

Manual

USB Products

WERMA Signaltechnik GmbH + Co. KG

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Content

- 1. Introduction 3**
- 2. Technical information 4**
 - 2.1 System requirements..... 4
- 3. Driver Installation..... 5**
 - 3.1 Automatic Driver Installation 5
 - 3.2 Manual driver installation 5
- 4. Operation with virtual COM Port 9**
 - 4.1 Settings 9
 - 4.2 Serial Commands for the USB Terminal Elements KombiSIGN 40 and KombiSIGN 71/72 9
 - 4.2.1 Version..... 9
 - 4.2.2 Name..... 9
 - 4.2.3 Write..... 10
 - 4.2.4 Read 11
 - 4.2.5 Power-on state 11
 - 4.3 Serial Commands for the 816 LED Beacon USB 12
 - 4.3.1 Version..... 12
 - 4.3.2 Name..... 12
 - 4.3.3 Read..... 12
 - 4.3.4 Write..... 13
 - 4.3.5 Power-on colour..... 13
- 5. Operation with USB-Terminal.exe..... 14**
 - 5.1 Introduction 14
 - 5.2 Documentation 14

1. Introduction

WERMA USB products provide the ideal solution for applications which require a personal computer. The innovative **KombiSIGN 40**, **KombiSIGN 71/72** and the **816 LED Multicolour Beacon** products which were developed in-house at WERMA allow direct PC actuation for fast and convenient commissioning. As well as actuation via USB-Terminal.exe the products can also be simply commissioned by means of VCP (Virtual COM Port) actuation. This ensures a simple integration into any customer-specific software.

Our USB products use FTDI chips such as FT230X for USB serial communication for which license-free drivers are provided by FTDI for all major Operating Systems.

The USB Terminal Elements for KombiSIGN 40, KombiSIGN 71/72 and the 816 LED Multicolour Beacon with USB interface require neither their own separate power supply nor any additional hardware.

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WERMA reserves the right to make technical improvements to the product and accepts no responsibility for mistakes or printing errors which may be contained in this documentation.

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310.640.022

2. Technical information

2.1 System requirements

- USB port (port must provide 500 mA, otherwise a USB hub with external power supply must be used)

Using USB-Terminal.exe to access USB devices:

- Windows 10, Windows 11, Windows Server 2016, 2019, 2022
- Further details are listed in the provided README.txt of USB-Terminal.exe

Using Demo-App:

- Windows 10, Windows 11

Using FTDI VCP-drivers:

- Linux, Mac OS X, Windows CE (Version 4.2 and greater), Windows RT, Android
(For further information and drivers, see <http://www.ftdichip.com>)
- FTDI may provide older versions of the VCP driver for older Windows operating systems. These drivers may work with certain hardware models as is, but no support is provided by WERMA or FTDI.

3. Driver Installation

3.1 Automatic Driver Installation

1. Plug in the USB device.
2. Windows will start driver installation using Windows Update
3. Once completed, Windows notifies you about completed driver installation.

3.2 Manual driver installation

Two options are available for the manual driver installation:

FTDI Driver Set-Up Programme:

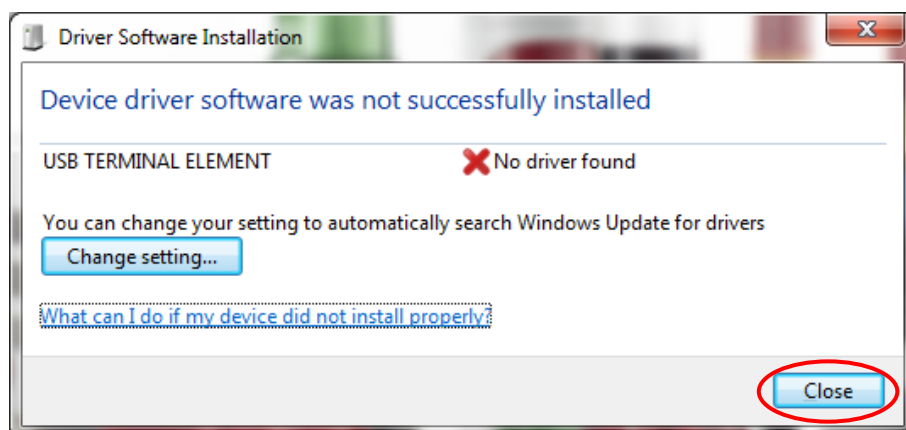
- 1) Download the install package: www.werma.com/software
- 2) Unpack the ZIP file, we need the subfolder "driver".
- 3) On Windows based Systems, please run the file CDM212364_Setup.exe
Please follow the instructions of the set-up programme. This setup installs the required USB drivers for supported Windows operating systems.

