ZeitControl
cardsystems GmbH

USB-configurator

KBD-Rfid reader configuration program

Inhaltsverzeichnis

1. introduction

The 'TagTracer USB configurator' serves to configure the USB keyboard devices of ZeitControl cardsystems GmbH.

1.1. software

The software can be downloaded via the Internet:

http://www.zeitcontrol.de/download/configurator.zip

1.2. devices

The following devices are supported by this software:

designation	**type**	**order number**
TagTracer MicroStick Multi	Stick	77.002.0156
TagTracer MicroStick Mifare	Stick	77.002.0162
MagicTron Multi USB	Desktop	77.002.0157

In the following, the devices: "TagTracer MicroStick Multi" and "MagicTron Multi USB Keyboard" are equated.

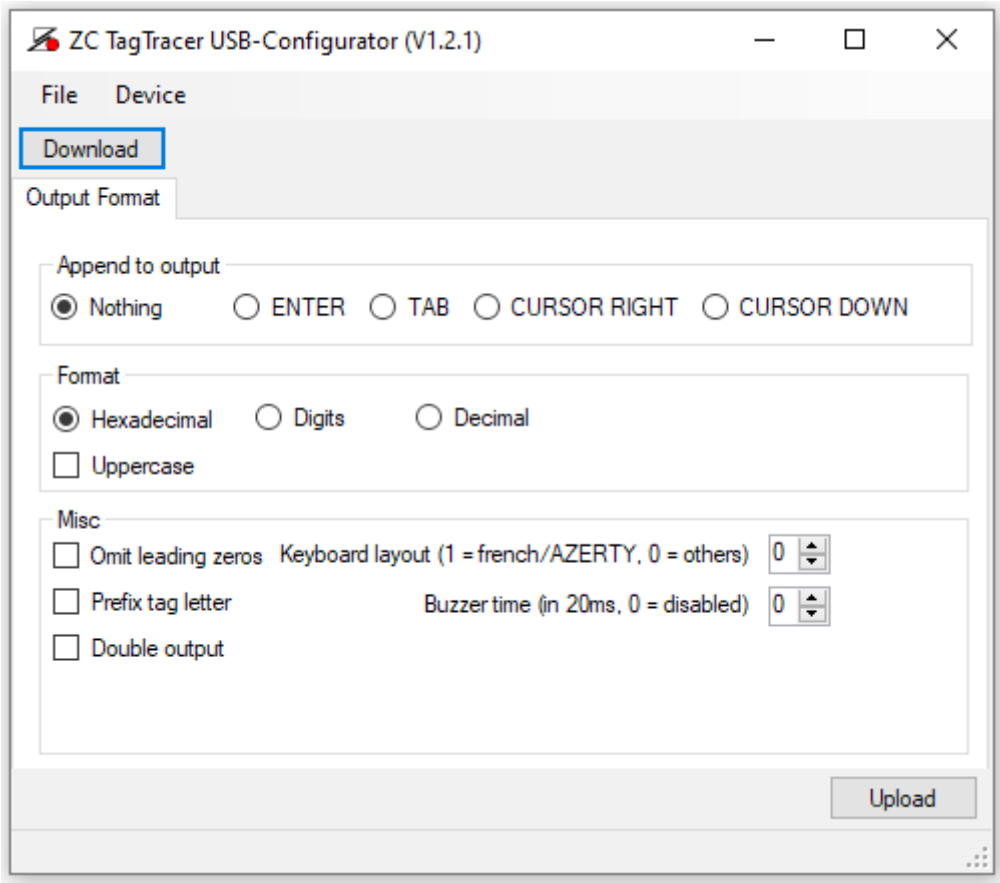
2. user interface

The configuration is done via the specified program.

notice: Only one device may be connected at a time during configuration.

2.1. program window

The following picture appears after calling up the program.



notice: The program window should not be active when a transponder is read in, because the tag number can only perform one action. For testing, a simple editor, such as 'notepad', should be opened additionally, which can then be activated to test the output.

