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Handheld Software

BL ident[®] TA-UHF

User Manual

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1 About this Manual

The manual describes the structure, functions and use of the device software and helps you to use the product as intended. Read the manual carefully before using the product. In this way you avoid possible injury to persons, property and appliances. Keep the manual, as long as the product is used. If you pass on the product, please pass on the manual with it.

1.1 Target Groups

This manual is intended for trained personnel and must be read carefully by every person who operates the machine.

1.2 Explanation of Symbols Used

The following symbols are used in these instructions:



ATTENTION

ATTENTION indicates a situation that may lead to property damage, if it is not avoided.



NOTE

In NOTES you find tips, recommendations and important information. The notes facilitate work, provide more information on specific actions and help to avoid overtime by not following the correct procedure.



CALL TO ACTION

This symbol identifies steps that the user has to perform.



RESULTS OF ACTION

This symbol identifies relevant results of actions and sequences of action.

1.3 Further Documents

In addition to this document you will find the following documents on www.turck.com:

- Manual "BL ident ® handheld PD ident...TA" (D500034)

1.4 Naming Convention

The term "tag" is used as a synonym to "data carrier".

1.5 Feedback on this Manual

We strive to make this guide as informative and clear as possible. If you have any suggestions for a better design or you are missing information in the manual, please send your suggestions to techdoc@turck.com.

2 Notes on the Product

2.1 Product Identification

This manual describes the TA-UHF software for the TURCK BL ident® handhelds version 1.2.1.

2.2 Manufacturer and Servicing

TURCK supports you in your projects from the first analysis to commissioning of your application. In the TURCK product data base you find software tools for programming, configuration or commissioning, data sheets and CAD files in many export formats. Explore our product data base on: www.turck.de/products

For further questions contact our sales and service team in Germany:

Sales: +49 208 4952-380

Service: +49 208 4952-390

Outside Germany, please contact your TURCK representation.

Hans Turck GmbH & Co. KG
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Germany

3 For your Safety

The product is designed according to state of the art. However, there are residual risks. To avoid injury and damage observe the safety and warning notices. TURCK assumes no liability for damage caused by non-observance of the safety advice and warning hints.

3.1 Intended Use

The BL ident® Software TA-UHF is used to read and write data on UHF-RFID data carriers using BL ident® handhelds. The software is only compatible with the following TURCK handhelds (as at: 10/2015):

- PD-IDENT-UHF-RWBTA-865-868
- PD-IDENT-UHF-S2D-RWBTA-865-868
- PD-IDENT-UHF-RWBTA-902-928
- PD-IDENT-UHF-S2D-RWBTA-902-928
- PD-IDENT-UHF-RWBTA-920-925
- PD-IDENT-UHF-S2D-RWBTA-920-925

All data carrier types according to ISO 18000-6C or EPCglobal Gen2 can be read and written to with the software.

4 Product description

4.1 Properties and features

- Selection of various languages: German, English, French, Spanish, Italian, Chinese upon request)
- Support for various data carrier types
- Querying the data carrier EPCs
- Reading data carrier information
- Reading and writing data carriers with a specific EPC
- Reading and writing the next data carrier in the field
- Addressing the memory for reading and writing
- Data formats: ASCII, Hexadecimal, Decimal
- Reading and writing of up to 500 bytes in a step
- Save the read data in a text file on the handheld, with date, time stamp, address and EPC

4.2 Setup

The TURCK BL ident®-Software TA-UHF includes 7 screens:

- Start menu
- "Query/Select tag EPCs"
- "Read/Writing next tag"
- UHF settings
- ASCII keyboard
- Hexadecimal keyboard
- Decimal keyboard

4.2.1 Start menu

The start menu provides access to the following elements:

- Language selection
- Save data in local text file
- Battery display
- UHF settings
- Query/Select tag EPCs
- Read/Writing next tag
- Exit

