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## User Manual Rider Recognition System

MOD07XX06

# User Manual Rider Recognition System

Models: XCB0305  
XCB0307  
K0349-0

Date	Rev.	Changes description	Points modified	Signature
24 July 2017	00	First Release		GeDS
29 August 2017	01	Added Certifications	4	GeDS
30 August 2017	02	Added ICASA Approval Numbers and IFETEL	4.3, 4.8	GeDS
01 September 2017	03	Removed CNC approval numbers of the Main Units	4.1	GeDS
07 September 2017	04	Removed CNC ID under the CNC LOGO and updated the IFETEL with the right model numbers. Added Morocco Certifications	4.1, 4.8, 4.9	GeDS
21 September 2017	06	Updated Malaysia Certifications	4.5	GeDS
09 October 2017	07	Added ANATEL ID	4.2	GeDS
10 October 2017	08	Removed certification WIP. Released to KTM	4	SeAI
20 October 2017	09	Added IFETEL Certifications	4.7	GeDS
05 December 2017	10	Added Ukraina Certifications	4.8	GeDS
24 January 2018	11	Added Belarus Certification	4.6	GeDS
14 February 2018	12	Added FCC IDs and Warnings	4.10	GeDS
28 March 2018	13	Added ISED ID	4.11	GeDS
29 March 2018	14	Added Technical details for China market	4.12	GeDS
20 April 2018	15	Added South Korea Certification IDs	4.13	GeDS
13 June 2018	16	Added UAE Certification IDs	4.14	GeDS
13 June 2018	17	Added Israel Certifications and Warnings	4.15	GeDS
04 July 2018	18	Added Russia and Kazakhstan Certifications	4.6	GeDS
16 September 2019	19	Added FCC and ISED information	4.10, 4.11	GeDS
19 September 2019	20	Modified FCC and ISED information	4.10, 4.11	GeDS

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## Description

The Rider Recognition System (RRS) is a mechatronic system which fully integrated "Automatic Main Switch and Steering Lock" for motorbikes.

The system is composed by:

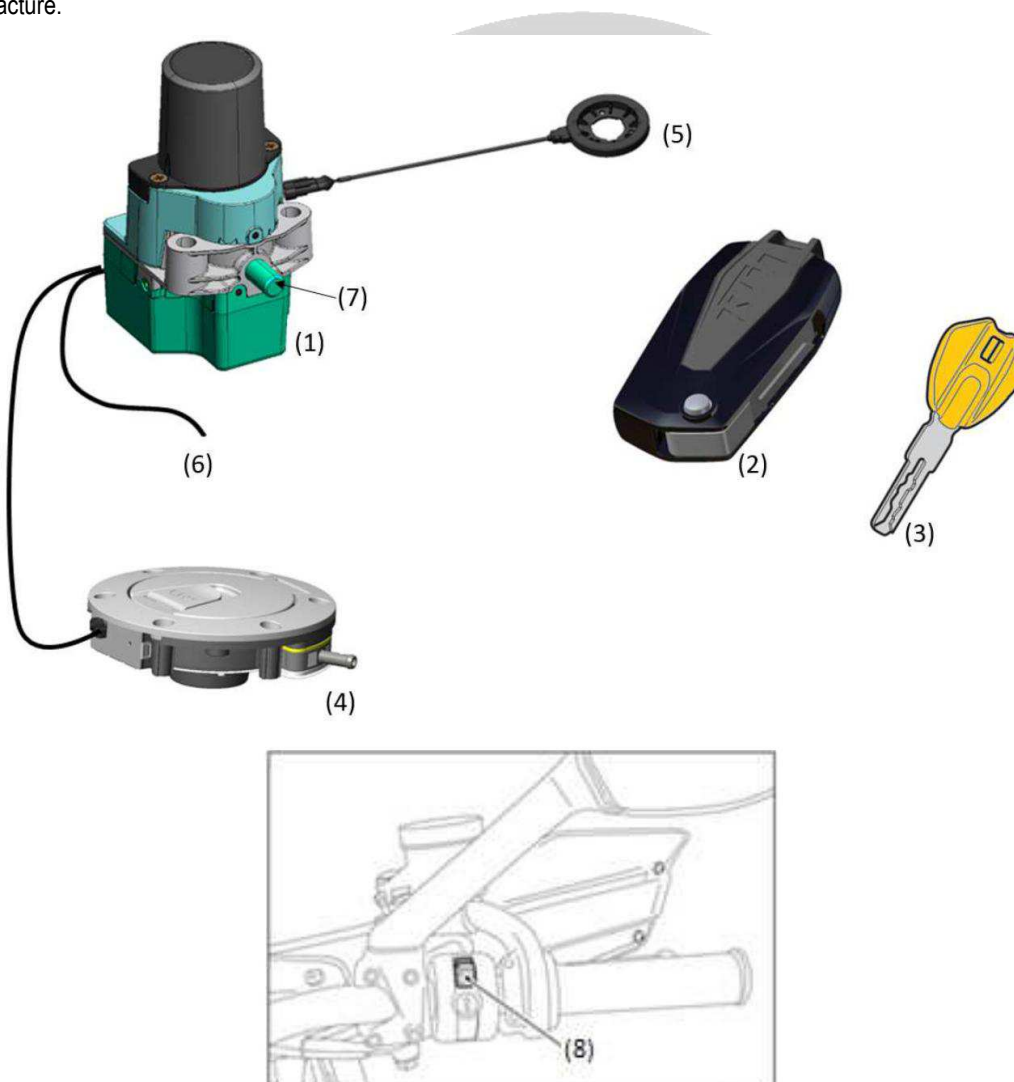
- the **main unit** (1), which provides the following function:
  - o user recognizer, by means of an **active key** (2) or a **passive key** (3);
  - o the Lock and Unlock of the steering, by moving the **bolt** (7);
  - o the enable and disable of the ignition of the bike;
- the **active key** (2);
- the **passive key**, an RFID transponder (3).

