

## **User Manual**

적용차결 CN7 작성처 Wireles	ss Design ream	INFORMATION DOCUME	NIC NT I E-APPR	S NO.	페이지(SHT/S 1,	GHTS) /5
		OF VEHICLE RF REMOTE KEYLESS ENTRY 목차	r in SM	ART KEY SYS	SIEM	
		Information Document		(5 sheets: Inclu	ude 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)		
- RE	ELEASED			ALL	2019.09.26	H S GIM
Kev.NU RFI	DATE	DESCRIPTION OF CHANGE	CH	ANGE PAGE	CHECKED	
0rigina (PLM	).12.12 al archive SYSTEM)	REFERENCE	APPR OVAL	H S GIM	R H HWANG	J H LEE

Title :		NO.		
	Information Document	Date		
		SHT/SHTS : 2/5		
0.	GENERAL			
0.1.	Make			
	MOBASE ELECTRONICS Co., Ltd.			
0.2.	Model No.			
	- Transmitter : MBEC3FOB2004			
	- Transmitter : MBEC4FOB2004			
	- Transmitter : MBEC5FOB2004	11-14)		
	- Receiver : (IBO : Intergrated Body control	Unit)		
0.3.	Name and address of manufacturer			
	MOBASE ELECTRONICS Co., Ltd.			
	100, Saneop-ro 156beon-gil, Gwonseon-gu,	Suwon-si, Gyeonggi-do, Republic of Korea		
0.4.	Address of assembly plant			
	MOBASE ELECTRONICS Co., Ltd.			
	100, Saneop-ro 156beon-gil, Gwonseon-gu,	Suwon-si, Gyeonggi-do, Republic of Korea		

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Title :	Title : Information Document		NO.	
			Date	
			SHT/SHTS : 3/	5
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 $^\circ\!\!\!\!\mathrm{C}$ with Battery	
	Storage temperature range	-	$30 \sim + 85 ^{\circ}{\rm C}$ without Battery	
	Modulation		FSK	
	Frequency		433.92MHz	
	Code	Ro	lling Code(Hopping Algorithm)	
	Electric field strength		10mW (433.92MHz)	
	Battery life	2 Yea	ar(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	
Standby Culterit	(in alarm setting condition)	

Title :	Information Document	NO.		
	mormation bocument	Date		
		SHT/SHTS : 4/5		
2.3	<ul> <li>Operating summary <ul> <li><u>RKE</u></li> </ul> </li> <li>① Push button of FOB <ul> <li>(Transmitter / Lock, Unlock, Trunk, Panic, Telecranking)</li> </ul> </li> <li>② TX modulates data to FSK and transmits RKE data using an RF frequency. <ul> <li>(433.92MHz)</li> </ul> </li> <li>③ IBU(receiver) distinguish the RKE command data and transmit command after check the door, trunk state</li> <li>④ Door lock, unlock, trunk open, panic(option), Telecranking(option) function is activated</li> </ul> <li> <b>Passive Start</b> <ul> <li>① the SSB button of SMK is pressed to start the engine.</li> <li>② The indoor ANT of the car transmits the code via the Low Frequency.</li> <li>③ Fob(receiver) decrypts the received code from SMK.</li> <li>④ Fob transmits the code via radio frequency.</li> <li>⑤ IBU should check the boot state</li> </ul></li>			
	6 IBU controls a start-up operation and the transition of supply power.			
2.3.1	<ul> <li>LOCK &amp; UNLOCK &amp; TRUNK &amp; PANIC</li> <li>1) RKE Locking request <ul> <li>When you push Lock button, All door locks will be locked.</li> </ul> </li> <li>2) RKE Unlocking request <ul> <li>When you push Unlock button, All door locks will be unlocked.</li> </ul> </li> <li>3) RKE Trunk release request <ul> <li>When you push Trunk button for 1 second, trunk locks will be opend.</li> </ul> </li> <li>4) RKE Panic request(Option) <ul> <li>When you push Panic button for 1 second (KMC : 0.5s, HMC : 1s), Horn will</li> </ul> </li> <li>5) RKE Telecranking request(Option) <ul> <li>When you push Telecranking button for 2 second, will be engine start.</li> </ul> </li> </ul>			
2.4	<ul> <li>Caution</li> <li>Danger of explosion if battery is incorrectly re</li> <li>Replace only with the same or equivalent typ</li> <li>Dispose of used batteries according to the re</li> </ul>	eplaced. be recommended by the manufacturer. nanufacturer's instructions.		



- 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.



## 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