

# **User Manual**

# **Handsfree-System**

**Models : ZKM013**

**ZKM013A**

**ZKM013-903**

**ZKM013A-903**

### ■ Revision history

Rev.	Date	Points modified	Changes description
00	20.Oct.2020		First Release
01	9.Nov.2020		Modify FCC ID (3.2.4) Replace NCC disclaimer (3.2.8)
02	17.Dec.2020		4.2.4 Change product name Steering lock ⇒ Ignition SW 4.2.5 Change product name Steering lock ⇒ Ignition SW Add Vietnam certification 1.Add and change sentence
03	22.Dec.2020		Add Technical Specification
04	19.Jan.2021		Add EU DoC
05	12.July.2021		1.4 Change laser marking
06	20.Dec.2021		1.4 Change replacing the battery in the Smart Key
07	2.Feb.2023		4.2.3 Change EU Declaration of Conformity 4.2.4 Add UK Declaration of Conformity
08	5.July.2023		4.2.7 Change certification marking

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## 1. Overview

This product is an steering lock with Handsfree-System designed to prevent theft.

This product can be attached to the motorcycle.

The system is composed of:

- The Ignition SW (1) with its integral steering lock equipped control unit (4), which provides the following functions:

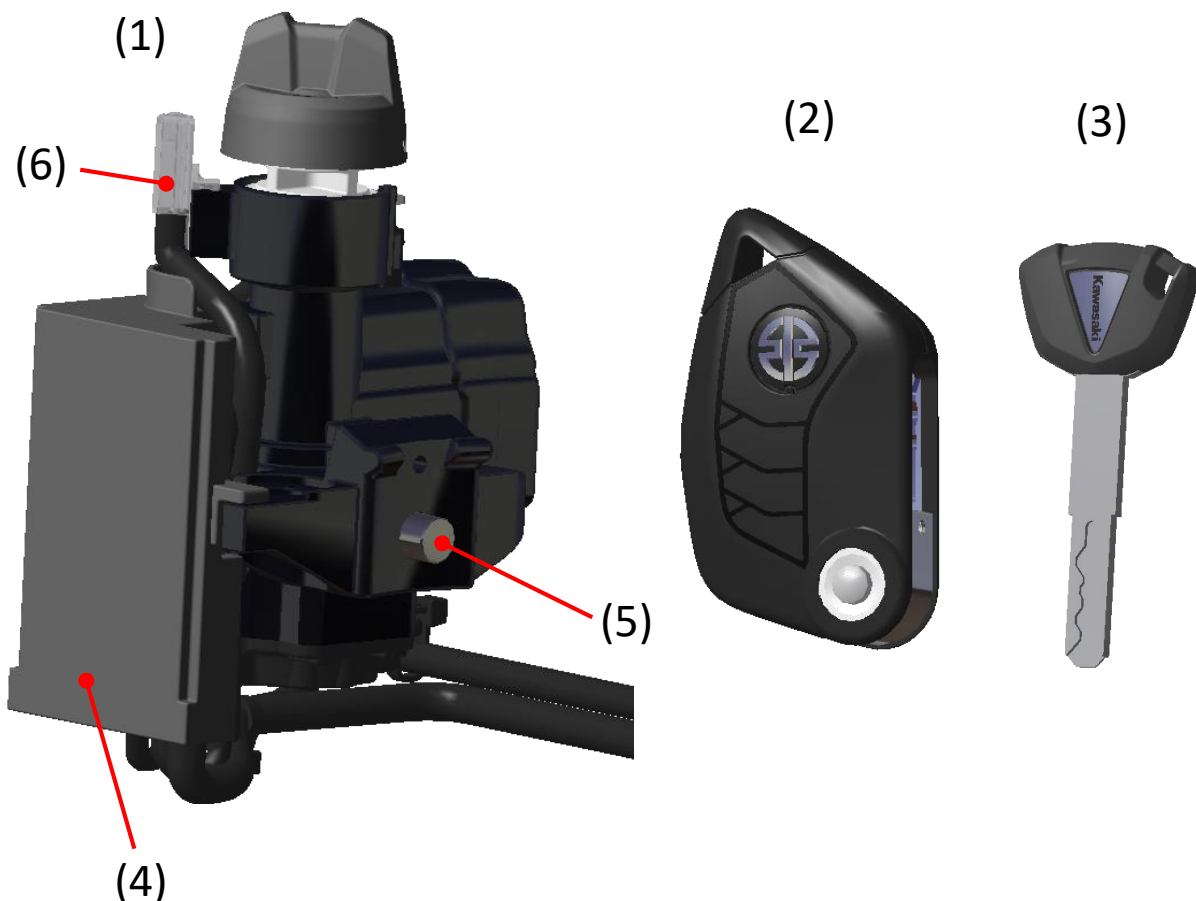
- User recognizer, by means of a Smart key (2) or an Immobilizer Key (3).
- Lock and Unlock of the steering, by moving the Lock bar (5).
- Enable and disable of the ignition of the bike .

