



BRAILLEX[®] Duo

The Braille Display And Braille Keyboard

User's Manual





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User's Manual BRAILLEX Duo

Revision: Jan 07

All technical data, information about and properties of the product described in this manual were compiled to our best knowledge and correspond to the facts at the date of publication.

Modifications and improvements of the product can be introduced at any time.



Introduction

BRAILLEX Duo stands for two highlights:

- a 40-cell Braille display with the proven Efficiency Line (EL) and SingleChannel technologies, and
- an integrated Braille keyboard to be used with a PC.

The newly developed seamless SingleChannel Braille display stands for highest reading comfort: Your fingers slide like on paper on the slightly concave display that is perfectly adapted to the shape of your fingertips.

The ergonomic Braille keyboard is ideally positioned around the Braille display. The space bars and special function keys are located in front of the display, the Braille keys behind. The distance between the Braille keyboard and the display is only 3.5 cm (1.38").

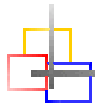
Obviously, BRAILLEX Duo, like all Papenmeier EL displays, is equipped with the patented Easy Access Bar, a long single lever (like a space bar) situated on the front side of the device, all along the Braille display.

You use the joystick-like Easy Access Bar with the thumb of the reading hand. It lets you navigate around the screen without you ever taking your hand off the Braille display. You can go back and forth, up and down - or tab through a dialog box, if you switch it to interactive mode.

Traditionally, Braille displays have a number of function keys, on the front panel, or left and right of the display. In any case, you usually have to take your hands off the display when you navigate around the screen or interact with the computer. With the Easy Access Bar, you can execute the commands from any place on the Braille display. This means less hand movement, more comfort, higher speed, and more efficiency.

BRAILLEX Duo connects to your computer via its USB port.

This document will describe the installation and use of the device.



Generalities

System Requirements

For a full PC functionality (i.e. both Braille display and Braille keyboard), you need a PC with a USB interface running Windows 2000, Windows XP or above, and a screen reader program (Jaws 6 and up, Dolphin HAL / Supernova, Window Eyes) and the appropriate driver (will be shipped with BRAILLEX Duo)

Scope Of Delivery

BRAILLEX Duo ships with the following components:

- BRAILLEX Duo device
- USB cable
- Soft carrying pouch with shoulder strap
- Software (drivers on CD)
- Manual in print and in electronic format

Copyright and Trademarks

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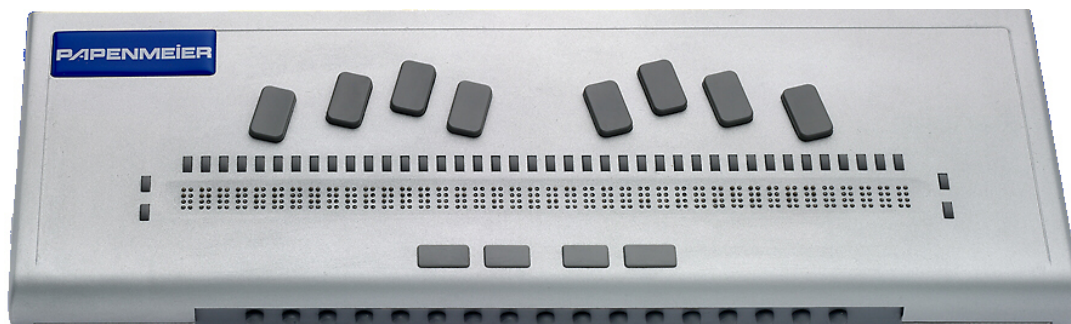
Getting Started

Physical Description

BRAILLEX Duo has a 40-character Braille display with a seamless surface. The Braille display is placed along the front line. It almost occupies the whole width of the device. Behind each of the characters, you will find a routing key. To the left and the right of the display, there are two keys on each side, one behind the other one. We will call them the left and right front and rear keys.

Behind the Braille display, you find the ergonomic 8 key Braille keyboard. The space keys are located in front of the Braille display. When you have your hands on the keyboard, your thumbs will automatically be located above the two space keys. Of the four keys in the space key row, the space keys are the two inner ones. The two external ones will be called the left and right thumb key. The thumb keys are used for special functions.

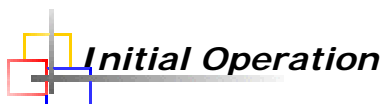
In the rounded front you will find the integrated Easy Access Bar. The bar has a rubber profile.



The only connection of the device is on the left side of BRAILLEX Duo.

On the left side you find, starting from the front,

- The on-off switch
- The USB port



The device may only be put into operation if no damages of the device itself or of the connection cables can be discerned.

Connection with the PC

You connect BRAILLEX Duo with a PC via the USB port.

USB Connection

You use the USB connection under the operating systems Windows 2000, Windows XP or better. Plug the flat end of the supplied USB cable into a free USB port of the PC. The square connector goes into the plug on the left side of BRAILLEX Duo.

BRAILLEX Duo is also powered through the USB port.

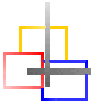
Switching On and Off BRAILLEX Duo

You power on BRAILLEX Duo with the on-off switch on the left side of the device. A short beep indicates that the device has been switched on. An LED next to the on-off switch is lit while the device is on.

You switch off BRAILLEX Duo by pressing the on-off switch for more than a second. You will see the message "switch off duo?". If you keep the on-off switch pressed then, the message "off" will appear. The LED goes out and a double beep can be heard when the device is switched off. For a short while, you will also see the message "off" in Braille, then the Braille will fade away. If you release the on-off switch after you get the first message, you can continue working.

Sleep Time

BRAILLEX Duo will automatically switch off after a period of inactivity defined in the device settings. When you first get the device, this period is 10 minutes. In order to reactivate the device, press the on-off switch.



