

客户技术文档

Technical Customer Documentation (TCD)

UAES

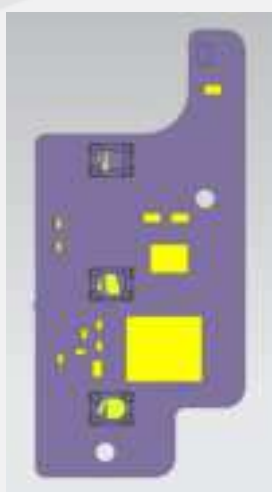
产品名称/Product Designation: 遥控无钥匙进入发射器

产品号码/Product Part Number(s): F 03H 00F 022

应用/Application: 车身电子

版本/ Version: 001

日期/Date: 2021/02/05



英汉翻译如有差异或歧义，以中文为准。

In case of any differences or ambiguities between the English and the Chinese translation,
the Chinese prevails.

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1 产品信息 产品名称：遥控无钥匙进入发射器 产品类型： RKE-KEY-2.0 零件号： F 03H 00F 022 客户端零件号： 2376514 供货图纸号： F 03H A0F 022 客户端图纸号： F 03H T0F 022 客户名称：上汽通用五菱汽车股份有限公司 客户规范的编号、版本、日期和标题： 同F03H00F039 协议编号： 同F03H00F039 其它适用文档: NA 此产品仅用于：遥控无钥匙进入发射器	1 PRODUCT IDENTIFICATION Product designation: Remote Keyless Entry-key Type designation: RKE-KEY-2.0 part No.: F 03H 00F 022 Client part number: 2376514 Number of offer drawing: F 03H A0F 022 Client drawing number: F 03H T0F 022 Customer: SGMW Customer Specification Number, Edition/Version, Date, and Title : AS same as F03H00F039 Contract Number: AS same as F03H00F039 Further Applicable Documents: NA This product is solely intended for use in: RKE
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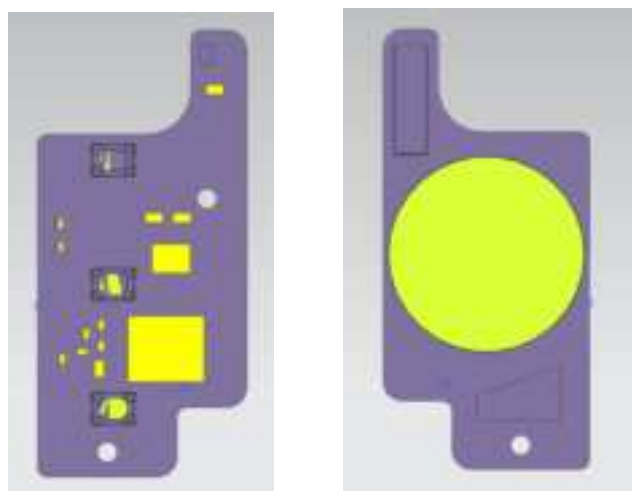
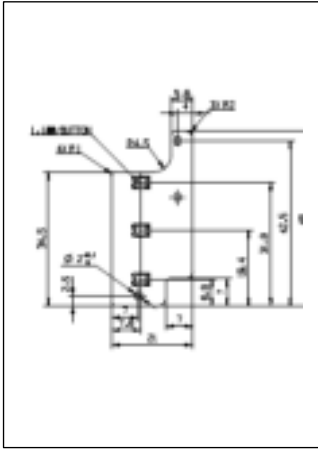
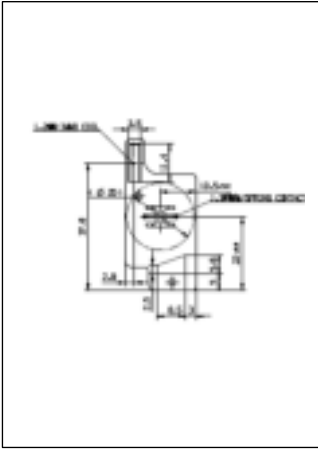
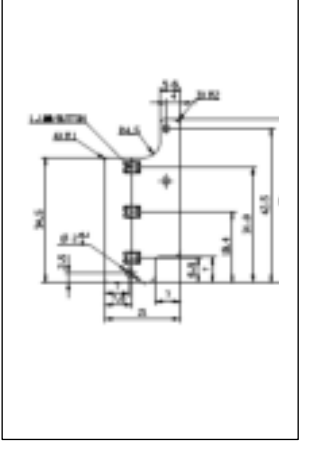
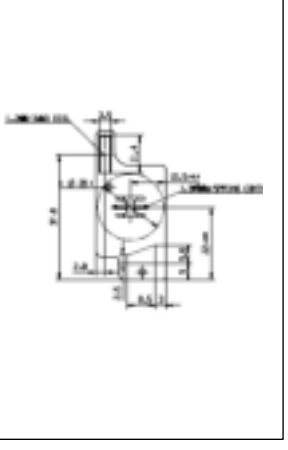


