# Table of Contents

Foreword 0

**Part I  About This Book** 1

1 Version ................................................................................................................................. 1
2 General ................................................................................................................................. 1
3 How to Use This Book .......................................................................................................... 1
4 Document Conventions ....................................................................................................... 1
5 Terminology ......................................................................................................................... 2
6 Product Name Conventions ................................................................................................. 2
7 Related Documents ............................................................................................................ 2

**Part II  Product Overview** 3

1 General .................................................................................................................................. 3
   Operating Systems .................................................................................................................. 3
   User Rights ............................................................................................................................. 3
2 Embossers .................................................................................................................................. 3
   Features .................................................................................................................................... 3
3 Index Braille Software .......................................................................................................... 4
   WinBraille ............................................................................................................................... 5

**Part III  Unpacking the Embosser** 6

1 Basic Embosser ................................................................................................................... 6

**Part IV  Setting Up the Embosser** 7

1 Voltage 230 & 115  Basic .................................................................................................... 7
2 Unlocking the Embosser Head ............................................................................................ 7
   Basic-D/S .................................................................................................................................. 7
3 Power on Embosser ............................................................................................................... 8

**Part V  Paper Handling** 9

1 Default Paper Settings ........................................................................................................ 9
2 Setting up paper size .......................................................................................................... 9
3 Basic ...................................................................................................................................... 9

**Part VI  Software Installation** 10

1 Windows .............................................................................................................................. 10
   Installing Index Braille Software .......................................................................................... 10
   Ports and Cables ................................................................................................................... 10
   Installing Printer Drivers on Windows .................................................................................. 10
   Network Installation ........................................................................................................... 11
   Basic, Everest, 4X4 PRO ...................................................................................................... 11
Part VII  Controlling the Embosser

1 Embossing Printer Information ................................................................................................................................... 13
2 Function Summary ................................................................................................................................................................. 13
   Information ........................................................................................................................................................................ 13
   Common Commands ......................................................................................................................................................... 13
   Setup Commands .............................................................................................................................................................. 14
   Numerical Values ............................................................................................................................................................ 14
   Embosser Calibration ..................................................................................................................................................... 15
   Extended Key Commands ............................................................................................................................................... 15
   Copy Function ................................................................................................................................................................. 16
      Copy Function Examples ........................................................................................................................................ 16
   Setup Command Values .................................................................................................................................................. 17
      Menu Structure .......................................................................................................................................................... 17
      Paper Everest/4X4 PRO ................................................................................................................................................... 18
      Paper Basic ............................................................................................................................................................... 18
      Page Layout ................................................................................................................................................................ 18
      Braille .......................................................................................................................................................................... 19
      Option ........................................................................................................................................................................... 20
      Index Braille Default Settings ........................................................................................................................................ 20
         Default Basic .................................................................................................................. 20
   3 Embossed Feedback .................................................................................................................................................. 20
      Hammer Test Page .................................................................................................................................................. 20
      Braille Format Page ................................................................................................................................................ 21
      Calibration Page ...................................................................................................................................................... 22
      Own Braille Table .................................................................................................................................................... 22
      Letter Information Page .............................................................................................................................................. 23
      Embossing Head Information ........................................................................................................................................ 23
   4 LED Feedback .................................................................................................................................................. 24
      Status LED Interface Board Basic ........................................................................................................................................ 24
   5 Web Interface .......................................................................................................................................................... 24
   6 Controlling the embosser with ESC Sequences ............................................................................................................ 25

Part VIII  Embossing

1 Embossing on Windows .................................................................................................................................................. 28
   Embossing using WinBraille .............................................................................................................................................. 28
2 Embossing on Mac OS X 10.4 .............................................................................................................................................. 28

Part IX  Service and Support

1 Support Tools .......................................................................................................................................................... 29
   Embosser Utility ........................................................................................................................................................ 29
      Main Functions ....................................................................................................................................................... 29
      Starting Embosser Utility ......................................................................................................................................... 30
      Upgrading Embosser Firmware ....................................................................................................................................... 30
   Software Service Interface ............................................................................................................................................... 30
      On Macintosh .......................................................................................................................................................... 30
2 Vertical Alignment .................................................................................................................. 31
3 First Braille Line Position .................................................................................................. 31
   Top of Form Offset .............................................................................................................. 31
   First Line Offset .................................................................................................................. 32
4 Replacing the Main Board ................................................................................................. 33
   Main Board Contact Position ............................................................................................ 33
   Setting the Dip Switches ..................................................................................................... 34
   Changing Board Size .......................................................................................................... 34
5 Replacement Modules ........................................................................................................ 34
6 Removing Index Braille Software ...................................................................................... 34
   Removing Index Printer Drivers on Windows ........................................................................ 34
   Removing Index Printer Drivers on Mac OS X 10.4 ............................................................. 35
   Removing WinBraille from Windows ................................................................................... 35
   Removing Embosser Utility from Windows ......................................................................... 35
7 Transport and Service ......................................................................................................... 35
   Locking the Embosser Head ................................................................................................. 35
   Basic-D/S ............................................................................................................................. 35
8 Appendix ............................................................................................................................. 36
   Letter Fonts .......................................................................................................................... 36
   Index Default Braille Table ................................................................................................. 36
   List of Index file formats ..................................................................................................... 37
   Power Supply Basic/Everest/ 4X4 PRO ................................................................................. 38

Index

0
1 About This Book

1.1 Version

Version: 20080124

1.2 General

This book describes the Index Braille Embosser products. The information is intended for service personnel, system administrators and users.

1.3 How to Use This Book

Product Overview: overview of the Index Braille products

Unpacking the Embosser and Setting up the Embosser: how to unpack, install and set up the embosser.
Software Installation and Set-up: installing drivers and other related software and connecting the embosser to your computer.
Controlling the Embosser: control and set-up of the embosser.

Service and Support: maintaining and servicing.

1.4 Document Conventions

To facilitate reading this document, a consistent format is used to describe each function. This format is defined below.

<table>
<thead>
<tr>
<th>Function described</th>
<th>Format in Manual</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressing a key on the front panel</td>
<td>key 1</td>
<td></td>
</tr>
<tr>
<td>Pressing a two-key sequence on the front panel</td>
<td>key 1 + key 2</td>
<td>Press the second key within half a second</td>
</tr>
<tr>
<td>Speech Feedback</td>
<td>echo &quot;echoed message&quot;</td>
<td></td>
</tr>
<tr>
<td>Speech Feedback Number</td>
<td>echo &quot;echoed message (xx.x)&quot; where xx.x is the number</td>
<td></td>
</tr>
<tr>
<td>Information video on the Index Braille CD</td>
<td>VIDEO: Name.wmn</td>
<td></td>
</tr>
<tr>
<td>Starting programs</td>
<td>menu 1/ menu 2/ menu 3, etc..</td>
<td></td>
</tr>
<tr>
<td>Program name</td>
<td>Program Name</td>
<td></td>
</tr>
<tr>
<td>Selection of menu from the front panel in setup</td>
<td>setup/ page layout/ Braille, etc.</td>
<td></td>
</tr>
<tr>
<td>Selected menu item in program</td>
<td>&quot;Name of the selected item&quot;</td>
<td></td>
</tr>
<tr>
<td>Escape sequences</td>
<td>&lt;1B&gt;&lt;44&gt;&lt;PL&gt;&lt;500&gt;</td>
<td>Use brackets to visually separate the numbers</td>
</tr>
</tbody>
</table>
1.5 Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embosser</td>
<td>Printer that produces Braille texts as raised dots in paper</td>
</tr>
<tr>
<td>Index Braille Code</td>
<td>Default installed text-to-Braille translation table</td>
</tr>
<tr>
<td>Own Braille Table</td>
<td>User-defined Braille translation tables made in computer or literary Braille</td>
</tr>
<tr>
<td>Braille translation files</td>
<td>Files used by WinBraille defining the text-to-Braille translation. The Braille translation files handle both contracted or uncontracted Braille</td>
</tr>
<tr>
<td>Embossing Module</td>
<td>Embossing Modules are used in 4Waves PRO. The Embossing Modules are identical; their function as Module 1-4 depends on their position in the system.</td>
</tr>
<tr>
<td>Master Module (1)</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Module 2, 3, 4</td>
<td>See picture above</td>
</tr>
<tr>
<td>Power Module</td>
<td>Module located below the embosser including power supply, communication, connectors and dip switch for module definition.</td>
</tr>
<tr>
<td>Contracted Braille/ Grade 2 Braille</td>
<td>When words or parts of words are translated in to a short form. This is used to reduce a book's volume and increase reading speed.</td>
</tr>
</tbody>
</table>

1.6 Product Name Conventions

The various software products and deliverables provided by Index Braille are listed below together with the short names used in this document.

