

Basic Braille Plus



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Table of Contents

1	GENERAL	2
1.1	Preface.....	2
1.2	Basic Braille Plus at a Glance	2
2	INSTALLATION	4
2.1	Package Contents	4
2.2	Software Installation	4
2.3	Installation of the Bluetooth Tie-In.....	5
2.3.1	Bluetooth-PC Tie-In	5
2.3.2	Bluetooth Apple iOS Device Tie-In	6
2.3.3	Bluetooth-Android Device Tie-In	6
2.4	Connecting the USB Cable	7
2.5	Connecting the plug-in power supply unit.....	7
2.6	Using USB and Bluetooth at the same time	8
2.7	Technical Specifications	9
3	START-UP	10
3.1	Turning the Power On	10
3.2	Energy Saving Features.....	10
3.3	Operation as a Braille Display	10
3.4	Configuration Mode.....	11
4	SETTINGS FOR HANDY TECH BRAILLE DISPLAYS	14
4.1	Connection.....	14
4.2	ATC	15
4.3	Status Cells	15
4.4	Key Actions.....	15
4.4.1	Key Lock	16
4.4.2	Fast Keys.....	16
4.4.3	Repeat Keys	16
4.5	Miscellaneous	17
4.6	Info	17
5	SCREEN READER OPERATIONS	18
5.1	Screen readers using Windows, Example JAWS	19
5.1.1	Overview	19
5.2	Screen reader using Windows, Example SuperNova.....	21
5.2.1	Overview	21
5.3	VoiceOver: Screen reader for Apple iOS Devices	22
6	IMPORTANT INFORMATION	25
6.1	Symbols on the Device	25
6.2	Safety Notes in Accordance with the Standards for Medical Devices ..	25
6.3	General Safety Information.....	25
6.4	Handling the Basic Braille Plus.....	26
6.5	Warranty.....	26
6.6	Technical Support	27
7	COPYRIGHT NOTICE.....	28

1 General

1.1 Preface

Thank you for choosing the Basic Braille Plus. Please take the time to review this user manual. We have tried to make using the Basic Braille Plus as easy and as intuitive as possible, but this manual will help you utilize your Basic Braille Plus's features even better.

The Basic Braille Plus is available in different sizes in order to serve a variety of customer needs. The handling of the different models is identical therefore you find all necessary information about your device in this manual.

It is very important that you read the safety information regarding the appropriate handling of the Basic Braille Plus before starting it up for the first time. You will find this information in chapter 6 of this manual.

In order to use the Basic Braille Plus as a Braille display under Windows, a screen reader is needed which is also available from Handy Tech. The screen reader program NVDA will be provided for free if needed.

The Basic Braille Plus has been developed and tested with great care. However, if you have any ideas or suggestions for improvements, please do not hesitate to contact your Handy Tech customer service representative. Your opinion is very important to us.

We hope you will enjoy using your Basic Braille Plus.

1.2 Basic Braille Plus at a Glance

This section will help familiarize you with the Basic Braille Plus and its control elements. We recommend keeping the device handy, so that you can follow along with the instructions in this section.

Please place the Basic Braille Plus in front of you, facing the Braille cells on the top edge. The hand resting surface with the Braille keys is facing in your direction. Above the Braille cells you find for each Braille element an integrated cursor routing key, which is designated as [CR]-key. With this cursor routing keys you can place the cursor directly at the text position of that Braille module.

To the left and right of the Braille display are six function keys, 3 each on the right and 3 on the left. They are embedded in the housing so that they do not stand out from the Braille modules. These buttons can be operated at the top, center and bottom. The function keys have the following functions:

The top button (up) on the right and left side serves as a read button to move back in the text and is called [FLU] or [FRU] in the following.

The bottom button (down) on the right and left side is used to read forward and is referred to below as [FLD] or [FRD]. In the event that both the right and left function keys can be pressed up or down, they are referred to as [FU] or [FD].

Pressing the center function key left or right triggers different additional functions. Below you will find an overview of the naming of the function keys:

Left upper function key: [FLU]

Left middle function key: [FLC]

Left lower function key: [FLD]

Right upper function key: [FRU]

Right middle function key: [FRC]

Right lower function key: [FRD]

Below the Braille modules you will find 9 ergonomically arranged Braille input keys. They correspond to the usual Braille keyboard layout and are, from the left to the right as follows:

7 3 2 1 SPC 4 5 6 8

The Braille input keys are ergonomically shaped and coated with a rubber layer to prevent dirt from entering the device.

On the right side of the device there is a magnetic USB-interface for connection to a PC or power supply. If you put the USB-cable on the USB-interface, the magnetism automatically pulls it into the correct position.

The Basic Braille Plus is powered via the USB-interface. You can switch it on by pressing and holding [FRU] for about two seconds. To switch off the Basic Braille Plus, press [FRU] for approx. 5 seconds. It is advisable to switch off the device when it is not in use, as this will protect the Braille modules.

Your Basic Braille Plus has a built-in lithium battery. This battery is charged via the USB interface and can only be replaced by authorized service personnel if necessary. If your Basic Braille Plus should ever get into a state in which it no longer reacts to inputs and cannot be switched on and off, you can reset it with the small reset button on the bottom of the device. You will need a pointed object, such as a paper clip, to carefully pierce the small hole in the right part of the bottom of the device. You will feel the resistance of the button, which you have to overcome in order to trigger the reset function.

2 Installation

2.1 Package Contents

Please verify that your package contains all of the parts listed below. If one of the components is missing or damaged, please contact us in order to request the missing part or a replacement.

You should find enclosed the following:

- Basic Braille Plus
- 1 magnetic USB interface cable
- 1 USB extension cable
- 1 power supply for USB
- Dust cover
- Short Reference for the Basic Braille Plus
- StartStick with drivers for screen reader (JAWS, SuperNova) and this user manual

2.2 Software Installation

Before you connect the Basic Braille Plus to your computer, you should install the software delivered with the device. To install the required software, plug the included USB memory stick with the inscription StartStick into a free USB port on your PC.

