

JAWS Driver for BAUM Braille Displays

Driver Version 15.3

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About BAUM JAWS Treiber 15.3 / System requirements

Standard JAWS installations do not provide the latest drivers for BAUM made braille displays. The old drivers included in JAWS do neither cover all BAUM displays nor do they provide all the functionality for proper use of the braille display.

We strongly recommend installation of this new JAWS driver for BAUM made braille displays which is certified by Freedom Scientific.

Supported JAWS-Versions

This driver is suitable for JAWS version 11 and higher versions.

Supported Operating systems

- Windows 10 32 Bit / 64 Bit
- Windows 8.x, 32 Bit / 64 Bit
- Windows 7, 32 Bit / 64 Bit
- Windows VISTA, 32 Bit / 64 Bit
- Windows XP 32 Bit

Supported braille displays

- AudioData BM (32 Bit Windows only)
- AudioData B2K (32 Bit Windows only)
- BAUM SuperVario (incl. Pocket Vario)
- BAUM SuperVario2
- BAUM VarioConnect (incl. Conny)
- BAUM VarioPro
- BAUM Pronto!
- BAUM VarioUltra
- HumanWare Brailiant (BAUM made models)
- HumanWare BrailleConnect (BAUM made models)

Installation and Setup

Note: Make sure there is only one version of JAWS installed on your PC. If you have more than one version installed on your PC, the driver may not be able to install correctly. See Appendix A on how to remove old versions of JAWS.

JAWS 11 or higher must be installed before you run the driver setup program.

Run the installer and follow the instructions given. The installer searches for a suitable installation of JAWS and installs the driver into the appropriate location. If the installer does not find a compatible JAWS installation, it exits with an error message.

The driver installs a device called "BaumUniversal USB" into JAWS and makes it the default braille display.

Note – JAWS 15 (16)

This JAWS-Version install an old driver for BAUM devices which unfortunately cannot be removed. This causes the effect, that the list shows the braille displays twice! Please be very careful to select the right braille display with the new driver when manually selecting one. Please follow these rules:

- If connection is made via USB, select the Universal-Display named „BAUM Universal USB".
Do **not** select: „BaumUni BrailleDisplay"!
- If connection is made via BlueTooth, select the name that describes your braille display best. For example „BAUM SuperVario 80" uses the new driver, whereas „BAUM SuperVario BrailleDisplay" uses the old one.
- If you encounter problems after waking up from suspend, please check if you selected the right device.

Connecting through USB

If your braille display is connected via USB, you do not need to enter a COM port number. The driver installs a device called "BaumUniversal USB" into JAWS and makes it the default display. You simply have to restart JAWS in order to make it work.

Select the Universal-Display named „BAUM Universal USB".
Do **not** select: „BaumUni BrailleDisplay"!

The driver setup program automatically copies the USB device drivers for **BAUM USB braille displays** to your PC. They will be installed once the braille display is connected. (SuperVario, VarioConnect, VarioPro, Brailiant, BrailleConnect)

USB device drivers for **AUDIODATA braille displays** must be installed prior to driver setup. They are only available for 32 bit Windows. Installation instructions are available from chapter 2.4 of COBRA manual:

http://www.baum.de/cobra/help/index.php?lid=1033&topic=install_audiodata

USB HID braille displays do not require a device driver. Windows will recognize them automatically. (SuperVario2, Pronto!, VarioUltra).

Connecting through BlueTooth

Before you are able to use a display over BlueTooth, check the following requirements:

- Is BlueTooth activated in the setup menu of the braille display?
- Is the device paired connected to the PC?
- Pronto! onl: Is the application "Pronto as Braille display" setup for BlueTooth and running?
- VarioUltra only: Has VarioUltra been paired in notetaker mode and is it now in braille display mode and ready to be used.

To connect the display to the PC, search for your device in the BlueTooth neighbourhood. If you find it, connect to it. In the properties of the connected device, mostly under "Services", you find the virtual COM-Port number to which the device is connected to. Make a note of it.

In the JAWS Braille settings page choose to modify the port settings and set the port to the port of your device.

After a restart of JAWS the device should be operable now.

We recommend to use the Microsoft Bluetooth Stack. This stack ist part of Windows XP ServicePack 2 and all later Windows versions. Re-establishing a broken Bluetooth connection works best with the Microsoft stack. Please read Appendix B for more information about Bluetooth trouble shooting.

- If connection is made via BlueTooth, select the name that describes your braille display best. For example „BAUM SuperVario 80“ uses the new driver, whereas „BAUM SuperVario BrailleDisplay“ uses the old one.
- If you encounter problems after waking up from suspend, please check if you selected the right device.

Note on VarioUltra: If VarioUltra is paired to a PC, Windows installs 4 virtual COM ports (one COM port for each Bluetooth channel). However none of them is activated by default. You have to do this manually in the properties of the paired Bluetooth device. Usually you will find 4 checkboxes there. Only if one of these check boxes is checked, an active virtual COM port will be generated which then must be assigned to VarioUltra in the JAWS braille display manager.

Then restart JAWS. If not already done, you must now select VarioUltra as standard braille display and restart JAWS once more.

Make sure VarioUltra is not in emulation mode. It must be used and seen as "VarioUltra". If you want to use an emulation for any reason, make sure to select the appropriate device in JAWS braille manager and activate it as standard braille display.

Serial port connections:

Some devices, like SuperVario, Brailiant and Pronto! provide the ability to connect to the PC through a standard serial interface (COM port). These connections are not supported by the driver due to restrictions by JAWS! SuperVario and Brailiant displays may be connected through USB and BlueTooth, for BAUM Pronto! BlueTooth and USB HID connections are supported.

