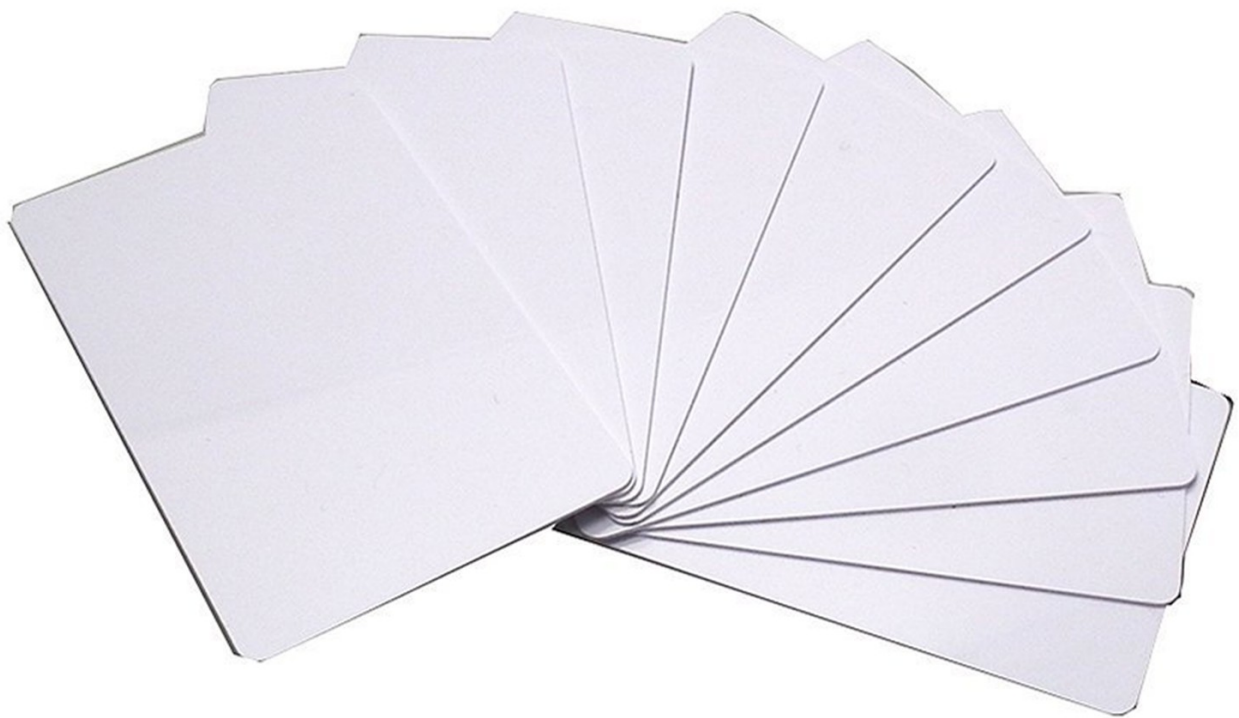# AZ-Delivery

RFID Karten 13,56MHz

Datenblatt

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1. Description

It is proximity ID card of 13.56Mhz ISO14443. It has been specially manufactured and packaged to be clean from dust. And you can print any pictures on the PVC blank cards. You can use it with our RFID RC522 reader module (https://www.az-delivery.de/products/rfid-set?_pos=10&_sid=8eee1ed07&_ss=r&ls=de).

The card's electrical parts consist of an antenna and ASIC. Antenna is made of winding coils, suitable for packaging in IS0 card. ASIC is composed of a high-speed (106KB baud rate) RF interface, a control unit and a 8Kbit EEPROM.

The communication layer (MIFARE RF Interface) complies with part 2 and 3 of the ISO/IEC14443A standard. It is contactless transmission of data and energy and no battery is needed.

This card is fundamentally used for storing memories, while a simple security mechanism divides the memories into segments. Therefore, it is ideal for high volume transactions in all different applications, such as transport ticketing, time attendance solutions, car parking, road-tolling etc. It is mainly used in closed systems as fixed value tickets (e.g. weekly/monthly travel passes).