The StartStick with the HTStart program is a USB-stick that contains all the relevant drivers and documents that you need to operate your Handy Tech Braille display. In addition, it contains the free NVDA screen reader, so that you can operate the PC immediately, even if no screen reader (JAWS or SuperNova) is installed.

After plugging the StartStick into your PC, run the start.exe program from the root directory. If a screen reader is already installed, it is available for use. Otherwise, the supplied screen reader NVDA provides access via speech output and Braille support.

HTStart recognizes which Handy Tech display is connected to your PC and automatically makes the pre-selection for the installation of all the necessary drivers and software components. Depending on the security settings of your operating system, you may be prompted to allow the execution of the program HTStart. To enable HTStart to determine and display the installed screen reader, your consent is required. Please allow the execution of HTStart because otherwise the use of the program is not possible.

Once you have selected a screen reader, the HTStart window appears in which all supported Handy Tech products are listed. The language of the user interface is pre-selected based on your Windows settings. However, in the selection list, you can select another language.

In the product list you find the manuals in the selected language. If the manual in the selected language is not available, the English manual appears instead.

After choosing "Software Installation", you can choose the following components of the software, to be installed:

- Basic Braille Plus Firmware: for updating the internal functions of your Basic Braille
- Basic Braille Plus user manual: this user manual.
- JAWS driver: latest Braille display driver for JAWS for Windows
- SuperNova driver: latest Braille display driver for SuperNova

We recommend that you use the default setting for the installation. All required software components will be installed. After completion of the installation program you will find a group named "Handy Tech" in programs in the start menu. Here you find the following subfolders:

- Basic Braille Plus: Here you find this user manual, a program for updating the firmware and the uninstall program.
- BrailleDriver: here you find the key settings of your Basic Braille Plus for your screen reader and the configuration program for the Braille display driver.

After installing successfully, you can hook on your Basic Braille Plus on to your computer.

2.3 Installation of the Bluetooth Tie-In

If your Basic Braille Plus features a Bluetooth transmission module, you can also establish a wireless connection between the Basic Braille Plus and a computer or a cell phone, if they are equipped with wireless Bluetooth technology. You need to make sure that the wireless Bluetooth interface on your Basic Braille Plus is active, by enabling the option "Bluetooth on" in the configuration menu like described in chapter 3.4 Configuration Mode. The wireless transmission radius is approximately 10 meters (10 yards or 33 feet).

2.3.1 Bluetooth-PC Tie-In

1. Please make sure, that the Basic Braille Plus is switched on and the Bluetooth interface in the configuration mode is enabled.
2. Select "Bluetooth Devices" from the control panel or from your system tray and press the context menu key.
3. Select the "new device/connection" item
4. "Add Bluetooth Device Wizard" will appear.
5. All detected Bluetooth devices will be listed. Select the Basic Braille Plus from the list and press "Next".
6. Now the pairing will be done and the needed drivers will be installed. Please wait a moment. Please confirm by pressing "Finish".

Your Basic Braille Plus now has a wireless connection to the PC, and you can utilize all of its functions, as if it were connected via the USB cable.

Note: If you move the Basic Braille Plus beyond the Bluetooth connection's communications radius (10 meters/yards), the connection to the PC will be interrupted. The connection will automatically be re-established by Handy Tech's Braille device driver once you move back within range. For this you need to have installed the latest Braille display driver (see chapter 2.2 Software Installation).

2.3.2 Bluetooth Apple iOS Device Tie-In

Mobile Apple devices, such as the iPhone or iPad, include a screen reader by default, which enables blind people to operate the devices by speech and Braille output.

Since the operation of a Braille display in iOS requires changes that have not been done yet, the Basic Braille Plus can emulate an already supported Braille display - in this case the Active Braille. If you want to connect the Basic Braille Plus to an Apple device, you must first activate the "Active Braille Emulation" option in configuration mode (see 3.4 Configuration Mode). To connect the Basic Braille Plus to an Apple device, you must first enable VoiceOver. Proceed as follows:

1. Please make sure that the Basic Braille Plus is turned on, the Bluetooth interface and Active Braille emulation is turned on in Config mode.
2. Open "Settings" on the home screen of your iOS device.
3. Choose „Accessibility“..
4. Turn VoiceOver on. The speech output is launched. You can navigate through the controls with the "swipe left" gesture and select with "double tap".
5. Choose "Braille" on the Accessibility page.
6. If Bluetooth is off, the iOS device will remind you and you should turn it on now.
7. The iOS device is now searching for Bluetooth Braille displays. Please choose the Active Braille from the list.
8. The Bluetooth connection will be established and on the Braille display the information of the iOS device is displayed by VoiceOver. You can open apps and select individual items with the [CR] keys.

Note: if the connection was interrupted because you have turned off or put to sleep mode the Basic Braille Plus and/or the Apple device, please turn on/wake up the Basic Braille Plus first.

2.3.3 Bluetooth-Android Device Tie-In

Android devices, such as the Samsung Galaxy Sx, include the screen reader TalkBack by default, which enables blind people to operate the devices by speech. This is pre-installed on most Android devices and can be activated under Settings>Accessibility. For Braille support an additional App, called BrailleBack, is needed which you can download and install via Play Store. Since the operation of a Braille display in Android operating system requires changes that have not been done yet, the Basic Braille Plus can emulate an already supported Braille display - in this case the Active Braille. If you want to connect the Basic Braille Plus to an Android device, you must first activate the "Active Braille Emulation" option in configuration mode (see 3.4 Configuration Mode). In order to connect the Basic Braille Plus via Bluetooth with an Android device, proceed as follows:

1. Please make sure that the Basic Braille Plus is turned on, the Bluetooth interface and Active Braille emulation is turned on in Config mode.
2. Activate Bluetooth on the Android device and search for new devices.
3. After some seconds, the Basic Braille Plus will be found and listed as Active Braille in the device list.
4. Start the pairing process by double click on the Active Braille.
5. If the paring was successful, you'll hear the message "device connected".
6. Open BrailleBack on the Android device. You can find it under Settings>Accessibility.

