RF IDEAS
Solutions for Identification and Access

ANATOMY OF A CARD

Understanding The Technology Behind RFID Cards

Curious as to how an RFID card functions? You've come to the right place. We created this easy guide to help you better understand the nuances of RFID cards and how they communicate with card readers.

Discover how an RFID card works.

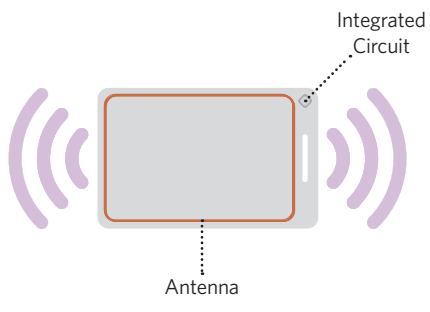
Compact Credentials

Radio Frequency (RF) access credentials come in all shapes and sizes. From clamshell cards to key fobs and watches, these compact devices are loaded with data and offer access to an array of impressive applications.

Inside An RFID Card

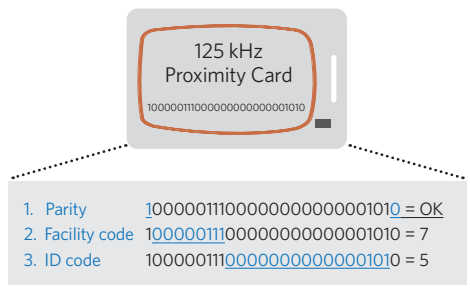
RFID cards communicate with card readers using electromagnetic frequencies. When a card is held within the electromagnetic field created by a card reader, the antenna draws power from the field and funnels it to the card's Integrated Circuit (chip).

This powers on the card.



Proximity Cards Enable Simple Access

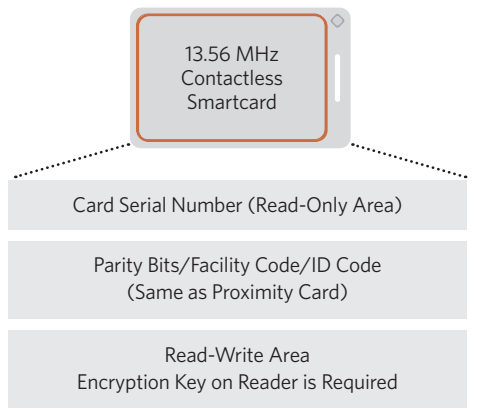
Proximity Cards operate at a frequency of 125 kHz and broadcast a limited amount of data bits designated for personal identification purposes. Bits of data and additional ID numbers are programmed into the card by the card manufacturer. Proximity cards only transmit their identification data, and no additional information can be sent or received by the card.



Smartcards Unlock Greater Capabilities

A smartcard provides much greater security and contains 100 times the data storage of a proximity card. Smartcards contain application-specific encryption keys that securely separate the data from various applications, such as:

- Secure pull-print
- Access control
- Organizational charge code information
- Granting access to keyboards



Sharing Data with the Card Reader

Once powered on, the card and reader communicate by sending radio waves at a shared frequency. The data is carried on these radio waves by modulating certain waves and leaving others un-modulated. This enables data to be encoded in the waves. In this manner, RFID systems enable data to be shared without the card and reader ever touching each other.

Operating at One Frequency or Both

Some readers operate only at 125 kHz or 13.56 MHz frequencies, while others operate at both. If the frequency the card transmits matches the frequency of the card reader, the reader then passes its data to a software application. The software application then matches card data with an approved credential and the card owner is granted access to a device's feature.

Expert Knowledge

As the technology behind RFID cards continues to advance, you can trust RF IDeas to be your expert source for understanding the dynamic world of RFID technology.

- For more information on how cards work or what card reader is most appropriate for your needs, contact your RF IDeas sales representative today.

Gain more insight into RFID technology with RF IDeas.

RF IDEAS

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