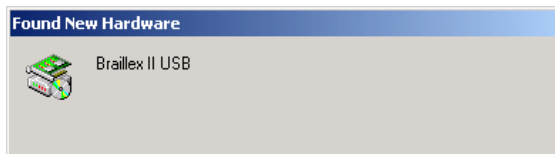
Installation

Installing the Screen Reader

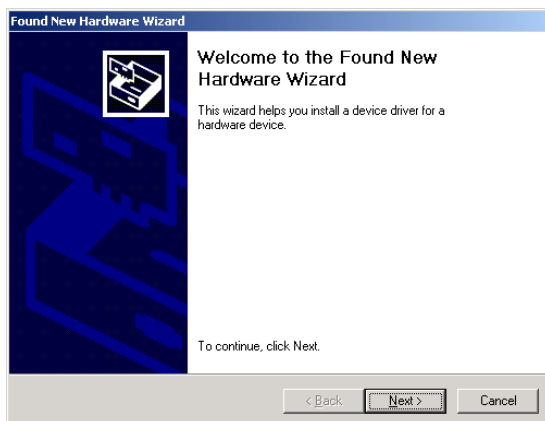
If you want to read the computer screen on the Braille display, you need to install and run a screen reader package. This should be done before you install any further software for BRAILLEX Duo.

USB Connection

You connect the BRAILLEX EL device with the PC with the supplied USB cable. After a short while, a box will pop up: "Found new hardware, Braillex II USB".



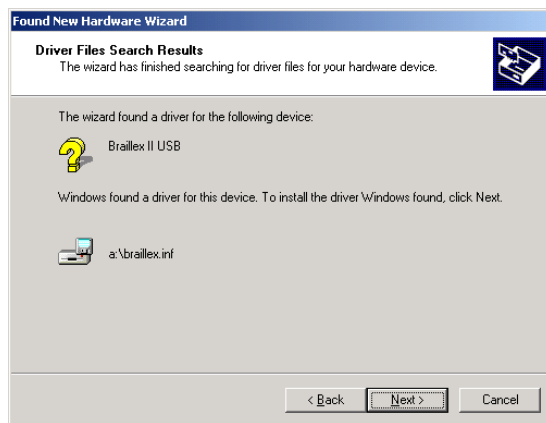
After a couple of seconds, the Found New Hardware Wizard dialog starts. Hit Enter to activate the Next button.



In the next box, check "Search for a suitable driver for my device (recommended)" and hit Enter to activate the Next button.

In the next box, you can specify the search locations to reduce the searching time. Check "Floppy disk drives" if you have the driver on a floppy disk, or "CD ROM drives" if you have it on a CD-ROM. Hit Enter to activate the Next button.

Finally, confirm that you want to install the "BRAILLEX.INF" driver that Windows found on the media you specified and hit Enter to activate the Next button.



The next box confirms that you have installed a "Papenmeier Braillex II USB device". Hit Enter to activate the Finish button.

Uninstalling the USB Driver

You can easily uninstall the software for the USB driver of BRAILLEX Duo via the uninstall routine of the Windows operating system: Open the Start menu, select Settings / Control Center / Add/Remove Programs and you will find an entry "Papenmeier BRAILLEX II USB Device" in the list of installed software. You can remove it like any other software package.

Installing BRAILLEX Duo Screen Reader and Keyboard Drivers

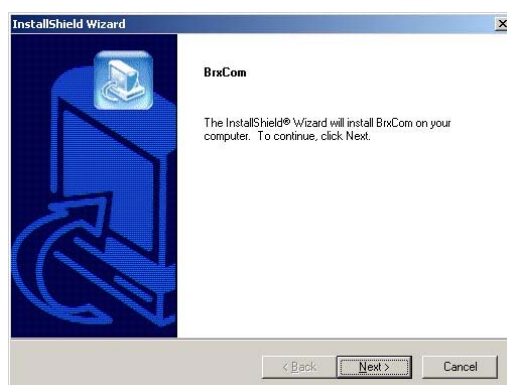
Besides the USB driver, BRAILLEX Duo requires some more software to be able to communicate with the computer. The programs include special drivers for the screen reader programs and a Braille keyboard driver.

IMPORTANT: System Requirements

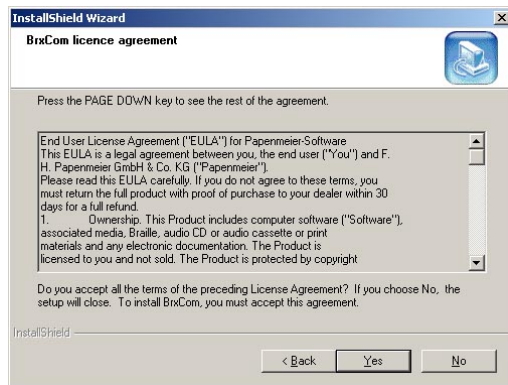
Once again: The Duo driver suite is based on the so-called service concept, and therefore requires a Windows operating system Win2000 or WinXP. A solution for Win98SE with reduced functionality will be available as well, but the following will refer to Windows 2000 or Windows XP. Without this service, you can only use the device as a display, not as a keyboard.

Installer

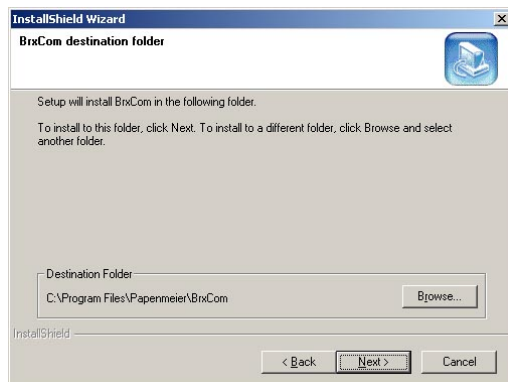
From the Duo CD, run Duo_Setup_ENU.EXE. This will start an InstallShield wizard that will help you doing the installation.



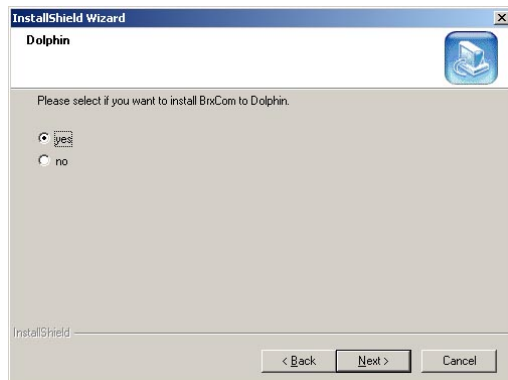
After the start screen, press Alt-N for "Next".



Confirm that you accept the End User License Agreement by pressing Alt-Y for "Yes".



The install program will then suggest a destination folder for the program suite, i.e. C:\Program Files\Papenmeier\BrxCom. Press Alt-R for "Browse" if you want to change the folder, or press Alt-N for "Next" to maintain it and continue.