7. The Bluetooth connection will be established, and you can read the text from the Android device on the Braille display.
8. Under settings in the BrailleBack menu, you will find the BrailleBack keyboard help.

Note: if the connection was interrupted because you have turned off or put to sleep mode the Basic Braille Plus and/or the Android device, please turn on/wake up the Basic Braille Plus first.

2.4 Connecting the USB Cable

To connect your Basic Braille Plus to a PC or laptop computer via USB interface, you will need the included USB cable. The USB cable has a small magnetic USB plug on one end. The other end features a bigger flat plug. If you want to use a different USB cable, please make sure that it is not longer than 3 meters (118 inch).

Please connect the magnetic USB plug to the USB port on the right side of your Basic Braille Plus. The plug is pulled by the magnet into the correct position. It does not matter how the magnetic plug is placed around. The flat plug is then plugged into the PC's USB port.

If the Basic Braille Plus is to be used as a medical device, the PC must conform to all Medical Device Standards, or else it must have a ground connection or be connected to an isolating transformer. Even if you are not using the Basic Braille Plus as a medical device, we recommend connecting it only to a grounded PC. Otherwise you might feel the voltage on the housing, which is harmless and permitted for non-medical devices but unpleasant.

When the PC is turned on, the Basic Braille Plus will automatically be recognized by USB-enabled operating systems. Once the Basic Braille Plus is recognized by the computer and accessed by a screen reader, the USB connection becomes primary. If the Bluetooth interface is activated, it may be possible that it uses the primary channel. In this case, you can switch to USB channel by pressing [FLC] and [FRC] simultaneously for about one second.

The power for the Basic Braille Plus is supplied via the USB interface. You can turn on the Basic Braille Plus by pressing and holding on [FRU] for about two seconds and turn it off by pressing [FRU] for 5 seconds.

Note: If using the Basic Braille Plus with Windows 8, 8.1, 10 or 11, a screen reader must be active. If there is no screen reader running, Windows will disconnect the Basic Braille Plus when pressing any Braille key. In order to use the Basic Braille Plus again, you must switch it off and on.

2.5 Connecting the plug-in power supply unit

The included power supply unit is used to supply power and to charge the built-in battery via a power outlet. While the battery is charging, you can work with the Basic Braille Plus via the Bluetooth interface.

To connect the power adapter, plug the small magnetic USB connector of the included USB cable into the connector socket on the right side of the device. The plug is pulled into the correct position by the magnet. It doesn't matter which way around the magnetic plug

is placed. Now you can connect the plug-in power supply to the flat end of the USB cable and plug it into an easily accessible socket.

Please note that while the Basic Braille Plus is charging via the power outlet, no USB connection can be established to the PC.

If the Basic Braille Plus is connected to the PC via USB cable, the battery will also be charged, but with a smaller current.

2.6 Using USB and Bluetooth at the same time

You can use an USB and Bluetooth connection at the same time. If you have connected the Basic Braille Plus for example via USB to your PC or laptop, you can hook on parallel a smart phone or a second PC via Bluetooth.

If you have connected the Basic Braille Plus to two devices at the same time via USB and Bluetooth, e.g. to the PC via USB and to the smartphone via Bluetooth, the Braille display automatically switches to the channel from which data is sent to the Braille display. Switching channels only happens when a new connection is established (e.g. unlocking smartphone) and sending braille data, or when an existing connection is interrupted (e.g. locking smartphone). This function we call "SmartSwitching". If you do not want automatic switching, you can switch off SmartSwitching in configuration mode (see chapter 3.4 Configuration Mode).

To switch manually between these two connections, press both center function keys [FLC] and [FRC] together for 1 second. Please note, that the Bluetooth setting in Config Mode must be "ON" or "AUTO".

If you choose "AUTO", the Bluetooth channel will be active for 15 minutes after switching on the Basic Braille Plus. If no connection will be established in this time, the Bluetooth interface will be deactivated in order to save battery live.

After switching the interface channel, the Basic Braille Plus shows the following messages:

- **Disconnected:** no connection, switching not possible
- **Bluetooth only / USB Only:** only one connection, switching not possible
- **USB primary with Bluetooth:** the USB connection becomes primary
- **Bluetooth primary with USB:** the Bluetooth connection becomes primary

Note: While switching between USB and Bluetooth it might happen, that the screen reader is sending data to the Basic Braille Plus and you cannot see this message because it appears very shortly.

2.7 Technical Specifications

- 32/40/48 concave piezoelectric Braille cells with cursor routing keys
- 8 keys for Braille input
- 1 space key
- 6 function keys, 3 right and 3 left of the Braille display
- 1 magnetic USB Port
- Supply voltage: 5 V, 200 mA
- Lithium Polymer Battery
- Battery charging time: 3 to 4 hours
- Battery duration: approx. 12 hours, depending on the number of modules
- Power consumption while charging: 500 mA

Dimensions and weights:

- Height: 0.76 inch (1.95 cm)
- Depth: 3.6 inch (9.15 cm)

Number of Modules	Width	Weight
32	11.6 inch (29.5 cm)	1.43 lb (650 g)
40	13.6 inch (34.7 cm)	1.65 lb (750 g)
48	15,7 inch (39,9 cm)	1.70 lb (850 g)

3 Start-Up

3.1 Turning the Power On

Please make sure that the Basic Braille Plus is connected to your PC via an USB cable or Bluetooth, and the PC is on. If necessary, turn on the Basic Braille Plus by pressing [FRU] shortly. The Braille display shows the following welcome message:

'HT Basic Braille Plus xx V y.y BT ON' or
'HT Basic Braille Plus xx V y.y BT OFF' or
'HT Basic Braille Plus xx V y.y BT AUTO'

If the option „**Battery charge disable**“ in Config mode is enabled, you will see this message approx. 2 seconds before the welcome message.

xx stands for the length of the braille display (e.g., 32, 40 or 48) and y.y stands for the version number of the firmware of your Basic Braille Plus (e.g., 4.2).

Please notice that there is a number sign in front of the version number.

As soon as the screen reader sends information to the Basic Braille Plus, the welcome message disappears, and the new data will be displayed.

