

User Manual

WIBE

concerning Software-Version 1.1.x

Wetterinfobox Europe for PC/USB



Seawater-Receiver for short- and long wave (German Weather Service)
with Synop-Decoder
Weatherfax-Receiver for short wave
NAVTEX-Receiver 490/518kHz
Barograph



This manual contains important information for correct using of this device.
Please read this instruction carefully before start-up.



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Technical ones are subject to change.

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In spite of careful processing and programming a defect and/or complete failure of the WIBE can not be completely excluded. Due to atmospheric disturbances or to disturbances of other electrical and electronic devices, contents of messages can be falsified. The operators of the transmitting plants can change or stop the broadcasting service (temporarily or permanent).

Therefore no liability for availability and correctness of the indicated messages are taken over. In particular no liability for possible damages resulting from use of the WIBE and information of this manual will be taken over.

In this manual trademark, trade-names, customer-names, etc. are used. Even if these are not particularly characterized, the appropriate protection regulations are effective.

Note:

Software updates for this product are available in the Internet:

<http://www.wetterinfobox.com/english/Downloads.htm>

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Scope of delivery

The following parts belong to the delivery scope of the WIBE:

- 1 x WIBE,
- 1 x USB-cable,
- CD with WIBE-software and USB-driver,
- User Manual.

Introduction

The WIBE is a receiver for weather-, fax- and NAVTEX messages for PC and notebook. Additionally the device contains an air pressure sensor to record the air pressure course for an interval of maximal seven days. The device receives weather messages PC-independent. The WIBE stores all received data in the internal flash memory.

The German Weather Service transmits sea weather reports, weather forecasts and station messages in German and English language on one long wave and five short wave frequencies.

Beside the known plaintext sea weather reports the German Weather Service also transmits coded weather messages, the so-called Synop/Ship messages. The WIBE software can decode this messages and show them as wind arrows on a map.

The facsimile maps of the German Weather Service are emitted on three short wave frequencies. The weather charts contain e.g. air pressure-, swell- and wind forecasts. Starting with software version 1.1.x the WIBE can also receive facsimile maps of the *Fleet Weather and Oceanographic Center, Northwood, England*.

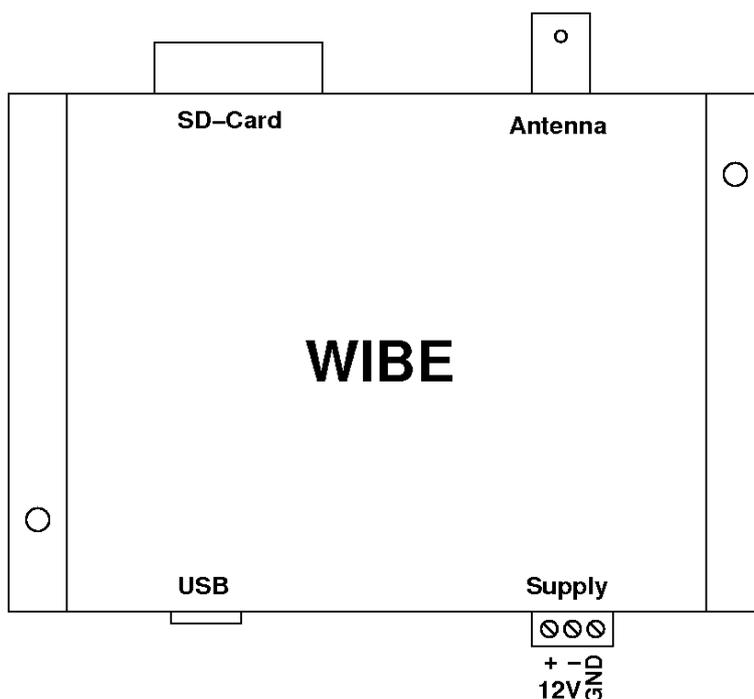
The WIBE can receive NAVTEX messages alternatively on 518 kHz (internationally in English) or 490 kHz (nationally, national language).