图 1： 产品名称示例/Product designation example

2 产品总体描述	2 GENERAL PRODUCT DESCRIPTION
2.1 产品主要功能及属性	2.1 MAIN FUNCTION AND PROPERTIES OF THE PRODUCT
1. 三键式RKE，完成上锁、解锁、后备箱解锁等功能； 2. 调制类型：FSK； 3. 加解密算法RKE MADLASZLO；	1. 3-Key RKE for locking and unlocking , trunk unlocking； 2.Modulation type FSK； 3.Encryption and decryption algorithm RKE MADLASZLO
2.2 预期用途	2.2 INTENDED USE
<p>如果被动无钥匙进入发射器在本TCD及相关约定文件所规定的（环境，应用，安装，载荷）条件下使用，联合电子确保产品满足约定的性能。超出前述约定的范围须经联合电子书面同意。当产品成功通过TCD及相关约定文件所规定的试验时，则认为产品满足预期用途。</p> <p>由客户负责保证产品在整个系统/车辆中的正确应用。</p> <p>如果产品应用环境的变化偏离本 TCD 及双方约定的文件的规定，则联合电子不承担任何责任。</p> <p>本产品由 UAES 针对预期的应用进行描述(见章节 1)，并根据与 UAES 产品相关的法律和法规要求发布，以用于以下目标市场:<中国大陆>。</p>	<p>Provided that PKE is used within the conditions (environment, application, installation, loads) as described in this TCD and the corresponding agreed upon documents, UAES ensures that the product complies with the agreed properties. Agreements beyond this require the written approval by UAES. The product is considered fit for the intended use when the product successfully has passed the tests in accordance with the TCD and agreed upon documents.</p> <p>It is the responsibility of the customer to ensure the proper application of the product in the overall system/vehicle.</p> <p>UAES does not assume any responsibility for changes to the environment of the product that deviate from the TCD and the agreed upon documents.The product is described by UAES for the intended application (cf. Chapter 1) and released on the basis of the legal and normative requirements relevant to the UAES product for use in the following target markets: <Chinese Mainland>.</p>
2.3 产品安全	2.3 PRODUCT SAFETY
类似频率的无线电设备会影响钥匙功能（如手机、笔记本电脑等）。使用本产品时，请远离无线电设备。	Product (such as cell phones, laptops, etc.) with similar radio frequency may affect key functions. Using the product, please stay away from radio equipment.
2.3.1 功能安全	2.3.1 FUNCTIONAL SAFETY
联合电子在此指明，本系统/产品不执行任何（ISO 26262 的）ASIL 等级要求。因此，联合电子未批准其所交付的系统/产品具有 ASIL 相关要求（高于 QM）的作	UAES points out that the system/product does not implement any ASIL-classified requirements (in the sense of ISO 26262). Therefore, it has not been