Note: You must have administrator rights to install the drivers.

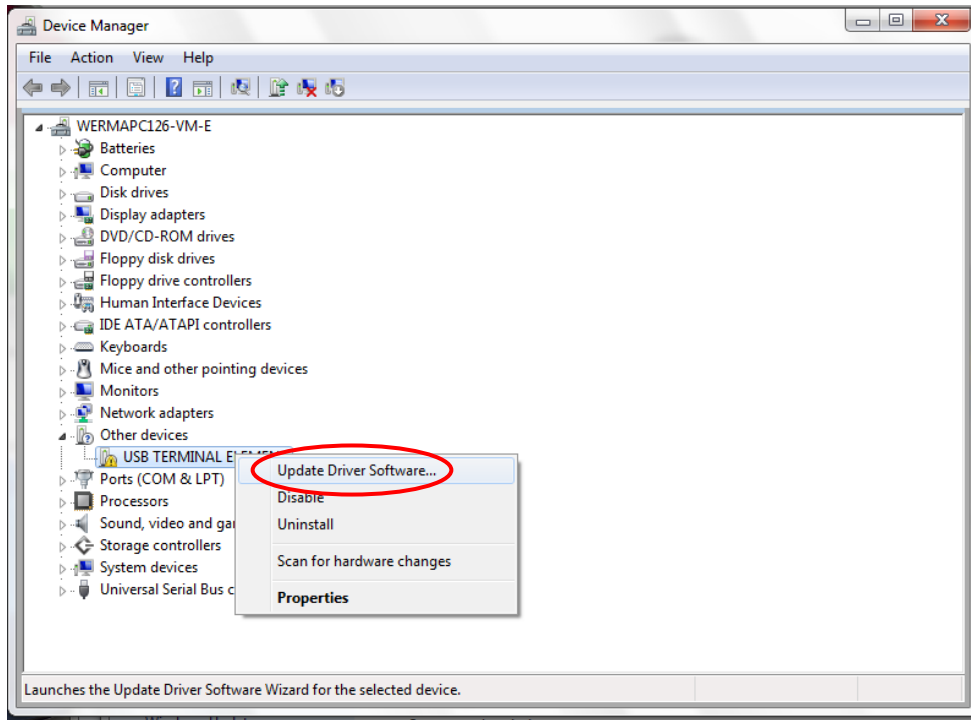
Using Windows Device Manager:

1. Download the install package: www.werma.com/software
2. Unpack the ZIP file, we need the subfolder "driver" for the manual driver installation