The device does not have any control elements. All functions will be activated by the PC.

The received text messages can be saved PC-independent on a SD card (see section *SD card interface*, page 5). Then the data can be displayed on mobile devices with SD card interface and web browser.

Connections

The figure below shows the connection assignment of the WIBE:



The antenna socket (BNC) can be connected with an active antenna (12V) or a passive antenna (e.g., isolated backstay with passiv-balun).

If an active antenna is used, it should be mounted very high (best of all in the mast's top).

In the WIBE software you have to determine whether you use an active or passive antenna (see section *Broadcasting schedule*).

The antenna input has an impedance of 50Ω.

Beside the SD-card-slot there is a light-emitting diode. The light-emitting diode turns on if the device is supplied with current.

For an easier connecting of the supply lines the supply terminal can be pulled out off the device. If possible, please connect line *GND* with the grounding bar of the ship or boat. With water contact the signal to noise ratio and therefore the reception of weak signals improves. The line *GND* is decoupled to the 12V(-) connection by an 100nF/50V capacitor in parallel with 100kΩ resistor.

When connecting the supply voltage please pay attention to the correct polarity. Protect the supply lines of the WIBE with time-lag 250mA fuse. The WIBE is protected internally with a resettable fuse element.

The WIBE can be integrated to the board connecting block. For receiving and saving messages in spite of the board network is switched off, the WIBE must be connected directly to the battery. Additionally the supply lines must be protected by a fuse directly at battery.

With the enclosed USB cable the connection of the WIBE (outlet USB) with PC/Notebook will be done.

The bulk of the USB jack as well as the connection 12V(-) are coupled with each other. Please note: you can get undesirable ground-loops between the USB connection and the PC. In such a case other electric devices can be parasitical connected with ground (or battery -). Devices needing much current could cause a damage in wiring or connected devices.

SD card interface

The WIBE contains a SD card slot. So it is possible to save the received data on SD card. The WIBE saves on SD card only weather messages coming from German Weather Service (RTTY in german and english language) which are younger than 24 hours, as well as NAVTEX messages which are younger than two days. Fax and Synop data are not saved.

To save data on SD card, please insert a card in the card slot. The LED beside the card starts to blink. Please do not take out the card as long as the LED blinks. After some time the light-emitting diode turns off. Now the data are saved on the SD card and you can take the card out off the device.

The data on the SD card are saved in HTML format. Therefore, messages can be displayed on most mobile devices with SD card slot and HTML browser. With a Windows mobile PDA you have to do following steps:

- Put the SD card into the device,
- start the *File-Explorer*,
- open folder *Storage Card*,
- open at folder *Storage Card* folder *WIBE*,
- open file *INDEX*,
- follow the links in the file *INDEX* to see the specific message.

Please note that the WIBE can only handle SD cards which are FAT16 formatted. Most SD cards (memory size 32MB – 2GB) are FAT16 formatted. Do not use cards with important data on it (e.g. PDA navigation data). Mörer Schiffselektronik can not take over liability for lost data.

Software

You can handle the WIBE with comfortable Windows software. The software works with operating systems Windows 2000, XP and Vista. The screen resolution should be min. 1024x768 pixels. Software updates for the WIBE are distributed via the Internet. Look at <http://www.wetterinfo.com> for getting news and updates.

USB driver installation

If the WIBE is connected to your PC for the first time, Windows asks for a device driver. The drivers are stored on the enclosed CD. Insert the CD in the CD or DVD drive of your PC. In most cases Windows finds the driver automatically. Follow the Windows installation instructions. If you have the possibility to choose a file directory for the driver, select the local CD/DVD drive. Please avoid an internet search for getting a suitable driver.

