

R-DT-EVO-DES-USB-SMP
13.56 MHz OEM RFID Reader
For Automatic Data Acquisition
From DESFire Data Tags
USB Version

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1 Function Description

The RFID device automatically reads a number of bytes from a file on a Mifare DESFire RFID tag.

The hexadecimal value is converted into a decimal number.

The RFID device sends the decimal number to the virtual com port (VCP) with which it is connected to a PC.

Example

The RFID device reads the number 0x00008CFC. This is converted to a decimal number 36092. This telegram is then sent:

<STX>, „3“, „6“, „0“, „9“, „2“<ETX> Hexadecimal: 0x02, 0x33, 0x36, 0x30, 0x39, 0x32, 0x03

1.1 Housing

Desktop Reader housing.

1.2 Power Supply

Power is supplied via the USB port.

1.3 Interfaces, Connectors

USB Mini B socket at the RFID device for power supply and VCP.

1.4 Target Data Tag Type

Chip Type: Mifare DESFire

Design: Keyfob

1.5 Antenna, Required Range

The antenna should ensure 0...3 cm reading range. The RFID device must also function on any metal surface.

1.6 Functional Description RFID

Automatic reading of data from a Mifare DESFire data carrier.

Application: 7080F4

File: 0x00

Start Byte: 0x0009

Data Length: 0x0004

Convert these 4 bytes into a decimal number.

1.7 USB Communication

The device logs on as VCP when connected to a PC. The RFID device uses this connection to automatically send captured data to the customer's software.

1.8 Baud-Rate

The Baud rate is factory preset to 115200 and can be configured to this values:

- 9600
- 19200
- 38400

- 57600
- 115200

1.8.1 Telegram Format

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
STX (0x02)	Highest digit	Digit	Digit	Digit	Lowest digit	ETX (0x03)

1.8.2 Alive Telegrams

Only with the Ethernet version.

1.9 Feedback to the Operator

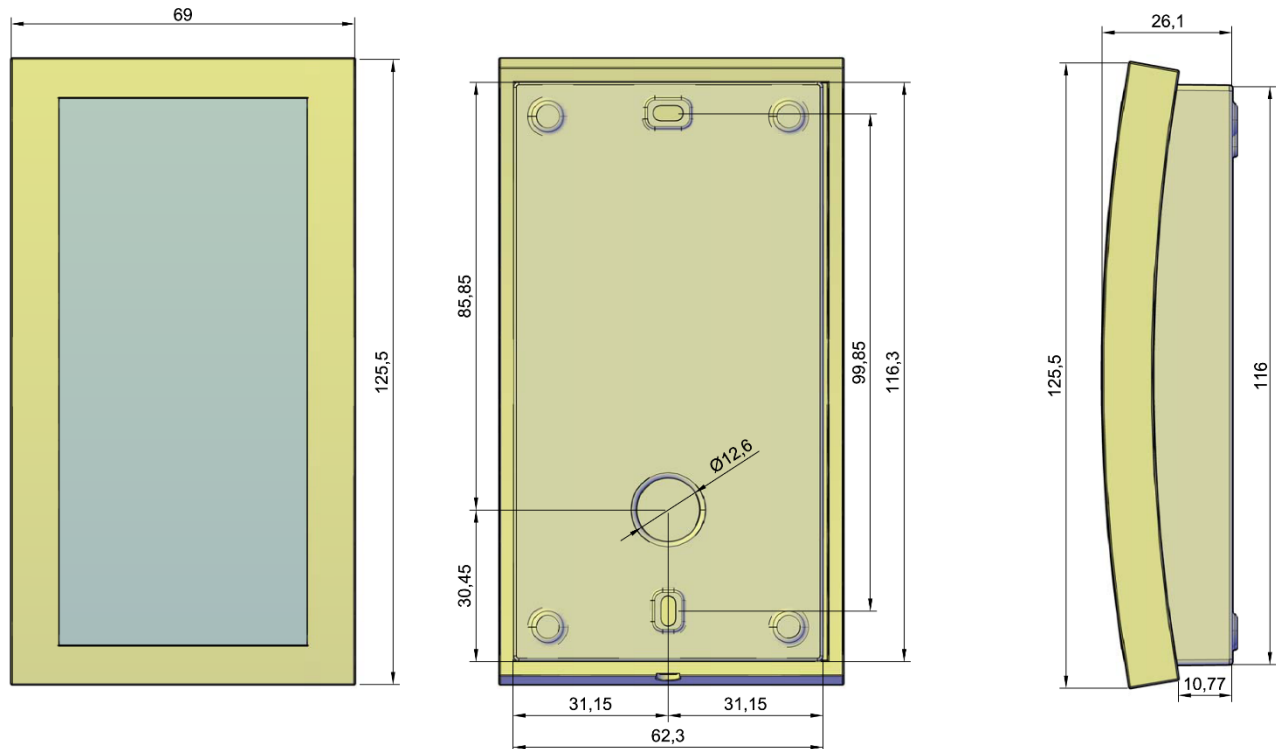
Standard (lurking for an RFID tag): LED lights blue
DESFire successful read: LED lights green + 1 short buzzer signal
ISO 14443A RFID tag found, but no data: LED lights red

1.10 Reference Documents

There are no reference documents, this device operates a customr-specific Firmware (SMP).

2 Housing

Desktop housing, drawing with dimensions and mounting holes.



3 Electrical Connection

Connect the USB Mini socket with a PC or other IT equipment.

4 USB Drivers

Normally, USB drivers are installed automatically by the Windows operating system. If, exceptionally, this does not happen automatically, you can download the current driver directly from the manufacturer of the USB interface module here:

<https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers>

5 Configuration

The device operates a customer-specific software. The only setting is the Baud rate of the virtual com port. The factory setting is 115200 bps.

In order to configure other Baud rates, you have to send these commands to set the desired Baud rate:

9600 bps: 50 00 01 01 04 54
 19200 bps: 50 00 01 01 03 53
 38400 bps: 50 00 01 01 02 52
 57600 bps: 50 00 01 01 01 51
 115200 bps: 50 00 01 01 00 50

These are binary commands. The values are noted in hexadecimal values.

You can use this software: <https://www.der-hammer.info/pages/terminal.html>

6 Revisions

Version	Date	Notes
1.0	2021-02-16	First release of user's manual
1.1	2021-12-08	Entry USB Drivers added, note on hterm added

7 Technical Data

Electrical Data	
Power Supply	Via USB
Operating Frequency	13.56 MHz
Antenna	Internal, smaller size for keyfobs
Reader IC	CL 663
Interface	VCP, Silabs CP2102

Mechanical Data	
Dimensions	125,5 × 60 × 26,1 mm
Mass	130 g
Material	ABS

Applicable Standards	
EMC	EN 301489-1:2012-04 (v1.9.21) EN 301489-3:2013-12 (V1.6.1)
Radio Regulation	EN 300330-1:2015-08 (V1.8.1) EN 300330-2:2015-08 (V1.6.1)
Safety	EN 50581:2012 (valid till 2024-07-07) EN 63000:2018
RoHS 2	EU Guideline 2011/65/EU EU Guideline 2015/863/EU
REACH	EU Guideline 1907/2006, updated by 2018/2005/EU