# RFid Reader™

## Manual

### Additional Board

*All Mikroelektronika's development systems feature a large number of peripheral modules expanding microcontroller's range of application and making the process of program testing easier. In addition to these modules, it is also possible to use numerous additional modules linked to the development system through the I/O port connectors. Some of these additional modules can operate as stand-alone devices without being connected to the microcontroller.*

**E MikroElektronika**

SOFTWARE AND HARDWARE SOLUTIONS FOR EMBEDDED WORLD ...making it simple

# RFid Reader

The *RFid Reader* additional board is used to read identification cards (*RFid Cards)* using radio waves.This additional board features a receiver/transmitter module with antenna and a 2x5 male connector that enables connection with development systems. The operation of the *RFid Reader* board is based on amplitude modulation of radio waves and electromagnetic induction. The *RFid* card is not provided with the *RFid Reader*, but you can buy it separately.
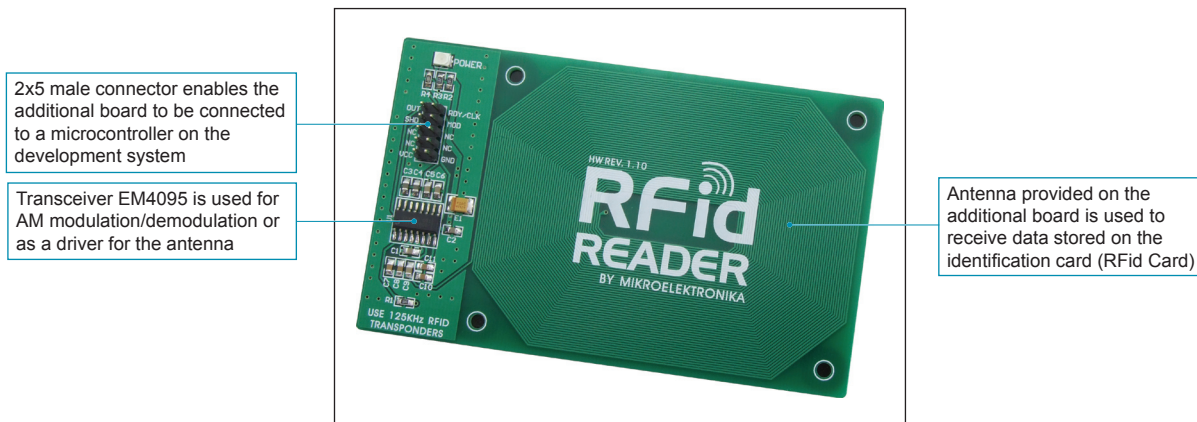


2x5 male connector enables the additional board to be connected to a microcontroller on the development system

Transceiver EM4095 is used for AM modulation/demodulation or as a driver for the antenna

Antenna provided on the additional board is used to receive data stored on the identification card (RFid Card)

**Figure 1:** *RFid Reader*

*RFid Reader* is powered via a development system it is connected to. The presence of the power supply is indicated by a LED marked POWER. When the *RFid Reader* is turned on, a 125kHz voltage is supplied on its antenna. As a result, the anntena starts emitting an electromagnetic field necessary for reading the *RFid* identification card. As passive *RFid* card doesn't have its own power supply, it features a coil where the voltage is automatically induced by approaching the card to the *RFid Reader*'s antenna. This voltage is necessary for the chip featured on the *RFid* card to work. The memory chip on the *RFid* card contains a unique identification code. This code is sent by the card when it is placed close to the *RFid Reader*'s anntena. The code is received via this anntena. Then, it is sent to the microcontroller for further processing.
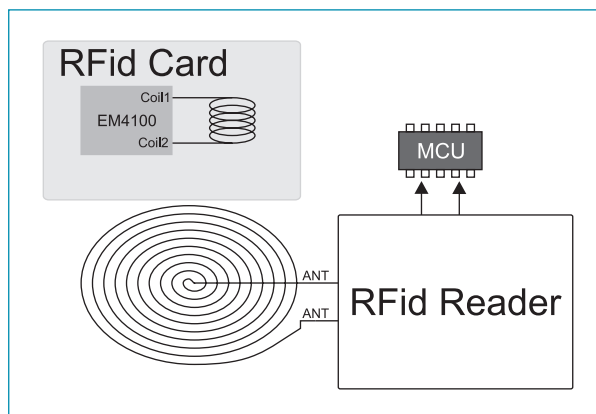