For older braille displays, which only support COM ports, an older driver is available which covers JAWS up to version 10.

Key assignment of BAUM braille displays

This chapter first describes the buttons on each braille display and afterwards provides a list of predefined key assignments. You may change those key assignments at any time in the JAWS settings.

BAUM SuperVario / SuperVario2 / HumanWare Brailiant

These braille displays have a display length of 24, 32, 40, 64 or 80 Braille cells with a stripe of cursor routing keys above. On both sides of the display there is a group of 3 "D"-Keys.

SuperVario / Brailiant buttons

Name	Location
D1	At the top of the left keygroup
D2	Middle of the left keygroup
D3	Bottom of the left keygroup
D4	At the top of the right keygroup
D5	Middle of the right keygroup
D6	Bottom of the right keygroup
Cursor Routing	Above the display there is one line of routing keys. It is assigned to the JAWS cursor routing functionality.

Brailiant key assignments

Name	Assignment
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
D1+D2	BrailleTop
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D5	BrailleMovesActive
D3+D6	BottomOfFile
D4+D6	BrailleTab
D5+D6	BrailleBottom
D1+D2+D5	KeyboardHelp
D1+D3+D4	MenuBar
D1+D4+D5	MinimizeAllApps
D2+D3+D5	BrailleToggle8DOTS
D2+D4+D5	JAWSWindow
D1+D2+D4+D5	BrailleGrade2Translation
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab

Name	Assignment
D2+D3+D5+D6	ListTaskTrayIcons

SuperVario key assignments

Name	Assignment
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D1+Routing	BrailleDescribeFont
D2+D4	RouteJawsCursorToPc
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D6	BottomOfFile
D4+D5	JAWSDelete
D4+D6	BrailleTab
D5+D6	BrailleBottom
D1+D2+D3	SelectALink
D1+D2+D4	SelectAFrame
D1+D2+D5	KeyboardHelp
D1+D3+D4	MenuBar
D1+D3+D5	OpenListBox
D1+D3+D6	MuteSynthesizer
D1+D4+D5	MinimizeAllApps
D2+D3+D4	StartJAWSTaskList
D2+D3+D5	BrailleToggle8DOTS
D2+D3+D6	SelectaHeading
D2+D4+D5	JAWSWindow
D2+D4+D6	CloseListBox
D2+D5+D6	CloseDocumentWindow
D3+D5+D6	HotKeyHelp
D1+D2+D3+D4	PreviousDocumentWindow
D1+D2+D3+D5	BrailleAutoAdvance
D1+D2+D3+D6	SetBrailleVerbosity
D1+D2+D4+D5	BrailleGrade2Translation
D1+D2+D5+D6	BrailleGrade2ExpandCurrentWord
D1+D3+D4+D5	NextDocumentWindow
D1+D3+D4+D6	BrailleTurnMarkingOff
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab
D2+D3+D4+D6	ReadBoxInTabOrder
D2+D3+D5+D6	ListTaskTrayIcons
D2+D4+D5+D6	WindowKeysHelp

BAUM VarioConnect / HumanWare BrailleConnect

This is a family of Braille displays which are available in different module counts (12, 24, 32, 40). In addition to the "D"-Keys of the SuperVario family they also have Braille input keys, a NaviStick control and 4 S-buttons at the front. They connect over USB and BlueTooth.

VarioConnect / BrailleConnect buttons

Name	Location
"D"-Buttons	Those keys are located in two groups of three keys left and right of the display.
D1	At the top of the left keygroup
D2	Middle of the left keygroup
D3	Bottom of the left keygroup
D4	At the top of the right keygroup
D5	Middle of the right keygroup
D6	Bottom of the right keygroup
Braille input keys	Those keys are designed like a Braille typewriter keyboard. The keygroup has 8 keys on top of the display arranged "on your finger tips". Also both space keys on the front of the device where your thumbs rest belong to this key group. Those keys generate keyboard input, if this is activated in JAWS.
Dot 1	Left forefinger
Dot 2	Left middle finger
Dot 3	Left ring finger
Dot 4	Right forefinger
Dot 5	Right middle finger
Dot 6	Right ring finger
Dot 7	Left little finger
Dot 8	Right little finger
"S"-Buttons	Two groups of two small round buttons located on the outer sides of the front edge.
S1	Left outer button
S2	Left inner button
S3	Right inner button
S4	Right outer button
NaviStick	Joystick-similar control located on the middle of the front edge. Under JAWS the events of this control are translated into key events.
Left	
Right	
Up	
Down	
Enter	
Cursor Routing	Above the display there is one line of cursor routing keys. It is assigned to the JAWS cursor routing functionality.