<table>
<thead>
<tr>
<th>Full name</th>
<th>Short name</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinBraille</td>
<td>WinBraille</td>
</tr>
<tr>
<td>Index Embosser Utility</td>
<td>Embosser Utility</td>
</tr>
<tr>
<td>Index IbPrint</td>
<td>IbPrint</td>
</tr>
<tr>
<td>Index Speech Tool</td>
<td>Index Speech</td>
</tr>
<tr>
<td>Index Braille Printer Driver</td>
<td>Index Printer Driver</td>
</tr>
<tr>
<td>Index Braille CD</td>
<td>Index CD</td>
</tr>
<tr>
<td>Index Braille Embosser(s)</td>
<td>Index Embosser(s)</td>
</tr>
</tbody>
</table>

1.7 Related Documents

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index Catalogue</td>
<td>The Index Braille Product Guide</td>
</tr>
<tr>
<td>WinBraille Users Guide</td>
<td>The Users Guide describes how to install and use WinBraille.</td>
</tr>
</tbody>
</table>
2 Product Overview

2.1 General

2.1.1 Operating Systems

Index Braille embossers, WinBraille 4.xx, Embosser Utility, and IbPrint support the following Windows operating systems.

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Office 2000</th>
<th>Office XP</th>
<th>Office 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2000</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Windows XP, PRO</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Windows XP, Home</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

WinBraille 3.xx Braille editor supports
- Windows 95
- Windows 98

iBraille and the Index Braille Printer Drivers for Macintosh support Mac OS X 10.4.4 or higher.

2.1.2 User Rights

Windows:
Login with "Administrator" rights when installing WinBraille, Embosser Utility and IbPrint.

Macintosh:
Administrator rights are required when installing iBraille or the printer driver on Mac OS X 10.4.

2.2 Embossers

This section provides general information for all the embossers and an overview for each embosser describing its use and advantages.

2.2.1 Features

Free - WinBraille editor
WinBraille is one of the most powerful Braille products on the market, providing comprehensive support for all Windows users. WinBraille is compatible with all Index Braille embossers. It translates text into contracted and uncontracted Braille and supports a large number of languages. You may perform multilingual translations in one document. See [WinBraille](#).

Speech Guided
Index Braille embossers are controlled by an ink- and Braille-labeled front panel. Combined with the speech feedback, it is easy to install and operate by blind and sighted users alike.

Graphics
The Index Braille Embossers version 3 can emboss graphical images with 0.5-mm resolution. The requirements are WinBraille 4.0 or higher and embosser firmware 11.1 or higher.

Modern Communication
The Version 3 embossers include standard communication ports that can be connected to any modern computer.
Product Overview

- USB, Plug & Play
- Network (TCP/IP)
- Serial port (for service)
- Parallel port, IEEE 1284

Networking
Index Braille version 3 embossers can be installed in a Network. Index Braille embossers use the IP network port 91.00. They support:
- Network interface (TCP/IP)
- DHCP (Dynamic Host Configuration Protocol)
- SNMP (Simple Network Management Protocol)
- Host name support

MS DOS Functionality
Use parallel port, it is the only port supported by MS DOS.

Graphics using Braille editors other than WinBraille
Graphic resolution 1.6, 2.0 and 2.5 mm.
See, esc sequences for graphics

Service and Security
Index Braille Embossers come with a two-year 200,000-page warranty (4Waves PRO 5,000,000 pages), whichever comes first, following the international trade agreement "Orgalime S2000". To ensure efficient service, Index Braille has established a module exchange system, with modules available for prompt delivery from stock. The embossing head, electronics board and sheet feeder for all models are the modules included in the exchange system. See also www.indexbraille.com for further information.

2.3 Index Braille Software

Free download
All Index Braille software may be downloaded and upgraded from www.indexbraille.com or from Index CD free of charge

Firmware
The firmware is loaded into the embosser to control functions, communication, speech feedback, etc.

Index Printer Drivers
Index Printer Drivers is the software required to attach the embossers to the host computer. There is one version for Windows and one for Mac OS X 10.4. To install see Setting up Communication and Software for Windows and Installing Printer Drivers on Mac OS X 10.4 for Mac. Index printer drivers will set up paper layout, duplex, Z-folding, number of copies and rule file for translation from original text file to Braille automatically.

WinBraille - the Braille editor
WinBraille Braille editor is used to edit, translate, format and emboss texts and graphics to an Index embosser. See WinBraille for details.

IbPrint
IbPrint is a useful drag and drop program to send text, graphic, installation files, etc. to an Index embosser. IbPrint does not support tactile graphics on 4X4 PRO.

Embosser Utility
Use the Embosser Utility on Windows operating system to:
- Upgrade Firmware
• Upgrade Local speech
• Calibrate Vertical Alignment
• Install your Own Braille tables
• Set up your embosser as a network printer on Windows
• Install custom defined setup

**Index Speech - a distributors tool**
If you are a distributor you may use the Index Speech Tool to make a new speech feedback language. Use the windows multimedia program to record and edit the sound files. These files will be converted to embosser flash files and available on the Index website when tested.

2.3.1 WinBraille

WinBraille is one of the most powerful Braille software products on the market providing comprehensive support for all Windows users.

**Installation and setup**
As part of the installation, you may choose
• Standard formatting and language setup for the most commonly used languages
• Menu language
• Modes of operation: standard - easy to use, professional - all features included

**Only for Index Braille Embossers**
WinBraille is compatible with all Index Braille embossers. The available Index Braille embossers will automatically be installed by WinBraille. Some functions, such as tactile images, are supported only by the newer embosser versions.

**Braille Translation**
WinBraille translates text into contracted and uncontracted Braille. It supports a large number of languages, currently 32 and we continue to add languages and improve the product. You may perform multilingual translations in one document.

**Graphics**
Use WinBraille to insert and translate graphical images to Tactile images with 0.5-mm resolution or build tactile images directly with WinBraille's powerful Image Editor. WinBraille's graphic features give new options to the production of Braille books and Magazines. The image editor includes
• translate images to Tactile Graphics
• translate images to Tactile Outlines
• adjust contrast, color, etc.
• adjust picture size
• import image files (.BMP, .TIF, .WMF, .PNG, .JPG, .JPEG, .GIF and .SIG)
• insert Braille in tactile images
• insert tactile letters in tactile images

**Book/newspaper production**
WinBraille contains functions for the automatic production of Braille books and newspapers: dual page numbering (ink/Braille), headers, translation into several languages in the same document, tables, bullets, header/footer handling and advanced formatting.

