

Vehicle model JX1 / BLE			Page (SHT/SHTS) 1/12															
Drawing Wireless Design team	INFORMATION DOCUMENT NO.																	
Title : RELATING TO CE TYPE-APPROVAL AS SEPARATE TECHNICAL UNIT OF VEHICLE BLUETOOTH LOW ENERGY UNIT																		
목차 <table border="0" style="width: 100%;"> <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> <tr> <td>Attachment 6 – ANTENNA Approval</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)	Attachment 6 – ANTENNA Approval	(1 sheet)
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NO	REVISIONS	PAGE	DATE	CHANGER														
DATE 2019.08.05	REFERENCE	DESIGNED	CHECKED	APPROVED														
		Sign																

Title : Information Document	NO. Date
SHT/SHTS : 2/12	
0. GENERAL	
0.1. Make	
SEOYON ELECTRONICS Co.,Ltd.	
0.2. Model No.	
- Transmitter : BLE(BLUETOOTH LOW ENERGY)	
- Receiver : Cell PHONE	
0.3. Name and address of manufacturer	
SEOYON ELECTRONICS Co.,Ltd.	
100, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea	
0.4. Address of assembly plant	
SEOYON ELECTRONICS Co.,Ltd.	
100, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea	

Title :	NO.
Information Document	Date

SHT/SHTS : 4/12

2.3 Operating summary

-BLE Send

- ① Run the Debugger application.
- ② BLE transmits codes over radio frequencies.
- ③ Debugger accepts demodulated code and demodulates it.
- ④ The debugger takes the demodulated signal and measures the RSSI.

-BLE Receive

- ① Run the Debugger application.
- ② The Debugger sends the code via radio frequency.
- ③ BLE receives the demodulated code and demodulates it.
- ④ Debugger measures Packet whether modulated signal is transmitted to BLE UNIT.

*RSSI : Received signal strength indicator

Title : Information Document		NO. Date																		
		SHT/SHTS : 3/12																		
2. PRODUCT SPECIFICATION																				
2.1 Scope of BLE																				
2.1.1 BLE : It has the RKE functions. Data is transmitted with radio frequency																				
2.1.2 Debugger: Check the send / receive function of BLE UNIT through APP. (SmartRF Studio 7)																				
2.2 SPECIFICATIONS																				
2.2.1 Transmitter																				
<table border="1"> <thead> <tr> <th>ITEM</th> <th>SPECIFICATION</th> </tr> </thead> <tbody> <tr> <td>Rated supply voltage</td> <td>DC 12V</td> </tr> <tr> <td>Operating voltage range</td> <td>DC 9 ~ 16V</td> </tr> <tr> <td>Operating temperature range</td> <td></td> </tr> <tr> <td>Storage temperature range</td> <td></td> </tr> <tr> <td>Modulation</td> <td>GFSK</td> </tr> <tr> <td>Frequency</td> <td>2.4~2.48GHz</td> </tr> <tr> <td>Code</td> <td>Rolling Code(Hopping Algorithm)</td> </tr> <tr> <td>Electric field strength</td> <td>10mW ↓ (2.4~2.48GHz)</td> </tr> </tbody> </table>			ITEM	SPECIFICATION	Rated supply voltage	DC 12V	Operating voltage range	DC 9 ~ 16V	Operating temperature range		Storage temperature range		Modulation	GFSK	Frequency	2.4~2.48GHz	Code	Rolling Code(Hopping Algorithm)	Electric field strength	10mW ↓ (2.4~2.48GHz)
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3. USER MANUAL

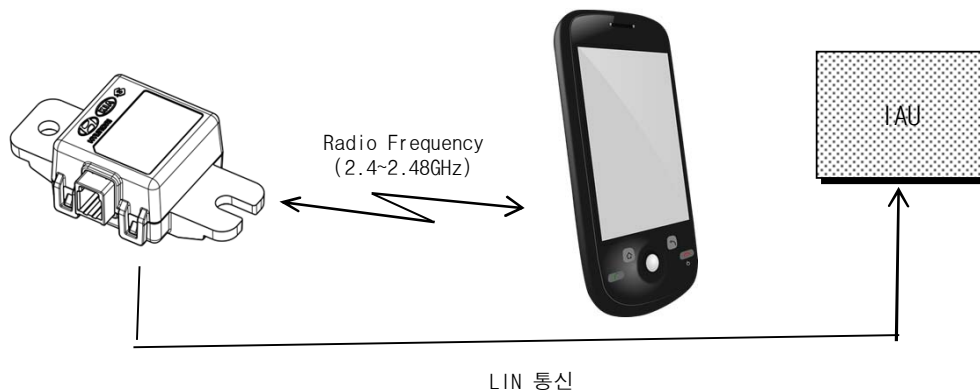
3.1 ITEM : BLE

- This system includes BLE.
- The BLE system communicates with the DEBUGGER and measures whether the packet is sent or received.

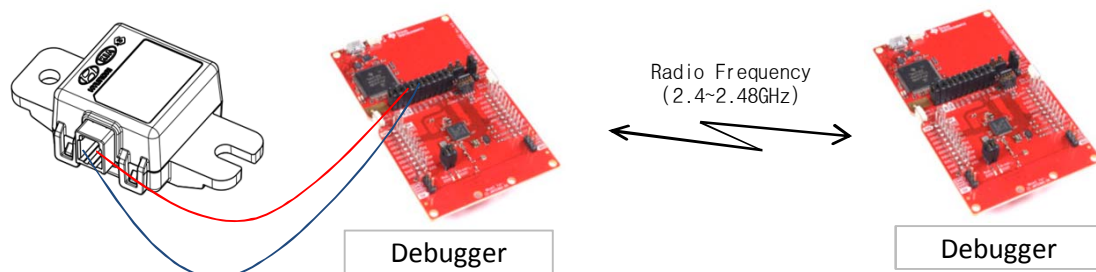
*BLE : BLUETOOTH LOW ENERGY UNIT

3.2 SYSTEM CONSTRUCTION

3.2.1 SYSTEM IN VEHICLE



3.2.2 SYSTEM FOR TEST



- ① Run the DEBUGGER application to check the communication by sending and receiving a PACKET.



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:

IC certification

English:

This device complies with Industry Canada's license-exempt RSSs. 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.*

French:

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.