BrailleConnect key assignments

Name	Assignment
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine

Name	Assignment
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
Dot 7	JAWSBackspace
Dot 8	BrailleEnter
S1	BrailleShiftTab
S2	BrailleTab
S3	BrailleAltTab
S4	NextDocumentWindow
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D1+Routing	BrailleDescribeFont
D2+D4	RouteJawsCursorToPc
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D6	BottomOfFile
D3+Routing	BrailleSelectText
D4+D5	JAWSDelete
D4+D6	BrailleTab
D5+D6	BrailleBottom
S1+S2	DecreaseBrailleAutoAdvanceSpeed
S1+S3	GoBack
S1+S4	ActiveMovesBraille
S2+S3	BrailleMovesActive
S2+S4	GoForward
S3+S4	IncreaseBrailleAutoAdvanceSpeed
D1+D2+D3	SelectALink
D1+D2+D4	SelectAFrame
D1+D2+D5	KeyboardHelp
D1+D3+D4	MenuBar
D1+D3+D5	OpenListBox
D1+D3+D6	MuteSynthesizer
D1+D4+D5	MinimizeAllApps
D2+D3+D4	StartJAWSTaskList
D2+D3+D5	BrailleToggle8DOTS
D2+D3+D6	SelectaHeading
D2+D4+D5	JawsWindow
D2+D4+D6	CloseListBox
D2+D5+D6	CloseDocumentWindow
D3+D5+D6	HotKeyHelp
D1+D2+D3+D4	PreviousDocumentWindow
D1+D2+D3+D5	BrailleAutoAdvance
D1+D2+D3+D6	SetBrailleVerbosity
D1+D2+D4+D5	BrailleGrade2Translation
D1+D2+D5+D6	BrailleGrade2ExpandCurrentWord
D1+D3+D4+D5	NextDocumentWindow
D1+D3+D4+D6	BrailleTurnMarkingOff

Name	Assignment
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab
D2+D3+D4+D6	ReadBoxInTabOrder
D2+D3+D5+D6	ListTaskTrayIcons
D2+D4+D5+D6	WindowKeysHelp
Up	BraillePriorLine
Down	BrailleNextLine
Left	BraillePanLeft
Right	BraillePanRight
Enter	BrailleEnter

VarioConnect key assignments

Taste	Funktion
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
Dot 7	JAWSBackspace
Dot 8	BrailleEnter
S1	BrailleShiftTab
S2	BrailleTab
S3	BrailleAltTab
S4	NextDocumentWindow
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D1+Routing	BrailleDescribeFont
D2+D4	RouteJawsCursorToPC
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D6	BottomOfFile
D3+Routing	BrailleSelectText
D4+D5	JAWSDelete
D4+D6	BrailleTab
D5+D6	BrailleBottom
S1+S2	DecreaseBrailleAutoAdvanceSpeed
S1+S3	GoBack
S1+S4	ActiveMovesBraille
S2+S3	BrailleMovesActive
S2+S4	GoForward
S3+S4	IncreaseBrailleAutoAdvanceSpeed
D1+D2+D3	SelectALink
D1+D2+D4	SelectAFrame
D1+D2+D5	KeyboardHelp
D1+D3+D4	MenuBar

<i>Taste</i>	<i>Funktion</i>
D1+D3+D5	OpenListBox
D1+D3+D6	MuteSynthesizer
D1+D4+D5	MinimizeAllApps
D2+D3+D4	StartJAWSTaskList
D2+D3+D5	BrailleToggle8DOTS
D2+D3+D6	SelectaHeading
D2+D4+D5	JawsWindow
D2+D4+D6	CloseListBox
D2+D5+D6	CloseDocumentWindow
D3+D5+D6	HotKeyHelp
D1+D2+D3+D4	PreviousDocumentWindow
D1+D2+D3+D5	BrailleAutoAdvance
D1+D2+D3+D6	SetBrailleVerbosity
D1+D2+D4+D5	BrailleGrade2Translation
D1+D2+D5+D6	BrailleGrade2ExpandCurrentWord
D1+D3+D4+D5	NextDocumentWindow
D1+D3+D4+D6	BrailleTurnMarkingOff
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab
D2+D3+D4+D6	ReadBoxInTabOrder
D2+D3+D5+D6	ListTaskTrayIcons
D2+D4+D5+D6	WindowKeysHelp
Up	BraillePriorLine
Down	BrailleNextLine
Left	BraillePanLeft
Right	BraillePanRight
Enter	BrailleEnter

BAUM VarioUltra

This product family is comprised of braille displays of different lengths (20, 40). In addition to SuperVarios D-buttons, it also has a braille keyboard, a NaviStick and 4 S-buttons at the front.

When using it, make sure the keyboard lock is in unlock position and the VarioUltra is in braille display mode.

VarioUltra can be connected via USB HID or Bluetooth. Pairing over Bluetooth must be done in Notetaker Mode.

VarioUltra buttons

Name	Location
"D"-Buttons	Those keys are located in two groups of three keys left and right of the display.
D1	At the top of the left keygroup
D2	Middle of the left keygroup
D3	Bottom of the left keygroup
D4	At the top of the right keygroup
D5	Middle of the right keygroup
D6	Bottom of the right keygroup
Braille input keys	Those keys are designed like a Braille typewriter keyboard. The keygroup has 8 keys on top of the display arranged "on your finger tips". Also both space keys on the front of the device where your thumbs rest belong to this key group. Those keys generate keyboard input, if this is activated in JAWS.
Dot 1	Left forefinger
Dot 2	Left middle finger
Dot 3	Left ring finger
Dot 4	Right forefinger
Dot 5	Right middle finger
Dot 6	Right ring finger
Dot 7	Left little finger
Dot 8	Right little finger
"S"-Buttons	Two groups of two small round buttons located on the outer sides of the front edge.
S1	Left outer button
S2	Left inner button
S3	Right inner button
S4	Right outer button
NaviStick	Joystick-similar control located on the middle of the front edge. Under JAWS the events of this control are translated into key events.
Left	
Right	
Up	
Down	
Enter	