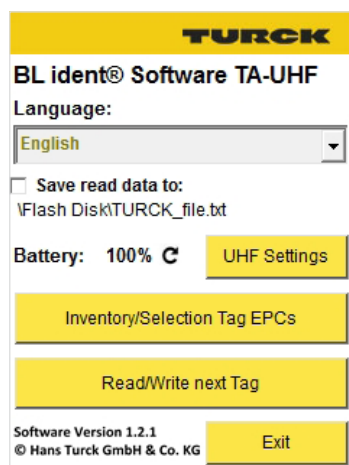


Fig. 1: Start menu

Element	Function
Language selection	The software has the following language settings: English, French, Spanish, Italian and German, and Chinese on request.
Save data in local text file	If the checkbox is selected, after a read command the read data is saved successively in a text file on the handheld, with data, time stamp, address and data carrier's EPC. The path \Flash Disk\TURCK_file.txt is the specified as standard and cannot be changed.
Battery display	Shows the current charge status of the battery. The value can be updated manually by clicking on the refresh icon.
UHF settings	The program opens the "UHF settings" screen.
Query/Select tag EPCs	The program opens the "Query/Select tag EPCs" screen.
Read/Writing next tag	The program opens the "Read/Writing next tag" screen.
Exit	Closes the program



NOTE

The program can only be ended on the start page.

4.2.2 "Query/Select tag EPCs" screen

The "Query/Select tag EPCs" screen provides access to the following elements:

- "EPC" column
- "Readings" column
- "Tags" display
- "Start" button
- "Tag Info" button
- "Start menu" button
- "Empty" button
- "UHF settings" button
- "Read/Write tag" button

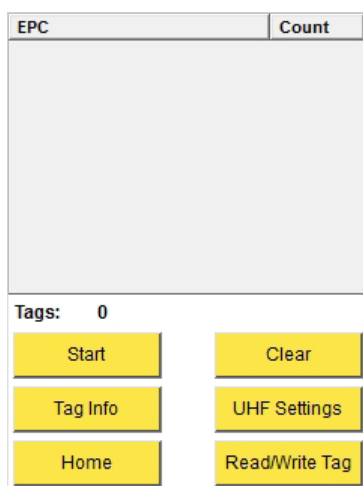


Fig. 2: "Query/Select tag EPCs" screen

Element	Function
"EPC" column	The "EPC" column shows the EPC of the read data carrier. If several data carriers have been read, the most recently read data carrier is automatically selected. You can select from several data carriers via the handheld's touchscreen or arrow keys.
"Readings" column	The "Readings" column shows how often a data carrier has been read.
"Tags" display	The "Tags" field shows the number of read data carriers.
"Start" button	Starts the EPC query After starting the query, the start button automatically becomes a stop button.
"Tag Info" button	The following parameters for the data carrier with the selected EPC are queried via the "Tag Info" button. – Chip type – ACCESS-PW memory – KILL-PW memory – PC + StoredCRC – EPC memory – TID memory – USER memory A block corresponds to 2 bytes. If the data carrier's chip type is not known, the error message "Length of the memory areas EPC, TID and USER cannot be checked. Please check manually." is displayed. After starting the query, the tag type start button automatically becomes a stop button. If a data carrier is detected, the "Tag Info" function stops automatically. If a data carrier EPC is selected, the data carrier type of the data carrier with the selected EPC is queried. The "Tag Type" function supports the following data carrier types: – Impinj Monza 2 – Impinj Monza 3 – Impinj Monza 4QT – Impinj Monza 4E – Impinj Monza 4D – Impinj Monza 4U – Impinj Monza 5 – Impinj Monza R6 – Impinj Monza X-2K Dura – Impinj Monza X-8K Dura – Alien Higgs 3 – Alien Higgs 4 – NXP G2iL – NXP G2iL+ – NXP G2XM – NXP G2XL – NXP G2iM – NXP G2iM+ – NXP UCODE 7 – PHILIPS UCODE EPC G2
"Start menu" button	The program opens the start menu.
"Empty" button	The displays in the EPC and Readings columns, as well as the number of data carriers, are reset.
"UHF settings" button	The program opens the "UHF settings" screen.