The RRS combines the transponder functionality (LF, *Low Frequency*) and the radio controller transmission (HF, *High Frequency*) to recognize the right user of the motorbike.

The RRS can manage the **Fuel Tank Cap** (4) opening.

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

The Keyless E-lock is customized in the connectors used on the wiring and in the strategy of function by the motorbike manufacture.



## 1.1 Key ON

The user recognizing with the active key (2) is performed as described below:

- press the Lock/Unlock button (8) on the handlebar of the motorbike for less than 1 second;
- the main unit (1) requires a radio frequency identification to the key (2 or 3) with an LF signal transmitted by the LF antenna (5);
- if the active key (2) is within a range of approx. 1.5 m and the battery is charged, replies to the main unit (1) by transmitting its ID via an HF signal;
- the main unit (1) receives the information through the HF antenna (6);
- if the main unit (1) recognizes the active key (2): sets T15 ON, starts the transmission of a periodical message on CAN bus and unlocks the motorbike steering by retracting the bolt (7).

**Note:** when the battery is discharged, the active key (2) acts like a passive key (3), see the below.

The user recognizing with the passive key (3) is performed as described below:

- press the Lock/Unlock button (8) on the handlebar of the motorbike;
- the main unit (1) requires a radio frequency identification to the key (2 or 3) with an LF signal transmitted by the LF antenna (5);
- if the passive key (3) is within a range of approx. 5 cm near the LF antenna (5), replies to the main unit (1) by transmitting its ID via an LF signal;
- the main unit (1) receives the information through the LF antenna (5);
- if the main unit (1) recognizes the passive key (3): sets T15 ON, starts the transmission of a periodical message on CAN bus and unlocks the motorbike steering by retracting the bolt (7).

## 1.2 Key OFF

Key-Off occurs when motorcycle speed is equal to zero, by pressing button (6) on the handlebar. Neither active key (2) nor passive key (3) are required.

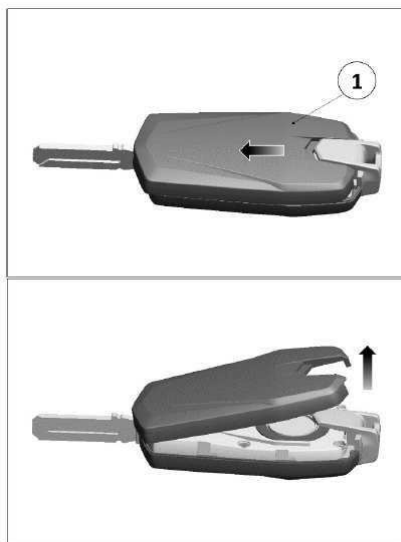
## 1.3 Steering lock

To engage the steering lock:

- Stop the motorcycle, then put it on the side stand and fully steer handlebar to the left or to the right;
- press the Lock/Unlock button (8) and hold it depressed for more than 2 second with steering turned completely to the left or to the right: steering lock will be engaged after this time (the bolt of the system (7) goes out).