3.2 Energy Saving Features

If no key is pressed or the display does not change on the Basic Braille Plus for 30 minutes, the device will switch into sleep mode. In sleep mode, the Braille modules are turned off and some of the electronic modules are also deactivated. As soon as any key is pressed or receiving any information from the screen reader, the Basic Braille Plus is immediately fully operational again. You will recognize this because the tactile pins of the Braille modules will be pushed back up.

After 8 hours in sleep mode the Basic Braille Plus turns itself completely off. You can turn it on again by pressing and holding on [FRU] for about two seconds. Read chapter 3.4 Configuration Mode to learn how to switch off the energy saving feature.

3.3 Operation as a Braille Display

In order to operate the Basic Braille Plus as a Braille display under any Windows operating system, you need a screen reader program to control the display, which is not included with the Basic Braille Plus.

Please make sure that your Basic Braille Plus is properly connected and switched on before starting up the screen reader program, because otherwise the screen reader will not be able to detect it. As a rule, the screen reader will display the currently selected position within the active window on the Braille display. For example, if you are moving through a menu, the selected menu item is displayed. In word processing programs such as Microsoft Word, you can also position the cursor with the [CR] keys. In addition, the [CR] keys also allow you to activate menu items or functions directly (e.g., when you are

prompted for a yes or no answer with '**y/n**', pressing the [CR] key above the "y" has the same effect as entering [y]).

The screen reader program converts the text and graphic contents of the Windows screen into speech and Braille. Generally, the computer's built-in sound card is employed for the speech output function. The display of Braille is achieved with the help of your Braille display, after the screen display information has been forwarded from the screen reader to the Braille display. All standard screen readers are compatible with Handy Tech's Braille System series. During the installation of the screen reader software, all you need to do is to select Handy Tech. The Braille output will then automatically adjust correctly to your Basic Braille Plus.

If you start your screen reader, a small window appears when the program is started up for the first time and displays the name of the Braille display detected by the program (in this case Basic Braille Plus), the interface used for communication currently selected. The various screen reader program functions are assigned to specific keys on your Basic Braille Plus.

Section 5 Screen reader Operations provides basic information on the use of the screen readers JAWS and SuperNova.

3.4 Configuration Mode

Configuration mode can be activated by holding down all six function keys next to the Braille modules for longer than 5 seconds. When the unit switches into Configuration Mode the message '**Config Mode**' appears on the Braille display.

Note: Please note that any settings you make here have a significant effect on the operation of the Basic Braille Plus. Make sure that you are completely certain what these effects will be before you make any changes. All settings remain stored even if the Basic Braille Plus is switched off.

All messages are in English, it is not possible to switch to another language.

For not assigned keys you get the message '**no function**'.

The keys on the Basic Braille Plus now have the following functions (non-functional keys are not listed):

[SPC] Active Braille emulation on/off

You only need this option if you want to connect your Basic Braille Plus to an Apple device (e.g. Mac, iPhone) or an Android device or if you are using Window-Eyes. Since the operation of a Braille display requires changes to the operating system, which have not been made yet, the Basic Braille Plus can emulate an already supported Braille display - in this case an Active Braille display. So, if you want to connect the Basic Braille Plus to an Apple device or Android phone, or if you are using Window-Eyes, you need to turn this option on.

The following messages will appear on the Braille display:

'Active Braille emulation ON' or

'Active Braille emulation OFF'

Please note that this option must be switched off before a firmware update.

- [FLU] Energy saving mode on/off
If energy saving mode is on, the Braille display is turned off after 30 minutes of inactivity. The following messages will appear on the Braille display:
'Sleep mode ON' or
'Sleep mode OFF'
- [FLC] Battery status
'Battery EMPTY'
'Battery LOW'
'Battery MEDIUM'
'Battery HIGH'
'Battery FULL'
If the Battery is actually charging, the message ends with **'charging'**. If you read the message **'Battery state not available'** you are supposed to charge the Battery for approximately 4 hours until the Basic Braille Plus shows **'Battery FULL'**.
- [FLD] Bluetooth settings
Here you can enable or disable the Bluetooth interface.
'Bluetooth OFF': You can connect the Basic Braille Plus only via USB cable to the PC.
'Bluetooth ON': You can also connect the Basic Braille Plus via Bluetooth to the PC or smartphone.
'Bluetooth AUTO': The Basic Braille Plus will look for a Bluetooth connection for 15 minutes. If no connection will be established, the Bluetooth interface turns off. PC or mobile device cannot find the Basic Braille Plus until you switch it on again. The chosen setting (ON, OFF, AUTO) will be shown in the welcome message after switching on the Basic Braille Plus.
- [FRU] Toggle Battery warning on/off
If the battery is low, the Basic Braille Plus can remind you to charge it.
'Low battery warning ON': If the battery life reaches a critical value, dots 7 and 8 are blinking every 15 seconds. The battery life will then last approx. 10 to 15 minutes more. Please charge the battery immediately.
'Low battery warning OFF': The Basic Braille Plus does not remind you to charge the battery.
- [FRC] Permit battery charging
'Battery charge disabled': The battery will not be charged if the Basic Braille Plus is connected via USB to a PC. This setting is useful if you are on the road with a laptop which has a lower battery life than the Basic Braille Plus. It's saving the laptop's power. But if the Basic Braille Plus is turned off, it's battery will be charged anyway, even if you have chosen "Battery charge disabled". If you want to save the laptop's power, we recommend disconnecting the Basic Braille Plus. This message will be shown before the welcome message, while turning the Basic Braille Plus on to remind you that the battery will not be charged. If the battery is low, the Basic Braille Plus takes only a little power (100 mA) from the laptop for operating the Basic Braille Plus and slowly charging the battery. Therefore, you can always use this setting for USB connection.

'Battery charge enabled': The Basic Braille Plus's battery will be charged via USB. We recommend this setting, if your PC is connected to a power outlet.

[FRD] Exit Configuration Mode
The new settings will be in force.