2.1.1. menu

file... open

Previously saved configurations can be loaded here. The standard configurations are enclosed and are stored in the program directory (subfolder 'ini') during installation.

file ... save

Own configurations can be saved for later reuse.

file ... close

This ends the program.

device ... 125 kHz (Multi)

Editing the parameters for TagTracer MicroStick Multi/MagicTron Multi USB.

device ... 13.56 Mhz (Mifare/ISO14443A)

Editing the parameters for TagTracer MicroStick Mifare.

2.1.2. buttons

download

Communication to the device is established and the currently stored parameters are read out. During communication, the device flashes in yellow/green.

notice: A currently set configuration is overwritten without request.

upload

Communication to the device is established and the currently set parameters are transmitted to the device. During communication, the device flashes in yellow/green.

notice: It is checked whether the configuration matches the connected device. If not, an error message is displayed if necessary.

2.1.3. information fields

Information about the connected device is displayed in the information fields. The information is always displayed after a download and is updated before a new download or an upload. The fields can not be changed manually.

PID

Displays the product ID (USB) of the device.

device type

Shows the type designation of the device.

firmware version

Shows the version number of the device's firmware.

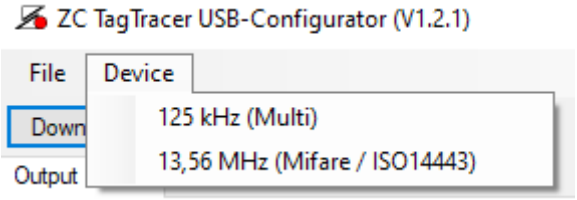
notice: Version V1.0 (Multi) does not include support for the French keyboard layout.

USB device number

Shows individual device number. This number is not identical to the serial number printed on the unit.