**Note:** In case of failed engagement of steering lock, the signal LED will blink 4 times.

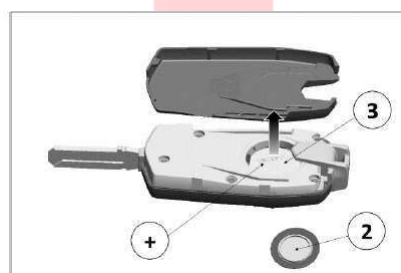
#### 1.4 Replacing the battery in the active key



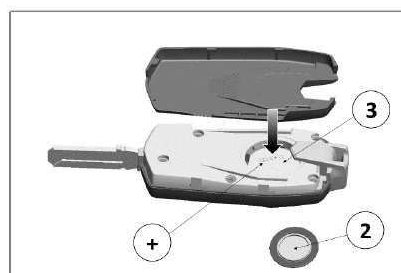
Remove the rear plastic shell (1) of the active key by pushing it forward and lifting it as shown into the images above.



Once removed the plastic shell, pull out the battery protection cap (2).



Remove the battery (3) and install a new one.



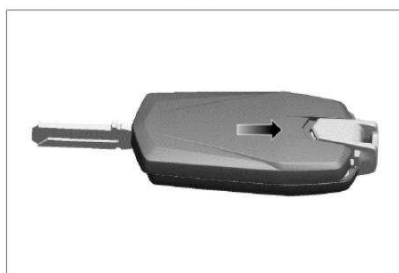
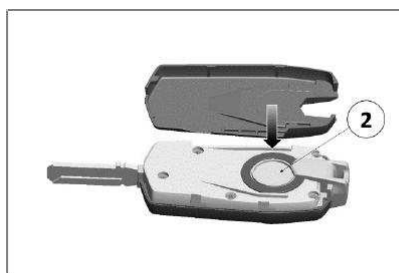
Install the battery into the properly housing and pay attention to the polarity: positive pole (+) must be facing up.



**Important:** only use the required type of battery, i.e. CR2032 3.0 Volts.

**CAUTION  
RISK OF EXPLOSION IF BATTERY IS REPLACED  
BY AN INCORRECT TYPE.  
DISPOSE OF USED BATTERIES ACCORDING  
TO THE INSTRUCTIONS**

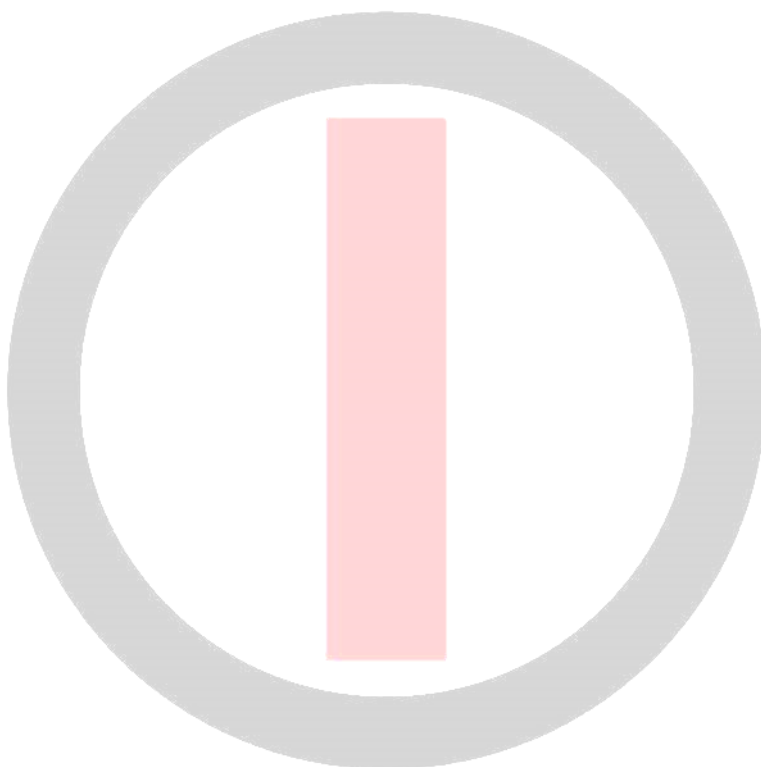
Refit protection cap (2) on the battery.