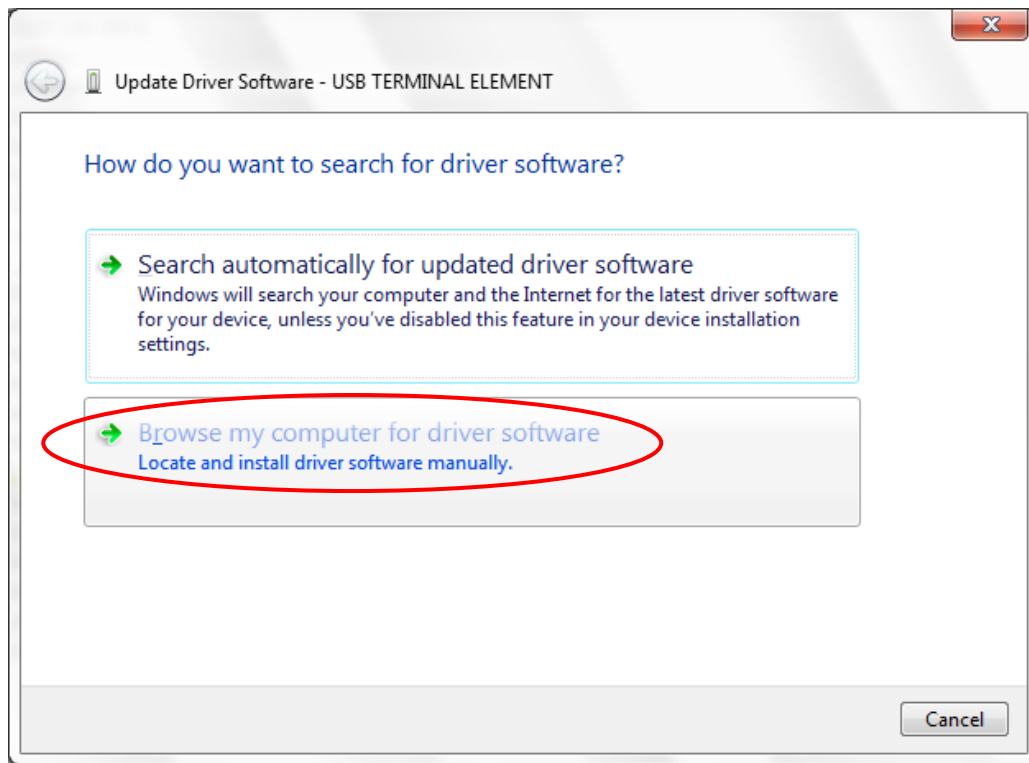
Note: Manual driver installation is only required if the USB product is not recognised. Windows will open the following window (layout/details depend on Windows version):



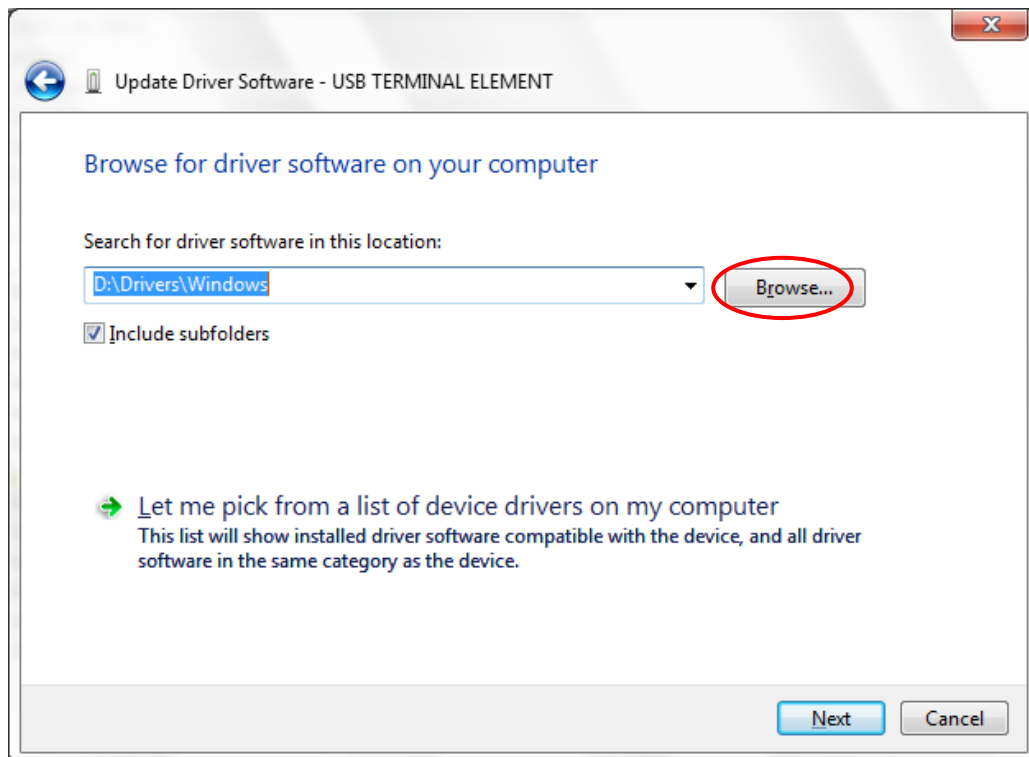
Close this window and open the Device Manager (Computer/Properties/Device Manager). Right click on USB TERMINAL ELEMENT / WERMA MULTICOLOUR BEACON and then click on "Update Driver Software".