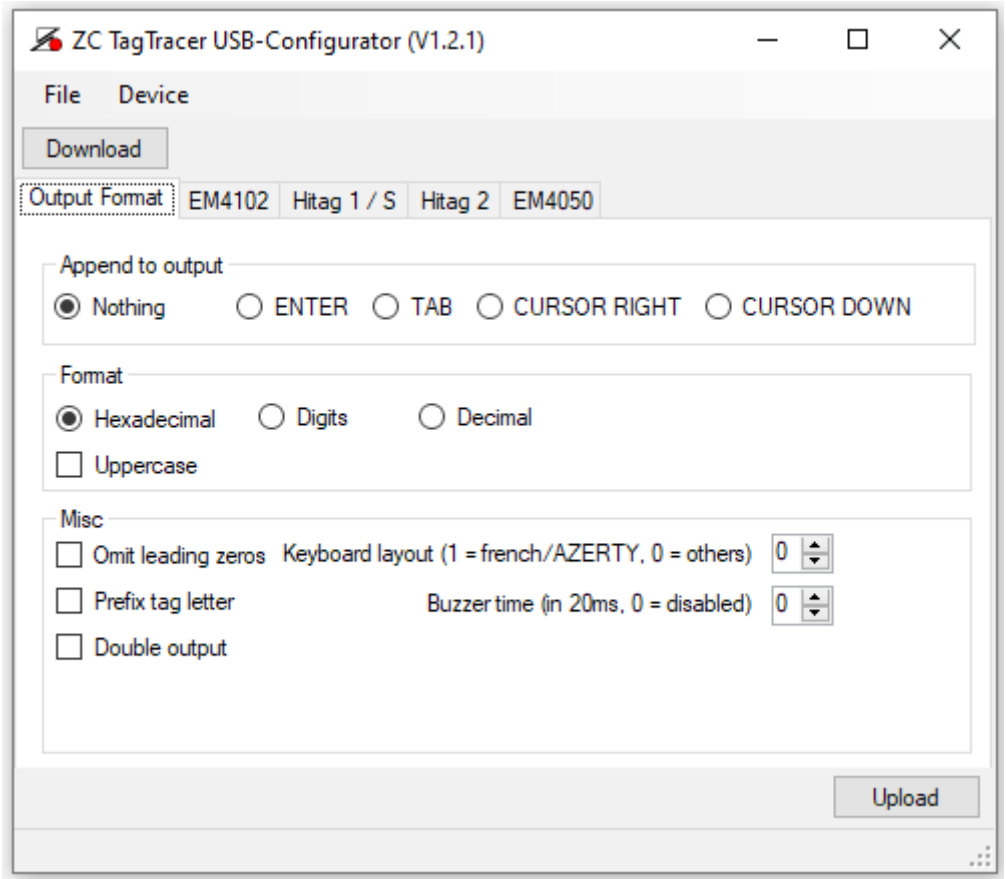
2.1.4. device selection

The device is selected either in the user interface via the menu item Device, or by downloading from a connected device.



According to the selected device, different parameters can now be changed.

2.1.5. program window TagTracer MicroStick Multi / MagicTron Multi USB keyboard



2.1.6. supported transponders

Different transponder types are supported in the 125 kHz range. The corresponding transponders are displayed as tabs to ensure clear "arming". The activation of the corresponding types can be found under the corresponding tabs.

EM4102

Support for EM4102 (and successor) from "EM MICROELECTRONIC-MARIN Ltd." is switched on.

Hitag1/HitagS

Support for Hitag1/Hitag S from “Nxp” (formerly Philips) is switched on.

Hitag2

Support for Hitag2 from “Nxp” (vormalig Philips) is switched on.

EM4050

Support for EM4050 (and successors) from "EM MICROELECTRONIC-MARIN Ltd.

2.1.7. EM4102 options

enabled

If you want the EM4102 detection to be activated, check the box provided.

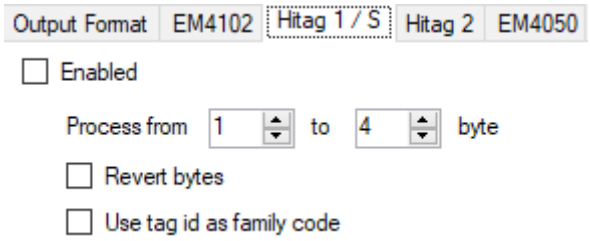
Magic Tron format

The output, processing of the RFID of an EM4102 follows the convention of the ZeitControl MagicTron.

bytes to be processed

With this option, the range of the transponder number used for processing can be limited. By default, the transponder number comprises 5 bytes (Byte 1 to Byte 5).

2.1.8. Hitag1 / S options



enabled

If you want the Hitag 1 / S detection to be activated, check the box provided.

bytes to be processed

With this option, the range of the transponder number used for processing can be limited. By default, the transponder number comprises 4 bytes (Byte 1 to Byte 4).

notice: To output only one byte the 'from', 'to' entries must be identical.

bytes invert

The output, processing of the bytes takes place in reverse order.

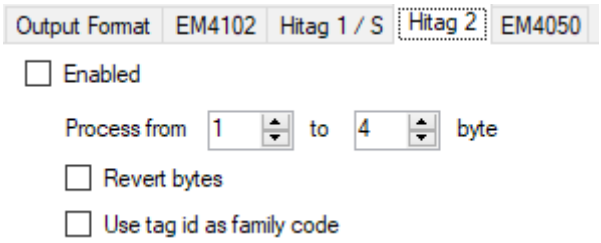
notice: The area "Invert bytes" refers to the previously selected bytes ("processed from ... to ... byte").

use tag id as family code

The serial number of the Hitag1 / HitagS transponder contains 4 bytes. With this option the length of the transponder is extended to 5 bytes. The ascii value of the transponder letter is prefixed ('h' / 68hex for Hitag1 and 's' / 73hex for HitagS).

notice: This option can only be switched on or off for the types Hitag 1, Hitag S, Hitag 2, EM4050 together.