Element	Function
"Read/Write tag" button	The program opens the "Read/Write" screen if a data carrier EPC has already been selected. On the "Read/Write" screen, the read and write commands are only executed for the selected data carrier. If a EPC has not been selected, the program opens the "Read/Write next tag" screen. The read and write commands for the next data carrier in the field are executed on the "Read/Write next tag" screen.
Exit	Closes the program

4.2.3 "Read/Writing next tag" screen

The "Read/Write next tag" screen provides access to the following elements:

- Memory area
- Start byte
- Data format
- Bytes
- Display and input field
- Status display
- "Read" button
- "Start menu" button
- "Write" button
- "Query tag EPCs" button

Memory Area:

EPC

Start Byte:

0

HEX

Bytes:

12

Byte	0	1	2	3
0000-0003	00	00	00	00
0004-0007	00	00	00	00
0008-0011	00	00	00	00

Read

Write

Home

Inventory Tag
EPCs

Fig. 3: "Read/Writing next tag" screen

Element	Function
Memory area	The memory area to be read or written is specified via the drop-down menu: – KILL-PW (memory bank RESERVED from byte 0): fixed number of memory blocks, length not variable. The data carrier is not automatically finally deactivated by setting a KILL password. – ACCESS-PW (memory bank RESERVED from byte 4): fixed number of memory blocks, length not variable. The data carrier is not automatically finally deactivated by setting an ACCESS password. – PC (memory bank EPC from byte 0): fixed number of memory blocks, length not variable. PC defines the length of the transferred EPC. – EPC (memory bank EPC from byte 4): Length variable, depending on chip type. – TID (memory bank TID from byte 0): Length variably settable, can only be read, not written. – USER (memory bank USER from byte 0): Length variably adjustable.
Start byte	The input specifies the start0byte address for the read or write process. The value for the first byte is 0. Maximum value for the input is 9000. If the memory area of the data carrier is smaller than the stated start byte, it is automatically adjusted when the read or write process starts.
Data format	Selection menu for the data format for the input and display of the read or written data. The ASCII, hexadecimal and decimal formats are available.
Bytes	The input specifies the number of bytes to be written or read (max. 500). During read or write processes, the handheld checks whether the data carrier has the set memory area. If the memory area of the data carrier is smaller than the stated value, the number of bytes is automatically reduced to the maximum number for the respective data carrier. A reference and information about the data carrier is displayed.
Display and input field	Shows the data read or to be written. The respective byte address is displayed in the left-hand column.
Status display	Indicates whether the read or write process has been performed. If the read or write process was successful, the message "Read/Write successful to EPC: ..." and the data carrier's EPC is displayed.
"Read" button	Starts the reading of the user data from the stated start byte for the stated number of bytes. After starting the read process, the "Read" button automatically becomes a "Stop" button.
"Start menu" button	The program opens the start menu.
"Query tag EPCs" button	The program opens the "Query tag EPCs" screen.

4.2.4 "UHF settings" screen

The "UHF settings" screen provides access to the following elements:

- Power
- Up to 2 × power when writing
- Expected number of tags
- Frequency
- Read/Write without EPC
- "OK" button
- "Cancel" button

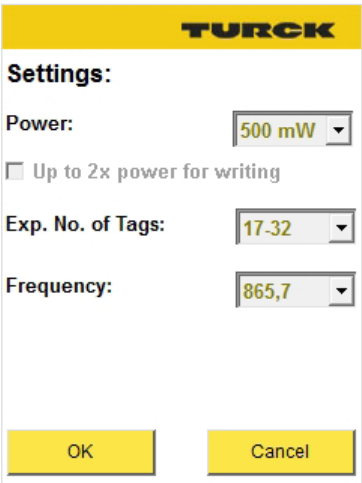


Fig. 4: "UHF settings" screen

Element	Function
Power	The power in mW can be selected in the "Power" drop-down menu. The following possible selections are available: – 5 – 10 – 25 – 50 – 100 – 200 – 250 – 300 – 400 – 500 – 600 – 750 – 900 – 1000 The values 600, 750, 900 and 1000 are only available for the devices PD-IDENT-UHF-...-902-928 and PD-IDENT-UHF-...-920-925.
Up to 2 × power when writing	Selecting the checkbox "Up to 2 × power when writing" doubles the power if writing is to be carried out to a data carrier. If a value of 300 mW or more is selected under "Power", the power if the checkbox is selected is 500 mW (maximum value for the handhelds PD-IDENT-UHF-...-865-868).

Element	Function
Expected number of tags	The Q value defines the number of available time slots for responses from the data carriers to the EPC query. It should be set up so that the number of available time slots corresponds to the number of data carriers in the field. The drop-down menu offers the following possible selections: – 1 (Q = 0) – 2-8 (Q = 3) – 9-16 (Q = 4) – 17-32 (Q = 5) – 33-64 (Q = 6) – 65-100 (Q = 7) – > 100 (Q=10)
Frequency	The "Frequency" drop-down menu is available for the devices PD-IDENT-UHF-RWBTA-865-868 and PD-IDENT-UHF-S2D-RWBTA-865-868. The following frequencies can be selected: – 865.7 – 866.3 – 866.9 – 867.5
"OK" button	Confirms the input
"Cancel" button	Cancels the procedure.