**Exception List**
Define your own list of words which you do not want to be translated. These could for example be acronyms and names of places and people.
3 Unpacking the Embosser

The following is included in a Shipment

- Embosser
- Power cable
- Communication cable (USB)
- Installation manual - in Braille and in ink
- Index CD including: WinBraille, Printer drivers, Embosser Utility, IbPrint, Braille translation files, manuals, etc.
- Embossing head lock
- Packing material
- 4Waves PRO also includes: Embosser service module, Network cable, grounding cable, pallet, lifting strips.

Unpack the embosser gently and save the packing material in case you need to transport the embosser or it needs to be returned for service.

3.1 Basic Embosser
4 Setting Up the Embosser

4.1 Voltage 230 & 115 Basic

Please, select the voltage before you connect the power cable.

<table>
<thead>
<tr>
<th>Caution</th>
<th>If the power cable is connected before you have selected the voltage, the fuse can be damaged.</th>
</tr>
</thead>
</table>

4.2 Unlocking the Embosser Head

Remove the transport lock from the embossing head and store it.

4.2.1 Basic-D/S
4.3 Power on Embosser

The echo "Embosser name" + "firmware version" + "loaded setup" confirms a correct embosser start-up sequence.

During power on, the 4Waves PRO will automatically confirm the installation of each module with the echo "check module", "one wave", "two wave", "three wave", "four wave", "ready".
5 Paper Handling

5.1 Default Paper Settings

All margins are at zero (0).

<table>
<thead>
<tr>
<th>Model</th>
<th>Page Size</th>
<th>Lines per page</th>
<th>Characters per line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic-D/S</td>
<td>Length 12” x width 11”</td>
<td>28</td>
<td>42</td>
</tr>
<tr>
<td>Everest</td>
<td>A4, 297x 210 mm</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>4X4 PRO</td>
<td>A3, 420 x 297 mm</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>4Waves PRO</td>
<td>Length 12” x width 11”</td>
<td>28</td>
<td>42</td>
</tr>
</tbody>
</table>

Text-to-Braille translation is Index Braille Default Settings: All margins are at zero (0).

5.2 Setting up paper size

See Controlling the embosser/ Setup Command Values.

5.3 Basic

Loading Paper in Basic
- Open the red aluminum cover.
- Release the lock on the right-hand tractor and adjust it according to the paper width.
- Adjust the left tractor to the right to emboss the first Braille character closer to the edge of the paper.
- Load paper and close the tractors.
- Pull the tractors outwards to put the paper under a slight tension and lock the tractors.
- Press form feed + form feed to detect the paper edge and move the paper to printing position.

VIDEO: load paper Basic.wmn
6 Software Installation

6.1 Windows

6.1.1 Installing Index Braille Software

Program files and manuals are available at [www.indexbraille.com](http://www.indexbraille.com) or from the Index CD. All software may be upgraded free of charge from the Internet.

<table>
<thead>
<tr>
<th>SOFTWARE</th>
<th>FUNCTION, MODULES</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinBraille 4.XX</td>
<td>• WinBraille Braille editor</td>
<td>The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.</td>
</tr>
<tr>
<td></td>
<td>• Index Printer Drivers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Word Excel and Adobe Acrobat macro</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>See WinBraille User’s Guide for details.</em></td>
<td></td>
</tr>
<tr>
<td>Printer Driver</td>
<td>• Index Printer Drivers</td>
<td>The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.</td>
</tr>
<tr>
<td>Only with WinBraille</td>
<td><strong>Run the WinBraille installation wizard and select &quot;driver installation only&quot;</strong></td>
<td></td>
</tr>
<tr>
<td>Printer Driver</td>
<td>• Index Printer Drivers</td>
<td>The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.</td>
</tr>
<tr>
<td>Only with Embosser Utility</td>
<td><strong>Run the Embosser Utility installation wizard and select &quot;driver installation only&quot;</strong></td>
<td></td>
</tr>
<tr>
<td>Embosser Utility [****]</td>
<td>• Embosser Utility</td>
<td>The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.</td>
</tr>
<tr>
<td></td>
<td>• IbPrint</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>IbPrint is automatically installed when installing Embosser Utility. The IbPrint icon is placed on the desktop</em></td>
<td></td>
</tr>
</tbody>
</table>

6.1.2 Ports and Cables

Computer Connections

<table>
<thead>
<tr>
<th>INTERFACE</th>
<th>CABLE</th>
<th>STANDARD</th>
<th>SETTING</th>
<th>INDEX PART NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centronics</td>
<td>36 P, 3 meter</td>
<td>IEEE1284</td>
<td>SPP, EPP, ECP</td>
<td>1267</td>
</tr>
<tr>
<td>USB</td>
<td>USB A-B, 3 meter</td>
<td>USB</td>
<td>Plug &amp; Play</td>
<td>1387</td>
</tr>
<tr>
<td>Network</td>
<td>UTP Cable CAT 5 RJ45</td>
<td>TCP/IP</td>
<td>Set IP address with: Embosser utility/ IP settings</td>
<td></td>
</tr>
<tr>
<td>Serial</td>
<td>9 P Female - Female, 3 meter</td>
<td>98400, 8, N, 1, Hardware</td>
<td>1447</td>
<td></td>
</tr>
</tbody>
</table>

Parallel Port
36 Pins, (IEEE1284-standard), supporting, SPP, EPP, ECP and plug & play.

6.1.3 Installing Printer Drivers on Windows

**Install the Printer Driver as part of the WinBraille installation**

Use the Add Printer Wizard to install the required printer drivers. Download them from [www.indexbraille.com](http://www.indexbraille.com) or the Index CD. There is an option to install only the printer drivers.

Installation steps:
Local connection parallel - just select the correct port.
When you install to a USB port, be sure to install the Printer Driver before you connect the Index Braille embosser to the computer.
Network Installation, see Network Installation.
Installing Client Printer Driver, select "Network Printer" and browse for any installed Index Braille Printer Drivers on the server.

Starting Add Printer Wizard
- Start/Programs/Index Braille/WinBraille/Index Add Printer Wizard
- Start/Programs/Index Braille/Embosser utility/Index Add Printer Wizard

6.1.4 Network Installation
6.1.4.1 Basic, Everest, 4X4 PRO
The Index Embossers has full network support and follows international standards. Setting up it in a network requires the knowledge and system rights as network administrator. Please do not try to install it on a network without this knowledge.

Setting up the Computer Network Port
- Select start/ settings/ printers
- Select File/ Server properties, select the Ports tab and press Add Port
- Select TCP/IP Port and New Port to start the Add TCPIP Printer Wizard
- Follow the Wizard and insert the IP address of your embosser in "Printer Name or IP Address", leave "port name" blank. The system will fill it in with IP_"embosser IP address"
- Finish the wizard

Verifying the Network Installation
Check Embosser Network Connection: Start/ run/ cmd (opens a command window) and type ping (IP address), example ping 192.168.3.13, the embosser will answer when it is correctly installed.

Setting up the Embosser Network settings
Network installation sequence:
1. Start the Embosser Utility, see Starting Embosser Utility.
2. Select Tools menu, IP Settings
3. Select embosser
4. Configure the address:
   - With DHCP Server support:
     Select "Obtain an IP address automatically" and press Update.
   - Set a fix IP address (no DHCP Support)
     Ask system administrator for the "IP-Address", "SubNet mask"and "Default Gateway". Fill in this information in the reserved fields (leave TFTP-Server blank) and press Update.
   - Obtain an IP address automatically with Hostname
     Fill in the Host name in the field and press Update.

Verify the IP address by pressing help + value. The embosser will echo the IP address and the SubNet mask.
6.1.5 Driver Installation with Other Softwares

Install just the Index Braille Printer Driver for your embosser model with the Index Braille Add Printer Wizard program. You can also install the WinBraille Printer Driver.