VarioUltra key assignments

key	assignment
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
Dot 7	JAWSBackspace
Dot 8	BrailleEnter
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D1+Routing	BrailleDescribeFont
D2+D4	RouteJawsCursorToPC
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D6	BottomOfFile
D3+Routing	BrailleSelectText
D4+D5	JAWSDelete
D4+D6	BrailleTab
D5+D6	BrailleBottom
D1+D2+D3	SelectALink
D1+D2+D4	SelectAFrame
D1+D2+D5	KeyboardHelp
D1+D3+D4	MenuBar
D1+D3+D5	OpenListBox
D1+D3+D6	MuteSynthesizer
D1+D4+D5	MinimizeAllApps
D2+D3+D4	StartJAWSTaskList
D2+D3+D5	BrailleToggle8DOTS
D2+D3+D6	SelectaHeading
D2+D4+D5	JawsWindow
D2+D4+D6	CloseListBox
D2+D5+D6	CloseDocumentWindow
D3+D5+D6	HotKeyHelp
D1+D2+D3+D4	PreviousDocumentWindow
D1+D2+D3+D5	BrailleAutoAdvance
D1+D2+D3+D6	SetBrailleVerbosity
D1+D2+D4+D5	BrailleGrade2Translation
D1+D2+D5+D6	BrailleGrade2ExpandCurrentWord
D1+D3+D4+D5	NextDocumentWindow
D1+D3+D4+D6	BrailleTurnMarkingOff
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab
D2+D3+D4+D6	ReadBoxInTabOrder
D2+D3+D5+D6	ListTaskTrayIcons
D2+D4+D5+D6	WindowKeysHelp
Up	BraillePriorLine

<i>key</i>	<i>assignment</i>
Down	BrailleNextLine
Left	BraillePanLeft
Right	BraillePanRight
Enter	BrailleEnter

BAUM Pronto!

BAUM Pronto! is a family of organizers. Two of them, Pronto! 18 and Pronto! 40, have a Braille display that can be used for Braille output by a screen reader. This driver does only support Bluetooth or USB HID connection.

To use Pronto! as Braille display over Bluetooth, please do the following:

- Make sure Bluetooth is activated in the Pronto!-Menu under Settings.
- Start the "Pronto as Brailledisplay" application.
- Change to your PC, browse the Bluetooth neighbourhood for devices.
- Connect to Pronto! Doing so, you have to enter a key on both sides to bind both together.
- The Bluetooth wizard on the PC tells you that the device is connected and informs you about assigned COM ports. Remember the name of the outgoing port.
- Under JAWS, go to the Braille dialog to modify the port settings and enter the new port.
- After a restart of JAWS Pronto! should now work as a Braille display.

If you have started Pronto! via cold boot (S154 on Pronto! 18, Powerbutton on Pronto! 40), you may encounter a problem after starting the "Pronto as BrailleDisplay" application. After selecting Bluetooth as connection, you find an undefined state where neither "Start Bluetooth" nor "Terminate" is activated. In this case you have to terminate the application and start it again from main menu.

BAUM Pronto! buttons

Name	Location
"D"-Buttons	Those keys are located in two groups of three keys left and right of the display.
D1	At the top of the left keygroup
D2	Middle of the left keygroup
D3	Bottom of the left keygroup
D4	At the top of the right keygroup
D5	Middle of the right keygroup
D6	Bottom of the right keygroup
Braille input keys	Those keys are designed like a Braille typewriter keyboard. The key group has 8 keys on top of the display arranged "on your finger tips". Also both space keys on the front of the device belong to this key group. Those keys generate keyboard input, if this is activated in JAWS.
Dot 1	Left forefinger
Dot 2	Left middle finger
Dot 3	Left ring finger
Dot 4	Right forefinger
Dot 5	Right middle finger
Dot 6	Right ring finger
Dot 7	Left little finger
Dot 8	Right little finger
"S"-Buttons	Two groups of two round buttons located on the outer sides of

Name	Location
	the front edge. Some of them are used by Pronto internally also while the Braille display application is running, therefore no assignments for this keys are done.
S1	Left outer button
S2	Left inner button
S3	Right inner button
S4	Right outer button
NaviStick	Joystick-similar control. On Pronto! 18 it is located in the middle of the front side beneath both space keys. On Pronto! 40 it is on the front edge between both space keys. Under JAWS the events of this control are translated into key events.
Left	
Right	
Up	
Down	
Enter	
Cursor Routing	Above the display there is one line of routing keys. It is assigned to the JAWS cursor routing functionality.

BAUM Pronto! key assignments

key	assignment
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D1+Routing	BrailleDescribeFont
D2+D4	RouteJawsCursorToPC
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D6	BottomOfFile
D3+Routing	BrailleSelectText
D4+D5	JAWSDelete
D4+D6	BrailleTab
D5+D6	BrailleBottom
D1+D2+D3	SelectALink
D1+D2+D4	SelectAFrame
D1+D2+D5	KeyboardHelp
D1+D3+D4	MenuBar
D1+D3+D5	OpenListBox
D1+D3+D6	MuteSynthesizer
D1+D4+D5	MinimizeAllApps
D2+D3+D4	StartJAWSTaskList
D2+D3+D5	BrailleToggle8Dots

key	assignment
D2+D3+D6	SelectaHeading
D2+D4+D5	JawsWindow
D2+D4+D6	CloseListBox
D2+D5+D6	CloseDocumentWindow
D3+D5+D6	HotKeyHelp
D1+D2+D3+D4	PreviousDocumentWindow
D1+D2+D3+D5	BrailleAutoAdvance
D1+D2+D3+D6	SetBrailleVerbosity
D1+D2+D4+D5	BrailleGrade2Translation
D1+D3+D4+D5	NextDocumentWindow
D1+D3+D4+D6	BrailleTurnMarkingOff
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab
D2+D3+D4+D6	ReadBoxInTabOrder
D2+D3+D5+D6	ListTaskTrayIcons
D2+D4+D5+D6	WindowKeysHelp
NaviStickDown	BrailleNextLine
NaviStickPush	BrailleEnter
NaviStickLeft	BraillePanLeft
NaviStickRight	BraillePanRight
NaviStickUp	BraillePriorLine
Dot 8	BrailleEnter
Dot 7	JAWSBackspace

BAUM VarioPro

The Base-Module

The base module of the VARIO Pro has a Braille display with 80 or 64 cells. It has 6 "D"-Keys, three at the left and 3 at the right side of the display. In front of the display there are 3 or 4 RollBars which can be used to move up and down, and they can also be pushed.

