

Document : **User Manual for IBU21N\_ENG**

Project : **IBU21N**

Project Code :

Version: 0.1

Date:

Engineering change order-No.:

Design Freeze No.:

Number of pages: 7

Filename: User Manual for IBU21N\_ENG.doc

<b>Contents list</b>	<b>Page</b>
<b>1. System configuration</b>	<b>3</b>
<b>1.1 Scope of IBU21N System</b>	<b>3</b>
<b>1.1.1 IBU21 (Non-SMK) system offer following feature</b>	<b>3</b>
<b>1.1.2 BCM functions offer following feature</b>	<b>3</b>
<b>1.2 short description of the SYSTEM</b>	<b>3</b>
<b>1.2.1 General Definition of IBU(Non-SMK)</b>	<b>3</b>
<b>1.2.2 Wireless Communication</b>	<b>3</b>
<b>1.2.3 concept Description</b>	<b>3</b>
<b>1.2.4 System Architecture</b>	<b>3</b>
<b>1.2.5 Main Functions</b>	<b>4</b>
<b>2. IBU Configuration</b>	<b>5</b>
<b>2.1 IBU21N ECU</b>	<b>5</b>
<b>3. Homologation</b>	<b>6</b>

Version: 0.1 File: User Manual for IBU21N_ENG_FCC,IC	ECO / DF No.  <b>Identification No. : Document No.</b>	Page 2 / 7

# 1. System configuration

## 1.1 Scope of IBU21N System

IBU(Integrated Body control unit) System(Non-SMK) integrate BCM in one ECU

### 1.1.1 IBU21 (Non-SMK) system offer following feature

- immobilizer backup solution integrated into IBU
- communication to the engine management system via a single line interface

### 1.1.2 BCM functions offer following feature

- BCM functions directly or indirectly control Lamps, Indicators, Rear curtain, Steering wheel heat and relay

## 1.2 short description of the SYSTEM

If insert the Immobilizer including trasponder to ignition switch and then power enter the IBU(Non-SMK)  
 After Receive the frequency of key, ECU decide the own's key and if same code ,starting a engine.

### 1.2.1 General Definition of IBU(Non-SMK)

IBU(Non-SMK) has a immobilizer function which enable the start up When Folding key approaching the Lock-body.

### 1.2.2 Wireless Communication

the Electromagnetic waves used for communication between Foldingkey and car.  
 Therefore car and Folding key include the transmitter, receiver and Immobilizer Antenna.

### 1.2.3 concept Description

magnetic field with a frequency of 125 kHz and ASK modulation is used

Technical aspects of 125 kHz – magnetic field:

- high penetration,
- less sensitive for detuning compared to higher frequency.

For the down-link from the SMART KEY FOB to the vehicle, the standard radio frequency (RF) is used (similar to the classic remote control functions) with FSK modulation.

### 1.2.4 System Architecture

The system is designed as an optional system, making it possible to equip vehicles of the same car-Line with different levels of access control systems.

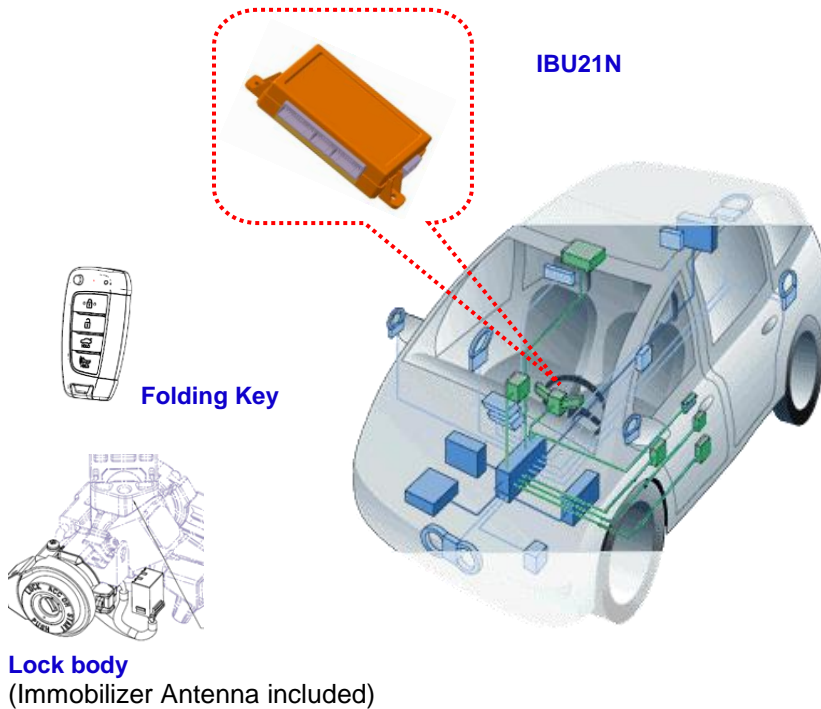
The system is suitable to be integrated into an existing architecture that provides central locking functions with standard remote control. This proposal assumes that the following functions / devices are already present in the vehicle's architecture.