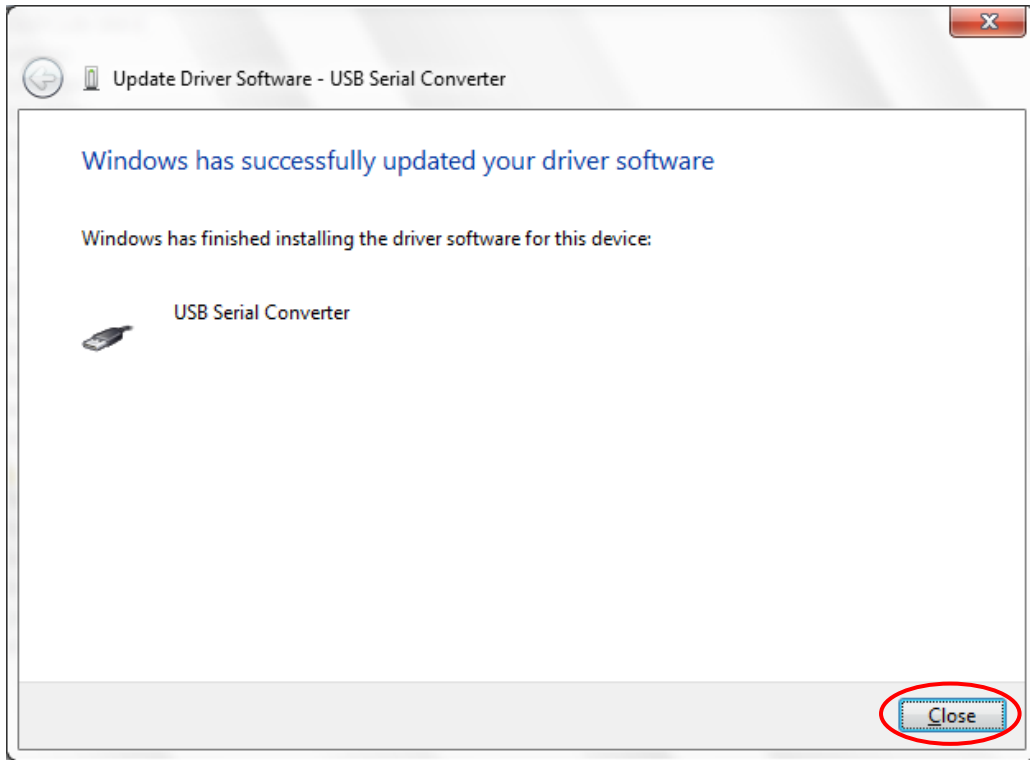
Select "Browse my computer for driver software".



Specify the location of the driver by clicking "Browse". Select the "Driver" folder from the unpacked ZIP file and confirm by clicking "Next".



The driver for the USB products has been successfully installed. Click "Close" to finish the update.



Note: The USB product is now ready for operation.

4. Operation with virtual COM Port

4.1 Settings

For the USB serial port you need the following settings:


Baud rate	9600 bits per second
Data bits	8
Stop bit	1
Parity	None
Flow control	No

Note: Every command has to end with a return <CR> and/or a line feed <LF>.


The arrow (→) represents the return value of the product. On error it would be "Command Error". All return values are finalized by <CR><LF>.