Reinstall the rear plastic shell (1) and push slightly as shown in the figures.  
Make sure to close/assembly the shell properly to align the upper and lower shells.

## 2 Installation notes

1. Zadi reserves of approve the installation activities on the vehicles.
2. The bolt, in rest position, must allow the overall/complete movements of the steering.
3. Installation Antenna LF: the item must be put in air, far from metallic parts. Every single installation must be agreed and approved by/with Zadi.
4. It is strictly forbidden modify, tamper the harness, antenna and any other device annex to the kit.
5. Harness installation: the harness must be put in place far from the metallic parts and every single installation must be agreed and approved by Zadi.
6. Every single device damaged, MUST be replaced.
7. Active key: it is strictly forbidden have access to the inner electrical component of the active key, except for the battery compartment (to replace the battery exhausted).





### 3 Technical Specification

#### 3.1 RRS Main Unit

##### 3.1.1 Electrical features

Nominal voltage	13.5V
Operating voltage	7.5-16V
Operating temperature	-25°C @ +60°C
Storage temperature	-45°C @ +90°C
Operating Current consumption	≥ 100mA at 12V
Stand-by Current consumption	≤ 30uA at 12V
Key supply output ( +15 )	0.05A to 5A max at 25°C
Key supply output ( +15 )	0.05A to 3A max in temp. range
2 <sup>nd</sup> Output supply	0.05A to 2A max at 25°C
2 <sup>nd</sup> Output supply	0.05A to 2A max in temp. range
Operating Frequency LF	134.5 KHz
Operating Frequency HF	433.92 MHz
RF Power	< 66 dBμA/m @10m (129.6 – 135 kHz)
Modulation Type	FSK for UHF and AM for LF

##### 3.1.2 Mechanical features

Dimensions (without external steering sensing leverages)	69 x 70 x 129 mm
Dimensions (with external steering sensing leverages)	113 x 70 x 129 mm
Weight	590 gr
Bolt PUSH / PULL load	≥ 50 N
External Housing	Aluminium
Protection grade	IP45 (upper part)
Vibration resistance	20 g

#### 3.2 Active Key – Remote control

##### 3.2.1 Electrical features

Battery type	CR2032
Nominal voltage	3V
Operating voltage	2.5-3.16V
Operating temperature	-20°C @ +60°C
Storage temperature	-30°C @ +60°C
Battery life	24 to 30 months
Operating distance for Key-Card	10-150 cm (on air)
Operating distance for passive key	1-5 cm (on air)
Operating Frequency LF	134.5 KHz
Operating Frequency HF	433.92 MHz
RF Power	< 10 mW e.r.p. (433,050 MHz – 434,790 MHz)
Modulation Type	FSK for UHF and AM for LF

##### 3.2.2 Mechanical features

Dimensions (Key closed and without pushbutton)	37.2 x 78.2 x 17.4 mm
Weight	56 g
External Housing	Plastic
Protection grade	IP55

## 4 Certification

### 4.1 Argentine Certification

#### 4.1.1 RRS Active Key K0349-0 Certification



**H-20232**

### 4.2 ANATEL Certification

"This product is homologated by ANATEL, in accordance with the procedures regulated by the Resolution 242/2000, and meets the technical requirements applied".

For more information, see the ANATEL website [www.anatel.gov.br](http://www.anatel.gov.br)

#### 4.2.1 RRS Active Key K0349-0 Certification

**Model: K0349-0**



**06880-17-08714**

" Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário."

#### 4.2.2 RRS Main Unit XCB0305 Certification

**Model: XCB0305**



**07025-17-08714**

" Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário."

#### 4.2.3 RRS Main Unit XCB0307 Certification

**Model: XCB0307**



**07026-17-08714**

"Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário."