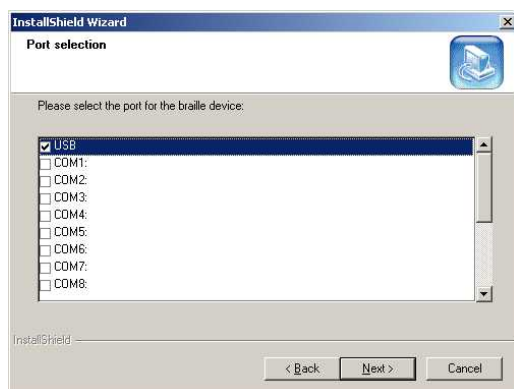


The program will then check for the installed screen reader program(s). If you have Dolphin HAL or Supernova installed, a new window will come up asking you whether you want to install BrxCom for Dolphin. By default, the answer "yes" is checked.

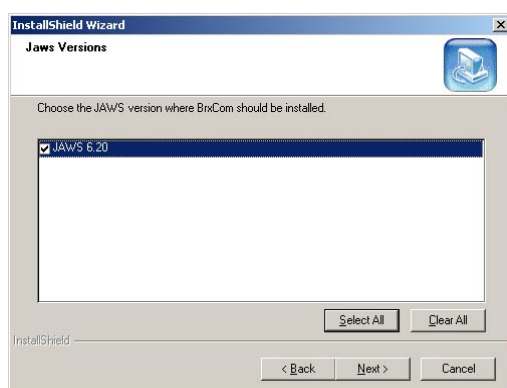
In the next Window, you will be asked to specify a port for the communication with BRAILLEX Duo. Select "USB" if you want to use a USB connection, or select a serial port if you use the Bluetooth port. The selection of the serial port must be the same as the outgoing serial port you found out during the Bluetooth pairing installation (see above).

Press Alt-N for "Next" to continue.

Installation



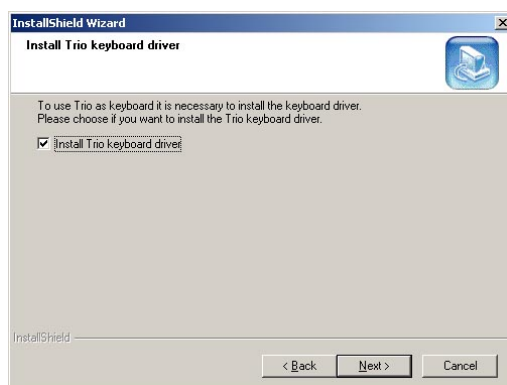
In the next Window, the program will list Jaws versions that can be upgraded and display them in a Window. You will check all the versions you want to install the driver for. You can do this manually, or you can select all of them at once pressing Alt-S for "Select All".



Jaws users will notice that only versions from 6.0 on will appear in the above Window. The BRAILLEX Duo software installation program will install a 2nd generation Jaws driver that is **NOT** compatible with Jaws versions prior to 6.0. If you wish or need to use an elder version of the screen reader program, the same applies as for Windows versions below the Win2000 level: You then have restricted possibilities, i.e. you can then only use BRAILLEX Duo as a display (no PC keyboard function and no file transfer).

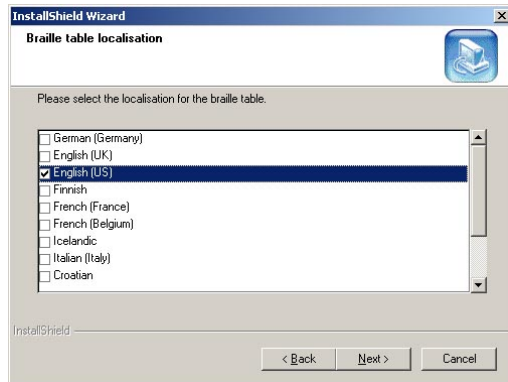
Press Alt-N for "Next" to continue.

In the next window, you will be asked whether you want to install the Duo keyboard driver. Installing this driver is necessary if you want to use BRAILLEX Duo as a Braille keyboard of your PC.

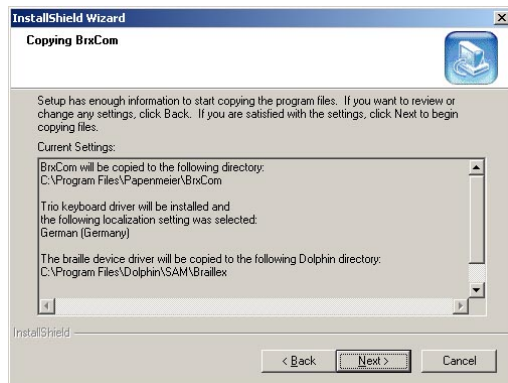


Press Alt-N for "Next" to continue.

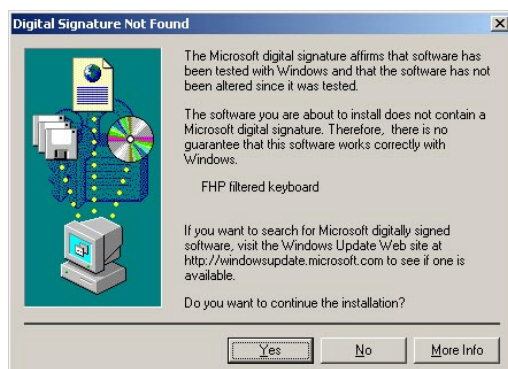
If you choose to install the keyboard driver, you then have to select the localization settings. Select the required keyboard layout and Braille table combination Press Alt-N for "Next" to continue.



The setup program now has all user definable settings and will present those in a new window. If you are satisfied with the settings, press Alt-N for "Next" to continue. If not, you can go back with Alt-B for "Back".



If you had chosen to install the Duo keyboard driver, you now will get a warning. The Duo keyboard driver (here called FHP filtered keyboard) does not have a Microsoft digital signature, and this generates an error message. Ignore this message and press Alt-Y for "Yes" to continue, otherwise the keyboard driver will **NOT** be installed.