Version: 0.1  File: User Manual for IBU21N_ENG_FCC,IC	ECO / DF No.  <b>Identification No. : Document No.</b>	Page 3 / 7
---	--	------------

- Central locking system (latch / motor – drivers etc.)
- Standard body control functions
- Warning buzzer
- Indicators
- Lamps
- Wiper control system
- Convenience equipments

### 1.2.5 Main Functions

- The system allows the user to operate relays to provide power(Off, Accessory, Ignition) to other ECU, and to start/stop the vehicle's engine without performing any actions with the Folding key.



**Figure 1: Offered System Components**

Version: 0.1 File: User Manual for IBU21N_ENG_FCC,IC	ECO / DF No.	<b>Identification No. : Document No.</b>
		Page 4 / 7

## 2. IBU Configuration

### 2.1 IBU21N ECU

The main functional blocks of the IBU ECU are:

- Power supply
- Microcontroller with FLASH Memory
- Single Line Interface to EMS
- Input stage
- Immobilizer Antenna output
- CAN communication with Other
- ECU Internal receiver(433Mhz)
- Rear curtain control
- Steering wheel heat control
- Head lamp washer relay control
- Indicators control
- Lamps control
- High speed CAN communication
- LIN communication

Version: 0.1	ECO / DF No.	<b>Identification No. : Document No.</b>
File: User Manual for IBU21N_ENG_FCC,IC		
		Page 5 / 7

### 3. Homologation

#### FCC Compliance Statement.

**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.**

**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.**

#### Do Not



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

Version: 0.1  File: User Manual for IBU21N_ENG_FCC,IC	ECO / DF No.  <b>Identification No. : Document No.</b>	Page 6 / 7

## IC Compliance Statement.

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 present 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.

Proprietary data, company confidential. All rights reserved.  
 Confie a titre de secret d'entreprise. Tous droits réservés.  
 Comunicado como secreto empresarial. Reservados todos los derechos.  
 Confidado como secreto industrial. Nos reservamos todos los derechos.

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht ausdrücklich zugestanden. Zuwiderhandlungen verpflichten zu Schadensersatz. Alle Rechte vorbehalten, insbesondere für den Fall der Patenterteilung oder GM-Entragung

Version: 0.1  File: User Manual for IBU21N_ENG_FCC,IC	ECO / DF No.  <b>Identification No. : Document No.</b>	Page 7 / 7
---	--	------------

## 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 ID: SY5IBU21N

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

IC: 8325A-IBU21N

"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 device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter."

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnant en conjonction avec une autre antenne ou transmetteur.

"It is the responsibility of the installer to ensure that when using the outdoor antenna kits, only those antennas certified with the product are used. The use of any antenna other than those certified with the product is expressly forbidden by FCC rules 47 CFR part 15.204 and IC RSS standards."

Il est de la responsabilité de l'installateur de s'assurer que lorsque vous utilisez les kits d'antennes extérieures, seules les antennes certifiées avec le produit sont utilisées. L'utilisation d'une antenne autre que ceux qui sont certifiés avec le produit est expressément interdite par la réglementation FCC partie 47 CFR 15.204 et IC normes RSS.