- The Smart key (2) referred to as Active Transponder. It can also be used as an Immobilizer key.

- The Immobilizer key (3) referred to as Passive Transponder.

The Handsfree-System combines the LF: Low Frequency and the RF: Radio Frequency to recognize the right user of the motorcycle.

The system is integrated in CAN bus for all data transfer with the other electronic units on the motorcycle.



## 1.1. Motorcycle start (Turn on the ignition and start the engine)

### 1.1.1. Smart key

User recognition with the Smart key (2) is performed as described below:

- A. Press the knob on the Ignition SW (1).
- B. The Control unit (4) installed on the Ignition SW (1) requires the Smart key (2) for a radio frequency identification with an LF signal transmitted by the LF antenna incorporated in the Control unit (4).
- C. If the Smart key (2) is within a range of 1.0 m from the vehicle and the battery is adequately charged, replies to the Control unit (4) and starts authentication.
- D. After successful authentication, Ignition switch knob becomes rotatable for 5 seconds. While the knob is rotatable, LED (6) is lit. When the knob is rotated to the ON position, the main power of the vehicle turns ON and engine can be started. If authentication failed, engine can't be started.
- E. Press the starter switch on the handle switch to start the engine.

### 1.1.2. Immobilizer key

User recognition with the Immobilizer key (3) is performed as described below:

- A. Press the knob on the Ignition SW (1).
- B. After about 3 seconds, the Control unit (4) installed on the Ignition SW (1) requires the Immobilizer key (3) for a low frequency identification with an LF signal transmitted by the LF antenna incorporated in the Control unit (4).
- C. If the Immobilizer key (3) is near the LF Antenna in the Control unit (4), replies to the Control unit (4) and starts authentication.
- D. After successful authentication, Ignition switch knob becomes rotatable for 5 seconds. While the knob is rotatable, LED (6) is lit. When the knob is rotated to the ON position, the main power of the vehicle turns ON and engine can be started. If authentication failed, engine can't be started.
- E. Press the starter switch on the handle switch to start the engine.

Immobilizer set position



## 1.2. Turn off the ignition and stop the engine

When the ignition switch knob is rotated to the OFF position, the main power of the vehicle turns OFF.  
Neither Smart key (2) nor Immobilizer key (3) are required for Key OFF

## 1.3. Parking (Lock of the steering)

To lock the steering lock:

Stop the motorcycle, then put it on the side stand and steer the handlebar rightward or leftward to the lockable position.

### 1.3.1. Smart key

User recognition with the Smart key (2) is performed as described below:

- A. A. Press the knob on the Ignition SW (1).
- B. The Control unit (4) installed on the Ignition SW (1) requires the Smart key (2) for a radio frequency identification with an LF signal transmitted by the LF antenna incorporated in the Control unit (4).
- C. If the Smart key (2) is within a range of 1.0 m from the vehicle and the battery is adequately charged, replies to the Control unit (4) and starts authentication.
- D. After successful authentication, Ignition switch knob becomes rotatable for 5 seconds. While the knob is rotatable, LED (6) is lit. When the knob is kept pressed and rotated to the LOCK position, the steering becomes locked.