**Driver for Duxbury 10.4**

Select Windows Device and the installed Index Braille Printer Driver.

![Driver Installation Screen](image)

6.2 Mac OS X 10.4

6.2.1 Installing Printer Drivers

See the iBraille User’s Guide for details how to install the Index Braille Printer Drivers for Macintosh.

6.2.2 Ports and Cables

**Computer Connections**

<table>
<thead>
<tr>
<th>INTERFACE</th>
<th>CABLE</th>
<th>STANDARD</th>
<th>SETTING</th>
<th>INDEX PART NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB</td>
<td>USB A-B, 3 meter</td>
<td>USB</td>
<td>Automatic</td>
<td>1387</td>
</tr>
<tr>
<td>Network</td>
<td>UTP Cable CAT 5 RJ45</td>
<td>TCP/IP</td>
<td>Choose System Preferences-&gt; Network. Select DHCP or Manually enter an IP address</td>
<td></td>
</tr>
</tbody>
</table>

**Parallel Port**

36 Pins, (IEEE1284-standard), supporting, SPP, EPP, ECP and plug & play
7 Controlling the Embosser

7.1 Embossing Printer Information

Emboss a tactile letter information page by pressing `help + help` (not possible on 4X4 PRO). Emboss a Braille information page by pressing `help + normal`.

For additional information see Emboss Printer Information.

7.2 Function Summary

7.2.1 Information

<table>
<thead>
<tr>
<th>FUNCTION KEY</th>
<th>FEEDBACK</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>off line + help</code></td>
<td>Echo: printout status, number of copies completed and position of the current printout</td>
</tr>
<tr>
<td><code>help</code></td>
<td>Echo: embosser model, firmware version and active setup</td>
</tr>
<tr>
<td><code>help + help</code></td>
<td>Embosses: information in letter graphics (not 4X4 PRO)</td>
</tr>
<tr>
<td><code>help + normal</code></td>
<td>Embosses: embosser information in Braille</td>
</tr>
<tr>
<td><code>help + value</code></td>
<td>Echo: IP Address, Subnet mask (not 4Waves PRO)</td>
</tr>
<tr>
<td><code>form feed + value</code></td>
<td>Echo: paper size, length, width, Braille page layout, etc.</td>
</tr>
<tr>
<td><code>help + setup</code></td>
<td>Embosses: installed Own Braille tables in Braille and letter graphics</td>
</tr>
<tr>
<td><code>help + on line</code></td>
<td>Embosses: Hammer test page displays dot quality of the individual hammers</td>
</tr>
<tr>
<td><code>item</code></td>
<td>Embosses: Braille page format</td>
</tr>
<tr>
<td><code>value</code></td>
<td>Echo: lines per page, characters per line</td>
</tr>
<tr>
<td><code>value + value</code></td>
<td>Echo: complete Braille page information, paper size, length, width, Braille page layout, etc.</td>
</tr>
</tbody>
</table>

7.2.2 Common Commands

<table>
<thead>
<tr>
<th>COMMANDS</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>on line</code></td>
<td>Starts embossing. Cancels selected value in setup, numerical function, adjustments, etc.</td>
</tr>
</tbody>
</table>
off line

- Interrupts embossing.
- See Stop Embossing in a Print Job
- The embosser will receive the text during off line and store it in the embosser memory.
- To continue embossing the remaining part of the document after the interruption (paper jam, etc.), 4Waves PRO only:
  - See Re-start Embossing at Stop Position.

form feed

- New page

form feed + form feed

- Basic: Paper moves to starting position.
- Everest / 4X4 PRO: Measures and adjusts paper length.
- 4Waves PRO: Starts loading paper.

form feed + on line

- Basic: Moves the paper to tear off position in the Acoustic Cabinet Basic.
- 4Waves PRO: Moves the paper forwards one page plus one page per embosser module.

form feed + off line

- Basic: Reverse the paper out of the embosser.
- 4Waves PRO: Reverse the paper to the first embosser module. Be sure to close the lid!

help + reformatted

- Open locked-setup panel, locked-setup panel echoes "setup locked".
- Normal
- Turns off reformatting.

double sided

- Double-sided embossing.

single sided

- Single-sided embossing.

reformatted

- Reformats the text to the installed Braille page format.

z-folding

- Basic and 4Waves PRO: Toggles between Z-folding and normal folding.
- 4X4 PRO: The Z-folding key gives magazine format.

A

- Selects installed values in setup A.

B

- Selects installed values in setup B.

C

- Selects installed values in setup C.

Setup

- Begin changing the setup values, valid keys see setup commands.

7.2.3 Setup Commands

<table>
<thead>
<tr>
<th>FRONT PANEL KEY</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 / value</td>
<td>Increase/ decrease the value by one.</td>
</tr>
</tbody>
</table>

See details in Setup Command Values

7.2.4 Numerical Values

Use the numerical value to insert numbers in copy, repeat, page size, setup, etc. It starts with the echo “Start at #”. Save the selected value by pressing setup.

See copy function keys.
### 7.2.5 Embosser Calibration

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>help + group</code></td>
<td>Start calibration of paper sensor (Everest / 4X4 PRO) see paper calibration.</td>
</tr>
<tr>
<td><code>help + item</code></td>
<td>Start calibration of actual paper length (Everest / 4X4 PRO) see paper calibration.</td>
</tr>
<tr>
<td><code>help + 10</code></td>
<td>Start setup of the distance between paper sensor and paper edge in paper calibration see first-line position.</td>
</tr>
<tr>
<td><code>help + 1</code></td>
<td>Start setup of the distance between paper edge and first Braille line see first-line position.</td>
</tr>
<tr>
<td><code>help + multiple</code></td>
<td>Start vertical alignment of the Braille cell.</td>
</tr>
<tr>
<td><code>help + double</code></td>
<td>Places the embossing head in transport position to enable inserting of the embossing head locks.</td>
</tr>
</tbody>
</table>

### 7.2.6 Extended Key Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>help + b</code></td>
<td>Start extended key command group</td>
</tr>
<tr>
<td><code>group</code></td>
<td>Next group (1-5)</td>
</tr>
<tr>
<td><code>item</code></td>
<td>Next item</td>
</tr>
<tr>
<td><code>value</code></td>
<td>Value item</td>
</tr>
<tr>
<td><strong>Group 1, Item 1,</strong></td>
<td>4Waves PRO: Check the status of embossing modules. The master (1) checks the internal network communication with modules 2, 3 and 4.</td>
</tr>
<tr>
<td><strong>Group 1, Item 2,</strong></td>
<td>4Waves PRO: Starts the status check of the hammers in module 1, 2, 3 and 4. The status feedback is embossed with letter graphics.</td>
</tr>
<tr>
<td><strong>Group 2, Item 1,</strong></td>
<td>Print embossing-head information in letter graphics: impact level, batch no, etc.</td>
</tr>
<tr>
<td><strong>Group 3, Item 1,</strong></td>
<td>Own Braille tables information: flash-block information in letter graphics</td>
</tr>
<tr>
<td><strong>Group 3, Item 2,</strong></td>
<td>Letter information: flash-block information in letter graphics</td>
</tr>
<tr>
<td><strong>Group 3, Item 3,</strong></td>
<td>Factory default setting A, B, C information: flash-block information in letter graphics</td>
</tr>
<tr>
<td><strong>Group 3, Item 4,</strong></td>
<td>Speech version information: flash-block information in letter graphics</td>
</tr>
<tr>
<td><strong>Group 3, Item 5,</strong></td>
<td>Firmware version information: flash-block information in letter graphics</td>
</tr>
<tr>
<td><strong>Group 4, Item 1,</strong></td>
<td>Adjust the embossing speed. Defines maximum stepper motor frequency 800-1600 Hz. The vertical alignment of the Braille cell may be effected by a speed change.</td>
</tr>
<tr>
<td></td>
<td>• Text embossing speed</td>
</tr>
<tr>
<td></td>
<td>  Echo &quot;value normal start at #1600&quot; where normal is text embossing speed and #1600 is current value. Use the numerical function to change the value and save it with setup. Echo &quot;saving #xxx&quot;. Where #xxx is the new text embossing speed.</td>
</tr>
<tr>
<td></td>
<td>• Graphics embossing speed</td>
</tr>
<tr>
<td></td>
<td>  Echo &quot;saving #xxx start at #1300&quot; where #xxx is the new embossing speed value and #1300 is current graphics embossing speed. Use the numerical function to change the value and save it with setup. Echo &quot;saving #xxx&quot;. Where #xxx is the new graphic embossing speed.</td>
</tr>
</tbody>
</table>
Controlling the Embosser