Software installation

The WIBE software is stored on the enclosed CD. In the folder Deutsch on the CD you will find the installation program for the German version. The folder English contains the appropriate installation program for the English version. For software installation start the wanted setup program (setup.exe). Follow the tips on the screen. After software and driver installation were successful the WIBE is able to work. Connect the device via USB cable to PC and start the WIBE program.

Broadcasting schedule

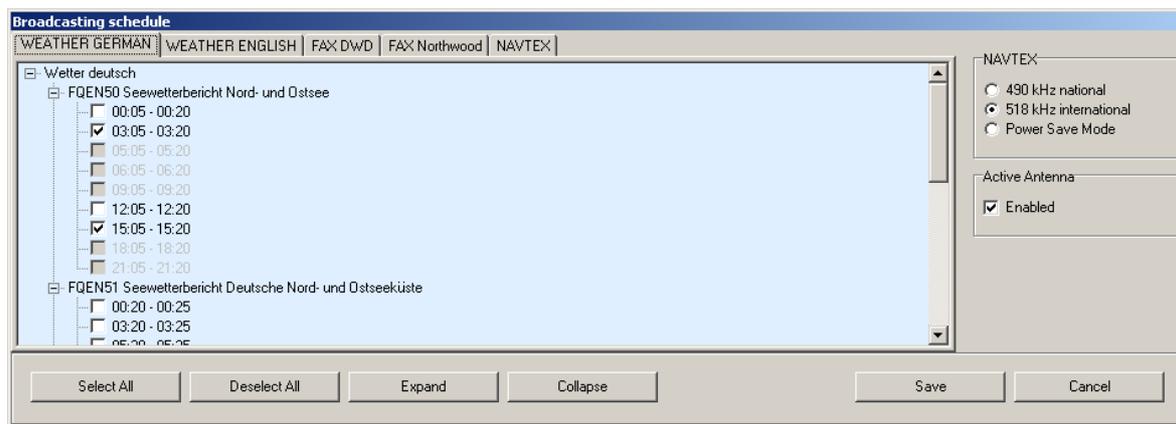
The WIBE receives time-controlled messages of the German Weather Service. The WIBE references the time from PC. Hence, it is important that the PC clock does not deviate around more than 30s from the current time. The local PC time is converted for the WIBE into UTC (Coordinated Universal Time).

To guarantee a correct conversion of the local time into UTC, time zone and summer and wintertime change-over must be adjusted the in Windows correctly. You can change the settings in Windows by clicking on the clock with the right mouse button (at bottom on the right on the screen) and select *time/date*. In this dialog box please adjust time and time zone correctly. The automatical summer and wintertime change-over must be activated.

The UTC is displayed in the status line of the WIBE program. So you can check whether the time settings are correct. Following commitments apply to the conversion CET / CEST (Central European Time / Central European Summer Time) in UTC:

UTC = CET - 1h,
UTC = CEST - 2h.

For the configuration of the broadcasting schedule please select the menu *Settings->Broadcasting schedule* or click on the suitable icon: .



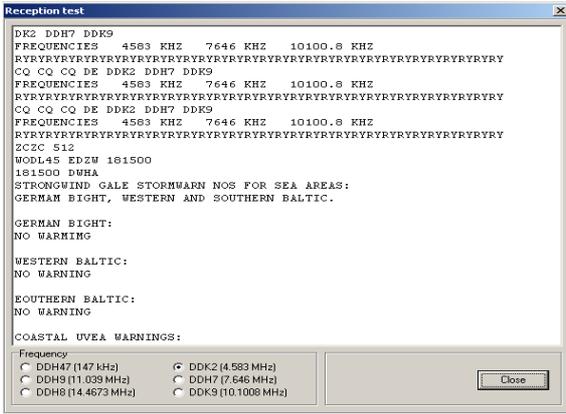
A configuration dialog for the broadcasting schedule is shown. In this dialog you can arrange your appropriate messages schedule.

