

## 无线功能模块

### Remote Functional Module



### 产品介绍 Product Description

无线功能模块主要用于从钥匙和/或胎压传感器接收射频信号, 然后发送处理后的数据给车身域控制器用于车身相关操作(如上锁, 解锁, 尾门, 胎压信息的仪表显示)。

RFM(Remote Functional Module) is mainly to receive the RF signal from UID(User Identification Device) and/or TPS(Tired Pressure Sensor), and then send the processed data to BDC(Body Domain Controller Unit) for vehicle related operation(Such as Lock, Unlock, Trunk, Panic, Sensor information on cluster display).

### 产品特征及优势 Feature and Benefits

- 采用车规级芯片方案  
Automotive Qualified Chip Solution
- 可支持AES128加密算法  
Support AES128 Algorithm
- CAN 或 LIN通讯  
CAN or LIN Communication
- 可支持无线遥控/无钥匙进入启动/胎压接收功能  
Support RKE/PKE/TPM receiving Function
- 可支持双频接收功能  
Support Two Frequency Receiving Function
- 满足不同的国家法规  
Meet Different Country Regulation
- 小尺寸及安装便利性  
Small Size & Convenience For Installation

### 技术参数 Technical Parameters

参数Parameter	参数指标Parameter Indicators
操作温度 Operated Temp.	-40~+85°C
存储温度 Storage Temp.	-40~+85°C
操作电压 Operated Voltage	9~16V
静态电流 Quiescent Current	<=1.5mA
通讯方式 Communication Method	LIN or CAN
通讯频率 RF Frequency	433.92MHz or 315MHz
射频距离 RF Distance	>20m

## 数字互联模块

### Digital Connectivity Module



### 产品介绍 Product Description

数字互联模块主要用于与手持端装置(如手机/智能穿戴/实体钥匙等)进行无线通讯,并将通讯数据通过总线传送给特定的电子控制单元或系统。

DCM(Digital Connectivity Module) is mainly to communicate with the handheld device(such smart phone, wearable devices, Key fob, etc.), and send the data to specified ECU or system via bus line.

### 产品特征及优势 Feature and Benefits

- 采用车规级芯片方案  
Automotive Qualified Chip Solution
- 超宽带 和/或 蓝牙 和/或 近场通讯组合  
UWB and/or BLE and/or NFC Combination
- 兼容CAN/CANFD通讯  
Compatible With CAN/CANFD Comm.
- 支持钥匙定位功能  
Support DSK Positioning Function
- 可支持SE加密功能  
Support SE function
- 满足不同的国际标准  
Meet Different International Standard
- 小尺寸及安装便利性  
Small Size & Convenience For Installation



### 技术参数 Technical Parameters

参数Parameter	参数指标Parameter Indicators
操作温度 Operated Temp.	-40~+85℃
存储温度 Storage Temp.	-40~+85℃
操作电压 Operated Voltage	9~16V
静态电流 Quiescent Current	<=500uA
通讯方式 Communication Method	CAN or CANFD
近场通讯频率 NFC Frequency	13.56MHz
近场通讯辨识距离 NFC Identification Distance	>3cm
超宽带频率 UWB Frequency	6~8GHz
有效全向辐射功率 EIRP	<-41.3dBm/MHz
蓝牙频率 BLE Frequency	2.4GHz

## 数字安全集成模块

### Digital Security Integration Module



### 产品介绍 Product Description

数字安全集成模块主要用于接收相关的数据以进行定位, 并将计算的数据结果通过总线传送给车身域控制系统进行车辆相关的操作。

DSM(Digital Security Integration Module) is mainly to receive the related data for positioning, and send the calculated result to BDC(Body Domain Controller Unit) via bus line for vehicle related operation.

### 产品特征及优势 Feature and Benefits

- 采用车规级芯片方案  
Automotive Qualified Chip Solution
- 超宽带 和/或 蓝牙  
UWB and/or BLE
- 兼容CAN/CANFD通讯  
Compatible With CAN/CANFD Comm.
- 支持数字安全访问进入功能  
Support Handfree Digital Security Access
- 支持诊断/刷新等  
Support UDS, Boot, etc.
- 含高精度定位算法  
With High Accuracy Positioning Algorithm
- 支持SE加密功能  
Support SE Function
- 满足CCC, ICCE及ICCOA相关标准  
Meet CCC, ICCE and ICCOA related Standard
- 小尺寸及安装便利性  
Small Size & Convenience For Installation