| Group 4, Item 2, | Basic: Enable or disable paper jam sensor. Located on back plate rollers. |
| Group 4, Item 3, | Reset IP setting to default. Clears the static IP address and enables DHCP. |
| Group 4, Item 4, | Set the Network Host name as Embosser Model_## |
|                | Where: |
|                | Embosser model is Everest, Basic, 4X4_PRO or 4Waves. |
|                | ## = Number of this embosser model in your network, example 01, 02, 03, etc. |
|                | Use Embosser Utility (menu: Tools/ IP Settings.) as a more flexible way to set up the Embosser Network Host name. |

7.2.7 Copy Function

Copy Commands Keys

| COPY          | See Copy Function |
| repeat       | Emboss a part of last document, from page # to page # (Not 4Waves PRO) |
| repeat + repeat | Emboss one additional copy of the entire document |
| multiple     | Select number of copies |

General instructions

See Common Commands
See Setup Commands
See Numerical Values

Load File for Copying

Last embossed Braille file is stored in the embosser memory. Make copies by using the copy function.

Load a Braille file into the embosser without first embossing it.
1. Press off line.
2. Send the file to the embosser. After receiving it, the embosser echoes "off line", "off line"...
3. Press on line to start the embossing one copy.
4. Use the copy function to make additional copies of the entire document or parts of it.

7.2.7.1 Copy Function Examples

Example 1: Emboss 1 Copy

Emboss one copy by pressing repeat + repeat

Example 2: Emboss 25 Copies

a) Activate multiple copy function by pressing multiple
b) Count to 25 with the 4 and 10 keys.
c) Select number of copies by pressing setup.
d) Press repeat + repeat to start the embossing

Example 3: Emboss 11 Copies of Page 3 to 4

Copying part of the document is not possible with 4Waves PRO.
a) Activate multiple function by pressing multiple
b) Count to 11 with the 4 and 10 keys. Select with multiple, confirm with setup
c) Press repeat to select from page
d) Count to 3 with 1 select with multiple, confirm with setup
e) Count to 4 with 1 select with multiple, confirm with setup.
f) The embossing of the selected document starts automatically.

VIDEO: copy function using front panel.wmn
### 7.2.8 Setup Command Values

#### 7.2.8.1 Menu Structure

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ITEM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>paper</td>
<td>paper length, mm or inch</td>
<td>numerical</td>
</tr>
<tr>
<td>paper</td>
<td>paper width, mm or inch</td>
<td>numerical</td>
</tr>
<tr>
<td>print folding</td>
<td>number of dots in the print folding line</td>
<td>0, 1, 2, 3</td>
</tr>
<tr>
<td>number of paper out</td>
<td>numerical</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ITEM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>page layout</td>
<td>outer margin, characters</td>
<td>0 – 10</td>
</tr>
<tr>
<td>inner margin, characters</td>
<td>0 – 10</td>
<td></td>
</tr>
<tr>
<td>top margin, lines</td>
<td>0 – 10</td>
<td></td>
</tr>
<tr>
<td>bottom margin, lines</td>
<td>0 – 10</td>
<td></td>
</tr>
<tr>
<td>page number</td>
<td>none, top - inner, center, outer, bottom - inner, center, outer</td>
<td></td>
</tr>
<tr>
<td>page mode</td>
<td>double sided, single sided, saddle stitch four pages, z-folding (Basic/4Waves PRO)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ITEM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braille</td>
<td>Braille table</td>
<td>Index Braille Default Braille table and possibly own tables</td>
</tr>
<tr>
<td>reformatted</td>
<td>normal, reformatted</td>
<td></td>
</tr>
<tr>
<td>line spacing</td>
<td>2.5 ... 10.0 mm (4X4 PRO 5.0)</td>
<td></td>
</tr>
<tr>
<td>Braille dot distance, mm</td>
<td>2.2, 2.5, 3.2 (4X4 PRO 2.5)</td>
<td></td>
</tr>
<tr>
<td>graphic dot distance, mm</td>
<td>1.6, 2.0, 2.5 (4X4 PRO 2.0)</td>
<td></td>
</tr>
<tr>
<td>impact level</td>
<td>normal, high</td>
<td></td>
</tr>
<tr>
<td>multiple impacts</td>
<td>1, 2, 3, 4, 5 strokes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ITEM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>communication</td>
<td>end of file delay</td>
<td>5, 10, 15, 20, 25 seconds</td>
</tr>
<tr>
<td>baud rate, serial port (service only)</td>
<td>300,...38400</td>
<td></td>
</tr>
<tr>
<td>data bits, serial port (service only)</td>
<td>8, 7</td>
<td></td>
</tr>
<tr>
<td>parity, serial port (service only)</td>
<td>none, even, odd</td>
<td></td>
</tr>
<tr>
<td>stop bits, serial port (service only)</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>handshake, serial port (service only)</td>
<td>hardware, software</td>
<td></td>
</tr>
<tr>
<td>serial mode, serial port (service only)</td>
<td>print, service</td>
<td></td>
</tr>
<tr>
<td>parallel port</td>
<td>on, off (off on delivery)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ITEM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>option</td>
<td>volume</td>
<td>1, 2, 3, 4, 5,</td>
</tr>
<tr>
<td>setup</td>
<td>open, locked</td>
<td></td>
</tr>
</tbody>
</table>
7.2.8.2  Paper Everest/4X4 PRO

Paper Length Setting
1. Press `setup/group (paper)/item (page length)`/ select the numerical value in millimeters. \(10 = 1.0 \text{ mm}, 1 = 0.1 \text{ mm}\)
2. Save it with `setup`.

Paper Width
1. Press `setup/group (paper)/item (page width)`/ select the numerical value \(10 = 1.0 \text{ mm}, 1 = 0.1 \text{ mm}\)
2. Save with `setup`

Automatic Paper Length Setting
Press `form feed + form feed`
See paper calibration information.

Activate Print Folding Line, 4X4 PRO
Embosses a line in the center of the paper which simplifies folding.
1. Press `setup/group (paper)/item (print folding)/value (on)`
2. Save it with `setup`

Adjust Print Folding Line 4X4 PRO
Perform a paper calibration if the folding line is not in the middle of the paper.

7.2.8.2.1  Paper Basic

Paper Length Setting
1. Remove the paper before setting up the paper length
2. Press `setup/group (paper)/item (page length)`/ select the numerical value in inches \(10 = 1 \text{ inch}, 1 = \text{ part of inch}\)
3. Save with `setup`

Paper Width
1. Press `setup/group (paper)/item (page width)`/ select the numerical value \(10 = 1 \text{ inch}, 1 = \text{ part of inch}\)
2. Save with `setup`

7.2.8.3  Page Layout

Verify the Page Layout
The Braille format page embosses a sample showing characters per line and lines per page and margins.

- `value` - echo actual Braille page format, characters per line, lines per page, margins, etc.
- `item` - embosses the Braille format page

Page Number
For automatic page numbering in the header or footer:
1. Press `setup/group (page layout)/item (page number)/value (position in header/ footer)`.
2. Save with `setup`.

Page Mode

<table>
<thead>
<tr>
<th></th>
<th>Single sided</th>
<th>Double sided</th>
<th>Saddlestitch Binding</th>
<th>Z-folding double sided</th>
<th>Z-folding single sided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic-S</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic-D</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Everest</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4X4 PRO</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4Waves PRO</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
7.2.8.4 Braille

Using Internal Braille Code
The internal Braille code translates text (DOS-type) to literary or computer Braille. Commercial Braille Editors will typically use the Index Default Braille Table. In other documents is may be named MIT-Braille or American Braille.

Link to Index Default Braille Table.

Own Braille Tables
Press \texttt{setup/ group (Braille)/ item (Braille table)} select Index Braille Table or installed Own Braille Tables, save with \texttt{setup}.

Emboss current loaded own Braille tables with the extended key command \texttt{Group 3, Item 1}. A maximum of four Own Braille tables may be installed using the Embosser Utility. For additional information contact Index Braille support.

Print mode
Press \texttt{setup/ group (Braille)/ item (reformatted)/ select normal or reformatted, save with setup}

<table>
<thead>
<tr>
<th>Typical Use</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>DOS text formatted to the Braille page layout. The page format of the original is maintained.</td>
</tr>
<tr>
<td>Reformatted</td>
<td>Reformat the DOS text to the Braille page layout on your embosser.</td>
</tr>
</tbody>
</table>

Reformatting Rules

<table>
<thead>
<tr>
<th>Rule</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple spaces</td>
<td>replaced with one space</td>
</tr>
<tr>
<td>One cr/lf</td>
<td>replaced with one space</td>
</tr>
<tr>
<td>Two cr/lf</td>
<td>replaced with one cr/lf</td>
</tr>
<tr>
<td>Three cr/lf</td>
<td>replaced with two cr/lf and two spaces, indented line</td>
</tr>
<tr>
<td>Four or more cr/lf</td>
<td>two cr/lf</td>
</tr>
<tr>
<td>One Form Feed</td>
<td>replaced with one space</td>
</tr>
<tr>
<td>Two or more FF</td>
<td>replaced with one FF</td>
</tr>
</tbody>
</table>

Line Spacing
Press \texttt{setup/ group (Braille)/ item (line spacing)/ select line spacing, save with setup}.

Line spacing is the distance in millimeters from dots 3 and 6 on one line to dots 1 and 4 on the next line. It may be adjusted from 2.5 to 10.0 mm. The default value is 5.0.

Braille Dot Distance
Press \texttt{setup/ group (Braille)/ item (Braille dot distance)/ select Braille dot distance, save with setup}.

The distance between the dots in the Braille cell:

- Normal Braille: 2.5 mm
- Japanese Braille: 2.2 mm (not available in the 4Waves PRO)
- Jumbo Braille: 3.2 mm

Graphic Dot Distance
Press \texttt{setup/ group (Braille)/ item (graphic dot distance)/ select distance, save with setup}.

The closest distance between two dots in the graphic:

- WinBraille Graphic: 0.5 mm, only by the use of WinBraille Image Editor
- Graphic 1.6 mm
- Graphic 2.0 mm
- Graphic 2.5 mm

Impact Level
Press \texttt{setup/ group (Braille)/ item (impact level)/ select normal or high, save with setup}.

Multiple Impact
Press setup/group (Braille)/ item (multiple impact)/ select 1 to 5 impacts, save with setup. Multiple impacts are typically used when embossing on plastic- or aluminum foils.

7.2.8.5 Option

Speech volume
Press setup/group (option)/ item (volume)/ select speech volume 1-5, save with setup.

Lock/Unlock Setup on Front Panel
Lock front panel: Press setup/group (option)/ item (setup)/ select locked, save with setup.

Unlock front panel: Press the double key command help + reformatted.

7.2.8.6 Index Braille Default Settings
Select Index Braille default setup by pressing the double command setup + c.

7.2.8.6.1 Default Basic

Basic-S is always set for single sided embossing.

7.3 Embossed Feedback

7.3.1 Hammer Test Page

Press help + on line
VIDEO: hammer test page Everest.wmn
7.3.2 **Braille Format Page**

Press *item* to emboss a frame showing current setting of lines per page and characters per line. It marks the four margin settings: top, bottom, inner and outer.
7.3.3 Calibration Page

The Calibration Page information is embossed during Paper Calibration.

VIDEO: calibrate paper sensor Everest/4X4 PRO.wmv

7.3.4 Own Braille Table

Press help + setup to emboss a list of installed Own Braille tables.
7.3.5 Letter Information Page

Press `help + help` to emboss the embosser information in relief letters (not 4X4 PRO)
Press `help + normal` to emboss the Braille embosser information page

7.3.6 Embossing Head Information

Extended key command

Includes the following information:
- Hammer batch no ####
- Hammer on time in milliseconds
- Impact level normal
- Impact level high
- Selected impact level (normal or high)
- Back-side adjustment, increase/ decrease ##%
Controlling the Embosser

Vertical alignment value 1 = Factory default
Vertical alignment value 1 = Factory default
Vertical alignment value 1 = Adjust with Help Multiple #.## millimeter

7.4 LED Feedback

7.4.1 Status LED Interface Board Basic

<table>
<thead>
<tr>
<th>LED Position Starting from top LED</th>
<th>Basic-D/S LED Function</th>
<th>Everest/4X4 PRO LED Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paper out rollers</td>
<td>LAN</td>
</tr>
<tr>
<td>2</td>
<td>5 V</td>
<td>LAN</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
<td>On/off line</td>
</tr>
<tr>
<td>5</td>
<td>Paper tractor</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>On/off line</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
<td>Reflective paper sensor</td>
</tr>
<tr>
<td>8</td>
<td>LAN</td>
<td>5 V</td>
</tr>
<tr>
<td>9</td>
<td>LAN</td>
<td>Not used</td>
</tr>
</tbody>
</table>

7.5 Web Interface

Use a web browser to get embosser information or to update the firmware. Type the LAN IP address of your embosser in the browser to reach the embosser's internal web site. By following the web site menus, you will find all information about your embosser and have the opportunity to upgrade the firmware, local speech interface, etc.

"Sign On" **user name** and **password** are available from your distributor and from support@indexbraille.com

**Get the Embosser's IP address**

<table>
<thead>
<tr>
<th>help + value</th>
<th>Echo: IP Address, Subnet mask (not 4Waves PRO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>help + help</td>
<td>Embosses: <strong>information in letter</strong> graphics (not 4X4 PRO)</td>
</tr>
</tbody>
</table>

The web interface is in firmware 12.01.1 released April 2007.
Index Embosser Web pages

- System information
- Embosser information
- Network settings
- Embosser Head properties
- Parameters for paper feed
- LED information
- Current settings
- Upgrade menu is available after "Sign On"
- Telnet
- Service

7.6 Controlling the embosser with ESC Sequences

Edit Files with ESC Sequences

The easiest way to create a file with esc sequences is to download a HEX editor from the Internet. Each esc sequence starts with HEX 1B as described in the first table. Sometimes, as in the case for the Temporary setting of document properties, the esc sequence is complemented with additional information.

