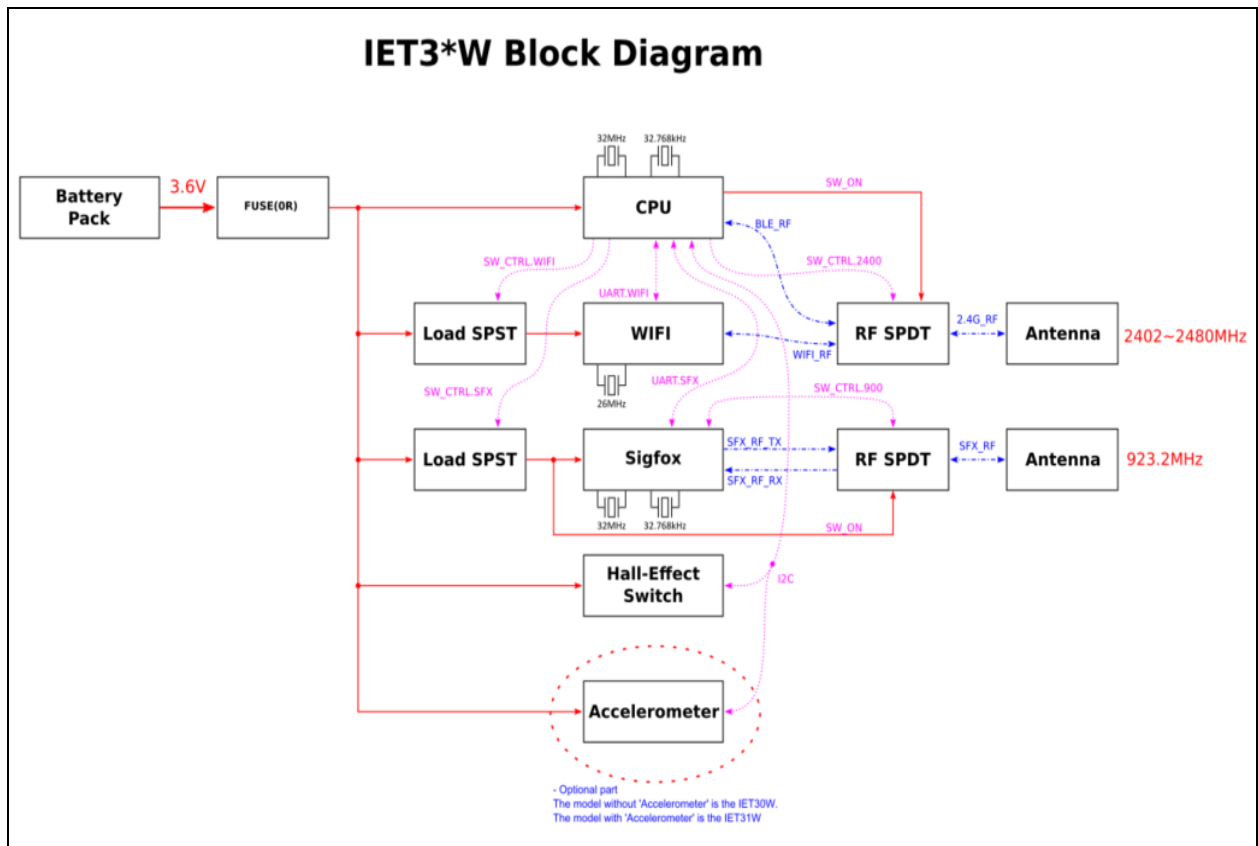
IET30W/IET31W is the Asset Tracker to send data from each installed pallet or each asset equipment, and It scans the nearby WIFI AP signal and transmits the location information and status of the asset device through Sigfox communication.