4.2 Serial Commands for the USB Terminal Elements KombiSIGN 40 and KombiSIGN 71/72

4.2.1 Version

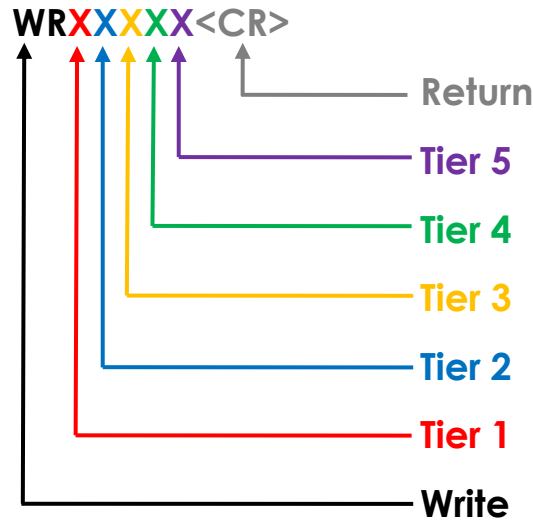
Type	Command	Description
Version	V	<p>Information about the version.</p> <p>V<CR></p>  <p>Example: V<CR> → Version:2.1.0<CR><LF></p>

4.2.2 Name

Type	Command	Description
Name	N	<p>Information about the name.</p> <p>N<CR></p>  <p>Example: N<CR> → USB TERMINAL ELEMENT<CR><LF></p>

4.2.3 Write

Type	Command	Description
Write	WRXXXXX	<p>Sets the output, X could be:</p> <p>0 → Off</p> <p>1 → On</p> <p>2 → Blinking</p> <p>3 → Inverted blinking</p> <p>4 → Double Flash</p> <p>X → Don't care, no change on that tier</p>

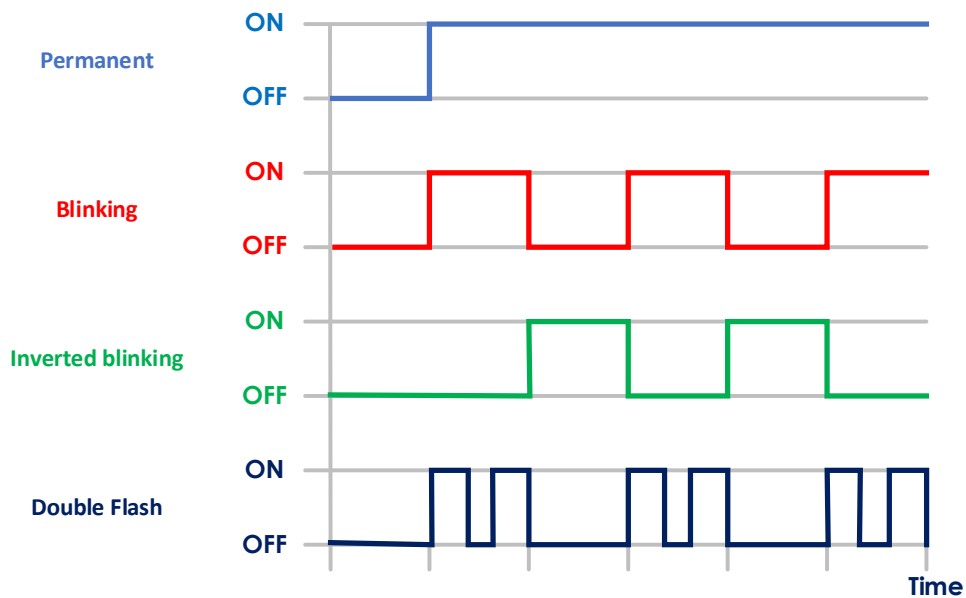


Example:

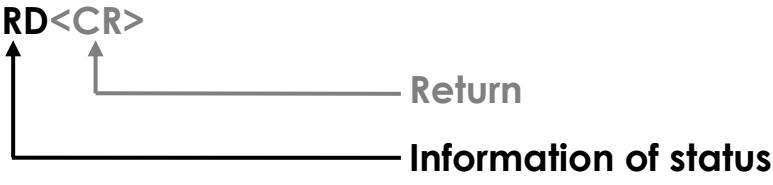
WR120X3<CR> → OK<CR><LF>

(Tier 1: On; Tier 2: Blinking mode 1; Tier 3: Off; Tier 4: Don't care; Tier 5: Blinking mode 2)