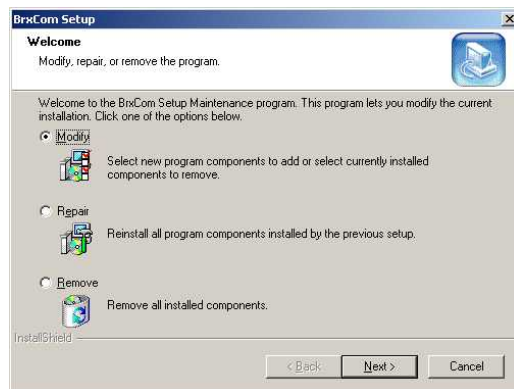


InstallShield will inform you about the successful installation of BrxCom. In order to complete the installation (and activate the keyboard driver), you have to reboot the system.



Modifications of the Installation Settings

If you wish to make changes to the settings you had chosen above (for example change the communication port from USB to Bluetooth or vice versa), run Duo_Setup_ENU.EXE again. The install shield will offer 3 options: "Modify" (Alt-m), "Repair" (Alt-e), and "Remove" (Alt-r). Select "Modify" with Alt-m, and you will have the same dialogs you had above, allowing you to change your settings.





Safety Advice



Please read the information in this manual carefully, so you will be able to avoid problems.



Use BRAILLEX Duo in a dry environment only. Even if the device is not powered up, it must not get wet.



Never place any heavy objects on the Braille display.



Service and Maintenance

Avoid touching the device with dirty hands. You may clean the surface of the device (NOT the Braille cells) with a soft, damp cloth. Do not use any aggressive detergent or soap.

In case of any defect of the Braille display unit, please contact an authorized Papenmeier service center. If you are in doubt about the service center responsible for your area, please contact Papenmeier:

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Talweg 2
58239 Schwerte, Germany

Phone: +49-2304-9460
Fax: +49-2304-946 246
E-mail: info.reha@papenmeier.de

If possible give a short description of the kind of disturbance.



Using BRAILLEX Duo With Your Screen Reader

BRAILLEX Duo offers 40 Braille cells for reading the screen. You can move this **reading window** across the screen with the **Easy Access Bar**. With the **routing keys** integrated into the Braille cells you move the mouse pointer to any desired place on the screen.

Basic Functions

You control the Braille display either with the Easy Access Bar alone, or in combination with the keys.

In any case, the behavior of the Braille display depends on the screen reader software. Depending on the software package used in conjunction with BRAILLEX Duo, a key or key combination might have different meanings.

Some screen reader programs such as Jaws for Windows and Dolphin HAL/Supernova also support the Papenmeier Simple User Interface, a series of on-screen menus that make the key + Easy Access Bar combinations redundant.

Some of the basic functions are identical for all screen readers, though:

Moving the Braille display (Reading Window)

For navigating across the screen, you just use the Easy Access Bar.

Push the Easy Access Bar one step up to move the display **up one line**. Push the Easy Access Bar one step down to move the display **down one line**. You maintain the column position of your Braille display when you push the Easy Access Bar up or down.

The Easy Access Bar positions one step left and one step right have the meaning "**Read backward**" and "**Read forward**".

- Push the Easy Access Bar one step left to move the reading window 40 columns to the left.
- Push the Easy Access Bar one step right to move the reading window 40 columns to the right.

Using the "Read forward" function, you continuously read the screen, i.e. once the display has finished reading the screen line, it will go to the next line if you continue pushing the Easy Access Bar.

Using the BRAILLEX Duo Braille keyboard to access a PC

If you have installed the keyboard driver during the BRXCom installation, as soon as you switch to terminal mode, BRAILLEX Duo's Braille keyboard becomes a PC keyboard.

The BRAILLEX Duo Braille keyboard has 8 Braille keys and 4 keys that are activated with the thumb.

The BRAILLEX Duo Braille keyboard can emulate almost all keys or key combinations of a regular PC keyboard.

Dots 7 and 8 are typically used for computer Braille entry. Dot 7 (to the left of dot 3) for example makes the difference between lower case and capital characters, a capital "A" for example, is written with dots 1+7. Dot 8 is often used in languages that have accented characters.

Of the 4 keys between the Braille display and the Easy Access Bar, the two internal ones are used as space keys. The two external ones are used for special functions (see below).

Please note that the Braille keys are only activated once they have been **released**.

PC keystrokes with the Braille keyboard

PC keystrokes with the Braille keyboard	
Enter	Space + dot 8; alternatively: dot 8
Escape	Space + dot 7
Left arrow	Space + dot 1
Right arrow	Space + dot 4
Up arrow	Space + dot 2
Down arrow	Space + dot 5
Page up	Space + dot 3
Page down	Space + dot 6
Home	Space + dots 1,2
End	Space + dots 4,5
Insert	Space + dots 2,3
Del	Space + dots 5,6
Tab	Space + dots 3,7
Backspace	Space + dots 6,8; alternatively: dot 7
F1-F12	Right thumb + letters a-l
NumPad 1-0	Right thumb + numbers 1-0
NumPad-operators	Right thumb + "+", "-", "*", "/"
NumPad Enter	Right thumb + dot 8
NumPad NumLock	Right thumb + letter "n"

Special BRAILLEX Duo Keystrokes

Special BRAILLEX Duo Keystrokes	
Control Center (Ctrl+Esc)	Space + dots 1,2,3,4,5,6
Toggle Internal functions - Terminal functions	Space + dots 7,8

Braille-Emulation of PC-Shift, Alt, Ctrl, Win

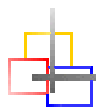
A special problem when emulating a full PC keyboard is the fact that you can combine just about any key with Ctrl, Alt or Shift. Computer Braille typically gives the possibility to write capitalized characters, such as "A" (typically dot 1+7), but there is no generally accepted code for Ctrl-Esc, for example, or Shift-F1.

The Braille keyboard of BRAILLEX Duo enables you to write just about any PC key combination, especially with these keys (and with Insert, which is commonly used in combination with other keys in a popular screen reader program).

Rather than defining a key combination (for example with combinations of thumb keys, space and Braille) for all these key combination, BRAILLEX Duo makes the key modifiers Shift, Alt, Ctrl and Insert available in the way of "sticky keys", as a prefix for combinations with other keys.

So if you want to write a key combination with Shift for example, you write the "Shift" code first, and the other key afterwards. In case you type one of these prefixes by mistake, you can also disable it again.