The German Weather Service transmits german-speaking weather messages on one long wave and on two short wave frequencies. The english-speaking weather messages are emitted on three short wave frequencies. The weather-fax messages are likewise emitted on three short wave frequencies. The WIBE can receive the facsimile transmitter Northwood (UK) on three short wave frequencies. The broadcasting schedule of four different messages (DWD german/english/fax, Northwood fax) overlap. The messages which mutually overlap are locked in the broadcasting schedule. Thus it is ensured that all selected messages can be received. A manual choice of the reception frequency is not necessary. The WIBE searches automatically for the best reception signal before recording a message. Messages which have no solid space in the broadcasting schedule will not be received.

During the free times in the broadcasting schedule NAVTEX messages can be received. You can select NAVTEX frequencies 490kHz or 518kHz. On frequency 490kHz national NAVTEX messages are emitted in national language. On frequency 518kHz international NAVTEX messages are emitted into English language. On tab *NAVTEX* it is shown which times are reserved for NAVTEX reception. If you activate the *power save mode*, no NAVTEX messages are recorded. In this state the WIBE is set into a power save mode during free times of broadcasting schedule. At this time current consumption of the WIBE is about 50-60mA.

If you handle the WIBE with active antenna, the active antenna must be enabled in the broadcasting schedule dialog. Otherwise the antenna is not supplied.

Reception test



The WIBE disposes of a reception test for the RTTY transmitter of the DWD.

This function is reachable either via menu *Settings->Reception test...* or by a mouse click on the icon: .

As long as the reception test is active, no messages are recorded. The reception test window automatically closes after approx. three minutes.

Weather Messages



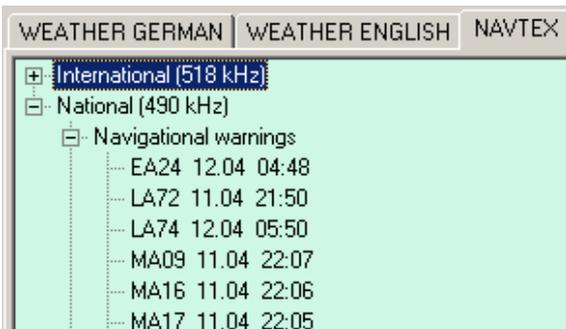
To display weather messages please activate the tab *WEATHER GERMAN* or *WEATHER ENGLISH*. Click on a message type in the weather menu tree. The suitable message appears in the message window on the right page. The last three messages of every message type are saved.

New messages are displayed in the menu tree in bold font. Messages which were already displayed once are shown in normal font.

The complete menu tree can be opened with the button  and closed again with the button . Additionally the reception date and time (UTC) is displayed for every message as well as the transmitter identification with appropriate frequency.

Please note that the WIBE software is delivered with demo-weather messages. Actual weather messages are only displayed, after they have been received. The transmission method (RTTY), the German Weather Service uses for transmission of messages, does not permit any error detection. Therefore errors can be contained in the indicated weather messages, which are not to be recognized as such.

NAVTEX Messages



In order to view NAVTEX- messages, please activate tab *NAVTEX*. NAVTEX menu tree is shown beside. NAVTEX messages are sorted according to their message type. For both NAVTEX frequencies (490 kHz and 518 kHz) an appropriate menu tree is available. The complete menu tree can be opened with button  and closed again with button .

New messages are displayed in the menu tree in bold font. Messages which were already displayed once are shown in normal font.

Additionally the reception date and time (UTC) is displayed for every message as well as the message identification. NAVTEX messages received two days ago are automatically deleted, when the WIBE software imports new NAVTEX data from the WIBE.

The transmission method for NAVTEX messages (Sitor) permits a reduced recognition and correction of transfer errors. Characters, which were not received correctly, will be represented as underscore (_). Please pay attention: characters represented in a normal design could be incorrect, too.