用。	approved by UAES for applications in which UAES delivered system/product has an ASIL related (above QM) role.
2.3.2 数据保护，网络安全和空中下载方面	2.3.2 DATA PROTECTION, CYBER SECURITY AND OVER-THE-AIR ASPECTS
不适用	Not applicable
2.3.3 安全和警告	2.3.3 SAFETY AND WARNING NOTES
<p>本设备符合 FCC 针对不受控制的环境规定的辐射暴露限制。</p> <p>类似频率的无线电设备会影响钥匙功能（如手机、笔记本电脑等）。使用本产品时，请远离无线电设备。</p>	<p>This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment</p> <p>Product (such as cell phones, laptops, etc.) with similar radio frequency may affect key functions. Using the product, please stay away from radio equipment.</p>
2.4 产品标签	2.4 LABELING OF THE PRODUCT
NA	NA
2.5 尺寸和重量	2.5 DIMENSIONS AND WEIGHTS
<p>PCB尺寸：45 mm x 21 mm x 1.2 mm</p> <p>重量：约$2.85 \text{ g} \pm 0.57 \text{ g}$（此重量为平台设计典型值，共参考，具体重量跟随配置有变化。）</p> <div style="display: flex; justify-content: space-around;">   </div>	<p>Size: 45 mm x 21 mm x 1.2 mm</p> <p>Weight: about: $2.85 \text{ g} \pm 0.57 \text{g}$ (This weight value is platform typical value, actual value may vary with configuration)</p> <div style="display: flex; justify-content: space-around;">   </div>
2.6 功率消耗和功率输出	2.6 POWER CONSUMPTION / POWER OUTPUT
工作电流：8~15.0 mA	Working current: 8~15.0 mA
2.7 服务，维修和维护说明	2.7 GENERAL REMARKS ON SERVICE, REPAIR, AND MAINTENANCE

产品不具有被维修的可能性	Repair of the product is not possible.
2.8 废弃和回收说明	2.8 INFORMATION ON DISPOSAL AND RECYCLING
本产品遵循ELV（End-of life vehicles）要求。	The product meets the ELV requirements.

3 系统描述	3 SYSTEM DESCRIPTION
3.1 相关系统	3.1 SYSTEM OF INTEREST (SOI)
RKE系统由两个单元组成：BCM、RKE。	RKE system is composed of two units: BCM, RKE.
3.2 硬件和软件接口	3.2 Hardware and software interfaces
NA	NA
4 包含测量变量和测量条件的技术参数	4 TECHNICAL DATA WITH MEASURED VARIABLES AND MEASURING CONDITIONS
4.1 功能，功能状态（运行模式），功能性特性和边界条件	4.1 FUNCTIONS, FUNCTION STATES (MODES OF OPERATION), FUNCTIONAL CHARACTERISTICS AND BOUNDARY CONDITIONS
本产品在温度 -20~60℃，最大湿度 80%，气压 86kpa-106kpa 下使用，可保证该产品具有额定性能。	The ambient temperature should be from -20 °C to 60 °C. The max humidity is 80 percent. the product rated performance is guaranteed.
4.2 机械特性	4.2 MECHANICAL CHARACTERISTICS
本产品的机械特性及相关试验要求，请参考与客户约定的相关试验项。	The product's mechanical characteristics and test requirement can be referred to test cases that agreed with customer.
4.3 电子特性	4.3 ELECTRICAL CHARACTERISTICS
本产品的电子特性，包括电气特性与电磁兼容特性，满足相关标准内要求试验，具体需要由客户项目相关试验标准来定义。	The product's electrical and electromagnetic characteristics meet relevant test case, which should be defined in DVP of specific customer project.
4.4 气候特性	4.4 CLIMATIC CHARACTERISTICS