Braille keyboard emulation of Shift, Alt, Ctrl, Ins	
Shift	Left thumb + dot 1
Ctrl	Left thumb + dot 2
Alt	Left thumb + dot 3
Shift + Ctrl	Left thumb + dots 1,2
Alt + Shift	Left thumb + dots 1,3
Alt + Ctrl	Left thumb + dots 2,3
Shift + Alt + Ctrl	Left thumb + dots 1,2,3
Insert (as a prefix)	Left thumb + dots 3,7
Win key (as a prefix)	Left thumb + dot 4
Disable prefix	Left thumb + dot 7



BRAILLEX Duo And Jaws For Windows

In combination with Jaws for Windows, BRAILLEX Duo works like any of Papenmeier's world-famous BRAILLEX EL displays. The handling and the functionality are identical.

When navigating in the active window, you can choose between three different working modes, which influence the assignment of the Easy Access Bar:

➤ **Navigation Mode**

In the Navigation Mode, you just read across the screen when using the navigation keys as described above; the cursor is NOT moved. This also means that you can explore parts of the screen where the cursor can't go.

➤ **PC Mode**

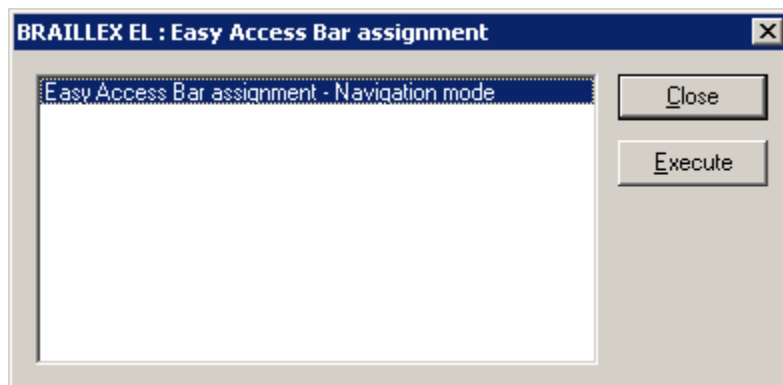
The PC mode is the opposite: Instead of moving the display across the screen when pushing the Easy Access Bar, you move the cursor. Please note that as long as the active cursor moves the Braille display, this obviously also influences the Braille display position.

➤ **Combined Mode**

The so-called Combined Mode is a mix of the two modes described above. It is useful especially when it comes to reading long text documents. Whenever you press a reading key and a line border is crossed, the PC cursor is moved to the new line as well. This means that you can read a text without having to bother about screen pages.

Selecting the Working Modes

In order to select the working modes, press the right key towards the rear. You will get a dialog box that looks like follows:



The mode displayed is the one currently selected. Move the Easy Access Bar one step left or right to change the values. Once you have reached the end of the list, you will see the first value again. The options are the following:

- Navigation mode
- PC Mode
- Combined Mode

For setting the value temporarily, push the Easy Access Bar 2 steps up. This will set the value displayed and return to the application you came from.

If you want to save the setting as a new default for the current application, push the Easy Access Bar 2 steps down. You will hear the message "settings saved", the value displayed will be activated, and you will return to the application you came from.

Easy Access Bar Assignment in the Three Working Modes

In the following you will see the assignment of the Easy Access Bar in the three different working modes:

Navigation Mode

Used for normal screen navigation. The cursor position is not changed. Two marker positions can be reached directly: the title bar (with 2 steps up) and the last window line, which typically corresponds to a status line (with 2 steps down). The main reading functions (read forwards and backwards) have a double assignment: they can be reached with both the first step and the second step right or left.

Navigation Mode Functions	
Easy Access Bar	Function
One step up	Moves the display one line up.
One step down	Moves the display one line down.
One step left	Read backwards.
Two steps left	Same as one step left.
One step right	Read forwards.
Two steps right	Same as one step right.
Two steps up	Moves the display to the title bar
Two steps down	Moves the display to the last line of the window.

PC Mode

In PC mode, the Easy Access Bar allows to navigate through an application. Easy Access Bar keys will emulate PC keyboard functions:

PC Mode Functions	
Easy Access Bar	Function
One step left	PC Left arrow key
One step up	PC Up arrow key
One step right	PC Right arrow key
One step down	PC Down arrow key
Two steps left	(Shift) + (Tab)
Two steps up	(Alt); within a dialog box or menu: (Esc)
Two steps right	(Tab)
Two steps down	(Enter)

Combined Mode

The combined mode includes both screen navigation and cursor movement features. When you move the Easy Access Bar up or down, the cursor is moved one line up or down as well (cf. PC mode). When you move the Easy Access Bar to the right, the function is the same as in navigation mode if the text line is longer than the display is. The cursor remains at the original position. Once all the text of that line has been displayed, another "read forwards" command will move both the cursor and the display to the next line. Pushing the Easy Access Bar one step left corresponds to "read backwards" if you are within a long line of text. Otherwise, both cursor and display are moved one line up.

In analogy to the navigation mode, two marker positions can be reached directly: the title bar (with 2 steps up) and the last window line, which typically

corresponds to a status line (with 2 steps down). This will NOT move the cursor. The main reading functions (read forwards and backwards) have a double assignment: they can be reached with both the first step and the second step right or left.

Combined Mode Functions	
Easy Access Bar	Function
One step left	Read backwards (within a long line), or: move cursor and display to previous line
Two steps left	Same as one step left
One step up	Move cursor and display to previous line
One step right	Read forwards (within a long line), or: move cursor and display to next line
Two steps right	Same as one step right.
One step down	Move cursor and display to next line
Two steps up	Moves the display to the title bar
Two steps down	Moves the display to the last line of the window.

Cursor Tracking

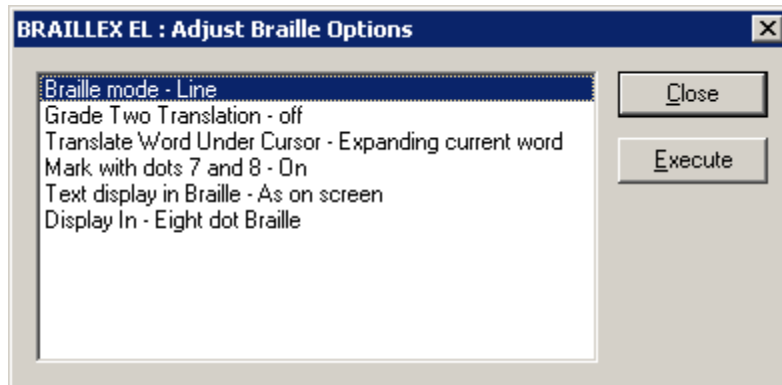
When navigating across the screen with the Braille display, you do not always take the cursor with you. You can return to the cursor position at any time. If the cursor is not present within the Braille display and you want to move the display back to the cursor position, press the right key towards the front. This will move the display to the cursor location and make sure that when the cursor is moved, the display will follow.