[CR2] Toggle SmartSwitching on/off.
SmartSwitching is called the smart switching feature between two devices connected to the Braille display (USB and Bluetooth). If the Braille display receives information via a newly established connection, SmartSwitching automatically switches to this channel and displays the information on the Braille display (see chapter 2.6 Using USB and Bluetooth at the same time).
The following message appear on the Braille display:
'SmartSwitching ON' or
'SmartSwitching OFF'

[CR3] Shows serial number of the Basic Braille Plus.

[CR5] test mode

[CR7] changing control speed of the Braille pins
'High USB power off': The control speed of the pins is normal.
'High USB power on': The control speed of the pins is fast. Therefore, the Basic Braille Plus takes more power from the PC which may cause problems on some Laptops.

Some cursor routing keys are assigned for in-house service functions.

4 Settings for Handy Tech Braille Displays

The universal Handy Tech Braille display driver features several optional settings for operating your Basic Braille Plus with your PC and screen reader. In order to open the Settings window, press [1] and [8] simultaneously. The Settings window can also be opened up from the Start menu, under "Programs – Handy Tech – Configure Braille display driver". The Braille display driver does not need to be running.

There are the following six tabs in the Settings window:

- Connection
- ATC
- Status Cells
- Key Actions
- Miscellaneous
- Info

Your changes in the settings of the different tab sheets will be saved by pressing the OK or Apply Button. If you choose the OK Button, the dialog will be closed.

The following sections provide more details about the settings that are available on these six tabs.

4.1 Connection

The check box "Activate Driver" is checked to enable your Braille display to be driven by the screen reader. If you uncheck this box, the driver will be deactivated, and you will not be able to drive any Handy Tech Braille display.

The field "Device Detection" provides two options: "Automatic" means that your screen reader will detect the Braille display regardless of the interface through which it is connected to your PC. The second option is to specify a fixed interface at which the screen reader should look for the Braille display. In the corresponding combo box you can choose one of the existing COM interfaces or USB-HID.

The field "Show Pop-Up Braille Display Information" allows you to specify whether you want to be informed which Braille display is connected to the PC at the start-up of the screen reader. If this setting is activated, there will be a small pop-up box during start-up containing the Braille display driver's version number, the detected Braille display and the interface designation.

Here, you have the following three options:

- When changing device or interface: The pop-up box appears only if you have connected a different Handy Tech Braille display to the PC, or if you have connected the same Braille display to a different interface on your PC.
- Never: The pop-up box will not be displayed during start-up.
- Always at start: Every time your screen reader starts up, the pop-up box will be displayed.

If the check box "Connect Braille display even when switched on after start up" is checked, the Braille display may be connected to the computer while the screen reader is already

running. It will still be recognized by the screen reader. By default, this check box is unchecked.

Using the option "Reconnect Braille display automatically when disconnect" instructs the screen reader to search for the Braille display in brief intervals if there has been a disconnection. For example, if you turned off the Braille display in order to install the power cable, the screen reader will continuously search for a Braille display until you turn the power back on. By checking the check box "Notify when searching for connection" you can cause the screen reader to inform you of this process. If you do this, you will receive the message "Searching Basic Braille Plus" at short intervals.

4.2 ATC

The Handy Tech ATC technology, which is available for the Actilino, Active Star, Active Braille and Modular Evolution only, detects your reading position on the Braille display, thus providing you with innovative features in the operation and control of the PC. This tab only appears, if your screen reader supports the ATC features through the Handy Tech Braille display driver.

4.3 Status Cells

The so-called status modules on your Braille display are used to indicate where your current position is on the screen, such as within a menu or within a text field. Exactly which information is shown on the status modules depends on the screen reader. On the "Status Cells" tab, you can specify some of the options for these status modules.

The field "Device" allows you to specify which Handy Tech Braille system or Braille display you are using. By default, the actually connected device is recognized and becomes the default setting here. However, this setting provides you with the option of configuring other Handy Tech Braille displays, even though they are not currently connected to the computer.

In the next field, you can specify the size of the status display section. As a default, four Braille elements are used as status modules. There is automatically one blank position inserted between the status modules and the remaining positions on the Braille line. The blank element has no function.

The field "Position of status cells" allows you to specify whether the status modules should be displayed on the left or right side of the Braille line. By default, they are displayed on the left.

The check box "Display status cells" lets you enable and disable the status display. The status information is not displayed by default.

4.4 Key Actions

This tab sheet allows you to adjust the behavior of the single keys strokes of your Basic Braille Plus in the following three different ways:

- Key Lock: Keys, defined as locked, will be ignored when pressed.

- **Fast Keys:** Keys, defined as fast keys, performs their action already when pressed and not – as usual – when released.
- **Repeat Keys:** Keys, defined as repeat keys, will repeat their action continually while be pressed.

4.4.1 **Key Lock**

Single keys of the Basic Braille Plus can be locked to prevent unintentional functions by pressing a key by mistake. This is helpful when starting to learn how to use the Basic Braille Plus.

With the checkbox "Use Key Lock", you can activate this function. The button "Locked Keys..." will open the dialog "Define locked keys for device". In the list box "Device" the connected Braille display is already preselected. In the list box "Available keys" you choose the keys to be locked. With the "Add" button you move the selected key into the list box "Locked keys". The "Remove" button removes the key back to the available keys. By default, no keys are locked.

4.4.2 **Fast Keys**

Fast keys are keys which initiate their assigned functions as soon as the key is pressed, instead of when the key is released. If one of the keys to be used in a key combination is a fast key, the fast key must therefore be pressed last.

The check box "Use Fast Keys" is used for enabling this function. The button "Fast Keys..." will open the dialog "Define Fast Keys for device". In the list box "Device" the connected Braille display is already preselected. In this dialog you can then select the keys you want to define as fast keys from the list box "Available keys" and move them by pressing the "Add" button into the list box "Fast Keys".

By default, no keys are defined as fast keys. There are no fast keys available for Braille input.

4.4.3 **Repeat Keys**

With the settings under "Repeat Keys" you can specify the repeat interval at which a function initiated by a key is repeated when that key is held down. This feature makes it easier, for example, to navigate through a list, because you do not need to keep pressing the forward or backward key for each item in the list, but can simply hold down the key until the cursor is at the desired item.