The structure of a NAVTEX message is to be explained on base of following example:

```
ZCZC PA09
NETHERLANDS COASTGUARD
NAVIGATIONAL WARNING NR. 9 172128 UTC AUG
PLATFORM L10-G 53-29.4N 004-11.7E
UNLIT
NNNN
```

A single NAVTEX message starts with the letters ZCZC, followed by the message identification (PA09). The first letter of the message identification indicates the master station. In this example it is NETHERLANDS COASTGUARD (P). In the second letter the type of message is coded (here navigational warning respectively navigation warnings). The next two numbers of the message identification (09) are a serial number. Number 00 has a privileged position. It is reserved for distress messages.

NAVTEX messages have a time stamp. It is shown at the end of the third line (172128 UTC August) and means: 17. August, 21:28 UTC. The time stamp refers to the date, the message was produced and not to the time of the radiant transmission. After these technical reports the message content follows. The message ends with NNNN.

The following table contains an overview of different message-types:

Code	Message-type	Menu option
A	Navigational warnings	Navigational warnings
B	Meteorological warnings	Meteorological warnings
C	Ice reports	Ice reports
D	Search and rescue information	Search and rescue information
E	Meteorological forecasts	Meteorological forecasts
F	Pilot service messages	Pilot service messages
G	Information about DECCA navigation- system	Electronic navaid messages
H	Information about LORAN navigation- system	Electronic navaid messages
J	Information about GPS navigation-system	Electronic navaid messages
K	Information about other navigation-systems	Other messages

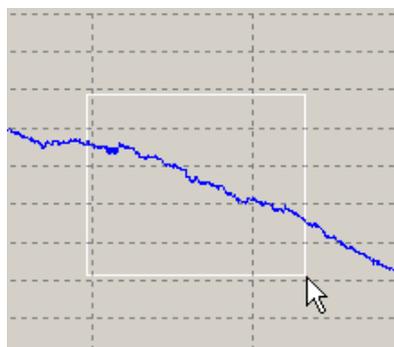
Code	Message-type	Menu option
L	Additional navigational warnings (f. e. ring moves)	Additional warnings
V	Additional navigational warnings (f. e. ring list)	Remaining messages
W	Reserved for special service	Remaining messages
X	Reserved for special service	Remaining messages
Y	Reserved for special service	Remaining messages
Z	QRU (no messages)	Remaining messages

Barograph



The fourth tab contains the BAROGRAPH. The measuring data are represented in the diagram from left to right. I.e. the current measured value is located on the right side of the curve. The barograph has a measuring interval of one minute and resolution of 0,1hPa.

The representation period can be decreased with the Zoom-In-Button  and increased with the Zoom-Out-Button . The temporal gradation is 6h, 12h, 24h, 48h and 7 days.



You can increase a cut-out of the air pressure curve. Draw in addition a rectangular window with the mouse from above left to downward right. Use the left mouse button. If the mouse button is released, the appropriate range of the diagram will be shown increased.

The enlargement can be cancelled again by drawing any rectangular window with the mouse in reverse direction (from downside right to upward left).

The diagram is movable in any direction. Click in addition with the right mouse button into the air pressure curve and move the mouse. As long as you keep the mouse button pressed, the air pressure curve will follow the mouse movements.

The barograph data are only up to date, if a WIBE is attached to the computer. In this case the curve is represented in blue colour. If the air pressure data are not up to date (no WIBE attached), the curve will be represented in black.

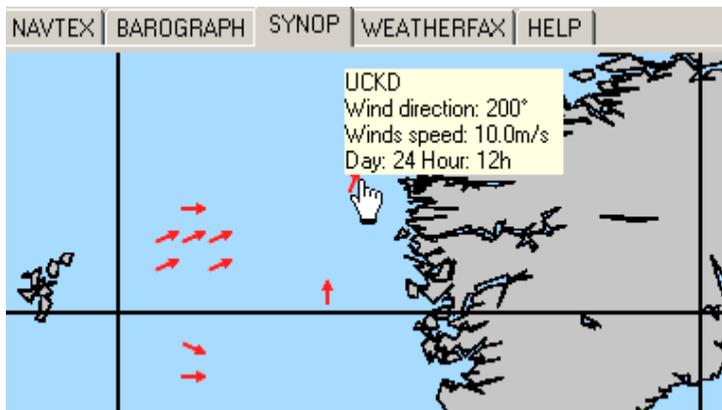
The WIBE indicates absolute air pressure. The shown value will not be converted to sea level. The air pressure will decrease by 1hPa per 8m. E.g. in a height of 80m above sea level the indicate pressure of WIBE is 10hPa lower than air pressure at sea level.