### 1.3.2. Immobilizer key

User recognition with the Immobilizer key (3) is performed as described below:

- A. Press the knob on the Ignition SW (1).
- B. After about 3 seconds, the Control unit (4) installed on the Ignition SW (1) requires the Immobilizer key (3) for a low frequency identification with an LF signal transmitted by the LF antenna incorporated in the Control unit (4).
- C. If the Immobilizer key (3) is near the LF Antenna in the Control unit (4), replies to the Control unit (4) and starts authentication.
- D. After successful authentication, Ignition switch knob becomes rotatable for 5 seconds. While the knob is rotatable, LED (6) is lit. When the knob is kept pressed and rotated to the LOCK position, the steering becomes locked.

## 1.4. Replacing the battery in the Smart Key



### [Important]

Take special care (A) when removing the key battery.

This symbol (B) warns the user about important use and maintenance instructions contained inside the documents provided with the equipment.



### [Warnings / Caution]

#### **Risk of battery leakage, heat generation, and explosion**

- Do not expose the key to high temperatures, such as on the dashboard, and under direct sunlight.
- Do not mechanically crush or cut the key.

#### **Risk of explosion if the battery is replaced by an incorrect type**

- Always use only the same or an equivalent type of CR2032 3.0 [V] coin batteries.

#### **Do not include a coin battery in your mouth. There is a risk of burns from chemical substances.**

- This product contains a coin battery.
- If coin batteries are accidentally ingested, chemical burns, penetration of mucosal tissue, etc. or in the worst case, death may result in just 2 hours.
- Keep new and used batteries away from children.
- If the battery cover does not close securely, stop using the product and keep it away from children.
- If you suspect that a battery is might have been swallowed or placed inside any part of the body, seek immediate medical attention.

1. Hold the FOB in one hand and find the groove.



2. Stick the thumbnail of your other hand into the groove (shown with a blue circle in the image).





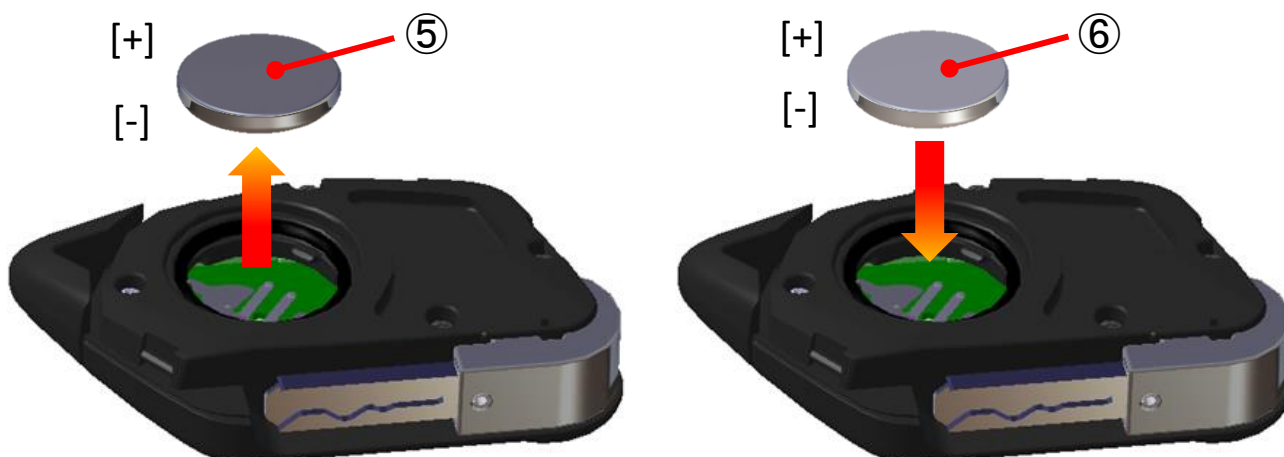
3. While sticking your thumbnail into the groove, pry open.  
You can hear a “CLICK” sound when it is unlocked.



