


User Manual

적용차종 CN7 / FOB			페이지(SHT/SHTS) 1/5													
작성처 Wireless Design Team	INFORMATION DOCUMENT NO.															
Title : RELATING TO CE TYPE-APPROVAL AS SEPARATE TECHNICAL UNIT OF VEHICLE RF REMOTE KEYLESS ENTRY IN SMART KEY SYSTEM																
<div style="text-align: center;">목차</div> <table style="width: 100%; margin-top: 20px;"> <tr> <td>Information Document</td> <td>(5 sheets: Include cover)</td> </tr> <tr> <td>Attachment 1 - System diagram</td> <td>(1 sheet)</td> </tr> <tr> <td>Attachment 2 - Fob block diagram</td> <td>(1 sheet)</td> </tr> <tr> <td>Attachment 3 - Schematic of fob</td> <td>(Each 1 sheet)</td> </tr> <tr> <td>Attachment 4 - Layout of fob</td> <td>(1 sheet)</td> </tr> <tr> <td>Attachment 5 - Part List</td> <td>(1 sheet)</td> </tr> </table>					Information Document	(5 sheets: Include cover)	Attachment 1 - System diagram	(1 sheet)	Attachment 2 - Fob block diagram	(1 sheet)	Attachment 3 - Schematic of fob	(Each 1 sheet)	Attachment 4 - Layout of fob	(1 sheet)	Attachment 5 - Part List	(1 sheet)
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REL. DATE	REFERENCE	SORT	PREPARED	CHECKED												
2019.12.12																
Original archive (PLM SYSTEM)		APPR OVAL	H S GIM	R H HWANG	J H LEE											

Title : Information Document	NO. Date
<div data-bbox="1123 376 1315 407" style="text-align: right;">SHT/SHTS : 2/5</div> <div data-bbox="213 452 446 483">0. GENERAL</div> <div data-bbox="213 568 373 600">0.1. Make</div> <div data-bbox="306 645 730 676" style="margin-left: 40px;">MOBASE ELECTRONICS Co.,Ltd.</div> <div data-bbox="213 721 427 752">0.2. Model No.</div> <div data-bbox="306 797 919 949" style="margin-left: 40px;"> - Transmitter : MBEC3FOB2004 - Transmitter : MBEC4FOB2004 - Transmitter : MBEC5FOB2004 - Receiver : (IBU : Intergrated Body control Unit) </div> <div data-bbox="213 994 730 1025">0.3. Name and address of manufacturer</div> <div data-bbox="306 1070 1407 1142" style="margin-left: 40px;"> MOBASE ELECTRONICS Co.,Ltd. 100, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea </div> <div data-bbox="213 1187 622 1218">0.4. Address of assembly plant</div> <div data-bbox="306 1263 1407 1335" style="margin-left: 40px;"> MOBASE ELECTRONICS Co.,Ltd. 100, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea </div>	

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2. PRODUCT SPECIFICATION

2.1 Scope of RKE, passive entry control, passive start control in SMART Key system.

2.1.1 FOB KEY : It has the functions for passive entry and passive start including RKE functions. It also has the TP for emergency authentication for passive start

2.1.2 SMART Key system : It is an ECU to control the whole smart key system. It has the functions such as passive entry control, passive start control, RKE functions.

2.2 SPECIFICATIONS

2.2.1 FOB KEY

ITEM	SPECIFICATION
Rated supply voltage	DC 3V
Operating voltage range	DC 2.5 ~ 3.2V
Operating temperature range	- 10 ~ + 60℃ with Battery
Storage temperature range	- 30 ~ + 85℃ without Battery
Modulation	FSK
Frequency	433.92MHz
Code	Rolling Code(Hopping Algorithm)
Electric field strength	10mW (433.92MHz)
Battery life	2 Year(10Times/Day)(Lithium 3V 1EA)

2.2.2 RECEIVER

Item	Specification
Rated Supply Voltage	DC 12V
Operating Voltage	DC 9 ~ 16V
Operating Temperature	- 35 ~ + 75℃
Max Humidity	95%
Standby Current	Below than 6mA (in alarm setting condition)