#### 3.1 General Specification

Items	Key features
Sigfox Ready™ Certificate	RC3c
Device Uplink Radiation Class	0u(12dBm≤EIRP<16dBm)
Sigfox Verified Certificate	RC3c
Battery Pack	Li-SOCl2 : +3.6V(typ), ½ AA size 14250, 1200mA Super Pulse capacitor : 3.6V(Nominal) 21mmx9mm
Normal operating temperature	-20°C ~ +60°C
Wafer proof	IP56
Wireless for location	Sigfox , BLE , WIFI(Rx scan only)
Device Management	Bluetooth 5.1 Support, BLE advertising, BLE FOTA
Sensors	Magnet Hall sensor
	3-AXIS Accelerometer Sensor(IET31W only)
Dimensions	75m x 33mm x 20mm
Weight	60±5g

## 4. Block diagram

IET30W/31W



## 5. Electrical characteristic

### 5.1 Absolute maximum ratings

Symbol	Parameter	Rating	Unit
OT	Operating Temperature	-20 to +60	°C
ST	Storage Temperature(*)	0 to +30	°C

※ If stored for a long time or left unattended, the battery life may be shortened.

### 5.2 DC characteristic

Symbol	Parameter		Min	Typ.	Max	Unit
VBAT	Battery pack voltage		3.0	3.6	-	V
CBAT	Battery capacity per 1pack			1200		mAh
Current	Shipping mode current (Not activated)	IET30W		3.5		uA
		IET31W		5.2		uA
	Sleep current	IET30W		5		uA
		IET31W		10		uA
	WIFI scan mode(3.5s Average)			64		mA
	Sigfox Tx current@RC3(8s Avg)			50		mA
	Sigfox Rx current@RC3(30s Avg)			15		mA

## 6. RF specifications

### 6.1 Sigfox; Specifications(RC3c)

Conditions: VCC=3.6V, Temp=25°C

Parameter		Min	Typ.	Max	Unit
RF Frequency	Tx		923.2		MHz
	Rx		922.2		MHz
Tx output power UL (CW, continuous wave)		13.0	15.0	16.8	dBm
Tx output power DL request (CW)		11.0	13.0	15.0	dBm
Frequency Error Tolerance(+25°C)		-3.0	-	+3.0	ppm
2 <sup>nd</sup> Harmonics(conducted)		-	-45	-35	dBm
3 <sup>rd</sup> Harmonics(conducted)		-	-53	-35	dBm
Rx Sensitivity(@600bps, GFSK)		-	-	-123	dBm
Rx Spurious Emission(30MHz~12.75GHz)		-	-	-54	dBm

### 6.2 WIFI Specifications [Receiver Specification, Conducted]

Conditions: VCC=3.6V, Temp=25°C

Parameter	Conditions	Min	Typ.	Max	Unit
Minimum Receiver Sensitivity in 802.11b mode					
1Mbps	PER<8%, Packet size = 1024bytes	-	-95	-80	dBm
2Mbps		-	-91	-80	dBm
5.5Mbps		-	-84	-76	dBm
11Mbps		-	-84	-76	dBm
Minimum Receiver Sensitivity in 802.11g mode					
6Mbps	PER<10%, Packet size = 1024bytes	-	-89	-82	dBm
9Mbps		-	-88	-81	dBm
12Mbps		-	-87	-79	dBm
18Mbps		-	-85	-77	dBm
24Mbps		-	-82	-74	dBm
36Mbps		-	-79	-70	dBm
48Mbps		-	-74	-66	dBm
54Mbps		-	-72	-65	dBm
Minimum Receiver Sensitivity in 802.11n mode					
HT20, MCS7	PER<10%	-	-70	-64	dBm

### 6.3 BLE Specifications

Conditions: VCC=3.6V, Temp=25°C, Conducted

Parameter		Min	Typ.	Max	Unit
RF Frequency Range		2.402	-	2.480	GHz
Output Power [TRM-LE/CA/01/C]		0.0	2.0	4.0	dBm
In Band Emission[TRM-LE/CA/03/C] ±2MHz offset ±3MHz offset				-20 -30	dBm
Modulation Characteristics [TRM-LE/CA/05/C]	Delta F1 Avg.	225	-	275	KHz
	Delta F2 Max.	185	-	-	KHz
	Delta F2 Avg/F1 Avg	0.8	-	-	-
Carrier Frequency Offset and Drift [TRM-LE/CA/06/C]	Initial Center Frequency Tolerance	-50	-	50	KHz
	Fn  Max.	-150	-	150	KHz
	F0 -Fn  Max.	-	-	50	KHz
	F1 – F0	-	-	20	KHz
	Fn = Fn-5  max.	-	-	20	KHz
Receiver Sensitivity [PER<30.8%, 1500packets]		-	-93.5	-70	dBm
Maximum input lever [PER<30.8%, 1500packets]		-10	0		dBm