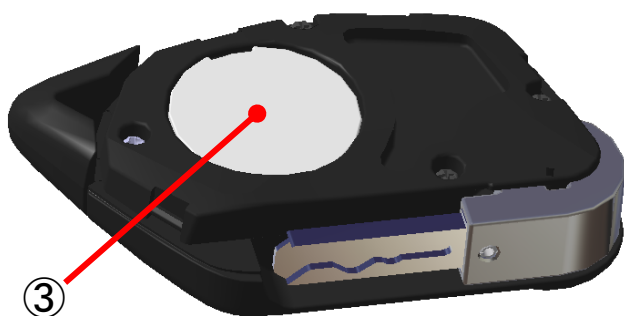
4. Open the cover until it is fully separated.



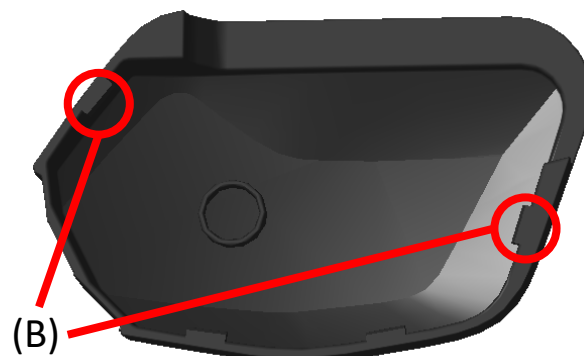
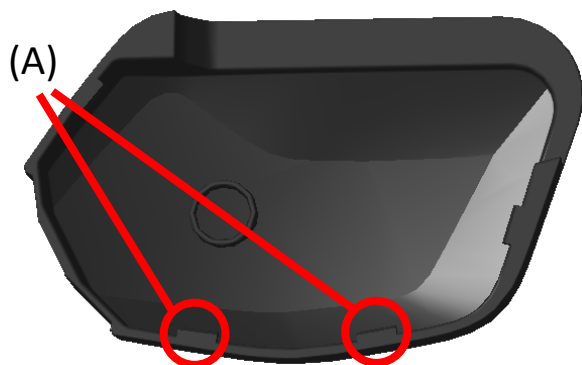
5. Remove ⑤ "Used coin battery" and replace it with ⑥ "New coin battery" .



6. Attach ③ "Coin battery cover" .



7. Attach ① "Rear plastic cover" with hooks in the order of (A) → (B).



## **2. Installation notes**

### **2.1. Handsfree-System attachment**

Handsfree-System consists of Ignition SW, Smart key, Immobilizer key.  
These are attached to a vehicle by factory/field personnel.

### **2.1. Access to Smart key internal parts**

It is strictly forbidden to have access to the inner electrical components, except used battery to be replaced.

### **2.2. Product modifications**

It is strictly forbidden to modify or tamper products included in the Handsfree-System including the Antenna Unit.

### **2.3. If the product fails**

All damaged components, must be replaced.

### 3. Technical Specification

#### 3.1. ZKM013 (Ignition SW)

Parameter	NOTE	MIN	NOM	MAX	UNIT
Operating frequency	-	-	134.2	-	kHz
RF Power	-	-	-	53.04	dBuV/m @10m

#### 3.2. ZKM013A (Ignition SW)

Parameter	NOTE	MIN	NOM	MAX	UNIT
Operating frequency	-	-	134.2	-	kHz
RF Power	-	-	-	53.04	dBμV/m @10m

#### 3.3. ZKM013-903 (Smart key)

Parameter	NOTE	MIN	NOM	MAX	UNIT
Operating frequency	-	-	433.92	-	MHz
RF Power	-	-	5	-	dBm