#### 4.3 South Africa Radio Equipment Type Approval Number

K0349-0 / XCB0305



K0349-0 / XCB0307



#### 4.4 Singapore Radio Equipment Type Approval Number

The certification label is reported in the User Manual due to the lack of space on the Active Key and of the fact the Main Unit it is not accessible to the final user.

K0349-0 / XCB0305 / XCB0307

**Complies with  
IMDA Standards  
DA107682**

#### 4.5 Malaysia Certification

The certification label is reported here due to the lack of space on the active key and of the fact the main Unit it is not accessible to the final user:

K0349-0 / XCB0305 / XCB0307



#### 4.6 Russia, Kazakhstan and Belarus Certifications

K0349-0 / XCB0305 / XCB0307



## 4.7 Morocco Certifications

### 4.7.1 Main Unit XCB0305 Certification

AGREE PAR L'ANRT MAROC

Numéro d'agrément : MR 14689 ANRT 2017

Date d'agrément : 31/08/2017

### 4.7.2 Main Unit XCB0307 Certification

AGREE PAR L'ANRT MAROC

Numéro d'agrément : MR 14688 ANRT 2017

Date d'agrément : 31/08/2017

### 4.7.3 Active Key K0349-0 Certification

AGREE PAR L'ANRT MAROC

Numéro d'agrément : MR 14690 ANRT 2017

Date d'agrément : 31/08/2017

## 4.8 IFETEL Certifications

### Advertencias de IFETEL

La operación de este equipo está sujeta a las siguientes dos condiciones:

- (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y
- (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

#### 4.8.1 Modelo XCB0305 (unidad central) K0349-0 (llave activa)

Certificado Homologacion Numero: **RLVZAXC17-1532**

#### 4.8.2 Modelo XCB0307 (unidad central) K0349-0 (llave activa)

Certificado Homologacion Numero: **RLVZAXC17-1560**

## 4.9 Ukraine Certifications

#### 4.9.1 Main Unit XCB0305 Certification



**UA.TR.109.0199-17**

#### 4.9.2 Main Unit XCB0307 Certification



**UA.TR.109.0200-17**

#### 4.9.3 Active Key K0349-0 Certification



**UA.TR.109.0198-17**

#### 4.10 USA Certification

Product name: RRS Main Unit  
 FCC ID: VFZKLGZADI02

Product name: RRS Active key  
 FCC ID: VFZKLGKZADI02

##### 4.10.1 Warnings

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§ 15.105 Information to the user statements

*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 or more 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 § 15.21 - Information to user

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

This product complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with minimum distance of 20 cm between the radiator and your body.

## 4.11 Canada Certification

### 4.11.1 Main Unit Certification

Product name: RRS Main Unit (XCB0305, XCB0307)  
IC: 22239-KLGMZADI02

*This device complies with Industry Canada licence-exempt RSS standard(s). 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.*

#### 4.11.1 Active Key Certification

Product name: RRS Remote control key (K0349-0)  
IC: 22239-KLGKZADI02

*This device complies with Industry Canada licence-exempt RSS standard(s). 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.*

*This product complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with minimum distance of 20 cm between the radiator and your body.*

*Cet appareil est conforme aux limites d'exposition aux rayonnements de l'ISED pour un environnement non contrôlé. L'antenne doit être installée de façon à garder une distance minimale de 20 centimètres entre la source de rayonnements et votre corps.*



#### 4.12 Technical details for China market

KTM Keyless E-lock composed by:

**(1) Main Unit XCB0305-XCB0307 (134.5kHz)**

General transmitting SRDs; Category A equipment

Operating frequency: 134.5 kHz (band 9-190 kHz)

EMF emission: < 72 dB  $\mu$ A/m (at 10 m) (-3 dB/octave) (quasi-peak)

Extreme environment condition: -25 °C + 85 °C

**(2) Active Key K0349-0 (433.92 MHz)**

Radio control device for various kinds of civilian equipment

Operating frequency: 433.00-434.79 MHz

Transmit power limit: <10 mW (e.r.p)

Occupied bandwidth:  $\leq$  400 kHz

Extreme environment condition: -20 °C + 60 °C

is in conformity with the requirements specified in the Technical Requirements for micro-power (Short range) Devices, MIIT Notification no. 423,2005 when used within the Extreme environment conditions listed above.