**Figure 2:** Identification card (**RFid Card*)



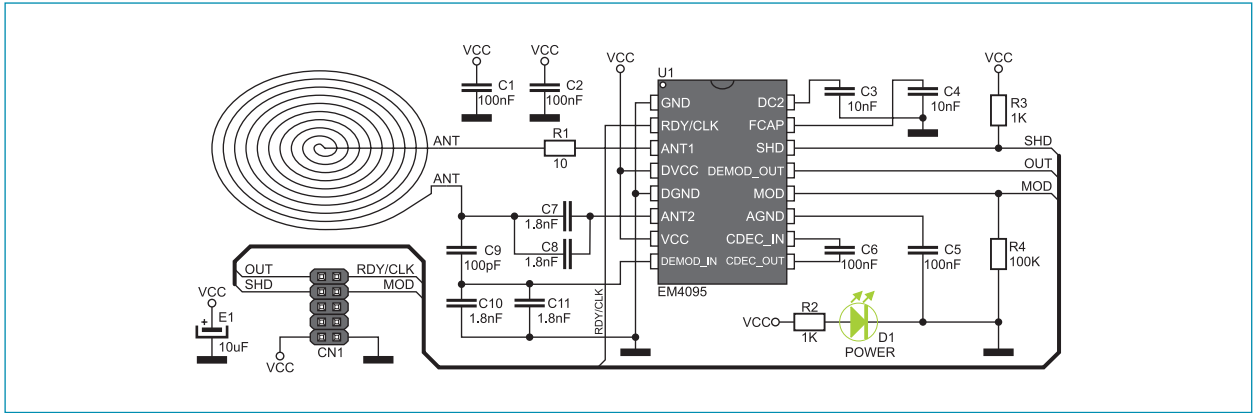**Figure 3**: The principle of *RFid Reade*r's operation

**Figure 4**: *RFid Reader* connection schematic

The function of pins provided on the 2x5 male connector CN1:

OUT        - Output signal from the EM4095 circuit (the code read from the identification card)
RDY/CLK - Clock frequency pin and flag
SHD       - High voltage on this pin causes the *RFid Reader* to enter *sleep* mode
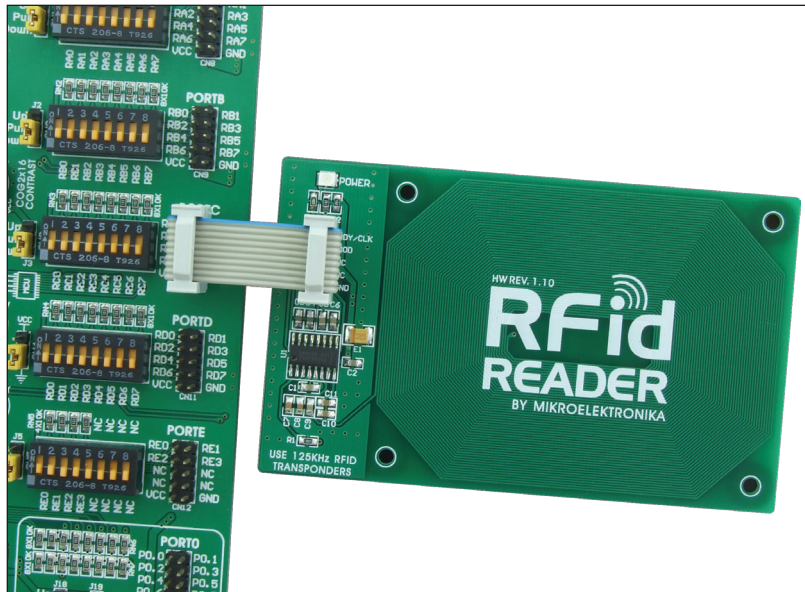MOD      - High voltage on this pin causes signal modulation on the antenna to start



**Figure 5:** *RFid Reader* connected to a development system

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for* RFID Transponder Tools *category:*

*Click to view products by* MikroElektronika *manufacturer:*

Other Similar products are found below :

SP-MX-08-HF-M2  ATA2270-EK3  V700-A43 10M  OM6716,599  WF-SM-30  V700-A44 20M  V680-A81  AS3953-DK-TAGS  V680-A60 2M  WS02-CFSC1-EV3  OM25180FDKM  OM5569/NT322ERM  OM5578/PN7150BBBM  OM5578/PN7150ARDM  V680-A60 5M  V700-A40-W 20M  V680-A60 10M  V700-A46 50M  V680-HA63A 10M  ST25-TAG-BAG-U  MIKROE-3644  MIKROE-4309  MIKROE-4208  113990817  MIKROE-2395  1482  MIKROE-2462  OM23221ARD  NFC-TAG-MN63Y1210A  2800  2802  XFAS01  OM5569/NT322EM  X-NUCLEO-NFC04A1  2095000000300  2095000000200  2801  MIKROE-2540  PNEV5180BM  CLOUDST25TA02K-P  DLP-RF430BP  ANT-1-6-ST25DV  OM5569/NT322FM  X-NUCLEO-NFC05A1  DEV-10406  SEN-14066  359  360  361  362