2. Specifications

- » Memory divided into 16 sectors
- » Each sector composed of 4 blocks
- » Each block is 16 bytes and serves as minimum data unit
- » Each sector has a separate set of passwords and access control
- » Each card has a unique 32-bit serial number
- » With anti-collision mechanism
- » it can support multiple card operation
- » No power
- » Built-in antenna
- » Contains logic circuit for encryption control and communication
- » Memory capacity: 1K byte EEPROM
- » Data retention period: 10 years
- » Rewrite: 100.000 times
- » Operating temperature: -20 ℃ ~ 50 ℃ (humidity 90%)
- » Operating frequency: 13.56MHZ
- » Communication speed: 106 Kbps
- » Read and write distance: <10 cm (depending on the reader)
- » Size: 85.5mm × 54mm × 0.84mm
- » Weight: 20g

3. Applications

- » Identification cards
- » Access management
- » Campus cards
- » Loyalty cards (reward points)
- » Tourist cards
- » Micropayment (mobile wallet, contactless payment, cashless payment)
- » Road tolling
- » Transport ticketing, Event ticketing, Mobile ticketing
- » Citizen card, Membership cards, Health cards, Ferry Cards
- » Car rentals, Parking, Bike rentals
- » Library cards, Fuel cards, Hotel key cards, Taxi cards, Access cards
- » NFC Tag (NFC apps, MIFARE4Mobile)
- » Smart meter
- » Product authentication, Production control
- » Blood donor cards
- » Information services
- » Password storage
- » Smart advertising
- » Social welfare
- » Waste management

4. Library for our RFID RS522 card reader (Arduino)

To download library for our RFID RC522 card reader module, open your Arduino IDE and go to *Tools > Manage Libraries*, and search for "*mfrc 522*" and install library "*MFRC522*" by GithubCommunity, like on image below.
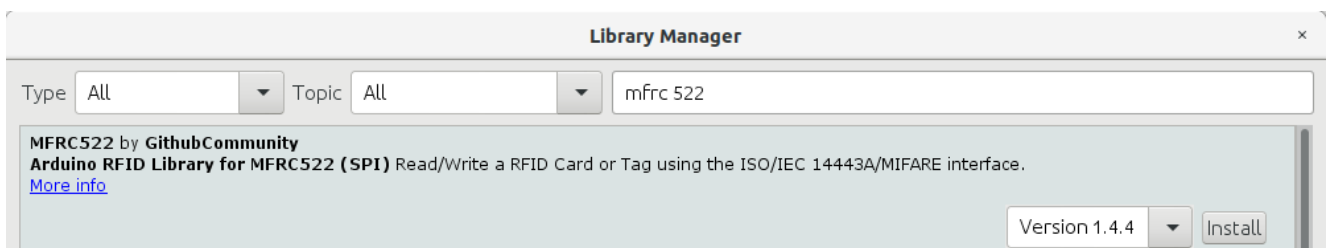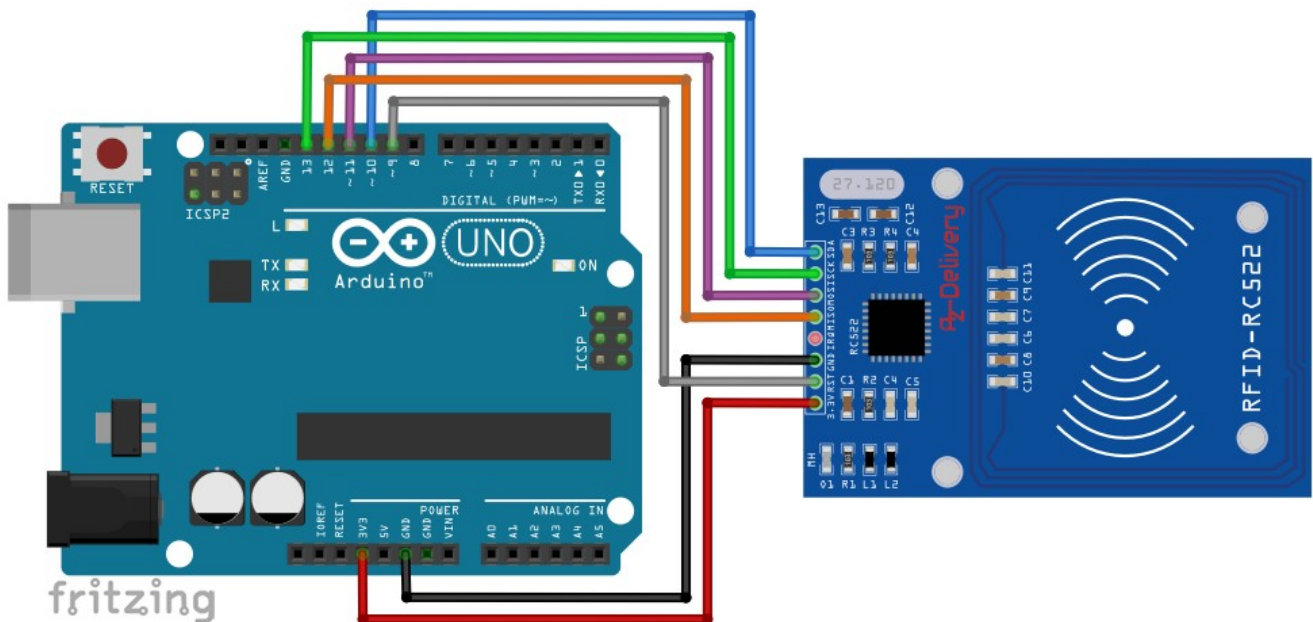