### 技术参数 Technical Parameters

参数Parameter	参数指标Parameter Indicators
操作温度 Operated Temp.	-40~+85℃
存储温度 Storage Temp.	-40~+85℃
操作电压 Operated Voltage	9~16V
静态电流 Quiescent Current	<=1mA
通讯方式 Communication Method	CAN or CANFD
超宽带频率 UWB Frequency	6~8GHz
有效全向辐射功率 EIRP	<-41.3dBm/MHz
蓝牙频率 BLE Frequency	2.4GHz

## 近场通信控制器

### Near Field Communication Controller



## 产品介绍 Product Description

NFC近场通讯系统通过NFC技术的近场通信能力与车辆电子系统进行安全认证，通过手机或NFC 钥匙卡模拟传统车钥匙，实现无物理接触的解锁、启动等操作。

The principle of NFC unlocking a car is based on the near-field communication capability of NFC technology and the security authentication mechanism of the vehicle's electronic system. It simulates traditional car keys through mobile phones or NFC key cards to achieve operations such as unlocking and starting without physical contact.

## 产品特征及优势 Feature and Benefits

- NFC控制器具备短距离通信、操作便捷、低功耗等优点。  
The NFC controller has the advantages of short-range communication, convenient operation and low power consumption.
- NFC控制器成本低廉，能显著提升用户体验。  
NFC controllers are cost-effective and can significantly enhance the user experience.
- NFC控制器体积小，可安装在外后视镜里面或者B柱位置。  
The NFC controller is compact in size and can be installed inside the exterior rearview mirror or on the B-pillar.
- NFC控制器场景适应性强，无需网络连接。  
The NFC controller has strong scene adaptability and does not require a network connection.
- NFC控制器无需暴露完整用户数据，降低隐私暴露风险。  
The NFC controller does not need to disclose complete user data, reducing the risk of privacy exposure.
- 轻量化，整体质量小于25g。  
Light weight with the whole weight less than 25 gram.

## 产品应用 Application

- 乘用车  
Passenger car
- 二轮摩托车  
Two-wheeled motorcycle
- 四轮全地形车  
Four-wheel all-terrain vehicle
- 电动摩托车  
Electric motorcycle
- 电动自行车  
Electric bicycle

## 操作 Operation

### 基本原理 Basic Principle

基于NFC近场通信技术实现的数字车钥匙系统，其业务流程包括NFC链路建立流程、NFC钥匙认证流程、基于NFC的配对流程。

用户可通过NFC手机、NFC可穿戴设备等移动智能终端形态、NFC key fob、NFC实体卡片等方式，和NFC控制器之间进行信息交互认证，认证通过后可执行车辆解锁或者车辆启动功能。

The digital car key system implemented based on NFC near-field communication technology has business processes including the NFC link establishment process, the NFC key authentication process, and the NFC-based pairing process.

Users can conduct information interaction and authentication with the NFC controller through mobile intelligent terminal forms such as NFC mobile phones and NFC wearable devices, NFC key fob, NFC physical cards, etc. After the authentication is passed, the functions of vehicle unlocking or vehicle starting can be executed.

### 连接选项 Connection Options

根据客户选择可定制不同尺寸和工艺的NFC卡片钥匙。

NFC card keys of different sizes and processes can be customized according to the customer's choice.

### 包装选项 Packaging Options

可提供定制包装以满足客户需要，请联系KESENS技术部了解详情。

Custom packaging can be provided to meet customer requirements, please contact KESSENS Engineering for detail.

## 技术参数 Technical Parameters

参数Parameter	参数指标Parameter Indicators
工作电压（work voltage）	DC9-16V
工作温度(work temperature)	-40°C ~ 85°C
存储温度(storage temperature)	-40°C ~ 85°C
静态电流（Static current）	≤4mA
CAN or LIN	1路(1 channel)
射频距离（RF Distance）	>4cm
IP等级(IP classic)	IP67

可根据客户需求定制产品，如有需求请联系我们。

Customized products available upon request. Contact us for details.

地址：浙江省嘉兴市经济技术开发区天枢路199号

Add: No. 199, Tianshu Road, Economic and Technological Development Zone, Jiaxing City, Zhejiang Province, China.

电话（Tel）：0573-82858999

邮箱（E-mail）：info@kesens.com

网址（Web）：www.kesens.com