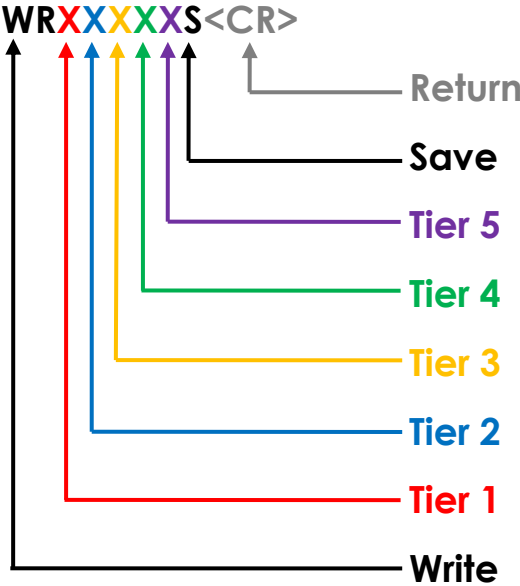
Note: Blinking and Inverted Blinking differ by blinking alternately (see diagram).



4.2.4 Read

Type	Command	Description
Read	RD	<p>Information of current status.</p> <p>RD<CR></p>  <p>Example: RD<CR> → 02131<CR><LF> (Tier 1: Off; Tier 2: Blinking mode 1; Tier 3: On; Tier 4: Blinking mode 2; Tier 5: On)</p>

4.2.5 Power-on state

Type	Command	Description
Default output state on power	WRXXXXXS	<p>Sets the output, X could be:</p> <p>0 → Off 1 → On 2 → Blinking 3 → Inverted blinking 4 → Double Flash</p> <p>WRXXXXXS<CR></p>  <p>Example: WR12003S<CR> → OK<CR><LF> (Tier 1: On; Tier 2: Blinking mode 1; Tier 3: Off; Tier 4: Off; Tier 5: Blinking mode 2)</p>

4.3 Serial Commands for the 816 LED Beacon USB

4.3.1 Version

Type	Command	Description
Version	V	Information about the version. V<CR> Return Information of the version Example: V<CR> → Version:2.0.0<CR><LF>

4.3.2 Name

Type	Command	Description
Name	N	Information about the name. N<CR> Return Information of the name Example: N<CR> → WERMA MULTICOLOUR BEACON<CR><LF>

4.3.3 Read

Type	Command	Description
Read	RD	Information of current status. RD<CR> Return Information of status Example: RD<CR> → 64 64 00<CR><LF> (R = 100%, G = 100%, B = 0%);

4.3.4 Write

Type	Command	Description
Write	WR 00 RR GG BB	<p>Sets the colour of the beacon, RR/GG/BB could be: 00_{hex} to 64_{hex} (101 different values) 00 = 0% 64 = 100% 0C = 12%</p> <p>WR 00 XX XX XX <CR></p> <p>Return Value blue Value green Value red Command</p> <p>Example: WR 00 64 64 00 <CR> → OK <CR> <LF> (R = 100%, G = 100%, B = 0%);</p>

4.3.5 Power-on colour

Type	Command	Description
Default output state on power	WR 00 RR GG BBS	<p>WR 00 XX XX XXS <CR></p> <p>Return Save Value blue Value green Value red Command</p> <p>Example: WR 00 64 64 00S <CR> → OK <CR> <LF> (R = 100%, G = 100%, B = 0%);</p>

5. Operation with USB-Terminal.exe

5.1 Introduction

The USB module is controlled by using USB-Terminal.exe, included in the ZIP file. The EXE contains several functions to set and retrieve the light module status.

The control over the light module is generally carried out by a customer application which invokes USB-Terminal.exe with appropriate arguments. The EXE file is a standard Windows console application which can be easily used with the most common application development tools such as Visual Basic, Visual C++, Visual C#, Java, NodeJS, Python, Perl etc.

5.2 Documentation

Complete documentation of USB-Terminal.exe is contained in README.txt, included in the ZIP file.



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