#### 3.4. ZKM013A-903 (Smart key)

Parameter	NOTE	MIN	NOM	MAX	UNIT
Operating frequency	-	-	315	-	MHz
RF Power	-	-	5	-	dBm

## 4. Certification

### 4.1. Manufacturer

Company Name	ASAHI DENSO CO., LTD.
Address	6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan
Website	<a href="http://www.ad-asahidenso.co.jp">http://www.ad-asahidenso.co.jp</a>

### 4.2. Approval of each country

#### 4.2.1. Australia certification




#### 4.2.2. China precautions for use

- 不得擅自改变使用场景或使用条件、扩大发射频率范围、加大发射功率（包括额外加装射频功率放大器），不得擅自更改发射天线；
- 不得对其他合法的无线电台（站）产生有害干扰，也不得提出免受有害干扰保护；
- 应当承受辐射射频能量的工业、科学及医疗（ISM）应用设备的干扰或其他合法的无线电台（站）干扰；
- 如对其他合法的无线电台（站）产生有害干扰时，应立即停止使用，并采取措施消除干扰后方可继续使用；
- 在航空器内和依据法律法规、国家有关规定、标准划设的射电天文台、气象雷达站、卫星地球站（含测控、测距、接收、导航站）等军民用无线电台（站）、机场等的电磁环境保护区域内使用微功率设备，应当遵守电磁环境保护及相关行业主管部门的规定；
- 禁止在以机场跑道中心点为圆心、半径 5000 米的区域内使用各类模型遥控器；

### 4.2.3. EU DoC

#### 4.2.3.1. Ignition SW

 6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan		
<b>EU DECLARATION of CONFORMITY (DoC)</b>		
This declaration of conformity is issued under the sole responsibility of the manufacturer:		
Name:	ASAHI DENSO CO.,LTD.	
Address:	6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan	
We declare that the DoC is issued under our sole responsibility and belongs to the following product.		
Object of the declaration:		
Product Name	IGNITION SW	
Model Name	ZKM013	
Software Name	Not reconfigurable radio	
Software Ver.	N/A	
Accessories	N/A	
The object of the declaration described above is in conformity with the relevant Union harmonization legislation:		
Radio Equipment (RE) Directive (2014/53/EU)		
The following harmonized standards and technical specifications have been applied:		
Health & Safety (Article 3.1(a)):	EN 62368-1:2014 + A11: 2017 EN 62368-1:2020	
EMC (Article 3.1(b)):	EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1	
Radio Spectrum (Article 3.2):	EN 300 220-1 V3.1.1 EN 300 220-2 V3.1.1 EN 300 330 V2.1.1	
Notified Body performed an EU-type examination in accordance with the requirements of Annex III of RE Directive and issued the EU-type examination certificate.		
Notified Body: UL Japan, Inc. (No. 1731) 4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021, Japan		
Certificate No.:	ULAR2101002	
Shizuoka, Japan	February 2, 2023	<i>Tomohiro Yaguchi</i>
Place of Issue:	Date of Issue:	Tomohiro Yaguchi Manager Engineering Department

#### 4.2.3.2. Smart key



6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan

### EU DECLARATION of CONFORMITY (DoC)

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Name: ASAHI DENSO CO.,LTD.

Address: 6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan

We declare that the DoC is issued under our sole responsibility and belongs to the following product.

Object of the declaration:

Product Name SMART KEY

Model Name ZKM013-903

Software Name Not reconfigurable radio

Software Ver. N/A

Accessories N/A

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

Radio Equipment (RE) Directive (2014/53/EU)

The following harmonized standards and technical specifications have been applied:

Health & Safety EN 62368-1:2014 + A11: 2017  
(Article 3.1(a)): EN 62368-1:2020

EMC EN 301 489-1 V2.2.3  
(Article 3.1(b)): EN 301 489-3 V2.1.1

Radio Spectrum EN 300 220-1 V3.1.1  
(Article 3.2): EN 300 220-2 V3.1.1  
EN 300 330 V2.1.1

Notified Body performed an EU-type examination in accordance with the requirements of Annex III of RE Directive and issued the EU-type examination certificate.