Base module buttons

<i>Name</i>	<i>Location</i>
D1	At the top of the left keygroup
D2	Middle of the left keygroup
D3	Bottom of the left keygroup
D4	At the top of the right keygroup
D5	Middle of the right keygroup
D6	Bottom of the right keygroup
Rollbar1	Push of the left rollbar control
Rollbar1 up	Moving up the left rollbar control
Rollbar1 down	Moving down the left rollbar control
Rollbar2	Push of the middle / middle left rollbar control
Rollbar2 up	Moving up the middle / middle left rollbar control
Rollbar2 down	Moving down the middle / middle left rollbar control
Rollbar3	Push of the right / middle right rollbar control
Rollbar3 up	Moving up the right / middle right rollbar control
Rollbar3 down	Moving down the right / middle right rollbar control
Rollbar4	Push of the right rollbar control (only Vario Pro 80)
Rollbar4 up	Moving up the right rollbar control (only Vario Pro 80)
Rollbar4 down	Moving down the right rollbar control (only Vario Pro 80)
Cursor Routing	Above the display there is one line of cursor routing keys. It is assigned to the JAWS cursor routing functionality.

The status module

This additional module is often mounted on the left or the right side of a VarioPro device. It has got 4 Braille modules with routing keys above and 4 Control-Buttons, arranged in a square.

Status module buttons

<i>Name / Group</i>	<i>Location</i>
Control Keys	A square of 4 Buttons just above the display stripe
C1	Upper left button
C2	Upper right button
C3	Lower left button
C4	Lower right button
Routing keys (Sm Bcr1 – Sm Bcr4)	The routing keys above the Braille display are translated to JAWS keys named "Sm Bcr1" to "Sm Bcr4".

The phone module

That module is designed for telephony applications. It has got 12 Braille cells, a numeric key pad arranged like the keys on a phone, 4 Control-Keys and a rollbar control.

The numeric keypad

Table showing the formation of the numeric keypad. The left three columns are building the phone keypad, the right column has got 4 MultiPurpose keys called "A" to "D".

Num1	Num2	Num3	NumA
Num4	Num5	Num6	NumB
Num7	Num8	Num9	NumC
NumStern	Num0	NumPlus	NumD

Other keys buttons

Name	Location
Control Keys	The 4 little buttons above the numeric keypad
Tm C1	Left
Tm C2	Middle left
Tm C3	Middle right
Tm C4	Right
Rollbar control	
Tm Rollbar	Rollbar push
Tm Rollbar up	Moving the Rollbar up
Tm Rollbar down	Moving the Rollbar down
Routing keys Tm Bcr1 – Tm Bcr12	The routing keys above the Braille display are translated to JAWS keys named "Tm Bcr1" to "Tm Bcr12".

The TASO module

The TASO module is a module with a numeric keypad, a Slider-Control (Y-direction), a jog wheel and three control buttons. Optionally is a X-positioning slider connected.

The module can be connected to a VarioPro device or can be operated standalone with an own USB connection.

TASO numeric keypad

This table shows the layout of the TASO numeric keypad. The keys arrangement follows mostly the numeric keypad on the PC.

Num7	Num8	Num9
Num4	Num5	Num6
Num1	Num2	Num3
NumStern	Num0	NumPlus

Other TASO buttons

Name / Group	Location
Control keys	A group of three keys over the numeric keypad and under the jog wheel
Taso C1	Left key
Taso C2	Middle key
Taso C3	Right key
Wheel	Push event of the Wheel
Wheel Left	Wheel turned left
Wheel Right	Wheel turned right
Slider(s)	One Y position slider and optionally a X positioning slider, both with a push button.
ZsUp	Moving up the Y Slider
ZsDown	Moving down the Y Slider
ZsButton	Button pushed
QsUp	Moving up the X Slider
QsDown	Moving down the X Slider
QsButton	Button pushed

The voice module

The voice module is created for easy control of voice parameters with linear potentiometer controls and some additional key groups. It can be attached to a VarioPro or can be operated standalone over a USB connection. This module is not very common.

Voice module buttons

<i>Name / Group</i>	<i>Location</i>
"K"-Keys	Group of 4 square buttons on the front edge of the module
Vm K1	Left outer key, marked with a slash
Vm K2	Left key, marked with a backslash
Vm K3	Right key, marked with a horizontal line
Vm K4	Right outer key, marked with a vertical line
Cursor cross	A group of five keys arranged like a cross located above the "K"-Keys and under the potentiometer controls
Left	
Right	
Up	
Down	
Click	Middle key
Control buttons	Group of three buttons located above the poti controls.
Vm C1	Left button
Vm C2	Middle button
Vm C3	Right button
Poti controls	In the middle of the module there is a set of 4 potentiometers to adjust voice parameters.

The Audio module

The audio module is created for easy access to audio applications. It has got a Rollbar at the front edge, a set of five Keys and six linear potentiometer controls. It is operated blocked together with a VarioPro base module or as standalone unit connected via USB.