The check box "Use Repeat Keys" is used for enabling this function. The button "Repeat Keys..." will open the dialog "Settings for repeat keys". In the list box "Device" the connected Braille display is already preselected. In this dialog you can then select the keys you want to define as repeat keys from the list box "Available keys" and move them by pressing the "Add" button into the list box "Repeat Keys".

The default setting is that key repeats are disabled. There is no key repeat available for Braille input.

4.5 Miscellaneous

On the tab "Miscellaneous", you can specify whether your actions should be recorded in a log file. This function is useful if you need technical support. Please check this box only when asked to do so by your customer service representative.

In the field "Protocol file", you can specify where this log file should be saved.

The check box "Quick Entry in PC mode by Dot 7 as Back Space and Dot 8 as Enter" causes the key dot [7] to be used as a backspace (Backspace) and the key dot [8] as enter key (Braille input). If you do not want this feature, you can disable the check box here.

4.6 Info

In the "Info" tab sheet you find important information about your Basic Braille Plus and the driver software, you are using.

In the field "Active Braille display" you find the type of Braille display, you are using, as well as the interface it is connected to and the serial number of your Braille display. In addition you find a reference when the next recommended maintenance of your Braille display is due.

In the field "Driver properties" the type of screen reader, you are using is listed, as well as the version of your driver.

At "Your dealer" you get the contact details of your Handy Tech dealer with postal address, telephone number and E-mail.

5 Screen reader Operations

All screen readers are used to output the information contained on a computer screen and to convert it into speech and Braille in a format that can be used by blind persons. The Basic Braille Plus serves to display the Braille data. Since only a small portion of the current screen contents can be displayed at any time on the Braille display, it is necessary for the screen reader to transmit only the information that is relevant in any given situation to the Braille display.

All screen readers on the market today provide "focused" Windows information after they start-up, for example, if any menu item is highlighted under the Windows Start menu, this will be displayed on the Braille display by default. If you move the Windows focus up and down by using the arrow keys, these changes will automatically be shown on the Braille display.

In any editable text input field, the cursor is usually represented as a character of blinking Dots 7 and 8. If the cursor leaves the portion of the screen that is shown on the Braille display while you are entering text, the section shown on the Braille display will automatically move forward. You can move around within the text regardless of the cursor position by using the reading keys, with [FLD] or [FRD] for forward, and [FLU] or [FRU] for backward. By activating any Cursor Routing key, you can move the cursor directly to the desired position. If you want to return to where the cursor is after navigating for a while, you can usually accomplish this simply by pressing [FLC], or by moving the cursor with the arrow keys. Any marked text, which is shown inverted on a computer screen, is underlined with dots 7 and 8 on the Braille display.

Generally, it is possible for the speech output information to differ from the information shown on a Braille display. In the "Save" dialogue of Microsoft Word when quitting the program, for example, the speech output will read the text "Do you want to save the changes made to...?" followed by the button texts "Save," "Don't Save," and "Cancel." Only the buttons, however, will be shown on the Braille display. You can select the desired button by activating the cursor routing key above the button text. You can also review the text in the dialog box by pressing the [FU] and [FD] keys.

The Basic Braille Plus is supported by various screen reader programs, such as:

- JAWS
- SuperNova (Dolphin Systems)
- NVDA
- VoiceOver
- BrailleBack
- Blinux (SuSE LINUX)

The current driver for the screen reader JAWS and SuperNova is included on the StartStick that came with your Basic Braille Plus.

5.1 Screen readers using Windows, Example JAWS

The functionality of JAWS is so extensive that only the basic functions for operating the Braille display can be described in brief in this section.

The status modules of a Braille display contain important data regarding screen positioning. Since your Basic Braille Plus does not include status modules, you can use [3 4] to toggle between displaying the contents of the screen and the status module display. The first three status elements indicate the cursor's pixel position within the line. The fourth status element indicates which mode is currently active, as follows:

- p for PC cursor
- j for JAWS cursor
- s for structured mode

Dots 7 and 8 of the status elements show the Braille display's position in a window line. Dots 7 and 8 in the status element have the following meanings:

- 1+2+3+4: The entire window line is shown on the Braille display
1+2: Left half of the window line
3+4: Right half of the window line
2+3: There is more text on the left and right in the window line

5.1.1 Overview

This table lists all functions associated with the Braille dots and control keys on the Basic Braille Plus. We have not included an exhaustive description of each of the functions, because these are contained in the JAWS manual.

Control Key/Braille Dot	Function
[7]	Activate PC cursor tracking.
[3]	Display the first line in the window (title).
[2]	Move the Braille display to the left.
[1]	Move the Braille display section one line up without changing the horizontal position.
[4]	Move the Braille display section one line down without changing the horizontal position.
[5]	Move the Braille display to the right.
[6]	Display the last line in the window.
[8]	Drag the JAWS cursor to the PC cursor and activate the JAWS cursor.
[FU]	If there is any text to the left of the Braille display section, it moves to the left, if not, it moves one line up.
[FD]	If there is any text to the right of the Braille display section, it moves to the right, if not, it moves one line down.
[3 4]	Toggle status modules on and off.
[7 8]	Switch between structured mode, section output and speech output.
[3 8]	Change cursor representation (dots 7 and 8, all 8 dots, blinking and non-blinking).
[2 8]	Toggle between 6/8 dot Braille.