## 7. Antenna specifications

### 7.1 Sigfox Antenna Specifications

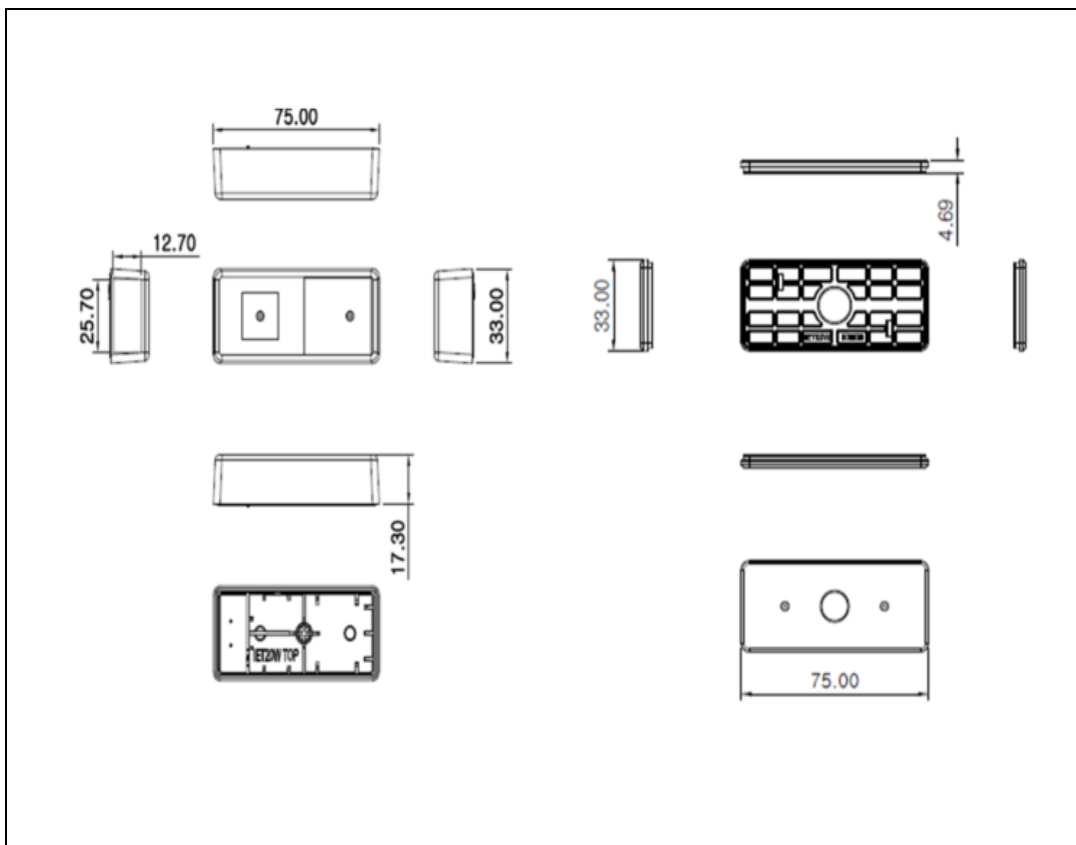
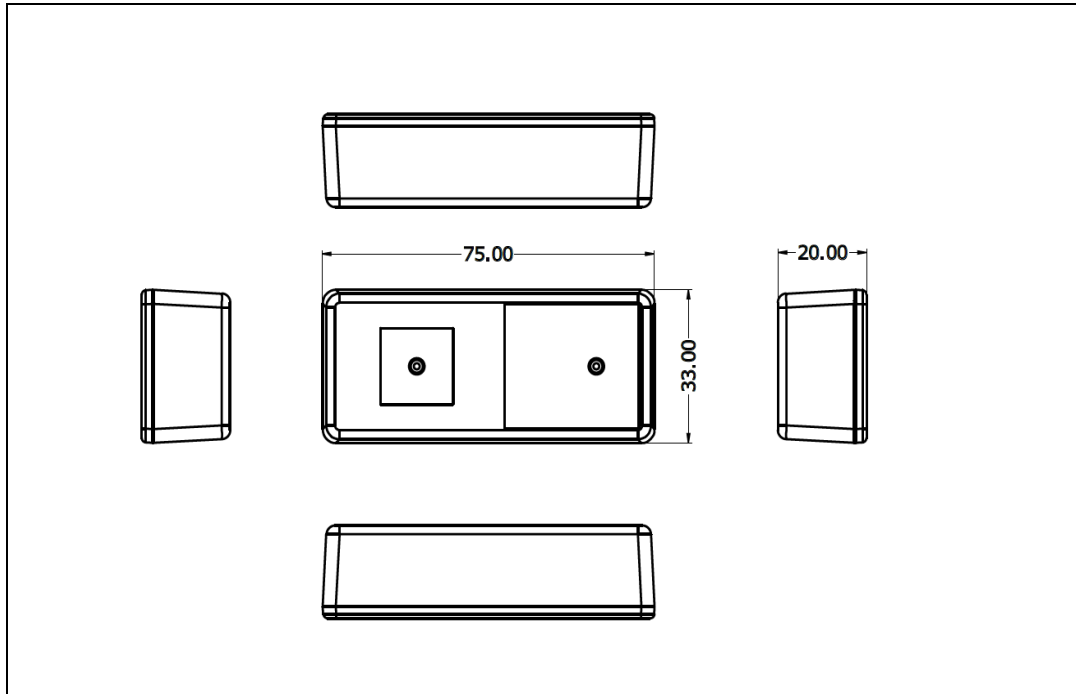
General Specification	
Model	IET30W/31W Antenna
Antenna Type	F-PCB Antenna(Dipole type)
Application	Sigfox Antenna
Electrical Specifications	
Frequency Range	900 ~ 945 (MHz)
V.S.W.R	LESS THAN 2.0:1
Max. Gain (dBi)	-0.08
Average. Gain (dBi)	-2.54
Impedance	50Ω
Polarization	Linear
Efficiency	55.6%(Avg)