Audio module buttons

Name / Group	Location
"K"-Keys	Group of five keys located just underneath the vertical linear potentiometer control.
Am K1	Outer left key, marked with a slash
Am K2	Left key, marked with a backslash
Am K3	Middle key, marked with a vertical line
Am K4	Right key, marked with a horizontal line
Am K5	Outer right key, marked with a dot
Am Rollbar	Rollbar push event
Am Rollbar up	Moving up the Rollbar control
Am Rollbar down	Moving down the Rollbar control
AudioModule linear potentiometer controls	Five vertical linear potentiometer controls and one horizontal linear potentiometer control.

VarioPro key assignments

Name	Assignment
D1	BraillePriorLine
D2	BraillePanLeft
D3	BrailleNextLine
D4	BrailleToggleCursor
D5	BraillePanRight
D6	RouteBrailleToActiveCursor
D1+D3	BrailleShiftTab
D1+D4	TopOfFile
D1+D5	BrailleEscape
D1+Routing	BrailleDescribeFont
D2+D4	RouteJawsCursorToPC
D2+D5	BrailleToggleMode
D2+D6	BrailleEnter
D3+D4	StartMenu
D3+D6	BottomOfFile
D3+Routing	BrailleSelectText
D4+D5	JAWSDelete
D4+D6	BrailleTab
D5+D6	BrailleBottom
D1+D2+D3	SelectALink
D1+D2+D4	SelectAFrame
D1+D2+D5	HotKeyHelp
D1+D3+D4	MenuBar
D1+D3+D5	OpenListBox
D1+D3+D6	MuteSynthesizer
D1+D4+D5	MinimizeAllApps
D2+D3+D4	StartJAWSTaskList
D2+D3+D5	BrailleToggle8Dots
D2+D3+D6	SelectaHeading
D2+D4+D5	JawsWindow
D2+D4+D6	CloseListBox
D2+D5+D6	CloseDocumentWindow
D3+D5+D6	HotKeyHelp
D1+D2+D3+D4	PreviousDocumentWindow
D1+D2+D3+D5	BrailleAutoAdvance
D1+D2+D3+D6	SetBrailleVerbosity
D1+D2+D4+D5	BrailleGrade2Translation
D1+D2+D5+D6	BrailleGrade2ExpandCurrentWord
D1+D3+D4+D5	NextDocumentWindow
D1+D3+D4+D6	BrailleTurnMarkingOff
D1+D3+D5+D6	SaySystemTime
D2+D3+D4+D5	BrailleAltTab
D2+D3+D4+D6	ReadBoxInTabOrder
D2+D3+D5+D6	ListTaskTrayIcons
D2+D4+D5+D6	WindowKeysHelp
Rollbar VarioPro base outer left	
RollBar1 up	BraillePriorLine

Name	Assignment
RollBar1 down	BrailleNextLine
RollBar1	SayLine
D1+RollBar1	JAWSFind
D1+RollBar1 down	JAWSFindNext
D1+RollBar1 up	JAWSFindPrior
D2+RollBar1 down	JAWSPageDown
D2+RollBar1 up	JAWSPageUp
D3+RollBar1 down	DecreaseVoiceVolume
D3+RollBar1 up	IncreaseVoiceVolume
Rollbar VarioPro Base inner left or mid (VP64)	
RollBar2 up	LeftWhizWheelUp
RollBar2 down	LeftWhizWheelDown
RollBar2	PressLeftWhizWheel
D1+RollBar2 down	DownCell
D1+RollBar2 up	UpCell
D2+RollBar2 down	NextCell
D2+RollBar2 up	PriorCell
D3+RollBar2 down	DecreaseVoiceRate
D3+RollBar2 up	IncreaseVoiceRate
Rollbar Vario Pro base inner left (VarioPro 80) or right (Vario Pro 64)	
RollBar3 up	BraillePriorLine
RollBar3 down	BrailleNextLine
RollBar3	RouteBrailleToActiveCursor
D3+RollBar3 down	DecreaseVoicePitch
D3+RollBar3 up	IncreaseVoicePitch
D4+RollBar3 down	MoveToNextSameElement
D4+RollBar3 up	MoveToPriorSameElement
D5+RollBar3 down	MoveToNextHeading
D5+RollBar3 up	MoveToPriorHeading
D6+RollBar3	SelectAPlaceMarker
D6+RollBar3 down	MoveToNextPlaceMarker
D6+RollBar3 up	MoveToPriorPlaceMarker
Rollbar Vario Pro base outer left (Vario Pro 80)	
RollBar4 up	ShiftTab
RollBar4 down	Tab
RollBar4	SayLine
D4+RollBar4 down	MoveToNextSameElement
D4+RollBar4 up	MoveToPriorSameElement
D5+RollBar4 down	MoveToNextDifferentElement
D5+RollBar4 up	MoveToPriorDifferentElement
D6+RollBar4	SelectAPlaceMarker
D6+RollBar4 down	MoveToNextPlaceMarker
D6+RollBar4 up	MoveToPriorPlaceMarker
Cursorcross of the Vario Pro VoiceModule	
Up	SayPriorLinePCCursor
Down	SayNextLinePCCursor
Left	BraillePanLeft
Right	BraillePanRight
Click	SayLine

Name	Assignment
Control buttons of the Vario Pro StatusModule	
C1	BrailleToggle8Dots
C2	BrailleToggleMode
C3	BrailleToggleCharactersAndAttributes
C4	SetBrailleVerbosity
Control buttons of the other modules (Vm = VoiceModule, Am = AudioModule, Tm = PhoneModule, Taso = TasoModule)	
Vm C1	BrailleToggle8Dots
Vm C2	BrailleToggleMode
Vm C3	BrailleToggleCharactersAndAttributes
Tm C1	BrailleToggle8Dots
Tm C2	BrailleToggleMode
Tm C3	BrailleToggleCharactersAndAttributes
Tm C4	SetBrailleVerbosity
Taso C1	BrailleToggle8Dots
Taso C2	BrailleToggleMode
Taso C3	BrailleToggleCharactersAndAttributes

AUDIODATA braille displays

The AUDIODATA system is a modular system where each module has its own USB connection. Commonly it consists of a Braille display and a controller box with a numeric keypad.