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<div data-bbox="1155 331 1353 362" style="text-align: right;">SHT/SHTS : 4/5</div> <div data-bbox="213 412 574 483"> <p>2.3 Operating summary</p> <p> <u>-RKE</u></p> </div> <div data-bbox="309 492 1292 801"> <ul style="list-style-type: none"> ① Push button of FOB (Transmitter / Lock, Unlock, Trunk, Panic, Telecranking) ② TX modulates data to FSK and transmits RKE data using an RF frequency. (433.92MHz) ③ IBU(receiver) distinguish the RKE command data and transmit command after check the door, trunk state ④ Door lock, unlock, trunk open, panic(option), Telecranking(option) function is activated </div> <div data-bbox="309 851 489 882"> <p> <u>- Passive Start</u></p> </div> <div data-bbox="309 891 1181 1124"> <ul style="list-style-type: none"> ① the SSB button of SMK is pressed to start the engine. ② The indoor ANT of the car transmits the code via the Low Frequency. ③ Fob(receiver) decrypts the received code from SMK. ④ Fob transmits the code via radio frequency. ⑤ IBU should check the boot state. ⑥ IBU controls a start-up operation and the transition of supply power. </div> <div data-bbox="213 1169 777 1200"> <p>2.3.1 LOCK & UNLOCK & TRUNK & PANIC</p> </div> <div data-bbox="309 1249 1465 1639"> <ul style="list-style-type: none"> 1) RKE Locking request <ul style="list-style-type: none"> - When you push Lock button, All door locks will be locked. 2) RKE Unlocking request <ul style="list-style-type: none"> - When you push Unlock button, All door locks will be unlocked. 3) RKE Trunk release request <ul style="list-style-type: none"> - When you push Trunk button for 1 second, trunk locks will be opened. 4) RKE Panic request(Optional) <ul style="list-style-type: none"> - When you push Panic button for 1 second (KMC : 0.5s, HMC : 1s), Horn will alarm. 5) RKE Telecranking request(Optional) <ul style="list-style-type: none"> - When you push Telecranking button for 2 second, will be engine start. </div> <div data-bbox="213 1686 413 1718"> <p>2.4 Caution</p> </div> <div data-bbox="309 1769 1343 1881"> <ul style="list-style-type: none"> ① Danger of explosion if battery is incorrectly replaced. ② Replace only with the same or equivalent type recommended by the manufacturer. ③ Dispose of used batteries according to the manufacturer's instructions. </div>	

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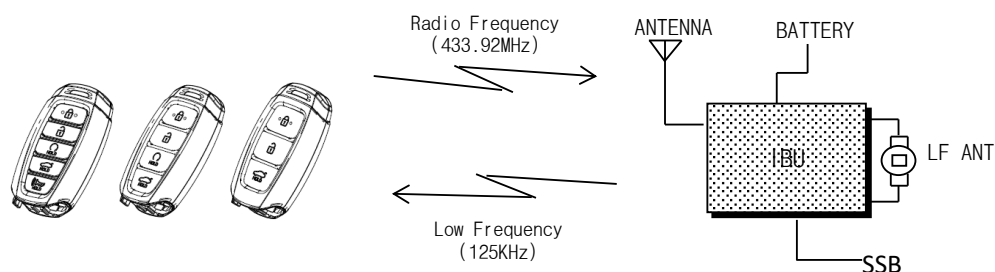
3. USER MANUAL

3.1 ITEM : FOB LF system

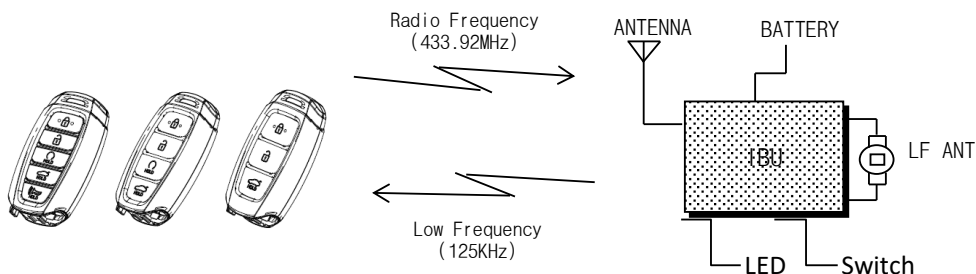
- This system is IBU and includes RKE.
 - RKE in IBU system is intended for auto door lock or unlock or TRUNK in vehicle.
 - This SMK system is to be installed on motor vehicles as *OE item.
- *OE : Original Equipment.
*IBU : Integrated Body control Unit
*RKE : Remote Keyless Entry.

3.2 SYSTEM CONSTRUCTION

3.2.1 SYSTEM IN VEHICLE



3.2.2 SYSTEM FOR TEST



- ① Connect the 12V power supply and turn on the switch
 - ② Pressing the white tact switch, LF signal is transmitted and FOB LED and IBU LED is flahes
 - ③ When the tact switch is pressed repeatively, FOB LED and IBU LED is flahes, repeatively.
- * It shows the status of operation through the LED used.



USER MANUAL

FCC Information to User

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.

Caution

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

FCC Compliance Information : 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

IMPORTANT NOTE:

FCC RF Radiation Exposure Statement: