

PAC Mate Portable Braille Display User's Guide

Freedom Scientific BLV Group, LLC

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Contents of this page

[Skip past contents](#)

[Introduction](#)

[Warranty Information](#)

[Features](#)

[Item Checklist](#)

[Connecting the Braille Display](#)

[Using the Braille Display](#)

[Braille Study Mode](#)

[The Carrying Case](#)

[Diagnostics and Cleaning Mode](#)

[Environmental Considerations](#)

[Dimensions and Weight](#)

[Federal Communication Commission Notice](#)

[Copyright](#)

Introduction

Congratulations on your purchase of the Freedom Scientific PAC Mate Portable Braille Display. This braille display, available in 20-cell and 40-cell models, is powered by the host computer. Host computers include the PAC Mate or any desktop/laptop computer using JAWS® reading technology. Offering the latest in refreshable braille display technology, each model has fourteen hot keys with 21 on-demand functions. Light in weight and easy to connect, the PAC Mate Portable Braille Display is convenient and easy to use.

Note: When used with versions of JAWS earlier than 6.0 on a desktop computer, there are ten hot keys and 17 on-demand functions.

Warranty Information

Congratulations on your purchase of PAC Mate BX/QX and/or the PAC Mate Portable Braille Display.

The PAC Mate BX/QX and the PAC Mate Portable Braille Display comes with a 12-month warranty against manufacturing defects.

Note: These devices have no user-serviceable components. Any unauthorized attempt to service or replace internal components by opening the case will void the product warranty.

Please call Freedom Scientific Technical Support at (727) 803-8600 for assistance in troubleshooting any problems. If necessary, the technical support specialist will issue a Return Materials Authorization (RMA) number that must be referenced on the outside of the package containing your returned unit. Your PAC Mate will then be exchanged or repaired as needed.

Return your unit to:

Freedom Scientific Inc.
Blind/Low Vision Group
13000 Automobile Blvd
Bldg 1 unit 103
Clearwater, FL 33762

Features

The PAC Mate Portable braille displays include the following features:

- 40-cell and 20-cell Models
- Mini B USB Port
- Cursor Routing Buttons
- Whiz Wheels®
- Right and Left AdvanceButtons
- Braille Display Hot Keys
- VariBraille Dot Firmness
- Compatibility with JAWS

Item Checklist

This package includes the following items. If you find that any of the components listed below are missing, please call Customer Service at (800) 444-4443.

- 20- or 40-cell braille display
- 3-foot USB A - Mini B cable
- 6-foot USB A - Mini B cable
- Carrying case with shoulder strap
- Quick Start Guide in braille
- Companion CD (includes documentation and device drivers)

- Foam Keyboard Stand

Connecting the Braille Display

[PAC Mate QX and BX](#)

[PAC Mate TNS and BNS](#)

[Desktop or Laptop Computer](#)

Note: The PAC Mate Portable Braille Display is powered by the [host computer](#), so no AC power supply is necessary.

PAC Mate QX and BX

To connect the braille display to your X-Series PAC Mate, do the following:

1. Locate the latch on the underside of the PAC Mate with your right hand and pull it toward the right side of the unit. This releases a catch allowing the bottom cover piece to be removed.
2. Grasp the middle of the top cover of the PAC Mate braille display in the indent just above the braille cells. This releases its top cover and you can remove it from the display.
3. Align the newly exposed portion of the braille display with the opening in the BX or QX and push them together until you hear the latch click into place. You now have an integrated braille display unit.

Once you connect your braille display to your PAC Mate, follow the directions in [Using the Braille Display](#). If you would like to configure PAC Mate's Braille Settings, go to the Start Menu, Settings, Personal Page and select Braille Settings. For configuration information, open Help from within the Braille Settings dialog.

In certain situations while using the braille display you may find it necessary to mute the synthesizer on PAC Mate. To do this, press **S CHORD, M** on the BX or **INSERT+S, M** on the QX.

PAC Mate TNS and BNS



USB A Connector



USB Mini B Connector

Connect the mini B end of the USB cable to the mini B port on the left side of the braille display, and follow the directions below that apply to you.