Control Key/Braille Dot	Function
[1 8]	Handy Tech configuration dialog (as of Handy Tech JAWS Driver version 3.x)
[4 8]	Toggle between focused text on Braille display/same text as on screen.
[5 8]	Activate the JAWS cursor.
[2 3]	Beginning of line
[5 6]	End of line
[1 2 3]	Top of file
[4 5 6]	End of file
[3 6 7]	Speech interruption on/off
[3 6 7 8]	Output task bar
[FLC]	Tab
[FRC]	Shift + Tab
[FLC + FRC]	Enter
[SPC + 1 2 7]	Toggle Braille input on/off

By entering letters in Braille, you can in addition input the so-called mnemonic commands that are listed below:

j	[2 4 5]	Activate the JAWS settings menu
%	[1 2 3 4 5 6]	Activate the screen reader settings menu (JAWS)
d	[1 4 5]	Desktop minimizes all applications
h	[1 2 5]	Activate JAWS Help (paste + F1)
\$	[4 6]	Tab
k	[1 3]	Shift Tab
g	[1 2 4 5]	Grade 2 on/off
m	[1 3 4]	Alternative for activating the menu bar
s	[2 3 4]	Start menu
+	[2 3 5]	Toggle 6/8 dot Braille
=	[2 3 5 6]	System Tray
z	[1 3 5 6]	Announce time
	[3 4]	Status cells on/off
c	[1 4]	Ctrl+Tab
C	[1 4 7]	Shift Ctrl+Tab
e	[1 5]	ESC
?	[2 6]	Enter
b	[1 2]	Braille cursor tracking on/off
f	[1 2 4]	Active cursor tracking on/off
v	[1 2 3 6]	Set level of Braille contractions

The cursor routing keys (CR) are used to directly place the cursor at that text position. In addition, the following functions can be initiated by activating cursor routing keys in combination with certain control keys.

[CR + 1] or [CR + 4]	Mark a text block (beginning and end of block)
[CR + 6]	Describe object at the CR position
[CR + 8]	Right mouse click at the CR position
[CR + FU] or [CR + FD]	Describe the font

If the four status modules are in use on the Braille display, the CR keys above the status elements (S1 through S4) have the following functions:

[S1]	Toggle attribute / text mode
[S2]	Change attribute representation, underline with dots 7+8
[S3]	Toggle unconditional / conditional cursor tracking
[S4]	Toggle active cursor tracking on/off

5.2 Screen reader using Windows, Example SuperNova

The functionality of SuperNova is so extensive that only the basic functions for operating the Braille display can be described in brief in this section.

In addition to navigating, the most important keys for operating SuperNova with the Basic Braille Plus are [7] and [3]. [7] switches into Live-Focus, and [3] activates the virtual focus. The virtual focus can be used to explore the contents of the screen, while also providing an opportunity to activate the Windows-elements displayed on the Basic Braille Plus. In contrast, Live-Focus tracks whichever Windows-element is the most relevant at the moment. For example, when entering text, if a cursor routing key is pressed at one of the Braille modules, this results in a mouse click at that text position, which means the cursor is now at this location.

5.2.1 Overview

This table lists all functions associated with the keys on the Basic Braille Plus. We have not included an exhaustive description of each of the functions, because they are already contained in the manuals for SuperNova.

Control Key/Braille Dot	Function
[7]	Use Live-Focus
[3]	Top
[2]	Left by one width
[1]	One line up
[FU]	Back
[FD]	Forward
[4]	One line down
[5]	Right by one width
[6]	Braille down
[8]	Go to Live-Focus
[3 4]	Toggle status modules on/off
[7 8]	Physical / logical mode
[3 8]	Braille cursor style
[2 8]	Eight dot / six dot Braille
[1 8]	Handy Tech configuration dialog
[4 8]	Expand gap on/off
[5 8]	Use virtual focus
[2 3]	Beginning of line
[5 6]	End of line

Control Key/Braille Dot	Function
[1 2 3]	Top of file
[4 5 6]	End of file
[5 6 8]	Run through attributes
[FLC]	Tab
[FRC]	Shift + Tab
[FLC + FRC]	Enter
[SPC + 1 2 7]	Toggle Braille input on/off

By entering letters in Braille, you can in addition input the so-called mnemonic commands that are listed below:

%	[1 2 3 4 5 6]	Activate system control
h	[1 2 5]	Help
\$	[4 6]	Tab
k	[1 3]	Shift Tab
g	[1 2 4 5]	Literary Braille on/off
m	[1 3 4]	Alternative for activating the menu bar
s	[2 3 4]	Start menu
+	[2 3 5]	Eight dot / six dot Braille
=	[2 3 5 6]	System Tray
z	[1 3 5 6]	Announce date and time
c	[1 4]	Ctrl + Tab
C	[1 4 7]	Shift Ctrl + Tab
e	[1 5]	ESC
?	[2 6]	Enter
f	[1 2 4]	Tracking on/off
v	[1 2 3 6]	Set level of Braille contractions

The cursor routing keys (CR) are used to directly place the cursor at that text position. In addition, the following functions can be initiated by activating cursor routing keys in combination with certain control keys. If the four status modules are in use on the Braille display, the CR keys above the status elements (S1 through S4) have the following functions:

[S1]	Run through attributes
[S2]	Set level of Braille contractions
[S3]	Tracking on/off
[S4]	Physical / logical mode

5.3 VoiceOver: Screen reader for Apple iOS Devices

You can also use your Basic Braille Plus as a Braille display for your iPhone, iPod, iPad or Mac. Please establish a Bluetooth connection as described in chapter 2.3.2 Bluetooth Apple iOS Device Tie-In. In the following table you find the key commands for controlling your iOS device with the Basic Braille Plus using VoiceOver:

