

"""

Interface RfId RC522 Reader using Maker Pi Pico and CircuitPython
<https://tutorial.cytron.io/2022/01/11/interface-rfid-rc522-reader-using-maker-pi-pico-a>

Items:

- Maker Pi Pico [https://my.cytron.io/p-maker-pi-pico]
- Mifare RC522 RFID Kit [https://my.cytron.io/p-mifare-rc522-rfid-kit]
- Grove - Relay [https://my.cytron.io/p-grove-relay]
- USB Micro B Cable [https://my.cytron.io/p-usb-micro-b-cable]

Libraries required from bundle (<https://circuitpython.org/libraries>): [simpleio.mpy]

References: [<https://github.com/domdfcoding/circuitpython-mfrc522>]

Last update: 11 Jan 2022 (tested with CircuitPython 7.1.0)

"""

```
import time, board
import digitalio, simpleio, busio
import mfrc522
```

```
sck = board.GP2 #sck = board.GP6
mosi = board.GP3 #mosi = board.GP7
miso = board.GP4 #miso = board.GP4
```

```
spi = busio.SPI(sck, MOSI=mosi, MISO=miso)
```

```
rst = digitalio.DigitalInOut(board.GP6) #rst = digitalio.DigitalInOut(board.GP8)
```

```
rfid = mfrc522.MFRC522(spi, cs, rst)
#rfid.set_antenna_gain(0x07 << 4)
```

```
print("\n***** Scan your RfId tag/card *****\n")
```

```
prev_data = ""; prev_time = 0; timeout = 1
```

```
while True:
```

```
    (status, tag_type) = rfid.request(rfid.REQALL) # next block #D
```

```
    if status == rfid.OK:
```

```
        (status, raw_uid) = rfid.anticoll()
```

```
        if status == rfid.OK:
```

```
            rfid_data = "{:02x}{:02x}{:02x}{:02x}".format(
                raw_uid[0], raw_uid[1], raw_uid[2], raw_uid[3])
```

```
            if rfid_data != prev_data:
                prev_data = rfid_data
```

```
                print("Card detected! UID: {}".format(rfid_data))
```

```
                prev_time = time.monotonic()
```

```
        else:
```

```
            if time.monotonic() - prev_time > timeout:
                prev_data = ""
```

```
### end ###
```