#### Information:

- 1) 不得擅自更改发射频率、加大发射功率（包括额外加装射频功率放大器）；不得擅自外接天线或改用其它发射天线。  
(Do not change the designed parameters (e.g. operating frequency, transmit power or antenna) without permission or connect the device to external RF power amplifier or antenna).
- 2) 使用时不得对各种合法的无线通信业务产生有害干扰；一旦发现有干扰现象时，应立即停止使用，并采取措施消除干扰后方可继续使用。  
(Stop the operation of the device immediately, if it causes any harmful interference to the existing radiocommunication operations or systems).
- 3) 使用微功率无线设备，必须忍受各种无线电业务的干扰或工业、科学及医疗应用设备的辐射干扰。  
(The operation of the device shall tolerate interferences from the radiocommunication system or radiated interferences from the ISM devices).
- 4) 不得在飞机或机场附近使用。  
(Do not use the device near aircrafts or airports).

#### Sources:

1. 信部无[2005]423号:微功率(短距离)无线设备的技术要求  
*Technical requirements for micro-power (short-range) devices*, MIIT notification no. 423, 2005.
2. 信部[1998]178号:微功率(短距离)无线电设备管理暂行规定  
*Provisional regulations for the management of micro-power (short-range) radio devices*, MIIT notification no. 178, 1998.

#### 4.13 South Korea Certification



R-CRM-ZAD-K0349-0

Company name: ZADI S.p.A.  
 Equipment Name: RRS Remote control key  
 Model Name: K0349-0  
 Manufactured Date: Week / Year  
 Manufacturer / Country: ZADI S.p.A./ ITALY



R-RRM-ZAD-XCB0305

Company name: ZADI S.p.A.  
 Equipment Name: Keyless System  
 Basic Model Name: XCB0305  
 Series Model Name: XCB0307  
 Manufactured Date: Week / Year  
 Manufacturer / Country: ZADI S.p.A./ ITALY

#### 4.14 UAE Certification

##### 4.14.1 Main Unit XCB0305 Certification

### NOTICE

This equipment has been registered with the Telecommunications Regulatory Authority for use in the UAE.

**TRA  
 REGISTERED No:  
 ER63529/18  
 DEALER No:  
 DA75721/18**

#### 4.14.2 Main Unit XCB0307 Certification

### **NOTICE**

This equipment has been registered with the Telecommunications Regulatory Authority for use in the UAE.

### **TRA**

**REGISTERED No:**

**ER63530/18**

**DEALER No:**

**DA75721/18**

#### 4.14.3 Active Key K0349-0 Certification

### **NOTICE**

This equipment has been registered with the Telecommunications Regulatory Authority for use in the UAE.

### **TRA**

**REGISTERED No:**

**ER63531/18**

**DEALER No:**

**DA75721/18**

## 4.15 ISRAEL Certification

### 4.15.1 Main Unit XCB0305 Certification

מוצר זה פטור מרישיון הפעלה אלחוטי.  
המוצר אסור לשימוש למתן שרות לצד ג'.  
אסור להחליף אנטנת המכשיר המקורית.  
אסור לעשות במכשיר כל שינוי טכני.

This product does not need an Israeli wireless operation license.  
It is forbidden to use this product for service to third party.  
It is forbidden to replace the original antenna  
It is forbidden to make any technical change in this product.

**ISRAEL: 5164445**

### 4.15.2 Main Unit XCB0307 Certification

מוצר זה פטור מרישיון הפעלה אלחוטי.  
המוצר אסור לשימוש למתן שרות לצד ג'.  
אסור להחליף אנטנת המכשיר המקורית.  
אסור לעשות במכשיר כל שינוי טכני.

This product does not need an Israeli wireless operation license.  
It is forbidden to use this product for service to third party.  
It is forbidden to replace the original antenna  
It is forbidden to make any technical change in this product.

**ISRAEL: 5164444**

### 4.15.3 Active Key K0349-0 Certification

מוצר זה פטור מרישיון הפעלה אלחוטי.  
המוצר אסור לשימוש למתן שרות לצד ג'.  
אסור להחליף אנטנת המכשיר המקורית.  
אסור לעשות במכשיר כל שינוי טכני.

This product does not need an Israeli wireless operation license.  
It is forbidden to use this product for service to third party.  
It is forbidden to replace the original antenna  
It is forbidden to make any technical change in this product.

**ISRAEL: 5164440**