With this library comes several sketch examples:
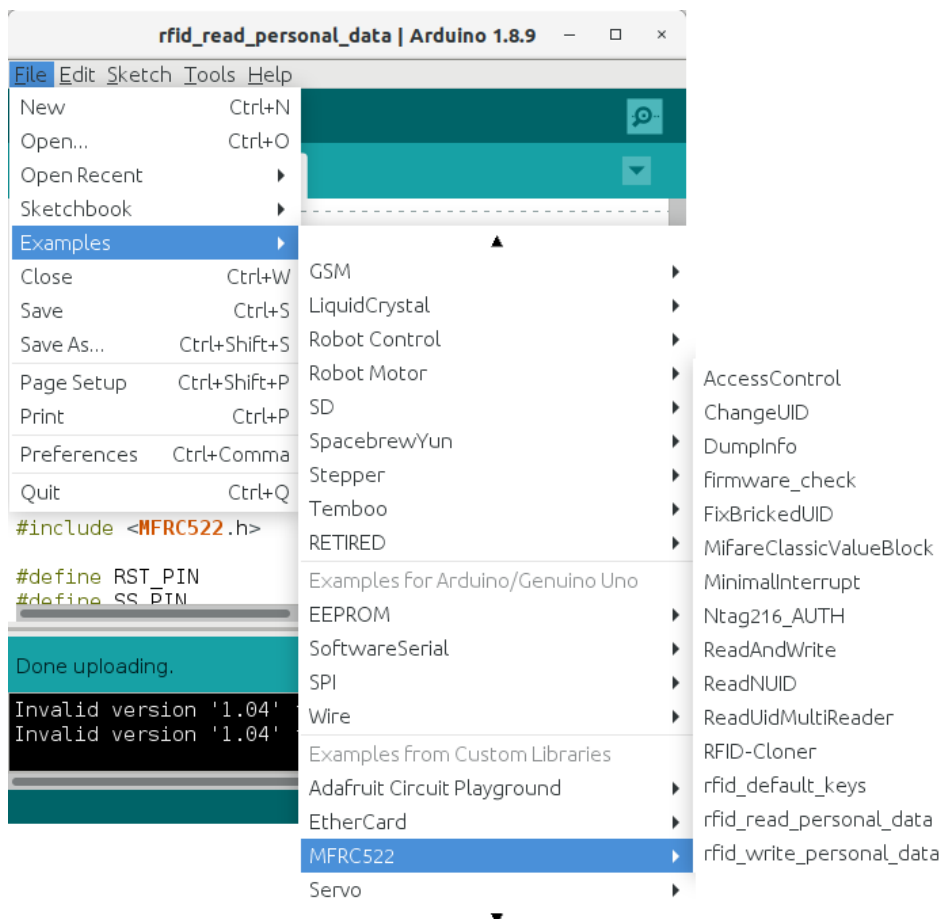
5. Connection Diagram

To use our RFID RC522 card reader module with Arduino Uno, connect them like on connection diagram below (SPI interface):

Card reader module pin	>	Arduino Uno pin	
SDA	>	D10	**Blue wire**
SCK	>	D13	**Green wire**
MOSI	>	D11	**Purple wire**
MISO	>	D12	**Orange wire**
RST	>	D9	**Gray wire**
VCC	>	5V	**Red wire**
GND	>	GND	**Black wire**