Please note that all barograph data are deleted in the WIBE, if the device is switched off (is separated from power supply).

While the WIBE is attached to PC, the current air pressure and the air pressure tendency (calculated on three hours) are indicated on top of the screen. The air pressure trend is only displayed if at least the air pressure data of the past three hours exist.



Synop data

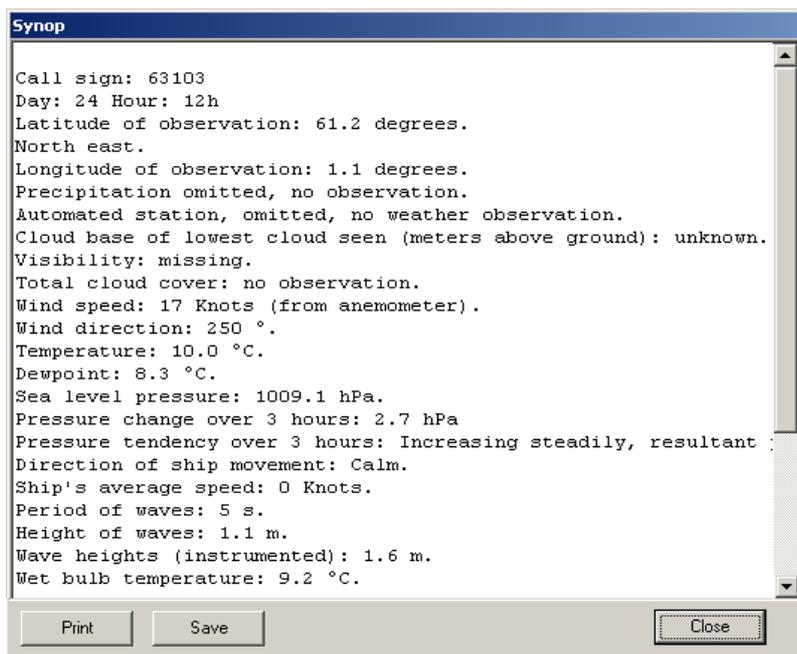


In addition to weather messages, the German Weather Service transmits encoded meteorological data of ships and fixed weather stations. The WIBE software decodes these data and indicates it in a map as wind arrows. Please activate the tab SYNOP for the representation of the Synop data. A pixel map is shown.

The red arrows in the map indicate Synop messages at the appropriate position. The white arrows indicate a weather station coming from reports of the German Weather Service for the North and Baltic Sea and the Mediterranean Sea.

Resting with the mouse pointer above an arrow, a reference display window appears and shows the radio call sign of the Synop message (or the station name coupled with German Weather Service station messages), the wind direction, the wind force as well as day and time of the message (UTC).

You can move the wind arrows map by clicking with the mouse in the map and moving the mouse. As long as you hold the mouse button the map follows the movements of the mouse.



To display all decoded information of a Synop message please click on the appropriate wind arrow (see page 10). A dialog opens with data in plain text format. If you click on a white arrow, the station messages of North/Baltic Sea respectively Mediterranean Sea are indicated. The station belonging to the arrow is marked by a star (*) at the beginning of the line.

