

Nfc passive lock capacitor energy storage





Overview

In battery-free (passive) smart locks (Figure 1), energy for supplying the electrical part of the lock can be harvested from the mobile device through the active NFC field and stored in the capacitor integrated in the lock system. What is a battery-free NFC smart lock?

In short, the battery-free NFC smart lock realises the unlocking operation without external power supply by cleverly using the energy collection and communication function of NFC technology, which is convenient for users and avoids the maintenance and replacement problems brought by batteries.

How do NFC smart locks work?

1. NFC Field Energy Harvesting: When an NFC-enabled mobile phone or other NFC-enabled read/write device is close to the battery-free NFC smart lock, it will generate an NFC RF field around it. The NFC chip or related components inside the smart lock can sense this RF field and harvest energy from it.

What is energy storage & conversion in a smart lock?

Energy Storage and Conversion: The collected energy will be stored in the capacitors or other energy storage elements inside the smart lock. These energy storage elements can store the instantly collected energy and convert and condition it to meet the working voltage and current requirements of the internal circuits and chips of the smart lock.



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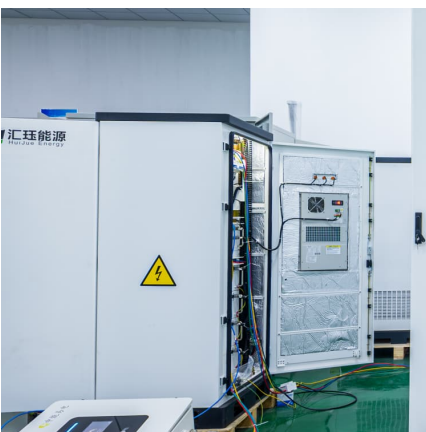


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The application provides a logistics object detection method, a device, a passive electronic lock and a storage medium, wherein the method comprises the following steps: if the mobile ...

Mobile NFC-powered vs. electronic key-powered: a comparison of energy

The current mainstream cell phone NFC power supply and electronic key power supply program, respectively, for consumer convenience and industrial reliability of the two ...



NFC-based enclosure access using passive energy harvesting

Access is provided using a passive near-field communication (NFC) entry device mounted to the enclosure. The disclosed strategy includes passively harvesting available battery energy from ...

TN2115S2 Specification

TN2115S2 is a NFC passive MCU, which integrates an ISO14443A-compliant NFC tag interface. The MCU is designed with Chivotech's exclusive TurboNFC technology that offers high



...



Infineon introduces NAC1080: Single-chip solution with integrated ...

Besides the passive NFC lock application, NAC1080 can also be used as an emergency backup power supply application. Active lock systems, for example, depend on ...



Battery Free Access Lock using NAC1080

Hello, 1. Energy storage depends on an energy storage capacitor. Please refer to the Application note NFC passive lock implementation with NAC1080 for more details. 2. You can choose the ...



Infineon's single-chip solution for NFC lock applicatio , Infineon

The smart lock is based on Infineon's NAC1080 microcontroller (MCU), a single-chip solution with integrated H-Bridge for passive NFC lock applications. "We are thrilled to introduce our new ...





How Battery-Free NFC Smart Locks Work?

In short, the battery-free NFC smart lock realises the unlocking operation without external power supply by cleverly using the energy collection and communication ...

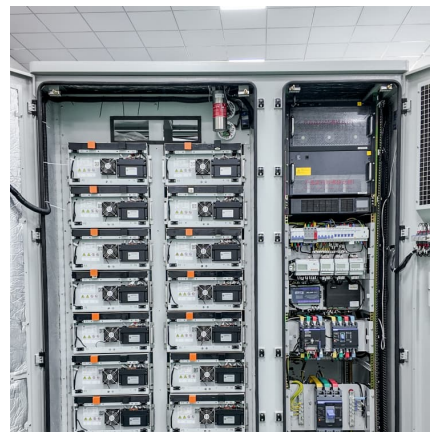


nfc energy storage circuit

NFC Hybrid Harvester for Battery-free Agricultural Sensor Nodes The design consists of an NFC coil antenna, a full wave rectifier operating at 13.56 MHz, a solar cell and a capacitor for energy ...