You can also decide not to have the Braille display follow the cursor movements. For this purpose, press the right key towards the front while the cursor is visible on the display. You will hear the message "the active cursor will not move the Braille display", and the automatic tracking is disabled. In order to enable the cursor tracking again, move the display away from the cursor and press right key towards the front again.

Cursor Tracking	
Key	Function
Right key in front position while cursor is NOT within Braille window	Enable cursor tracking and move display to the cursor position
Right key in front position while cursor is visible within Braille window	Disable cursor tracking

Braille presentation

When pressing the left key in front position, you access a number of Braille presentation options. A dialog box with six different parameters will pop up:



In this dialog, you can adjust the most frequently used Braille presentation options. The choices you have refer to the Braille verbosity settings within Jaws. The settings displayed are the ones that are currently selected.

Move the Easy Access Bar one step down or up to move between the different parameters. Move the Easy Access Bar one step left or right to change the values. The options are the following:

Braille presentation options	
Parameters	Options
Braille mode	Line Structured
Grade two translation	On Off
Translate word under cursor	Translating whole line Expanding current word
Mark with dots 7 and 8	On Off
Text display in Braille	As on screen Line up text
Display in	Eight dot Braille Six dot Braille

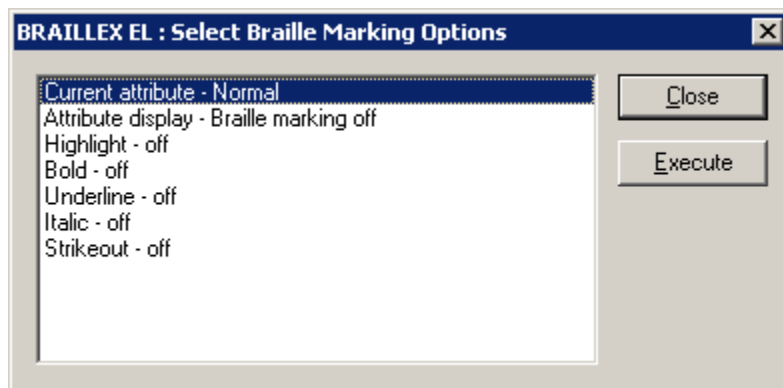
For setting the values temporarily, push the Easy Access Bar 2 steps up. This will set the value displayed and return to the application you came from.

If you want to save the setting as a new default for the current application, push the Easy Access Bar 2 steps down. You will hear the message "settings saved", the value displayed will be activated, and you will return to the application you came from.

Reveal Text Attributes

You can have the Braille display reveal different text attributes. The Braille display then underlines the corresponding portion of text with dots 7+8. You can select any of the different attributes directly, or you can choose to get all available attributes revealed. You can, of course, also disable this function.

Press the left key in rear position to activate the selection. You will see a dialog that looks like follows:



The first line in the dialog box shows the current attribute value at the cursor position of the application you are in. You can obviously also use this function to just look up the exact attribute at the cursor position.

The next line contains the global attribute display choices:

- Attribute display: Braille marking all
- Attribute display: Braille marking off
- Attribute display: Braille marking see below for current settings

If you select "Braille marking all", all text with screen attributes other than normal will be marked with dots 7 and 8. This only works if in the Braille presentation options, the "mark with dots 7 and 8" option is enabled.

The "Braille marking off" option disables the Braille marking function for all attributes.

If you have chosen one or several attributes you want to get revealed with dots 7 and 8, you get the message "Braille marking see below for current settings".

Push the Easy Access Bar one step to the left or to the right to select the settings.

In the next lines, you see the list of attributes that can be revealed with dots 7 and 8. You enable or disable the marking by pushing the Easy Access Bar one step to the left or to the right. If you modify any of the settings in this part of the dialog, line 2 will change to "Attribute display: modified". If you go back to line 2 you can then also restore the initial selection of attributes to be displayed, by choosing "Braille marking see below for current settings".

For setting the values temporarily, push the Easy Access Bar 2 steps up. This will set the value displayed and return to the application you came from.

If you want to save the setting as a new default for the current application, push the Easy Access Bar 2 steps down. You will hear the message "settings saved",

the value displayed will be activated, and you will return to the application you came from.

Mouse Functions

You can activate mouse functions with all BRAILLEX EL devices, using the routing keys.

In order to execute a mouse click, you first move the Braille display to the relevant position. Then you press a routing key at the desired position. This corresponds to a left mouse click.

You can also use the routing keys to select text, for example in a word processing program. Move the display to the starting point of the marker. Hold the left key in front position while you press the routing key at the start position. Then move the display to the end point and repeat the key combination.

Mouse functions	
Key	Function
Routing key	Route mouse to the key position and execute a left mouse click
Left front key + routing key	Text selection



BRAILLEX Duo with Dolphin HAL / Supernova

In combination with Dolphin HAL / Supernova, BRAILLEX Duo works like any of Papenmeier's world-famous BRAILLEX EL displays. The handling and the functionality are identical.

When navigating in the active window, you can choose between three different working modes, which influence the assignment of the Easy Access Bar:

➤ **Navigation Mode**

In the Navigation Mode, you just read across the screen when using the navigation keys as described above; the cursor is NOT moved. This also means that you can explore parts of the screen where the cursor can't go.