温度特性: 工作温度范围 (不含电池): -40°C ~ 85°C 储存温度范围 (不含电池): -40°C ~ 90°C	Temperature characteristics: Working temperature(without battery) is from -40 °C to 85 °C Storage temperature(without battery) is from -40°C to 90°C
4.5 化学特性	4.5 CHEMICAL CHARACTERISTICS
NA	NA
4.6 声学特性	4.6 ACOUSTIC CHARACTERISTICS
NA	NA
4.7 寿命	4.7 LIFETIME
关于本TCD中描述的用途和使用条件, 产品质保的最大寿命为5万公里, 或最大3年 (仅针对PCBA, 以先到者为准) 商业保证和责任不受此影响, 根据交付条件另行规定。	With respect to the use and usage conditions described in this TCD, the maximum life of the PCBA is 50,000 kilometers traveled, or 3 years usage time (only for PCBA. Whichever occurs first). The commercial warranty and liability is not affected by this and is governed separately by the delivery conditions.
4.8 运输、装配、开始和结束操作、存储	4.8 TRANSPORT, ASSEMBLY, START AND END OF OPERATION, STORAGE
请特别注意安全与警告事项! <ul style="list-style-type: none"> • 运输: 产品包装应考虑: ESD 防护、防潮、防振、防尘要求; 适应运输及装卸的有关要求 • 组装: 联合电子提供的 PCBA, 需装配机械钥匙和外壳部分使用。 • 启动/调试: 按下按键, 车身实现相应的功能; 与对应 BCM 配合, 进入学习状态调试产品。 • 储存: 产品的贮存和保管应符合 QC/T 238 的有关规定。产品的贮存期通常为 2 年 (从制造厂入库日期算起)。在贮存期满 2 年时, 产品应仍符合有关标准的规定。 	Please pay special attention to the safety and warning notes! <ul style="list-style-type: none"> • Transport: The package of product should meet ESD, moisture resistance, vibration resistance, dust protection requirements. • Assembly: The PCBA part provided by UAES is required to be assembling the key housing. • Start-up/commissioning: Press the key to realize the corresponding functions of the body; cooperate with BCM to enter learning state to debug products. • Storage: The storage of product should meet QC/T 238 requirements. Generally, the storage period is 2 years (date of warehousing from manufacturer). This product still meets the requirement when storage time is to 2 years.
5 批量过程中的测试	5 SERIES-ACCOMPANYING TESTS
自动光学检测 对焊接生产中遇到的常见缺陷进行检测, 在每次回流焊后进行。 人工目检	Automatic Optic Inspection (AOI) Detect defects encountered in welding production, after each reflow welding is completed. Artificial inspection

AOI检查出来的缺陷进行100%的人工确认,在每一个AOI的工位后续进行。 在线测试 检查在线的单个元器件以及各电路网络的开、短路情况。 功能测试 生产功能测试	100% of defects checked out by AOI are manually confirmed and followed up at each AOI station. In-circuit-test (ICT) Check the opening and short circuit of individual components and circuit networks on-line. Function test (FT) MTS Function test.
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6 测试	6 TESTING
6.1 联合电子端的测试	6.1 TESTING BY UAES
NA	NA
6.2 客户端的测试	6.2 TESTING BY CUSTOMER
NA	NA

7 售后返回产品的评估	7 ASSESSMENT OF PRODUCTS RETURNED FROM THE FIELD
如果产品符合 TCD 中 0 公里和售后的规范/试验数据, 则认为产品合格。	Products are considered good if they fulfill the specifications/test data for 0-mileage and field listed in the TCD.

8 附录和参考	8 APPENDICES AND REFERENCES
NA	NA

9 历史记录			9 HISTORY
版本 Version	生效日期 Valid from	发布人 Issued by	版本描述 Release description

当前版本信息/Current version information:

更改编号 Change number	变更点 Changed on	生效日期 Valid from	发布人 Issued by	联系人 Contact person
首次编写	—			

10 签字	10 SIGNATURE
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签字/ Signatures

UAES 联合电子	
Development/开发部门 Reviewer & Date 评审人&日期	Sales/销售部门 Reviewer & Date 评审人&日期
Approver & Date 批准人&日期	Approver & Date 批准人&日期

FCC statement

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 or more 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.

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.

CAUTION: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF exposure warning

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

The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.