AUDIODATA BM80 / 40 / 24

Braille display with 80, 40 or 24 Cells. Additionally the devices has got 6 "B"-Keys right and left of the display ,6 "D"-Keys on the front side and two NaviStick controls right and left of the display. The "BM80" and "BM40" have got a slider and FrontCross positioning controls.

BM display buttons

Name/Group	Location
"B"-Keys	Two keygroups right and left of the cursor routing keys. The numbering runs from left to the right.
B1	Left group, left key
B2	Left group, middle key
B3	Left group, right key
B4	Right group, left key
B5	Right group, middle key
B6	Right group, right key
NaviSticks	Joystick-like positioning controls on the right and left of the Braille display. The movements are translated to JAWS keys. "Nav1" means the left, "Nav2" the right control.
Nav1Left	
Nav1Right	
Nav1Up	
Nav1Down	
Nav1Push	
Nav2Left	
Nav2Right	
Nav2Up	
Nav2Down	
Nav2Push	
"D"-Keys	6 Thumb-Keys at the front edge symmetrically arranged. The numbering follows Braille-Typewriter-Style (3 – 2 – 1 --- 4 – 5 – 6).
D1	Left group, right key
D2	Left group, middle key
D3	Left group, left key
D4	Right group, left key
D5	Right group, middle key
D6	Right group, right key
FrontCross	This control is formed by a lot of tiny buttons at the front edge of the device between the "D"-Key-Groups. The buttons are arranged in logical groups of 2 Pair of buttons, one pair in vertical direction, one pair in horizontal direction. The number of groups depends on the length of the display. (BM80/BM40)
Up	
Down	

Name/Group	Location
Left	
Right	
X-Slider (QS)	The slider is an absolute positioning control in X-Direction. Under JAWS the slider movement is translated to JAWS keys.
QsLeft	Slider movement to the left
QsRight	Slider movement to the right
QsButton	Push of the slider control

AUDIODATA Generation 2000, B2K 80 /40

Braille display with 40 or 80 Braille cells and 4 status cells. The display has got 6 "B"-Keys and 9/6 "K"-Keys above the front edge. On the front edge is a X-positioning slider control with a pushbutton.

B2K display buttons

Name/Group	Location
"B"-Keys	Two keygroups right and left of the cursor routing keys. The numbering runs from left to the right.
B1	Left group, left key
B2	Left group, middle key
B3	Left group, right key
B4	Right group, left key
B5	Right group, middle key
B6	Right group, right key
"K"-Keys	2 keygroups above the front edge just behind the slider control symmetrically arranged. The numbering follows Braille-Typewriter-Style (3 – 2 – 1 --- 4 – 5 – 6).
K1	Left group, right key
K2	Left group, middle key
K3	Left group, left key
K4	Right group, left key
K5	Right group, middle key
K6	Right group, right key
"Z"-Keys (BZ80 only)	A group of three keys in the middle between the "K"-Keygroups.
Z1	Left key
Z2	Middle key
Z3	Right key
X-Slider (QS)	The slider is a absolute positioning control in X-Direction. Under JAWS the slider movement is translated to JAWS keys.
QsLeft	Slider movement to the left
QsRight	Slider movement to the right
QsButton	Push of the slider control

AUDIODATA CeBox

The Ce(Controller)Box has got a numeric keypad that is mostly arranged like the numeric keypad on a PC keyboard. It has also a vertical positioning slider control and two jog wheels that can be also pushed.

CeBox numeric keypad

This table shows the layout of the numeric keypad.

Num7	Num8	Num9
Num4	Num5	Num6
Num1	Num2	Num3
NumStern	Num0	NumPlus

Other CeBox buttons

Name	Location
WheelA	Push-Event upper wheel
WheelALeft	Turning upper wheel left
WheelARight	Turning upper wheel right
WheelButton A	Button right under wheel A
WheelB	Push-Event lower wheel
WheelBLeft	Turning lower wheel left
WheelBRight	Turning lower wheel right
WheelButton B	Button right under wheel B
Y-Slider (ZS)	Absolute positioning slider control for Y-Direction with pushbutton
ZsUp	Moving the slider up
ZsDown	Moving the slider down
ZsButton	Pressing the slider button

AUDIODATA X-Slider

This device has got a positioning slider control in X-Direction and 9 additional keys. It is used on stations without Braille (speech, enlargement).

X-Slider buttons

Name / Group	Location
"Q"-Buttons	3 Groups of 3 Buttons above the slider control. The outer groups are arranged like the keys of a Braille typewriter, so we come to the following arrangement: (Q3 – Q2 – Q1 --- Q7 – Q8 – Q9 --- Q4 – Q5 – Q6)
Q1	Left group, right key
Q2	Left group, middle key
Q3	Left group, left key
Q4	Right group, left key
Q5	Right group, middle key
Q6	Right group, right key
Q7	Middle group, left key
Q8	Middle group, middle key
Q9	Middle group, right key

Name / Group	Location
Y-Slider (QS)	Absolute positioning slider control for Y-Direction with pushbutton
QsUp	Moving the slider up
QsDown	Moving the slider down
QsButton	Pressing the slider button