4X4 PRO only supports tactile graphics from WinBraille 4.xx. See the tables that follow and the example below the tables.

<table>
<thead>
<tr>
<th>Description</th>
<th>Decimal</th>
<th>Hexadecimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate six-dot graphics</td>
<td>27 1</td>
<td>1B 01</td>
</tr>
<tr>
<td>Deactivate six-dot graphics</td>
<td>27 2</td>
<td>1B 02</td>
</tr>
<tr>
<td>Activate general graphics</td>
<td>27 3</td>
<td>1B 03</td>
</tr>
<tr>
<td>Deactivate general graphics</td>
<td>27 4</td>
<td>1B 04</td>
</tr>
<tr>
<td>Activate four-dot graphics</td>
<td>27 6</td>
<td>1B 06</td>
</tr>
<tr>
<td>Deactivate four-dot graphics</td>
<td>27 7</td>
<td>1B 07</td>
</tr>
<tr>
<td>Activate six-dot graphics</td>
<td>27 49</td>
<td>1B 31</td>
</tr>
<tr>
<td>Temporary Setting of Document Properties</td>
<td>27 68</td>
<td>1B 44</td>
</tr>
<tr>
<td>Activate WinBraille printing</td>
<td>27 87</td>
<td>1B 57</td>
</tr>
<tr>
<td>Transparent mode (y * 256 + x) number of characters</td>
<td>27 92 x y</td>
<td>1B 5C x y</td>
</tr>
<tr>
<td>Deactivate six-dot graphics</td>
<td>27 93</td>
<td>1B 5D</td>
</tr>
<tr>
<td>Transparent mode – one character</td>
<td>27 94</td>
<td>1B 5E</td>
</tr>
<tr>
<td>Activate / Deactivate Letter graphics</td>
<td>27 252</td>
<td>1B FC</td>
</tr>
</tbody>
</table>

Temporary Setting of Document Properties

<table>
<thead>
<tr>
<th>Function</th>
<th>Valid values</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Length</td>
<td>PL</td>
<td>See Page Length Value below</td>
</tr>
<tr>
<td>Page Width</td>
<td>PW</td>
<td>See Page Length Value below</td>
</tr>
<tr>
<td>Inner Margin</td>
<td>IM</td>
<td>0-10 characters</td>
</tr>
<tr>
<td>Outer margin</td>
<td>OM</td>
<td>0-10 characters</td>
</tr>
<tr>
<td>Top margin</td>
<td>TM</td>
<td>0-10 characters</td>
</tr>
<tr>
<td>Bottom margin</td>
<td>BM</td>
<td>0-10 characters</td>
</tr>
<tr>
<td>Multiple copies</td>
<td>MC</td>
<td>2-10,000 copies</td>
</tr>
<tr>
<td>Feature</td>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Page mode, (duplexing)**    | DP   | 1 = single sided  
2 = double sided  
3 = Z-folding double sided  
4 = Saddle stitch 4X4 PRO  
5 = Z-folding single sided |
| **Line Spacing**              | LS   | 0 = 2.5 mm  
1 = 3.75 mm  
2 = 4.5 mm  
3 = 4.75 mm  
4 = 5.0 mm  
5 = 5.25 mm  
6 = 5.5 mm  
7 = 7.5 mm  
8 = 10.0 mm  
10 = higher calculate line spacing in 1/10 mm.  
Example 45 = 4.5 mm |
| **Line Distance**             | LD   | Temporary line spacing to next row  
Value xx-xxx 1/10 mm  
Example. Distance to next row 5.8 mm.  
Value 58 |
| **Page Position**             | PP   | Exact vertical position of the row from top of page position in 1/10 mm.  
Example 638 = 63.8 mm from top of page. |
| **Graphic Dot Distance**      | GD   | 0 = 2.0 mm resolution  
1 = 2.5 mm resolution  
2 = 1.6 mm resolution |
| **Braille Dot Distance**      | TD   | 0 = 2.5 mm normal Braille cell interpoint  
1 = 2.0 mm Japanese Braille, interline  
2 = 3.2 mm Jumbo Braille interpoint |
| **Page Number**               | PN   | 0 = None  
1 = Top  
2 = Top-left  
3 = Top right  
4 = Bottom  
5 = Bottom-left  
6 = Bottom-right |
| **Braille Table**             | BT   | 0 = Index default Braille table  
1 = Own Braille table no 1  
2 = Own Braille table no 2  
3 = Own Braille table no 3  
4 = Own Braille table no 4 |
| **Banner Page**               | BP   | Text max 50 characters.  
The text is automatically embossed on the banner pages. Both in Braille and tactile letters. |

**Everest and 4X4 PRO Page Length - PL**
The Page Length Parameter is defined in millimeters in Everest and 4X4 PRO, the minimum value is 100 and maximum value is 585.
**Basic Page Length - PL for Basic**

Page Length in Basic is defined in whole and fractional inches.

<table>
<thead>
<tr>
<th>Paper Length PL</th>
<th>Syntax = XXY XX=1-17 Y = 0, 1, 2, 3, 4, 5, 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 inch</td>
<td>110</td>
</tr>
<tr>
<td>11 1/4 inch</td>
<td>111</td>
</tr>
<tr>
<td>11 1/3 inch</td>
<td>112</td>
</tr>
<tr>
<td>11 1/2 inch</td>
<td>113</td>
</tr>
<tr>
<td>11 2/3 inch</td>
<td>114</td>
</tr>
<tr>
<td>11 3/4 inch</td>
<td>115</td>
</tr>
<tr>
<td>12 inch</td>
<td>116</td>
</tr>
<tr>
<td>etc.</td>
<td>120</td>
</tr>
</tbody>
</table>

**Example 1: Setting a temporary page length for Everest**

Set the page length for an Everest to 500 mm:

[ESC]DPL500;

<1B><44><PL><500>

**Example 2: Setting a temporary page format**

Set the page layout for Basic to paper length 11.5", Top margin 0, Bottom margin 1, Left margin 2, Outer Margin 0.

[ESC]DPL113, TM0, BM1,LM2,OM0;

<1B><44><PL><113>

**Example 3: Banner Page**

Banner page with the text “This is a banner page made by Index Braille”.

[ESC]DBPThis is a banner page made by Index Braille;
8 Embossing

On Windows you can emboss documents to the Index Braille Embossers through the following software functions:

- Embossing from any application directly to the Embosser
- WinBraille, see Embossing using WinBraille, (Windows operating systems only)
- IbPrint, see Embossing using IbPrint, (Windows operating systems only)
- Third party software, see Embossing using third party software

8.1 Embossing on Windows

8.1.1 Embossing using WinBraille

MS-Word, Excel and Acrobat PDF
The recommended way to emboss in these programs is: file/ WinBraille/ Emboss. Follow the instructions.

Other Windows software
Emboss to WinBraille by selecting file/ print/ WinBraille.

8.2 Embossing on Mac OS X 10.4

See the iBraille User's Guide for details how to format and emboss documents from a Macintosh.
9 Service and Support

9.1 Support Tools

The system administrator can update and calibrate Index Braille Embossers by using
- Front Key Panel, see Controlling the Embosser
- The Embosser Utility program for Windows
- The Software Service Interface for advanced maintenance

The Embosser Utility program is a part of the WinBraille installation.