Control Key/Braille Dot	Function
[SPC + 1]	Move to previous item
[SPC + 4]	Move to next item
[SPC + 3]	Move to previous item using rotor setting
[SPC + 6]	Move to next item using rotor setting
[SPC + 2 3]	Select previous rotor setting
[SPC + 5 6]	Select next rotor setting
[SPC + 3 6]	Activates the selected object
[SPC + 1 2 5]	Activates the Home button
[SPC + 1 3 5]	Scroll right one page
[SPC + 2 4 6]	Scroll left one page
[SPC + 1 4 5 6]	Page down
[SPC + 1 2]	Activates the Back button if present
[SPC + 1 2 3]	Move to the first element
[SPC + 4 5 6]	Move to the last element
[SPC + 2 4 5 6]	Read page starting at the top
[SPC + 1 2 3 5]	Read page starting at selected item
[SPC + 2 3 4]	Goes to the status bar
[SPC + 3 4]	Speak page number or rows being displayed
[SPC + 4 7] iPad only	Move to next container
[SPC + 1 7] iPad only	Move to previous container
[SPC + 4 or 5]	Moves through the list
[SPC + 2]	Pan Braille to the left
[SPC + 5]	Pan Braille to the right
[SPC + 1 2 3 4]	Pause or continue speech
[SPC + 1 3 4]	Toggle speech on and off
[SPC + 1 2 3 4 5 6]	Toggle Screen Curtain on and off
[SPC + 2 3 6]	Toggle between 6-dot and 8-dot Braille
[SPC + 1 2 4 5]	Switch between contracted and uncontracted braille
[SPC + 3 4 5]	Activates the Volume Up button
[SPC + 1 2 6]	Activates the Volume Down button
[SPC + 1 2 3 4 6]	Set label
[SPC + 1 3]	Keyboard help
[SPC + 2 3 4 5]	Activates the Tab key
[SPC + 1 2 5 6]	Activates Shift Tab
[SPC + 1 5]	Activates the Return key
[SPC + 8]	Activates the Return key
[SPC + 1 4 5]	Activates the Delete key
[SPC + 7]	Activates the Delete key
[SPC + 2 5 6]	Select text
[SPC + 2 3 5]	Deselect text
[SPC + 1 4]	Copy
[SPC + 1 3 4 6]	Cut
[SPC + 1 2 3 6]	Paste
[SPC + 1 3 5 6]	Undo typing
[SPC + 1 4 6]	Activates the Eject key
[SPC + 3 4 5 6]	Scroll up one page
[SPC + 1 4 5 6]	Scroll down one page

You can find the complete list of Braille commands for VoiceOver at <https://support.apple.com/en-en/HT202132> .

6 Important Information

This section contains important safety and warranty information. Please make sure you have read this information before starting up your Basic Braille Plus.

6.1 Symbols on the Device

The symbols on the bottom of the Basic Braille Plus have the following meanings:



Read the user manual



Type B application part

6.2 Safety Notes in Accordance with the Standards for Medical Devices

Medical electrical devices are subject to special safety precautions with respect to EMC (Electromagnetic Compatibility) and safety devices and must be installed and put into service as described in this user manual.

Portable mobile RF communication equipment may interfere with medical electrical devices.

6.3 General Safety Information

Avoid contact between your Basic Braille Plus and any liquids (rain, coffee...). If liquids enter into the housing, you may be exposed to the danger of hazardous electric shock. In addition, the Braille elements may sustain damage, which can only be remedied by costly repairs.

During operation, do not expose your Basic Braille Plus to excessively high temperatures or high relative humidity. The ambient temperature should be between +10° C (= 50° F) and +40° C (= 100° F) and the relative humidity should not exceed 80%.

The Basic Braille Plus may not be used in moist rooms (such as bathrooms), since a voltage of 200 V is generated inside it.

The device contains no user-serviceable parts. In the event of a defect, please contact your dealer or Help Tech directly. Only representatives of Help Tech GmbH or its authorized dealers have permission to service or open the Basic Braille Plus. This includes the exchange of the battery. An improperly replace of the battery can cause high temperature, fire or risk of injury due bursting of the battery.

Avoid switching your Basic Braille Plus on immediately after moving it from a cold room into a warm environment. Under unfavorable conditions, condensation might damage the device. Wait until the device has warmed to room temperature before turning it on.

Take care that the interface cable is laid such that it do not pose a hazard (danger of tripping over them).

When plugging in or removing the data cable of the Braille display, take care not to touch the pins of the plugs, since this could result in an electrostatic discharge which could damage the interface of your computer. Before unplugging the cable from the device, disconnect it from your PC.

Before cleaning the device, always unplug the USB cable.

If the Basic Braille Plus was dropped, the housing has become damaged, or it is malfunctioning, turn the unit off immediately. It needs to be serviced by authorized service personnel.

At the end of its useful life, the device must be disposed of in accordance with the applicable guidelines for electronic equipment.

6.4 Handling the Basic Braille Plus

The Basic Braille Plus's Braille modules utilize very reliable and maintenance-free piezo technology. If handled properly, you will enjoy many years of trouble-free operation.

Always operate the Basic Braille Plus at normal room temperature and protect it from humidity. Avoid exposing the Basic Braille Plus to extreme changes in temperature.

Do not drop your Basic Braille Plus and avoid exposing it to strong vibrations.

It is better for your Basic Braille Plus if you take care to operate it with clean hands, because otherwise the tactile pins can become sticky and may release only if prodded.

Please ensure that no fluids enter into the Braille display. The Braille elements are especially sensitive to humidity, because humidity could destroy the high-voltage piezo elements.

We recommend covering the Basic Braille Plus when it is not in use to prevent dust from entering the housing.

Clean your Basic Braille Plus with a damp cloth without any cleaners. The Braille elements may be cleaned only with a dry, lint-free cloth.

The Braille elements should be cleaned and serviced thoroughly every two years in average operating conditions. In general, during servicing of the Braille elements, all tactile pins and key heads will be replaced, and all input elements checked. An endurance test will then be performed. We can provide you with a replacement device during the maintenance period. Maintenance may be carried out only by authorized dealers.

6.5 Warranty

If you open the Basic Braille Plus housing, which is sealed, within the warranty period, the warranty becomes void. The same applies to improper handling or use.

In the unlikely event that your Basic Braille Plus does become defective, our repair service will be available for repairs.

6.6 Technical Support

The Basic Braille Plus is a highly complex product. Although it has been optimized to be as easy to use and as self-explanatory as possible, errors in understanding or operation, which may impede your use of the device, may occur. Please consult this user manual first if you encounter difficulties.

If this does not solve your problem, please contact your dealer or customer service representative. Alternatively, do not hesitate to contact Help Tech directly:

Help Tech GmbH, Brunnenstraße 10, D-72160 Horb, Germany

Phone: +49 7451 55 46 55

Fax: +49 7451 55 46 67

E-Mail: help@helptech.de

Our service representatives will be happy to assist you.

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