2.1.9. Hitag 2 options



enabled

If you want the Hitag 2 detection to be activated, check the box provided.

bytes to be processed

With this option, the range of the transponder number used for processing can be limited. By default, the transponder number comprises 4 bytes (Byte 1 to Byte 4).

notice: To output only one byte the 'from', 'to' entries must be identical

bytes invert

The output, processing of the bytes takes place in reverse order.

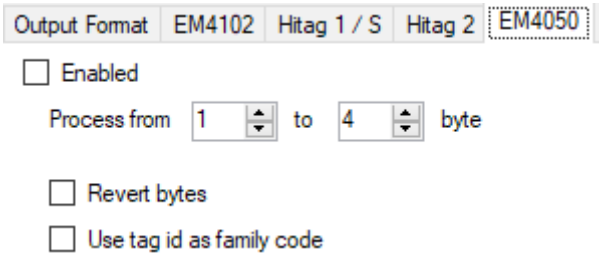
notice: The area "Invert bytes" refers to the previously selected bytes ("processed from ... to ... byte").

use tag id as family code

The serial number of the Hitag1 / HitagS transponder contains 4 bytes. With this option the length of the transponder is extended to 5 bytes. The ascii value of the transponder letter is prefixed ('h' / 68hex for Hitag1 and 's' / 73hex for HitagS).

notice: This option can only be switched on or off for the types Hitag 1, Hitag S, Hitag 2, EM4050 together.

2.1.10.EM4050 options



enabled

If you want the EM4050 detection to be activated, check the box provided.

bytes to be processed

With this option, the range of the transponder number used for processing can be limited. By default, the transponder number comprises 4 bytes (Byte 1 to Byte 4).

notice: To output only one byte the 'from', 'to' entries must be identical

bytes invert

The output, processing of the bytes takes place in reverse order.

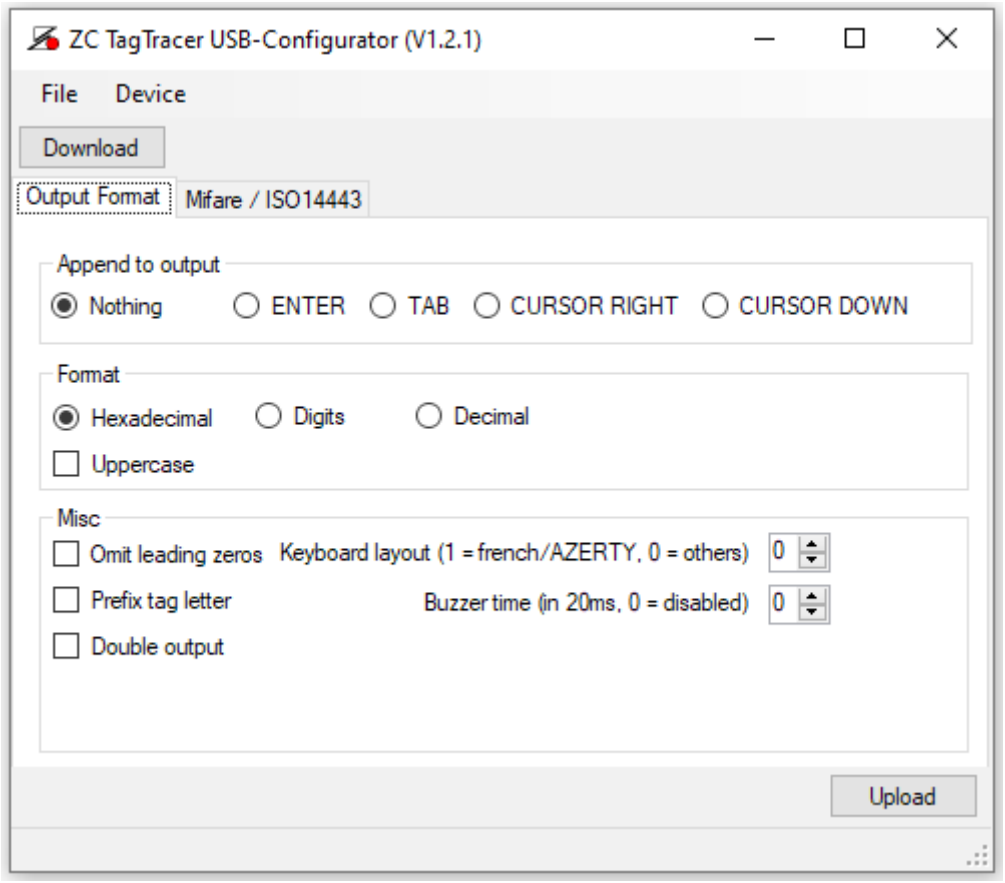
notice: The area "Invert bytes" refers to the previously selected bytes ("processed from ... to ... byte")..