4.2.5 ASCII keyboard

The ASCII keyboard is used to input data in ASCII format.



Fig. 5: ASCII keyboard

4.2.6 Hexadecimal keyboard

The hexadecimal keyboard is used to input data in hexadecimal format.



Fig. 6: Hexadecimal keyboard

Element	Function
Set everything to 00	Selecting "Set everything to 00" sets all values from the selected start byte to "00".
Set everything to FF	Selecting "Set everything to FF" sets all values from the selected start byte to "FF".

4.2.7 Decimal keyboard

The decimal keyboard is used to input data in hexadecimal format.

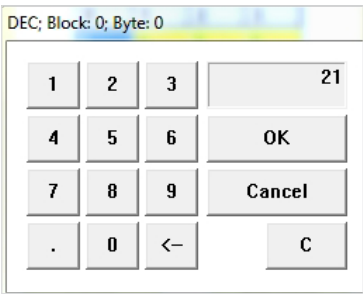


Fig. 7: Decimal keyboard

5 Install Software

When purchasing one of the following TURCK PD-IDENT handhelds, the software is preinstalled.

- PD-IDENT-UHF-RWBTA-865-868 (language: DE/EN/FR/ES/IT)
- PD-IDENT-UHF-S2D-RWBTA-865-868 (language: DE/EN/FR/ES/IT)
- PD-IDENT-UHF-RWBTA-902-928 (language: DE/EN/FR/ES/IT)
- PD-IDENT-UHF-S2D-RWBTA-902-928 (language: DE/EN/FR/ES/IT)
- PD-IDENT-UHF-RWBTA-920-925 (language: EN/CN)
- PD-IDENT-UHF-S2D-RWBTA-920-925 (language: EN/CN)

Updates are provided with corresponding installation instructions from TURCK.

6 Using the software

6.1 Starting the software

- Start the software via the TURCK icon on the handheld's desktop.
or
- Start the software via the handheld's start menu (Start > Programs > TURCK TA-UHF).

6.2 Selecting the language

- Select a language from the drop-down menu. You can choose from English, French, Spanish, Italian and Germany, or Chinese if applicable
- ➡ After selecting the language, the software automatically restarts.

6.3 Querying the electronic product code (EPC)

- In the start menu, press the button "Query/Select tag EPCs".

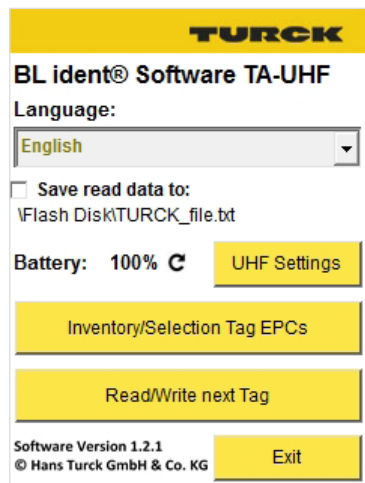


Fig. 8: Start menu

- ➔ The "Query/Select tag EPCs" screen opens.

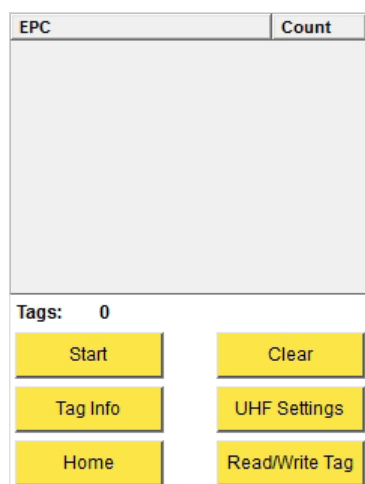


Fig. 9: "Query/Select tag EPCs" screen

- Press the start button
- ➔ The handheld confirms the successful EPC query with an acoustic signal.



NOTE

If a data carrier has been marked and Read/Write selected, only a data carrier with the same EPC can be read/written.
If a data carrier has not been marked, the next data carrier in the field is read or written.