➤ **PC Mode**

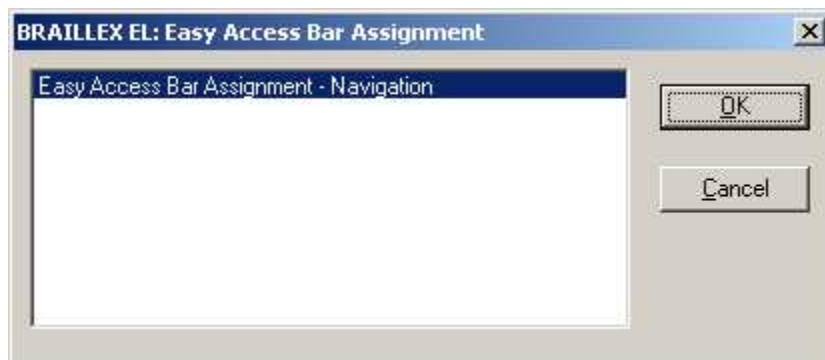
The PC mode is the opposite: Instead of moving the display across the screen when pushing the Easy Access Bar, you move the cursor. Please note that as long as the active cursor moves the Braille display, this obviously also influences the Braille display position.

➤ **Combined Mode**

The so-called Combined Mode is a mix of the two modes described above. It is useful especially when it comes to reading long text documents. Whenever you press a reading key and a line border is crossed, the PC cursor is moved to the new line as well. This means that you can read a text without having to bother about screen pages.

Selecting the Working Modes

In order to select the working modes, press the right key towards the rear. You will get a dialog box that looks like follows:



The mode displayed is the one currently selected. Move the Easy Access Bar one step left or right to change the values. Once you have reached the end of the list, you will see the first value again. The options are the following:

- Navigation mode
- PC Mode
- Combined Mode

If you want to save the setting, push the Easy Access Bar 2 steps down. The value displayed will be activated, and you will return to the application you came from.

If you want to exit without saving the changes, push the Easy Access Bar 2 steps up. You will then return to the application you came from.

Easy Access Bar Assignment in the Three Working Modes

In the following you will see the assignment of the Easy Access Bar in the three different working modes:

Navigation Mode

Used for normal screen navigation. The cursor position is not changed. Two marker positions can be reached directly: the title bar (with 2 steps up) and the last window line, which typically corresponds to a status line (with 2 steps down). The main reading functions (read forwards and backwards) have a double assignment: they can be reached with both the first step and the second step right or left.

Navigation Mode Functions	
Easy Access Bar	Function
One step up	Moves the display one line up.
One step down	Moves the display one line down.
One step left	Read backwards.
Two steps left	Same as one step left.
One step right	Read forwards.
Two steps right	Same as one step right.
Two steps up	Moves the display to the title bar
Two steps down	Moves the display to the last line of the window.

PC Mode

In PC mode, the Easy Access Bar allows to navigate through an application. Easy Access Bar keys will emulate PC keyboard functions:

PC Mode Functions	
Easy Access Bar	Function
One step left	PC Left arrow key
One step up	PC Up arrow key
One step right	PC Right arrow key
One step down	PC Down arrow key
Two steps left	(Shift) + (Tab)
Two steps up	(Esc)
Two steps right	(Tab)
Two steps down	(Enter)

Combined Mode

The combined mode includes both screen navigation and cursor movement features. When you move the Easy Access Bar up or down, the cursor is moved one line up or down as well (cf. PC mode). When you move the Easy Access Bar to the right, the function is the same as in navigation mode if the text line is longer than the display is. The cursor remains at the original position. Once all the text of that line has been displayed, another "read forwards" command will move both the cursor and the display to the next line. Pushing the Easy Access Bar one step left corresponds to "read backwards" if you are within a long line of text. Otherwise, both cursor and display are moved one line up.

In analogy to the navigation mode, two marker positions can be reached directly: the title bar (with 2 steps up) and the last window line, which typically corresponds to a status line (with 2 steps down). This will NOT move the cursor. The main reading functions (read forwards and backwards) have a double

assignment: they can be reached with both the first step and the second step right or left.

Combined Mode Functions	
Easy Access Bar	Function
One step left	Read backwards (within a long line), or: move cursor and display to previous line
Two steps left	Same as one step left
One step up	Move cursor and display to previous line
One step right	Read forwards (within a long line), or: move cursor and display to next line
Two steps right	Same as one step right.
One step down	Move cursor and display to next line
Two steps up	Moves the display to the title bar
Two steps down	Moves the display to the last line of the window.

Cursor Tracking

When navigating across the screen with the Braille display, you do not always take the cursor with you. You can return to the cursor position at any time. If you want to move the display back to the cursor position, press the right key towards the front. This will move the display to the cursor location.

Cursor Tracking	
Key	Function
Right key in front position	Move display to the cursor position

Braille presentation

When pressing the left key in front position, you access a number of Braille presentation options. A dialog box with six different parameters will pop up:



In this dialog, you can adjust the most frequently used Braille presentation options. The choices you have refer to the Braille verbosity settings within Jaws. The settings displayed are the ones that are currently selected.

Move the Easy Access Bar one step down or up to move between the different parameters. Move the Easy Access Bar one step left or right to change the values. The options are the following:

Braille presentation options	
Parameters	Options
Braille mode	Logical Physical
Literary Braille	On Off
Cursor at word uncontracted	On Off
Enhanced characters	On Off
Expand gaps	On Off
Display in eight dot	On Off

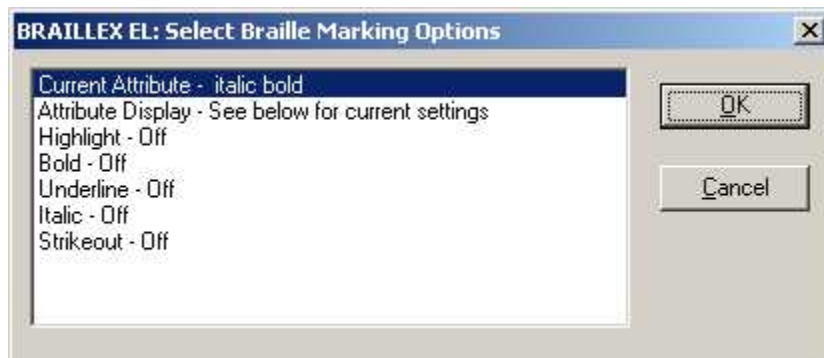
If you want to save the setting, push the Easy Access Bar 2 steps down. The value displayed will be activated, and you will return to the application you came from.

If you want to exit without saving the changes, push the Easy Access Bar 2 steps up. You will then return to the application you came from.

Reveal Text Attributes

You can have the Braille display reveal different text attributes. The Braille display then underlines the corresponding portion of text with dots 7+8. You can select any of the different attributes directly, or you can choose to get all available attributes revealed. You can, of course, also disable this function.