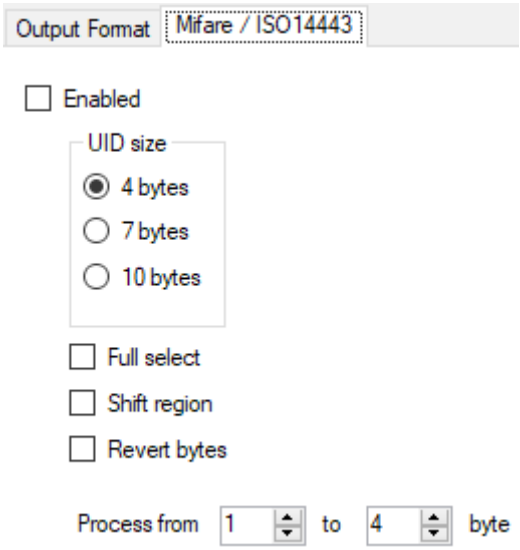
use tag id as family code

The serial number of the EM4050 transponder contains 4 bytes. With this option the length of the transponder is extended to 5 bytes. The ascii value of the transponder letter is prefixed ('T' / 54hex).

notice: This option can only be switched on or off for the types Hitag 1, Hitag S, Hitag 2, EM4050 together.

2.1.11. program window TagTracer MicroStick Mifare





enabled

If you want to have the recognition of the Mifare / ISO14443 transponder activated, check the box provided.

UID size

The transponder UID of a Mifare / ISO14443 transponder can be 4, 7 or 10 bytes long, depending on the type. The transmission between transponder and reader takes place in up to 3 steps, depending on the length. If the real size of the transponder is greater than the set length, one byte of the displayed transponder number is replaced by an 88hex (technically: CT, cascade tag).

notice: 10 bytes UID are currently mainly used with random UID. These are displayed, but cannot then be processed meaningfully. A random UID always starts with 08hex (in the standard configuration the number ends with this).

bytes to be processed

With this option the range of transponder numbers used for processing can be limited. If necessary, the length is automatically adjusted by changing the UID length.

notice: To output only one byte the 'from', 'to' entries must be identical.

shift region

If a transponder is read whose number is outside the selected 'from' . 'to' range, the 'from' ... 'to' range is adjusted.

example
A Uid length of 7 bytes is set. The 'from' ... 'to' range is, for example, '5'... '7'. If a transponder with a 4-byte UID is used, the possible UID bytes are outside the selected range. With the 'Shift range' setting, the range from '2' ... '5' is used in this case.

bytes invert

The output, processing of the bytes takes place in reverse order.

notice: The area "Invert bytes" refers to the previously selected bytes ("processed from ... to ... byte").

2.2. output format

The output of the transponder number depends on the transponder technology and may differ in the length of the number.
The following table shows the lengths of the corresponding transponders. The hex, digit and decimal representation are maximum values. By changing the 'bytes to be processed', the length is shortened. The lengths for the decimal output are fixed. Here the specified length is always used. However, the length can be shortened by 'suppressing leading zeros'.

transponder	hex	digit decimal	decimal
EM4102	10	20	14
Hitag1/S/2/EM4050	8/10[1]	16/20	14
Mifare	8/14/20[2]	16/28/40	11/18/26

1: depends on whether 'Tag-ID as family code' is activated or not.