6.4 Reading and writing the data carrier's user data

6.4.1 Reading user data

- Open the "Read/Writing next tag" screen.

Memory Area:

Start Byte:

Bytes:

Byte	0	1	2	3
0000-0003	00	00	00	00
0004-0007	00	00	00	00
0008-0011	00	00	00	00

Read Write

Home Inventory Tag EPCs

Fig. 10: "Read/Writing next tag" screen

- Enter the memory area to be read.
- Enter the start byte address.
- Enter the number of bytes to be read.
- Select the data format, in which the data should be displayed.
- Press the "Read" button.
- ➡ The handheld confirms the successful read process with an acoustic signal.
- ➡ The status display shows "Read process successful". The data carrier's EPC is displayed.
- ➡ The read data is automatically transferred to the display field.



NOTE

The read process is cancelled as soon as the user performs a manual action or presses the stop button.

6.4.2 Edit bytes

In the display and input field on the "Read/Write next tag" screen, only fields with a yellow background can be edited.

Memory Area: EPC

Start Byte: 0 HEX

Bytes: 12

Byte	0	1	2	3
0000-0003	00	00	00	00
0004-0007	00	00	00	00
0008-0011	00	00	00	00

Read Write

Home Inventory Tag EPCs

Fig. 11: Display and input field

- Select a field via the touchscreen or the keyboard in order to edit it.
- Enter the desired value in the selected data format.

6.4.3 Write user data



NOTE

If the EPC of the next data carrier is to be written or changed in the field, the data carrier has to be alone in the field.

- Open the "Read/Writing next tag" screen.

Memory Area: EPC

Start Byte: 0 HEX

Bytes: 12

Byte	0	1	2	3
0000-0003	00	00	00	00
0004-0007	00	00	00	00
0008-0011	00	00	00	00

Read Write

Home Inventory Tag EPCs

Fig. 12: "Read/Writing next tag" screen

- Enter the memory area to be read.
- Enter the start byte address.
- Enter the number of bytes to be written.
- Enter the data to be written.
- Press the "Write" button.
- ➔ The handheld confirms the successful write process with an acoustic signal.
- ➔ The status display shows "Write process successful" if the check of the data by the subsequent automatic read command was successful. The data carrier's EPC is displayed.


NOTE

The write process is cancelled as soon as the user performs a manual action or presses the stop button.

6.4.4 Change specific bytes in a memory area

- Open the "Read/Writing next tag" screen.
- Enter the desired data format.
- Execute a read command as described in chapter 6.4.1.
- Change the value for the desired bytes.
- Press the "Write" button.
- ➔ The handheld confirms the successful write process with an acoustic signal.
- ➔ The status display shows "Write process successful". The data carrier's EPC is displayed.

6.4.5 Read barcodes and write data to data carrier

Barcodes can be scanned with the handheld PD-IDENT-UHF-S2D-RWBTA-... and the data can be written to data carriers in ASCII and hexadecimal formats.

Example:

Barcode "29038671" is read by the handheld. The read data can be written to the data carrier in ASCII format = "29038671" (8 bytes) or hexadecimal format = "29038671" (4 bytes). When reading the data carrier's memory blocks in ASCII format (8 bytes) or hexadecimal (4 bytes), the output value is "29038671".


ATTENTION

Inputting the data in the wrong format

Possible malfunction of the data carriers

- Read the data from the data carrier in the format, in which it was previously saved.

- Open the keyboard in ASCII or hexadecimal format.
- Read the barcode.
- Perform the write process as described in chapter 6.4.3.

6.4.6 Access to read data

The read data is saved in a text file if the function has been activated in the start menu (see chapter 4.2.1). You can open the text file either directly from the handheld or via a PC. The data is saved in the text file as follows (see example):

2014-21-10; 13:16:17; USER; 5;20B; ASCII; E004010077E2B9AF; Released 01.12.14!

Explanation:

2014-21-10 [date]; 13:16:17 [time stamp];USER [memory area]; 5 [start byte]; 20B [number of bytes]; ASCII [data format]; [line feed] E004010077E2B9AF [EPC]; Released 01.12.14! [Data]

Open text file on the handheld

- Open the text file under the path \Flash Disk\TURCK_file.txt

Open the text file via a PC

- Connect the handheld to a PC (e.g. via a docking station).
- Open the text file under the path \Flash Disk\TURCK_file.txt

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