Press the left key in rear position to activate the selection. You will see a dialog that looks like follows:



The first line in the dialog box shows the current attribute value at the cursor position of the application you are in. You can obviously also use this function to just look up the exact attribute at the cursor position.

The next line contains the global attribute display choices:

- Attribute display: Braille marking all
- Attribute display: Braille marking off
- Attribute display: See below for current settings

If you select "Braille marking all", all text with screen attributes other than normal will be marked with dots 7 and 8. This only works if in the Braille presentation options, the "mark with dots 7 and 8" option is enabled.

The "Braille marking off" option disables the Braille marking function for all attributes.

If you have chosen one or several attributes you want to get revealed with dots 7 and 8, you get the message "Braille marking see below for current settings".

Push the Easy Access Bar one step to the left or to the right to select the settings.

In the next lines, you see the list of attributes that can be revealed with dots 7 and 8. You enable or disable the marking by pushing the Easy Access Bar one step to the left or to the right. If you modify any of the settings in this part of the dialog, line 2 will change to "Attribute display: modified". If you go back to line 2 you can then also restore the initial selection of attributes to be displayed, by choosing "Braille marking see below for current settings".

If you want to save the setting, push the Easy Access Bar 2 steps down. The value displayed will be activated, and you will return to the application you came from.

If you want to exit without saving the changes, push the Easy Access Bar 2 steps up. You will then return to the application you came from.

Mouse Functions

You can activate mouse functions with all BRAILLEX EL devices, using the routing keys. In order to execute a mouse click, you first move the Braille display to the relevant position. Then you press a routing key at the desired position. This corresponds to a left mouse click.

Mouse functions	
Key	Function
Routing key	Route mouse to the key position and execute a left mouse click

Important Advice

Purpose of the Device

BRAILLEX Duo is intended to be used for the purpose of compensation for the visual handicap of blind people.

According to the European Council directive 93/42/EEC (Medical Devices Directive), they have therefore been classified as active class I medical devices.

These products may only be used in home or office environments. In medical facilities, this product may only be used in office rooms.

The connected PC must comply with the standards regarding safety and EMC (electro-magnetic compatibility) relevant for the area where it is used.

Safety Advice

Before starting to operate the BRAILLEX EL device, the user should read this manual.

The device shall only be installed by a trained person.

The device may only be used with the original accessories and in combination with the products foreseen for this purpose by F. H. Papenmeier. If a combination with other devices is necessary, those devices must comply with the relevant standards.

- The device may only be used in closed and dry rooms. The ambient temperature must not exceed 40° C (ca. 105° F). Do not expose the device to direct sunlight or humidity (rain).
- Repairs and maintenance work may only be undertaken by Papenmeier or by authorized service centers.



There are no known risks for your health that might be caused by the use of this product.

General Precautions

Our products guarantee optimum safety and reduce to a minimum the strain caused through over-exertion. However, when respecting some precautions you can contribute to avoid prejudice to your health or damage to the product.

If a cellular phone is used close to the product, a minimum distance of 30 cm (1 ft) shall be respected.

Do not expose the product to strong pressure, and do not drop any objects on the product. This might damage the product or lead to misfunctions.

In order to avoid repetitive strain injury at your hands caused through long-time use of the function elements and reading the Braille display, we suggest pauses and relaxation exercise. In specialized bookshops you also find literature on how to equip a workplace in an ergonomical way and on how to avoid strain through an appropriate sitting position.

CE-Marking / CE Medical Devices Directive

The BRAILLEX EL devices and their original accessories comply with the relevant standards regarding the electro-magnetic compatibility (EMC) and the safety, and are marked with the CE sign.

FHP cannot guarantee however that these products still comply with these EMC standards if they are connected to cables or devices not produced by F. H. Papenmeier. In this case, the person(s) who connected the cables or devices are responsible for taking care that the combination complies with the required standards. In order to avoid EMC problems, you should observe the following advice:

- Only connect accessories and devices marked with the CE mark.
- Only use shielded connecting cables.

BRAILLEX Duo complies with the requirements of the European Union Medical Devices Directive, as an **active class I medical product** intended to be used for the purpose of compensation for a handicap.

This product may only be used in home or office environments. In medical facilities, this product may only be used in office rooms.

Please read this manual and the information on medical devices carefully.

Declaration of Conformity

EC Declaration of Conformity

acc. to Article 10.1 of the Directive 89/336/EEC (EMC-Directive)

We, F. H. Papenmeier GmbH & Co KG
Talweg 2
D-58239 Schwerte, Germany
Name and address of the manufacturer or of the introducer of the product on the market who is established in the EU

herewith take the sole responsibility to confirm that the product:

Braille Terminal **BRAILLEX Duo**

is in accordance with the following standards or standardized documents:

- | | |
|---|----------------------|
| 1. EN 55022:1998 + A1:2000 + A2:2003 Kl. B | RF emission |
| EN 55022:1998 + A1:2000 + A2:2003 Kl. B | conducted noise |
| EN 55022:1998 + A1:2000 + A2:2003 Kl. B | radiated noise |
| EN 61000-3-2:2000 + A2:2003 Kl. B | harmonics |
| EN 61000-3-3:1995 + A1:2001 | flicker |
| 2. EN 55024:1998 | immunity |
| EN 61000-4-6:1996 + A1:2001 | injected HF currents |
| EN 61000-4-3:2002 + A1:2002 | radiated HF fields |
| EN 61000-4-4:1995 + A1:2001 + A2:2001 | Burst |
| EN 61000-4-5:1995 + A1:2001 | Surge |
| EN 61000-4-11:1994 + A1:2001 | voltage variations |
| EN 61000-4-2:1995 + A1:1998 + A2:2001 | ESD |
| EN 61000-4-8:1993 + A1:2001 | magnetic fields |

(Title and/or number and date of the standard(s) or other standardized documents)

The following operating conditions and installation arrangements have to be presumed:

This confirmation is based on test report

21126235_001 TÜV Rheinland Product Safety GmbH, 51101 Köln, Germany



Jürgen Bornschein, Chief Engineer
F.H. Papenmeier GmbH & Co KG, Talweg 2, D-58239 Schwerte, Germany
Schwerte, August 24, 2006

Name, address, date and legally binding signature of the person being responsible

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