2: depends on the current UID length, limited by the maximum allowed UID length.

hex

The output is in hexadecimal representation. In the standard setting an EM4102 with 10 bytes is thus represented. The output of the remaining transponders is shown in the previous table.

digit decimal

The individual digits of the hex representation are shown in decimal values from 00 to 15. (see appendix).

decimal

The number is output as a multi-digit decimal value with leading zeros.

uppercase

The letters in the number ('a' - 'f') are output as capital letters.

notice:: This option only works in conjunction with hexadecimal representation.

2.3. attach to output

The output can optionally be terminated with various additional characters. This can be used to leave the mask during a mask-based input or just to jump to the next input field.

Nothing

No sign is attached.

'ENTER' attach

The 'Enter' key is also appended.

'TAB' attach

Additionally the 'TAB' key is added.

notice: When testing via an editor, this character may not be displayed/executed.

'CURSOR RIGHT' attach

Additionally the 'CURSOR RIGHT' key is added.

notice: When testing via an editor, this character may not be displayed/executed.

'CURSOR DOWN' attach

Additionally the 'CURSOR DOWN' key is added.

notice: When testing via an editor, this character may not be displayed/executed.

2.3.1. Output options (Misc)

Language / Keyboard layout

speaking area (especially in the Euro zone) have a fundamentally different structure than QWERTY/QWRTZ. For the use with a french computer a '1' has to be entered here.

notice: This option can only be used with a firmware version >= 1.1.

omit leading zeros

Leading zeros are suppressed in the output. This option is particularly useful when outputting as decimal numbers.

Prefix with tag identifier

The prefix is any site-specific word that is used to create the unique tags.

A letter is placed in front of the number to identify the transponder type.

'U'	EM4102 in TagTracer illustration
'u'	EM4102 in MagicTron illustration
'h'	Hitag1
's'	Hitag S
'H'	Hitag 2
'T'	EM4102
'M'	Mifare (ISO14443A)

double output

The transponder number (and, if applicable, the transponder identification) is output twice in succession.

Buzzer time

If the transponder is successfully recognised, the buzzer is activated for the corresponding time. The time is specified as a multiple of 20 ms.

notice: This function can only be used in connection with the desktop devices, for the microsticks it can be set, but has no function.

3. appendix

3.1. digit decimal

The conversion is carried out according to the following scheme:

0_{hex}	'00'
1_{hex}	'01'
2_{hex}	'02'
3_{hex}	'03'
4_{hex}	'04'
5_{hex}	'05'
6_{hex}	'06'
7_{hex}	'07'
8_{hex}	'08'
9_{hex}	'09'
A_{hex}	'10'
B_{hex}	'11'
C_{hex}	'12'
D_{hex}	'13'
E_{hex}	'14'
F_{hex}	'15'

3.2. examples

3.2.1. EM4102

Standard output	0103c07a93
TagTracer illustration	80c0035ec9
Standard output Byte 2+3	03c0
TagTracer illustration Byte 2+3	c003
Standard output, Hex capital letters	0103C07A93
Standard output, digit decimal	00010003120007100903
Standard output, decimal	00004357913235
Standard output, decimal with transponder letter	u00004357913235
TagTracer illustration, Hex with transponder letter	U80c0035ec9

3.2.2. Hitag1

Standard output	685898d455
only transponder number	5898d455
Standard output invert	6855d49858
Transponder number invert	55d49858
Standard output Byte 2+3	6898d4
Standard output Byte 2+3, invert	68d498
only transponder number Byte 2+3	98d4
only transponder number Byte 2+3, invert	d498
only transponder number, Hex capital letters	5898D455
only transponder number, digit decimal	508090813040505
only transponder number, decimal	00001486410837
only transponder number, decimal with transponder letter	h00001486410837