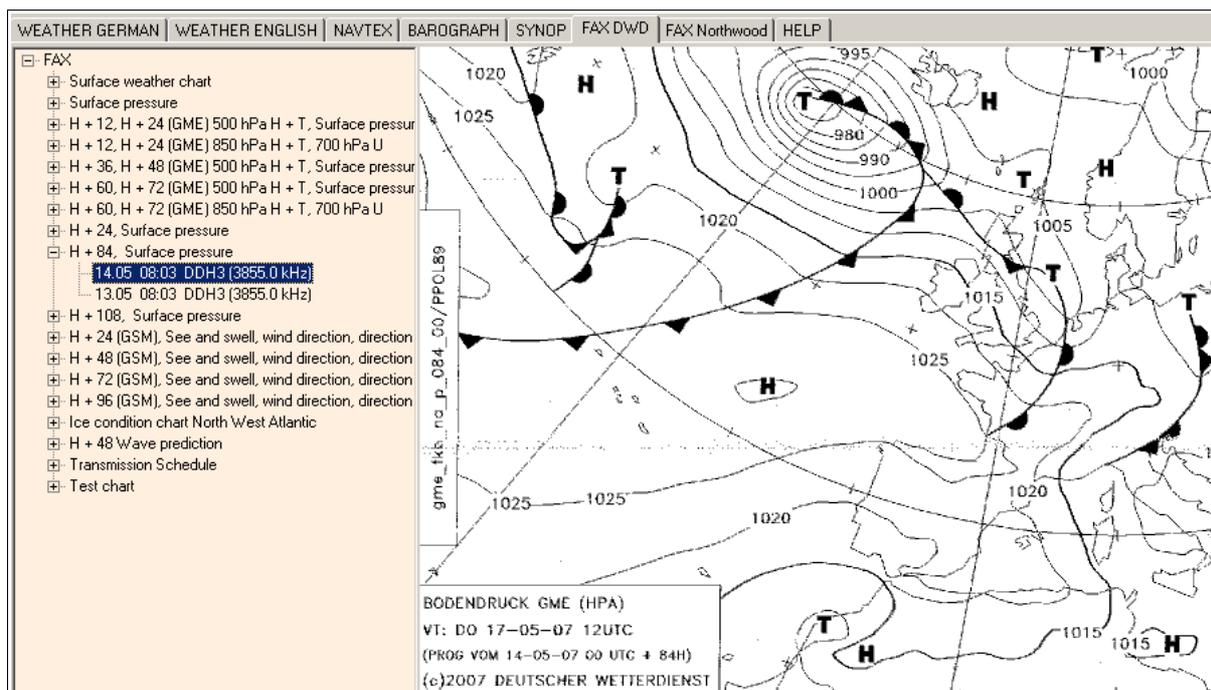
You can close the Synop Window with a click on the Close button or with a double-click into the text. The Synop data are also available in coded form on tab *WEATHER GERMAN* and *WEATHER ENGLISH* (in the menu tree below Synop). It is possible to store the data into a file, for instance to decode it with another program.

Important note:

Transmission errors in the encoded Synop data cannot be recognized, since no check sum is present. Already small errors in the encoded data can cause absolute wrong results during decoding. So please pay attention of the data from the Synop messages and refer also to other sources of information for weather determination.

Weather fax maps

For displaying weather fax maps please activate tab *FAX DWD* or *Fax Northwood*. On the left side a menu tree is shown with received weather fax maps. For every message type, three weather fax maps are maximum saved. Additionally the reception date and time (UTC) is displayed for every message as well as the transmitter identification with appropriate frequency. New messages are displayed in the menu tree in bold font. Messages which were already displayed once are shown in normal font. The complete menu tree can be opened with the button  and closed again with the button .



On the right side the weather fax map is displayed. You can move the fax map by clicking with the mouse in the map and move the mouse. As long as you hold a mouse button the map follows the movements of the mouse.

You can rotate the figure with the help of the icon  in 90° steps, to correct the figure position. This function can be executed also in the menu *Settings->rotate*. Via double click in the weather fax map the menu tree is hidden. The complete space in the WIBE window is available for the fax map. This action can be retracted by a new double click in the map. With the icon  (zoom in) and the icon  (zoom out) you can change the scale of the weather fax map. These functions can be executed also in the menus *Settings->Zoom in* and *Settings-> Zoom out*.