AUDIODATA key assignments

Key(s)	assignment
B1	sayDefaultButton
B2	BrailleToggle8Dots
B3	SayAll
B4	BrailleToggleMode
B5	SayWindowTitle
B6	JawsCursor
D1	BraillePanLeft
D2	BraillePriorLine
D3	SayFromCursor
D4	BraillePanRight
D5	BrailleNextLine
D6	PCCursor
K1	BraillePanLeft
K2	BraillePriorLine
K3	SayFromCursor
K4	BraillePanRight
K5	BrailleNextLine
K6	Pccursor
Num0	BrailleToggle8Dots
Num1	SayLine
Num2	Braillexnextline
Num3	SayWindowTitle
Num4	Selectpriorcharacter
Num5	SayFromCursor
Num6	selectnextcharacter
Num7	Pccursor
Num8	Braillepriorline
Num9	JawsCursor
Z1	StartMenu
Z2	BrailleEnter
Z3	BrailleEscape
B2+D2	Brailletop
B5+D5	Braillebottom
B6+Routing	BrailleRightMouseClick
D2+D5	Brailletop
D4+D5	Braillebottom
K2+B2	Brailletop
K2+K5	Brailletop
K4+K5	Braillebottom

Key(s)	assignment
K5+B5	Braillebottom
Num0+NumPlus	SayAll
Num1+NumPlus	RightMouseButton
Num2+NumPlus	Braillebottom
Num3+NumPlus	SaySelectedText
Num4+NumPlus	SelectPriorWord
Num5+NumPlus	SayFont
Num6+NumPlus	Selectnextword
Num7+NumPlus	LeftMouseButton
Num8+NumPlus	Brailletop
Num9+NumPlus	RouteJawsCursorToPc
Emulated keys by moving the slider controls and presses of their buttons	
ZsDown	BraillePriorLine
ZsUp	BrailleNextLine
WheelALeft	BraillePriorLine
WheelARight	BrailleNextLine
WheelBLeft	SayPriorCharacter
WheelBRight	SayNextCharacter
QsButton	SayCharacter
ZsButton	SayLine
WheelA	SayFromCursor
WheelB	SayWord
WheelButton A	SayToCursor
WheelButton B	SaySelectedText
FrontCross	
Up	BraillePriorLine
Down	BrailleNextLine
Left	BraillePanLeft
Right	BraillePanRight
NaviStick	
Nav1Up	SayPriorLinePCCursor
Nav1Down	SayNextLinePCCursor
Nav1Left	BraillePanLeft
Nav1Right	BraillePanRight
Nav1Push	SayLine
Nav2Up	SayPriorLinePCCursor
Nav2Down	SayNextLinePCCursor
Nav2Left	BraillePanLeft
Nav2Right	BraillePanRight
Nav2Push	SayLine

Appendix A Remove old JAWS versions

Make sure there is only one version of JAWS installed on your PC. If you have more than one version installed on your PC, the driver may not be able to install correctly. In this case please do the following:

- Remove all JAWS versions completely with all side applications
- Cleanup the system, remove remaining files and folders under the JAWS UserSetting and JAWS SharedSettings folder.
- Install your favourite JAWS version
- Install the driver

Appendix B - Bluetooth

Compatibility of Bluetooth Stacks

A Bluetooth stack is the software packet that allows for use of a Bluetooth radio on your computer. Unfortunately they behave differently, so some stacks work well, others have some quirks and drawbacks. Here is a table that shows our experience with different Bluetooth stacks:

Stack	Function	Remarks
Microsoft	recommended	This is the stack preinstalled in Windows XP ServicePack 2 or higher. We recommend using this stack because the connection is very stable.
Toshiba	OK	
BlueSoleil	Poor	You can connect to a device running on a BlueSoleil stack if you manually connect the COM port before you run JAWS. If you ever lose connection, there is no chance to connect to the device until next system startup.
BroadCom	Poor	Problems with reconnect of the device after the device came out of range.

Bluetooth: some quirks and problems

First, we recommend use of the Microsoft Bluetooth stack, because it is proven and stable working with our devices. This stack is part of Windows XP ServicePack 2 and all later Windows versions. Re-establishing a broken Bluetooth connection works best with the Microsoft stack. Not all Bluetooth radios are compatible with this stack, so if you have got a built in Bluetooth radio it may be a solution to use a different USB Bluetooth dongle, most of them are compatible with the Microsoft stack.

Many problems with Bluetooth come from an improper setup of the COM port. If your Braille display does not seem to respond, check if the port number in JAWS Braille settings matches with the port number you find in the Bluetooth environments properties of the Braille display shown under Services or Service- SPP.

One more problem may occur, if you use a Braille display which does only support one bluetooth partnership like SuperVario, SuperVario2 and VarioConnect. If they are paired to a PC and will afterwards be paired to a mobile phone, the PC connection will no more work. In order to reconnect to a PC, do the following:

- Open Bluetooth neighbourhood
- Remove the braille display.
- Search for devices
- Pair with braille display.
- In the unlikely case the port number has changed, correct it in the JAWS Braille settings.

Appendix C Troubleshooting

If your braille display does not work, check the following:

- Is the device connected to the PC?
- Is the device setup correctly? For example, if your device is set to "BlueTooth" connection, it is not possible to access it via USB. You may change it, not more.
- Is the device switched on?
- Was the device switched on while starting up JAWS? The driver has to talk with its device in order to gather information (Braille display length...) at start up time. Make sure the device is switched on and connected and restart JAWS to make it work.
- BlueTooth connection: is the port setting correct?
- USB connection: is the port setting set to "USB"?

If after selection of the Braille display and restart of JAWS there is no active braille display or you only can select RemoteBraille, it is pretty sure you use the old driver. Change your selection as described in chapter Installation and Setup.

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