Infineon new MCU enables smart locks to power themselves ...

The energy storage requirement of the system is an important factor to be considered in the design process of the smart lock. In the above smart lock design, the total ...



Infineon's single-chip solution for NFC lock applications

The smart lock is based on Infineon's NAC1080 microcontroller (MCU), a single-chip solution with integrated H-Bridge for passive NFC lock ...



[NFC passive lock implementation with NAC1080](#)

In battery-free (passive) smart locks (Figure 1), energy for supplying the electrical part of the lock can be harvested from the mobile device through the active NFC field and stored in the ...



Why are capacitors suitable for energy storage? , NenPower

In summary, capacitors play a crucial role in contemporary energy storage solutions, emphasizing speed, durability, and efficiency. Their diverse applications across ...

Battery-Free NFC Lock Solution

KERONG has been focusing on Battery-Free NFC Locks R& D and manufacturing for 20 years and has conducted in-depth research on battery-less locks and lock management systems, ...



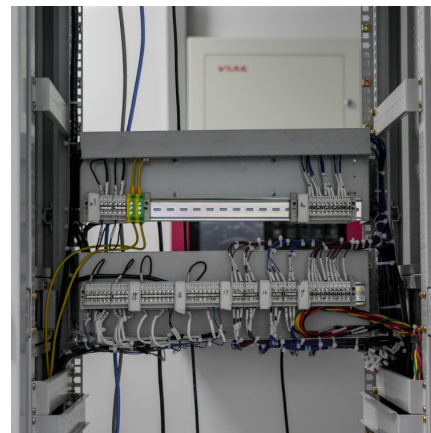


[NFC actuation and sensing IC NAC1080 development kit](#)

Scope and purpose This document describes the evaluation kit for Infineon's NAC1080 near-field communication (NFC) tag-side controller with the integrated H-bridge intended for passive ...

[NFC passive lock with key authentication function](#)

A key authentication and passive lock technology, applied in the field of NFC passive locks, can solve the problems of unreliable unlocking, large product size, and short service life, so as to ...



[Built-in Battery-free NFC Smart Lock , KENRONE](#)

Battery-free NFC smart lock, innovative battery-free design, with the help of NFC near field communication, mobile phones and other devices can be opened at ...

[NFC passive lock with secret key authentication](#)

The invention discloses an NFC passive lock with key authentication, which comprises an NFC intelligent device and a passive lock circuit, wherein the invention greatly increases the energy ...



Super capacitors for energy storage: Progress, applications and

Nowadays, the energy storage systems based on lithium-ion batteries, fuel cells (FCs) and super capacitors (SCs) are playing a key role in several applications such as power ...



NFC Passive Padlocks

The NFC passive padlock, when compared with traditional padlocks, are maintenance-free electronic locks offering the advantages of high reliability, no battery requirements, energy ...



[NFC actuation and sensing IC NAC1080 development kit](#)

Part of the harvested energy can be stored in the dedicated storage capacitor (C7 or C10) located on the board to enable operations with the mini motor needed for the smart lock system.





[passive electronic Lock , Passive Lock factory , kerong](#)

Battery-free locking solutions are advanced access control systems that operate without internal batteries by harvesting energy from ambient sources or user ...



NFC Smart Lock VS Passive Electronic Lock: A Guide to ...

Under the trend of "de-battery" locks, NFC smart locks and passive electronic locks, as the two mainstream battery-free solutions, are relying on zero-battery design to solve ...

A Survey of NFC Sensors Based on Energy Harvesting for IoT ...

Bluetooth low energy (BLE) is also included as an example of low-power, short-range wireless technology. The availability of low-cost standardized technology and the custom of users to ...



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