### 7.2 BLE and WIFI Antenna Specifications

Parameter		Specifications	Unit
Outline Dimensions		3.2x1.6x0.5	mm
Frequency		2400~2500	MHz
Bandwidth		100	MHz
VSWR		2(typical)	
Impedance		50	Ω
Gain	Peak	2.5(typical)	dBi
	Efficiency	47(typical)	%

## 8. Enclosure

Dimension : W33 x D75 x H20(mm)



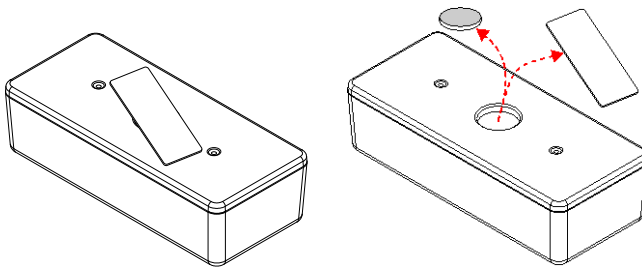
## 9. How to Use

### 9.1 Installation site selection

- \* Choose an area with a flat, non-rugged surface.
- \* Remove any debris from the surface.

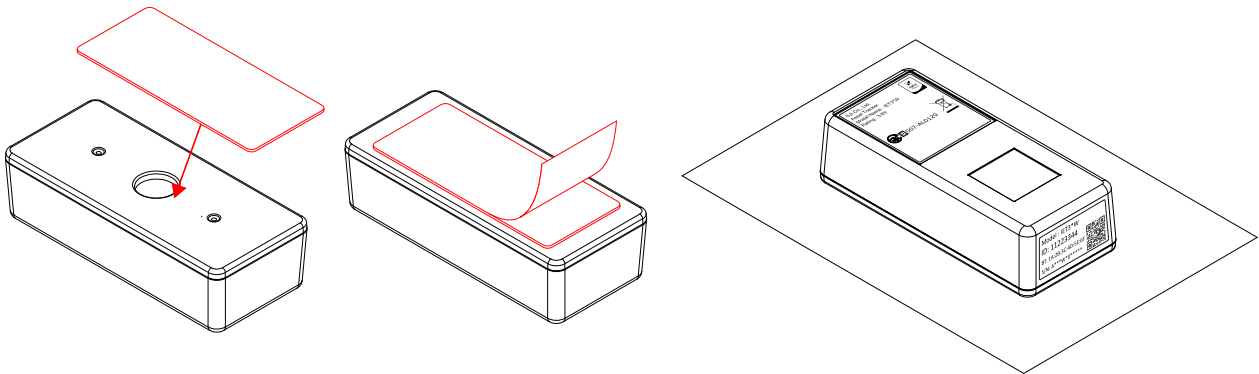
### 9.2 Product Startup

- \* Separate the magnet from the product by removing the tape on the bottom of the product.
- If you remove the magnet attached to the bottom of the product, it will start working after 30 seconds.



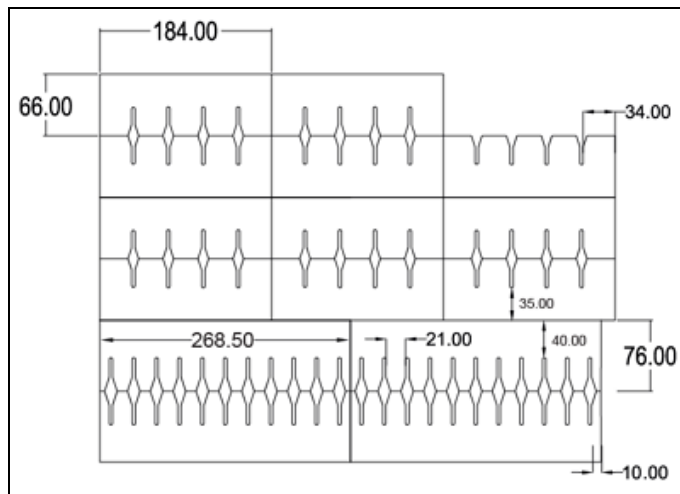
### 9.3 Installation

- \* Choose the right tape for your installation environment. Use the double-sided tape prepared by the user at the bottom of the product to attach it to the desired location. The recommended tape size is 70mm\*30mm.