Status-line



The status line is located at the lower edge of the WIBE-program-window. At this line information of the WIBE state are indicated.

The following information are contained in the status line (from the left to the right):

- Information of data communication with progress bar,
- information of new NAVTEX messages,
- free,
- current time in UTC,
- status of the WIBE.

Functional overview

The following table presents an overview of the WIBE software functions:

Menu Option	Icon	Function
File->Open...		Opens an already stored message.
File->Save...		Stores a message.
File->Print...		Prints a message.
File->Exit		Terminates the program.
Settings->Expand tree		Opens / unfolds the menu tree.
Settings->Collapse tree		Closes / folds the menu tree.
Settings->Zoom in		Increases the barograph view (only the time scale) or the fax image.
Settings->Zoom out		Decreases the barograph view (only the time scale) or the fax image.
Settings->Rotate		Turns a fax image around 90° to the left.
Settings->Broadcasting schedule...		Opens the configuration dialog for broadcasting schedule.
Settings->Reception test...		Opens the reception test.
Help->Manual		Opens the User Manual.
Help->System information...		Shows system information of the software and the WIBE.

Operating instructions

Environment

Please use the equipment only in the interior and dry environment. Do not expose the equipment in use to temperatures higher than 60°C and lower than 0°C.

Internal clock

The WIBE is equipped with an internal clock (RTC) which is buffered with a 3V lithium battery. The lithium battery should be exchanged at the latest after five years to guarantee a proper function of the WIBE.

Hints to radio reception

Electromagnetic interferences can impair the receipt. This can occur due to e.g. computer, electronic navigation equipment, fluorescent lamps, inverters, battery chargers, generators, electric motors, high voltage transmission lines etc. Therefore the antenna of the WIBE should be positioned as far away as possible from this equipment. The receipt can be impaired also by atmospheric disturbances (e.g. Thunderstorms).

Especially in the short wave band the reception quality strongly fluctuates. Hence you should activate the reception of the most important messages at several times a day in the broadcasting schedule.

Specifications

Receipt-frequencies	147,3 kHz, 490kHz, 518kHz, 3,8-14,5MHz
PC-interface	USB full speed, socked B
Supply voltage	12V
Current consumption Reception Mode	Approx. 80 - 120mA without active antenna
Current consumption Power Save Mode	Approx. 50 - 60mA
Antenna input	50 Ω , BNC
Supply voltage active antenna	12V, max. 20mA
Battery for internal clock	Type: CR2032
Resolution of air pressure sensor	0,1hPa
Absolute measurement error of the air pressure sensor	$\pm 1,5$ hPa
Typical long-term stability of the air pressure sensor	-1hPa / year
Air pressure measuring interval	60s
Maximum recording span air pressure	7 days
Operating temperature	0..60°C
Supported operating systems	Windows 2000, XP, Vista. Screen resolution: Min. 1024x768 pixel.
Memory for messages	Flash-memory 250KB for barograph data 256KB for NAVTEX data 512KB for RTTY data 3MB for fax data
Dimensions (LxWxH)	Approx. 102mm x 130mm x 48mm
Weight	Approx. 160g, without cable

For inside use only.

Warranty

If the WIBE exhibits a defect due to production or material defects within 24 months starting from the purchase date, it is either repaired by us or exchanged free of charge against appropriate equipment.

To wearing parts (e.g. housing, batteries, etc.) the warranty applies for six months starting from purchase date.

The warranty does not apply, if the defect is caused on inappropriate treatment or neglect of the manuals.

A receipt of the warranty voucher with purchase date is required.



Devices with a crossed out dustbin label have to be disposed in the European Union via a separate garbage collection at a suitable collective place for the recycling of electric and electronic devices.

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