You must set your PAC Mate to USB Host Mode.

[TNS](#)
[BNS](#)

TNS

Press **Windows Key, S** to open the Settings dialog, then press **CTRL+TAB** to move to the System page. Press the letter **U** to select USB Mode Settings and press **ENTER**. In the USB Mode combo box use the **ARROW** Keys to select Host.

With your PAC Mate set to USB Host Mode, connect the other end of the cable to the USB port on your PAC Mate. On the TNS, the USB port is just to the right of the battery on the rear of the unit.

Once you connect your PAC Mate to your braille display, follow the directions in [Using the Braille Display](#). If you would like to configure PAC Mate's Braille Settings, go to the Start Menu, Settings, Personal Page and select Braille Settings. For configuration information, open Help from within the Braille Settings dialog.

In certain situations while using the braille display you may find it necessary to mute the synthesizer on PAC Mate. To do this, press **INSERT+S, M**.

BNS

Press **F3, S** to open the Settings dialog, then press **DOTS 5-6 CHORD** to move to the System page. Press **DOTS 1-3-6** to select USB Mode Settings and press **DOT 8**. In the USB Mode combo box use the cursor cross to select Host.

With your PAC Mate set to USB Host Mode, connect the other end of the cable to the USB port on your PAC Mate. On the BNS, the USB port is on the left side immediately behind the 9-pin serial port.

Once you connect your PAC Mate to your braille display, follow the directions in [Using the Braille Display](#). If you would like to configure PAC Mate's Braille Settings, go to the Start Menu, Settings, Personal Page and select Braille Settings. For configuration information, open Help from within the Braille Settings dialog.

In certain situations while using the braille display you may find it necessary to mute the synthesizer on PAC Mate. To do this, press **S CHORD, M**.

Desktop or Laptop Computer

If you are using JAWS 4.51 or earlier, please follow the instructions below to update JAWS to the newest braille driver. If you are using a version of JAWS that is earlier than 4.02, you cannot use the PAC Mate braille display.

Updating the Braille Driver

1. With the Companion CD in your CD-ROM drive, open Windows Explorer and navigate to the FS Braille Display Driver folder. Open this folder and then open the Driver folder. In the Driver folder select and press **ENTER** on Setup.exe.
2. After Setup finishes, run JAWS and open the Braille Basic Settings dialog.
3. Select PAC Mate 20, or 40 Cells in the Default Braille Display combo box.
4. Restart JAWS.
5. Connect your PAC Mate braille display to the USB port on your computer.
6. A Found New Hardware dialog appears when you connect your PAC Mate Braille Display.

For the Windows XP Operating System, choose the Install the software automatically (Recommended) radio button. Then press **ENTER**. Wait for the system to locate the new software. When this process completes, press **ENTER** again to close the dialog.

For Windows 98, ME, and 2000, you do not have to do anything except wait for this process to finish.

Adding Support During JAWS 5.0 and Later Installation

To add support for the PAC Mate Braille displays during installation of JAWS 5.0 or later, select either the Guided or Advanced setup option. On the Select Components page of setup, use the **SPACEBAR** to check the PAC Mate Display or PAC Mate 20, or 40 Cells selection, depending on the version of JAWS you have installed. On all other pages of setup, select the options you need and/or desire. With JAWS 5.0 or later, your PAC Mate braille display is ready to use once the setup is complete.

Adding Support after JAWS 5.0 and Later Installation

To add support for a PAC Mate braille display after JAWS 5.0 or later is already installed:

1. Connect the PAC Mate braille display to the USB port on your computer.
2. Press **INSERT+J** to activate the JAWS application window.
3. Press **ALT+O, L** to open the Braille Basic Settings dialog.
4. Press **TAB** to move to the Add Braille Display button and press the **SPACEBAR**.
5. Once JAWS setup is open to the Select Braille Components dialog, use the **SPACEBAR** to check the PAC Mate Display or PAC Mate 20, or 40 Cells check box, depending on the version of JAWS you have installed, and then press **ENTER**.