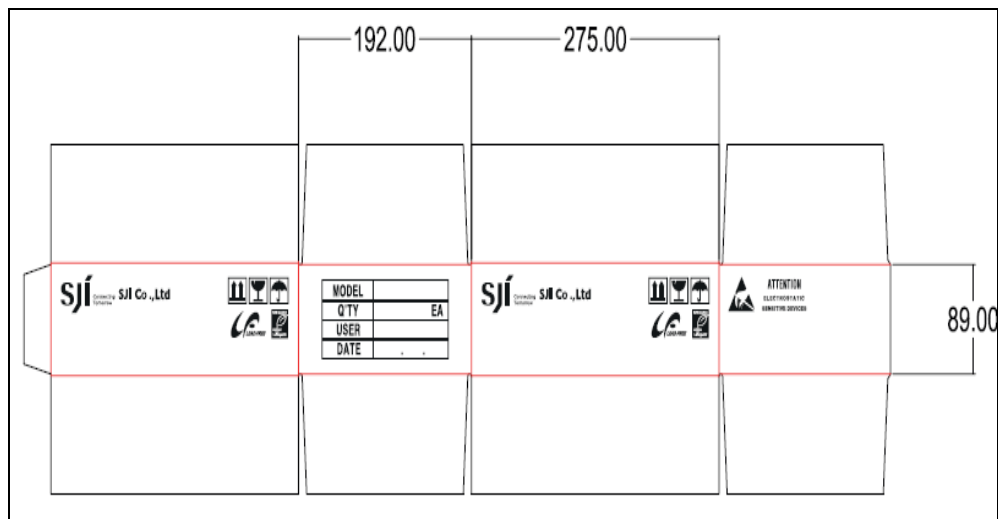


## 10. Package

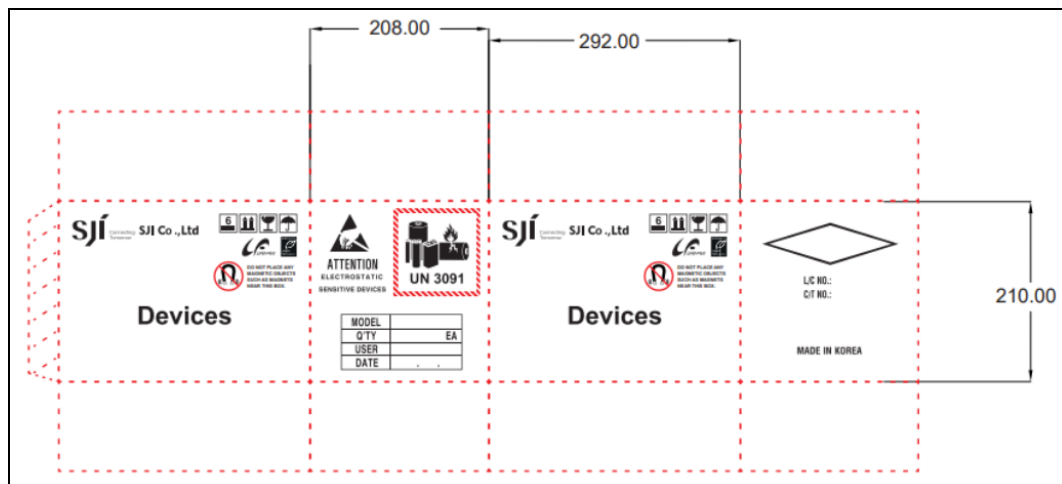
### ➤ Inner PAD



### ➤ INBOX : 1BOX= 50EA



### ➤ Carton Box : INBOX \* 2 = 100EA



## 11. Precautions

- ✓ This product may cause radio interference depending on the wireless environment in the installation and operating environment.
- ✓ There may be a shaded area of wireless communication.
- ✓ Do not disassemble, repair or modify unconditionally.
- ✓ The battery cannot be replaced, and when the life of the product is over, remove the battery and dispose of it at the designated disposal site.
- ✓ If you encounter a problem with the product, please contact CS.
- ✓ The device must never be exposed to heat sources such as heating equipment.
- ✓ Do not place the device close to objects with naked flames such as lit candles, blowtorches, etc.
- ✓ The device must not be exposed to harsh chemical agents or solvents likely to damage the plastic
- ✓ Avoid static electricity by wiping the product with a damp cloth before touching it.
- ✓ Fix it firmly to the target to prevent damage caused by falling or dislodging the product.



When the product has reached the end of its useful life,  
dispose of it at a designated electronic product recycling site.  
After use, the batteries must be disposed of at an appropriate recycling center.  
They must not be thrown away to degrade in the environment.



Precautions when opening or storing the product

\*This product is activated when the attached magnet is removed.

It may be malfunctioned by a magnet or other object with strong magnetic force.

- ✓ Do not place magnets near the product or the box it comes in.
- ✓ When storing the product, keep it in the box provided.
- ✓ Remove attached magnets only when installing the product.
- ✓ Do not mix activated and deactivated products.

## ※ WARNINGS



Valid for products indicated in the declaration of conformity Read the instructions in the manual.



The safety of this product is only guaranteed when it is used in accordance with its purpose.



Do not disassemble the device or replace the battery arbitrarily.

Risk of explosion if the battery is removed with an incorrect type.

## 12. Warranty

- This product was produced through strict quality control and technical verification.
- The warranty period of the product is 1 year from the date of purchase.
- We are not responsible for product loss due to customer negligence.
- In case of malfunction due to customer's carelessness, repair cost may be charged.
- This product is a wireless communication product, but it does not guarantee the Communication distance..

Support	iot.sales@seongji.co.kr
Warranty Term <sup>1)</sup>	1 year from date of purchase
Manufacturer	SJI Co., Ltd
Country of manufacture	Republic of Korea

<sup>1)</sup>This is not the meaning of life time to able use this device.

The life time of device is different depending on messages per day.