Notified Body:

UL Japan, Inc. (No. 1731)

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021, Japan

Certificate No.: ULAR2101001

Shizuoka, Japan

Place of Issue:

February 2, 2023

Date of Issue:



*Tomohiro Yaguchi*

Tomohiro Yaguchi  
Manager  
Engineering Department



#### 4.2.4. UK DoC

##### 4.2.4.1. Ignition SW

 6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan		
<b>UK DECLARATION of CONFORMITY (DoC)</b>		
This declaration of conformity is issued under the sole responsibility of the manufacturer:		
Name:	ASAHI DENSO CO.,LTD.	
Address:	6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan	
We declare that the DoC is issued under our sole responsibility and belongs to the following product.		
Object of the declaration:		
Product Name	IGNITION SW	
Model Name	ZKM013	
Software Name	Not reconfigurable radio	
Software Ver.	N/A	
Accessories	N/A	
The object of the declaration described above is in conformity with the relevant statutory requirements:		
STATUTORY INSTRUMENTS 2017 No. 1206 TELECOMMUNICATIONS (The Radio Equipment Regulations 2017)		
The following harmonized standards and technical specifications have been applied:		
Health & Safety (Article 3.1(a)):	EN 62368-1:2014 + A11: 2017 EN 62368-1:2020	
EMC (Article 3.1(b)):	EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1	
Radio Spectrum (Article 3.2):	EN 300 220-1 V3.1.1 EN 300 220-2 V3.1.1 EN 300 330 V2.1.1	
Shizuoka, Japan Place of Issue:	February 2, 2023 Date of Issue:	 Tomohiro Yaguchi Manager Engineering Department

#### 4.2.4.1. Smart key



6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan

### UK DECLARATION of CONFORMITY (DoC)

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Name: ASAHI DENSO CO.,LTD.  
Address: 6-2-1 Somejidai, Hamakita-ku, Hamamatsu, Shizuoka 434-0046, Japan

We declare that the DoC is issued under our sole responsibility and belongs to the following product.

Object of the declaration:

Product Name SMART KEY  
Model Name ZKM013-903  
Software Name Not reconfigurable radio  
Software Ver. N/A  
Accessories N/A

The object of the declaration described above is in conformity with the relevant statutory requirements:

STATUTORY INSTRUMENTS 2017 No. 1206 TELECOMMUNICATIONS (The Radio Equipment Regulations 2017)

The following harmonized standards and technical specifications have been applied:

Health & Safety (Article 3.1(a)):	EN 62368-1:2014 + A11: 2017 EN 62368-1:2020
EMC (Article 3.1(b)):	EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1
Radio Spectrum (Article 3.2):	EN 300 220-1 V3.1.1 EN 300 220-2 V3.1.1 EN 300 330 V2.1.1

Shizuoka, Japan

Place of Issue:

February 2, 2023

Date of Issue:

*Tomohiro Yaguchi*

Tomohiro Yaguchi  
Manager  
Engineering Department

### 4.2.5. FCC(USA) certification

Product name	Ignition SW	Smart key
FCC ID	T8VZKM013A	T8VZKM013A903

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.

#### FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### 4.2.6. ISED(Canada) certification

Product name	Ignition SW	Smart key
IC	6505A-ZKM013A	6505A-ZKM013A903

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

#### 4.2.7. Malaysia certification

The certification mark is shown here because there is not enough space on the product to display the certification mark.



#### 4.2.8. Taiwan certification

低功率射頻器材技術規範

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。

#### 4.2.9. Thailand certification

เครื่องมือโทรคมนาคมและอุปกรณ์นี้ มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดทางเทคนิคของ กสทช.

#### **4.2.10. Vietnam certification**

The certification mark is shown here because there is not enough space on the product to display the certification mark.

