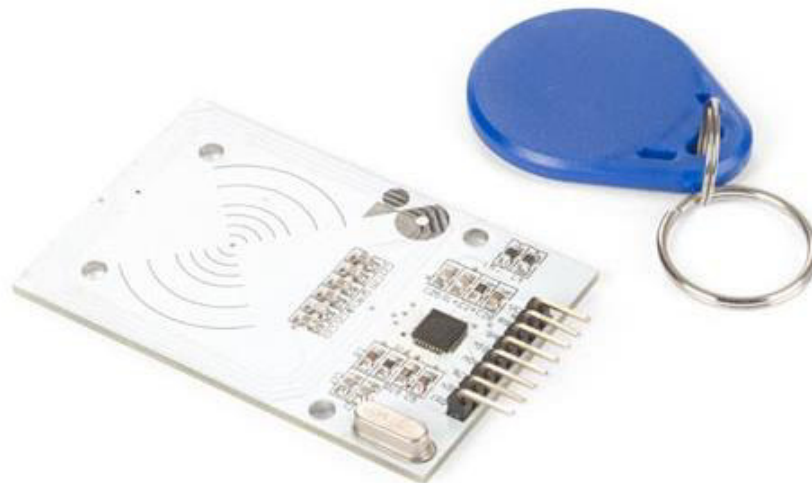# WHADDA
EXCITING ELECTRONICS

EN Arduino®-compatible RFID read-and-write module

WPI405

Introduction

To all residents of the European Union
Important environmental information about this product
This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit (or batteries) as unsorted municipal waste; it should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules.
If in doubt, contact your local waste disposal authorities.

Thank you for choosing Whadda! Please read the manual thoroughly before bringing this device into service. If the device was damaged in transit, do not install or use it and contact your dealer.

Safety Instructions

Read and understand this manual and all safety signs before using this appliance.

For indoor use only.

- This device can be used by children aged from 8 years and above, and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the device in a safe way and understand the hazards involved. Children shall not play with the device. Cleaning and user maintenance shall not be made by children without supervision.

General Guidelines

- Refer to the Velleman® Service and Quality Warranty on the last pages of this manual.
- All modifications of the device are forbidden for safety reasons. Damage caused by user modifications to the device is not covered by the warranty.
- Only use the device for its intended purpose. Using the device in an unauthorized way will void the warranty.
- Damage caused by disregard of certain guidelines in this manual is not covered by the warranty and the dealer will not accept responsibility for any ensuing defects or problems.
- Nor Velleman Group nv nor its dealers can be held responsible for any damage (extraordinary, incidental or indirect) – of any nature (financial, physical…) arising from the possession, use or failure of this product.
- Keep this manual for future reference.

What is Arduino®

Arduino® is an open-source prototyping platform based on easy-to-use hardware and software. Arduino® boards are able to read inputs – light-on sensor, a finger on a button or a Twitter message – and turn it into an output – activating of a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so, you use the Arduino programming language (based on Wiring) and the Arduino® software IDE (based on Processing). Additional shields/modules/components are required for reading a twitter message or publishing online. Surf to www.arduino.cc for more information.

RED Declaration of Conformity

Hereby, Velleman Group nv declares that the radio equipment type WPI405 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: www.velleman.eu.

Product Overview

This module allows to both read and write RFID cards.

Specifications

- operating voltage: 3.3 VDC
- working current: 13-26 mA
- sleep current: < 80 μA
- peak current: < 30 mA
- working frequency: 13.56 MHz
- supported card types: RFID
- interface / protocol: SPI
- controller chip: MFRC522
- data transmission speed: Max. 10 Mbit/s
- dimensions: 66 x 40 x 7 mm
- includes: 2 tags (1 card, 1 fob)

Connection

Arduino®		WPI405
+3.3 V	►	VCC
9	►	RST
GND	►	GND
12	►	MISO
11	►	MOSI
13	►	SCK
10	►	NSS (= SDA)
	►	IRQ (not used)

Use

1. Connect your controller board (WPB100, WPB101…) to your computer using a USB cable.
2. Start the Arduino® IDE.
3. In your Arduino® IDE, open the library manager by selecting Sketch → Include Library → Manage Libraries.
4. Search and install the MFRC522 library (by github_community).
5. Open the dump_info sketch by selecting File -> Examples -> MFRC522 -> DumpInfo.
6. Compile and load the dump info sketch into your board. Switch off your controller board.
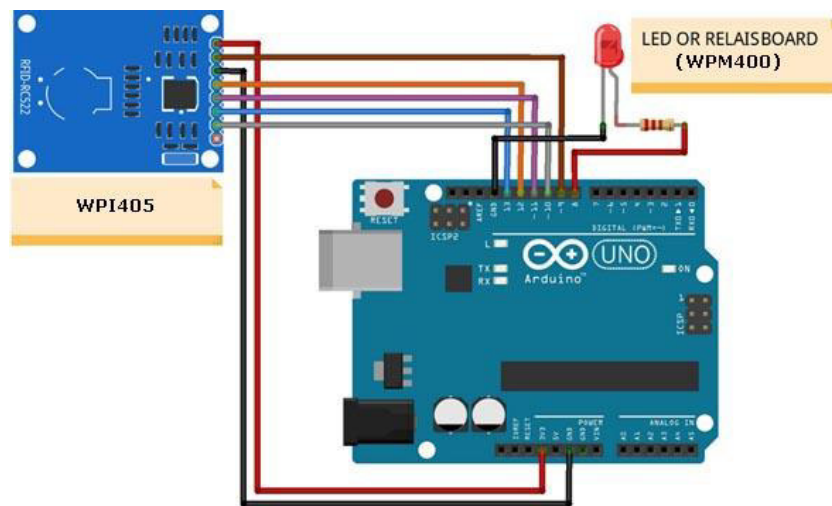
WARNING

The VCC of your WPI405 must be connected to 3.3 V on your controller board.

Do not connect to 5 V as your WPI405 will be destroyed!

7. The example drawing shows an LED. You can also use a buzzer (WPM319), a relay module (WPM400 or WPM406). In the example drawing, only pin 8 controls the LED. Pin 7 can be used to control a relay when a valid card is applied.
8. Check all connections and switch on your controller. Your WPI405 can now be tested.
9. In your Arduino® IDE, start the serial monitor (Ctrl + Shift + M).
10. Bring the card or tag in front of the WPI405. The card code will appear on the serial monitor.