# MINI IC Card reader

# product specification

## I. Product overview


MINI IC The card reader is an efficient device designed specifically for reading and writing contactless IC cards that comply with ISO14443 specifications. Developed using the mainstream 32-bit ARM architecture, it features a compact and lightweight design, making it suitable for use in both Android software applications and PC-based software. Its primary function is to query the user's card number.

## Product information

Product model: HWD-RFUM5FD
Product name: MINI IC Card reader

## Technical parameters

### (1) Hardware specifications

1. CPU: 32-bit, providing stable and efficient computing processing capability for the device to ensure fast read/write and processing of data.
2. Contactless 13.56MHz: Supports contactless IC card read/write operations at this frequency and can communicate accurately with cards that comply with the ISO14443 specification.

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3. Indicator light: Equipped with one indicator light, which can intuitively feedback the working status of the device through different display states, such as power connection, read/write operation in progress or completed.
4. Working voltage: 5V USB port is used to power the device, which facilitates the connection of various power supply devices with USB ports, such as computers and Android devices, so as to ensure stable power supply under different scenarios.
5. Size: Compact and exquisite, only 93x63x13mm, easy to carry and integrate into various terminal devices or systems, without occupying too much space.

### (2) Technical support parameters

1. The card reader can support MIFARE DESFire EV3 type cards and can read LEAF data structure type data inside the card;
2. In addition to reading UID directly, the card reader can also directly read any field data in LEAF data structure according to requirements (Ford will provide the key file);
3. The equipment meets the North American compliance requirements;
4. The card reader and the connecting cable are separated in design. The side plug of the card reader adopts Mini USB plug, and the computer end adopts USB2.0 plug;
5. The card reader supports plug and play on the computer, and can be used normally without installing drivers and software;
6. The card reader meets the protection level of Ip54.

### (3) Working environment

1. Temperature range: can work normally in the ambient temperature of-10℃ to 55℃, adapt to a variety of indoor and outdoor working scenes, whether it is cold winter or hot summer, can run stably.
2. Humidity range: The humidity adaptation range is 5% -90% (non-condensation). Under different humidity conditions, it can effectively avoid damage to the equipment caused by water vapor condensation and other problems, ensuring the reliability and stability of the equipment.

## Iv. Functional characteristics

1. High efficiency read and write: Based on advanced 32-bit ARM, architecture and 13.56MHz contactless read and write technology, it can quickly and accurately read the contactless IC card information in line with ISO14443 specifications, especially for DESFire cards, providing stable read and write performance.

2. Broad compatibility: It supports the use of software on Android devices and PC operating systems. It can be easily integrated with various operating systems and applications through USB interface, providing users with convenient card data interaction solutions.
3. Status indication: A single indicator light is designed to show the working status of the device to users in a simple and clear way, so as to help users understand whether the device is running normally and whether read/write operations are successful in time, reducing the difficulty of operation and troubleshooting.

# V. Instructions for use

1. Connect the device: Connect the MINI IC card reader to the USB port of the Android device or PC operating system via a USB cable.
2. Launch the application: Launch the software application that supports the reader on an Android device or PC.
3. Place the card: Place the DESFire card that conforms to the ISO14443 specification near the contactless antenna area of the reader. The reader will automatically detect and try to read the card information, and the indicator light will display according to the operation status.
4. Data interaction: The application will obtain the card information read by the reader and process it accordingly, such as displaying the card number, querying related data and other operations.

# V. Precautions

1. Use a standard 5V USB power supply to power the device. Avoid using a power supply with too high or too low voltage to damage the device.
2. During use, the reader should be protected from strong electromagnetic interference, such as near large motors, transformers and other equipment, to ensure the accuracy and stability of reading and writing operations.
3. Keep the working environment of the reader dry and clean, and avoid dust, water vapor and other impurities to enter the equipment, which will affect the normal operation of the equipment.
4. Do not use the reader in an environment that exceeds the specified operating temperature and humidity range to avoid affecting the performance and life of the device.

# FCC Caution:

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.

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

**NOTE:** 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.

**FCC Radiation Exposure Statement:**
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

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