Once setup has installed support for the PAC Mate display and JAWS has restarted, you are ready to use your PAC Mate braille display.

To learn the function of each hot key on the display, press **INSERT+1** on your computer's keyboard, then press each hot key.

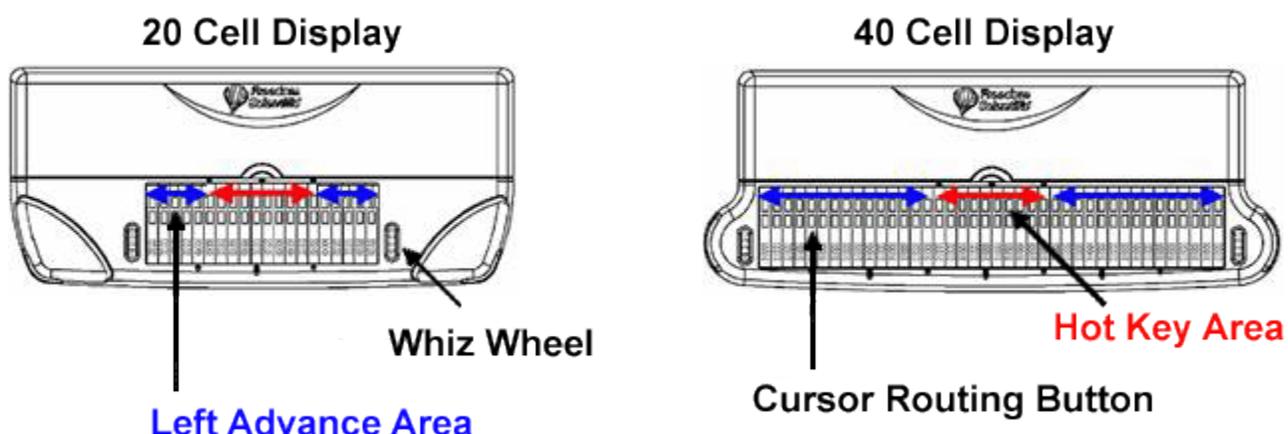
Using the Keyboard / Laptop Stand

The foam keyboard stand positions your keyboard or laptop computer for easy use with the PAC Mate braille display.

To arrange each device, place the foam stand on a table or desk with the cut away area near and facing you. Make sure the cut out for the USB connector is on the left. Slide the braille display into the cut away area. Then place the keyboard or laptop on the foam stand at a comfortable distance for you to read and work.

Using the Braille Display

Braille display settings are quickly accessed with [hot keys](#) and navigation is provided via [Whiz Wheels](#), [cursor routing buttons](#) and [right and left advance buttons](#).



Hot Keys

Hot Keys allow for quick access to various braille display options. The 14 hot keys are in the top row of buttons and consist of seven buttons on either side of the center mark. To help you locate and distinguish each hot key there are markers on the display's surface furthest away from you. The buttons to the left of center are numbered from left to right as 1, 2, 3, 4, 5, 6, and 7 and the buttons to the right of center are numbered as 8, 9, 10, 11, 12, 13, and 14. The remaining buttons to the left and right of the hot keys are the advance buttons.

Note: When used with versions of JAWS earlier than 6.0 on a desktop computer, there are 10 hot keys arranged in groups of 5 each to the left and right of the center mark.

The PAC Mate braille display uses one- and two-layer command sequences to set braille display options. You must toggle into the second layer with hot key 12 before and each time you execute a second layer command. The hot keys are described in the table below.

Note: With JAWS as your desktop screen reader, you can customize the hot keys. To learn more about customizing the hot keys on your braille display, please refer to JAWS Keyboard Manager in the JAWS Help.

Hot Key	First Layer Command	Second Layer Command
1	Turn On Braille Auto Advance Mode (Press any cursor routing button to turn off)	
2	Repeat Last Flash Message(*)	
3	Route braille cursor to active cursor	Change Cursor Shape
4	Active follows braille	Toggle Cursor On/Off
5	Braille follows active	Toggle Compressed Spacing (8 - Unlimited Pixels per Space)
6	Show Top of Active Window or	Route JAWS Cursor to

		Beginning of PC Cursor Structured Line	
	7	SHIFT+TAB	
	8	TAB	
	9	Show Bottom of Active Window or End of Structured Line	Toggle 6 / 8 cell braille
	10	Grade 2 (contracted braille)	Toggle Line, Structured, and Speech Box Modes
	11	Translate Word (Expand grade 2 symbol to edit word)	
	12	Toggle between layers 1 and 2	Display braille layer help
	13	Decrease Auto Advance rate	
	14	Increase Auto Advance rate	

(*) When used with JAWS 6.0 or later

Note: When used with versions of JAWS earlier than 6.0 on a desktop computer, the hot keys numbered 1, 2, 13, and 14 in this table are not available. Beginning with hot key 3 in this table, you should renumber the functions from 1 to 10.

Whiz Wheels

The braille display Whiz Wheels are used to quickly move through files, dialogs and menus. In addition, each wheel can be set independently for added functionality.

Files

In text files, the Whiz wheels are used to move by line, sentence, or paragraph. Pressing down on either Whiz Wheel toggles it between line, sentence, paragraph, or focus panning mode. Rolling the Whiz Wheel towards you moves downward in the text, while rolling the Whiz Wheel away from you moves you upward in the text. With panning mode, rolling the Whiz Wheel one "click" towards you pans right one display length, while rolling the Whiz Wheel one "click" away from you pans left one display length.

Menus

In menus, roll a Whiz Wheel toward you to move down through the menu or roll it away from you to move up through the menu. Press down on the Whiz Wheel to select a menu item.

Dialogs

In dialogs, rolling the wheel towards you moves you forward through the controls, while rolling the wheel away from you moves you backward through the controls. Depending on the control, the Whiz Wheels function differently when pressed.

- In list views, combo boxes, radio buttons, tree views and check box control groups: pressing the Whiz Wheel down puts it in List Mode. In this mode, rolling the Whiz Wheel lets you scroll through the items. To exit List Mode, press down on the Whiz Wheel again.
- For individual check boxes or buttons, pressing the Whiz Wheel down toggles the check box state or activates the button.

Cursor Routing Buttons

Immediately above each braille cell is a button. These are the cursor routing buttons. Press a cursor routing button to move the cursor to that point or to select a link in a Web page or e-mail message. To help you locate and route your cursor there are markers at every fifth cell along the display surface nearest you.

Right and Left Advance Buttons

The right and left advance buttons allow you to move through your files one display length at a time. To advance right, press any of the buttons to the right of the hot key area. To advance left, press any of the buttons to the left of the hot key area.

Braille Study Mode

Braille Study Mode is designed to assist in the teaching and learning of braille. It announces the braille character at the cursor position, speaks and spells the word.

To use Braille Study Mode, do the following:

1. Ensure that your PAC Mate Portable Braille Display is connected to your PAC Mate.
2. Open a contracted braille (Grade 2) file.
 - On The PAC Mate BX, press **S CHORD, B** to turn on Braille Study Mode.
 - On the PAC Mate QX, press **JAWS Key+S, B** to turn on Braille Study Mode.
3. Use the arrow keys to move the cursor to any braille contraction.
4. Press the cursor routing button located directly above the braille contraction. The cursor routing buttons are the row of buttons directly above the Braille cells on the display. The PAC Mate will announce the contraction.
5. Press the hot key button immediately above the cursor routing button you just pressed. The hot key buttons are the row of buttons located immediately behind the cursor routing buttons. The PAC Mate will first pronounce the word of which the contraction is a part and will then spell the word. When spelled, the contraction is not indicated; that is, the word is spelled character by character.

The Carrying Case

The carrying case that is supplied with the PAC Mate BX and QX models is designed to accommodate the PAC Mate with the braille display attached. If you have a PAC Mate BX or QX, you do not need to use separate cases for each unit.

The carrying case that comes with the PAC Mate BNS or TNS is designed for portability and usability of your braille display, and also to protect it from environmental debris and damage.

To place your braille display in the carrying case, unseat the Velcro® on the front flap and unzip the case. Next, slide the display into the case so that the braille cells are exposed by the fitted opening. (Do not forget to zip it closed.) The card holder on the inside front flap can be used for owner id or business cards.

Use the shoulder strap to carry the braille display alone or with a PAC Mate. With the display and PAC Mate secured to the shoulder strap, you can quickly unpack the braille display and PAC Mate to begin work.

To secure the PAC Mate Portable Braille Display and the PAC Mate BNS/TNS to a single shoulder strap:

1. Thread the clasp of one end of the strap through the eye of one of the braille display's carrying case rings.

2. Then attach the strap to the carrying rings on the PAC Mate BNS unit. On the PAC Mate TNS unit, attach the strap to the carrying posts.
3. Follow through with the other end of the shoulder strap.

The braille display and PAC Mate should carry side by side evenly.



When you are ready to work, unpack the braille display and PAC Mate as follows:

1. Set the braille display and PAC Mate on your lap or desk so that the Braille display is closest to you.
2. Open the flaps on each case.
3. Then secure the Velcro on the braille display case to the Velcro on the PAC Mate case.
4. (Optional) You may fold the flaps underneath the units and seat the Velcro of each flap to one another so they are secured and out of the way.
5. [Connect your cable](#) and you're ready to go!

Diagnostics and Cleaning Mode

The PAC Mate Portable Braille Displays have built-in diagnostic tests for the routing buttons, braille cells, and Whiz Wheels. In addition, there is a cleaning mode so you can clean the pins of each cell.

[Entering Diagnostics Mode](#)

[Routing Button Test](#)

[Whiz Wheel Test](#)

[Cleaning the Display](#)

Entering Diagnostics Mode

With your PAC Mate turned on, hold down the two buttons on the left end of the display and connect the USB cable to the PAC Mate. When connected, release both buttons simultaneously.

Note: With the braille display attached to the PAC Mate BX or QX, you can enter diagnostics mode by holding down these two buttons while you power the PAC Mate on.

Routing Button Test

The routing button test ensures that the routing buttons and the braille display work properly. To test, press each button of the top row. The top four pins in the cell of that button should display. Likewise, press each button of the bottom row. The bottom four pins in the cell of that button should display.

Whiz Wheel Test

This test ensures that the Whiz Wheels work properly. To test, rotate each wheel up. The display should read LU or RU depending on the wheel. Similarly, rotate each wheel down and the display should read LD or RD. Last, press down on each wheel and the display should read LW or RW.

Cleaning the Display

The cleaning mode allows you to clean your braille display of debris. To enter cleaning mode, turn on your PAC Mate, simultaneously hold down the two routing buttons on the right end of the display and connect the USB cable to the PAC Mate. Then release both buttons. When you do this, all pins of each cell should display.

Use a soft lint-free cloth dampened with 90% isopropyl alcohol or pre-moistened wipes used for cleaning electronic devices and gently wipe the pins. No other cleaning agent should be used. Disconnect the cable to recess the pins and gently wipe the display again. It may be necessary to repeat this procedure 5 or 6 times to clean your display properly.

Environmental Considerations

Storage

The unit is designed to survive storage temperatures of 5°F to 140°F (-15° to 60°C) with 5% to 90% humidity non-condensing.

Operating

The unit is designed to operate in a Temperature range from 32°F to 104°F (0°C to 40°C) with 20% to 98% humidity non-condensing.

Dimensions & Weight

20-Cell Display

Dimensions: 4.8 inches x 11 inches x 1.53 inches
(12.19 cm x 27.94 cm x 3.89 cm)

Weight: 1 lb. 12 oz. (0.79 kg)

40-Cell Display

Dimensions: 4.8 inches x 12.5 inches x 1.53 inches
(12.19 cm x 31.75 cm x 3.89 cm)

Weight: 2 lb. 3 oz. (0.99 kg)

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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