9.1.1 Embosser Utility

9.1.1.1 Main Functions

Embosser Utility is a Windows program for support and upgrade of Index Braille embossers. It has the following main functions:

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>EMBOSSER UTILITY</th>
<th>User Category, Comments, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade embosser flash memory</td>
<td>User Category, Comments, etc.</td>
<td>System administrator</td>
</tr>
<tr>
<td>1. Embosser firmware</td>
<td>File/ Open.../ From Internet or from local disc (Index CD)</td>
<td>System administrator</td>
</tr>
<tr>
<td>2. Embosser speech interface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Default settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Local default (local speech, default Setting abc, own tables)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set embosser network settings (Windows)</td>
<td>Tools/ IP settings...</td>
<td>System administrator</td>
</tr>
<tr>
<td>1. IP address</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. SubNet mask</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Default gateway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. DHCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. DHCP with host name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributor Default Settings</td>
<td>Tools/Factory settings...</td>
<td>Performed by Index Braille based on distributor information. Contact <a href="mailto:support@indexbraille.com">support@indexbraille.com</a> for further instructions.</td>
</tr>
<tr>
<td>1. Local speech</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Default settings A, B, C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Own tables 1-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install letter font</td>
<td>Tools/Letter font...</td>
<td>Performed by Index Braille based on distributor information. Contact <a href="mailto:support@indexbraille.com">support@indexbraille.com</a> for further instructions.</td>
</tr>
<tr>
<td>Edit Own Braille tables</td>
<td>Tools/Braille table...</td>
<td>Performed by Index Braille based on distributor information. Contact <a href="mailto:support@indexbraille.com">support@indexbraille.com</a> for further instructions.</td>
</tr>
</tbody>
</table>
9.1.1.2 Starting Embosser Utility
Menu: Start/All Programs/Index Braille/IndexEmbosserUtility.

9.1.1.3 Upgrading Embosser Firmware
file/ Open.../ from Internet or local disk

<table>
<thead>
<tr>
<th>Software Module</th>
<th>File Format</th>
<th>Included Software Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware Complete to version no</td>
<td>Firmware_Complete_xxxx.eff</td>
<td>Firmware, English Speech, Letter, Index Braille Default</td>
</tr>
<tr>
<td>Firmware Update to version no</td>
<td>Firmware_Update_xxxx.eff</td>
<td>Firmware only</td>
</tr>
<tr>
<td>Local Speech</td>
<td>Speech_Country_Company.eff</td>
<td>Speech only</td>
</tr>
<tr>
<td>Local Default</td>
<td>Custom_Default_Country_Company.eff</td>
<td>Local Speech, Default Setting ABC, Own Tables</td>
</tr>
<tr>
<td>Embosser calibration</td>
<td>Calibration data.ecf</td>
<td>Calibration data</td>
</tr>
</tbody>
</table>

Firmware Upgrade Process
1. Use the Embosser Utility to retrieve the firmware file from Internet or CD. (file/ Open.../)
2. Press the Upgrade Embosser button and enter the information about the current firmware version number. Upgrade the firmware via the USB or Network port. Firmware cannot be downloaded using the serial or parallel ports.
3. For a 4Waves PRO embosser, always select to update all embosser module(s).
4. Press OK to start the firmware upgrade. The embosser will beep during the Re-Flashing process, it will take 1-5 minutes depending on the computer. It is important to keep the printer on and the flash Utility program running during Re-Flashing.

Caution: If the transmission is interrupted before the start up message from the embosser is received the embosser's firmware may experience a major breakdown.

Upgrade verification
The embosser will issue a start-up message (echoed message) when the firmware upgrade is completed.

Check for new upgrades
You can use Embosser Utility to check www.indexbraille.com for new firmware upgrades.

9.1.2 Software Service Interface
The embossers have a service interface that can be accessed from Windows using:
• Hyper Terminal Serial Interface, see Hyper Terminal Serial Interface
• Telnet Network Interface, see Telnet Network Interface

On Mac OS X 10.4 launch the Terminal application to access the Software Service Interface, see On Macintosh.

9.1.2.1 On Macintosh
See the iBraille User's Guide for details how to access the Software Service Interface from a Macintosh.
9.2 Vertical Alignment

Adjusting Using Front Panel
Adjustments are made by moving the middle dot row, dots 2 and 5.
1. Press help + multiple.
   - Echo "help mode 100 start at #.##" (0.00 = default).
2. Adjust the middle row by 1, 10 and multiple (numerical values). Each step is 0.01 millimeters and increasing values move the middle dot row to the left.
3. Press setup to save the adjusted vertical alignment value.
   - Echo "save #.##"
   - an alignment test page with the adjusted values is embossed.
4. 4Waves Only
   Repeat step 1-3 for modules 2, 3 and 4 to adjust vertical alignment on all modules.

Checking Vertical Alignment Mechanics
If the above instructions do not give acceptable results please check the following.
- Gear wheel, gear bar and spring stretcher
- Stepper motor, stepper motor brackets, stepping motor cables and stepping motor drivers
- Paper movement rollers and formula tractors

9.3 First Braille Line Position

Adjustment steps.
Step 1. First set the First Line Offset to 0 and adjust the Top of Form Setting until the first Braille line (dots 1 and 4) is on the edge of the paper.
Step 2. Adjust the First Line Offset to move the Braille to the preferred position on the paper.

9.3.1 Top of Form Offset

The Top of Form value sets the distance between the paper sensor and paper edge on Basic, Everest, 4X4 PRO and 4Waves PRO.

Adjusting sequence
1. Press help + 10
   - Echo: "Top of Form in mm start at (##.#)".
   - only 4Waves PRO; Echo "beep #1 Top of Form in mm start at (##.#)" where "beep#1" is embossing module number.
2. Adjust the value with 1, 10 and multiple.
3. Press setup echo "saving ##.#" to save the new top of form value.
4. 4Waves PRO only - Repeat steps 1-3 for modules 2, 3 and 4.
5. When completed, the Braille format page is embossed with the new Top of Form value.

9.3.2 First Line Offset

This function is used to move the position of the Braille block on the paper.

First line offset adjusting sequence
1. Press help + 1.
   - Echo: "First line offset in millimeter start at (2.0)".
2. Adjust the distance with 1, 10 and multiple.
3. Press setup to save the new first line offset value.
4. When completed, the Braille format page is embossed with new first line offset value.
## 9.4 Replacing the Main Board

### 9.4.1 Main Board Contact Position

<table>
<thead>
<tr>
<th>No</th>
<th>Function</th>
<th>Text on Board Surface</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front Panel</td>
<td>KEYBOARD</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Sheet Feeder</td>
<td>P_FEED</td>
<td>Everest/4X4 PRO</td>
</tr>
<tr>
<td>3</td>
<td>Power supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Movement Stepper Motor</td>
<td>PF</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Embosser Head Stepper Motor</td>
<td>PH</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Embosser Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Speaker and Paper Sensor Board</td>
<td>P9</td>
<td>Basic and 4Waves PRO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Everest, 4X4 PRO Speaker and Paper Sensor Board =1-6</td>
</tr>
<tr>
<td>8</td>
<td>Paper Sensor</td>
<td>P_SENS</td>
<td>Basic and 4waves PRO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Switch formula tractor</td>
</tr>
<tr>
<td>9</td>
<td>DIP switch</td>
<td></td>
<td>Setting see <a href="#">instructions</a></td>
</tr>
<tr>
<td>10</td>
<td>Service port</td>
<td></td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Interface Board</td>
<td>P6</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Interface Board</td>
<td>P7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Grounding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Service port</td>
<td></td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>RS485</td>
<td>EXP</td>
<td>4Waves PRO internal communication</td>
</tr>
</tbody>
</table>
9.4.2 Setting the Dip Switches

The same version of the electronic main board and firmware is used in all Index Braille Embossers. However, the DIP switch settings for each embosser model are unique, so you have to set the DIP switches according to the table below before you insert a board in an embosser. Otherwise you will not receive the expected functionality.

<table>
<thead>
<tr>
<th>EMBOSSEER MODEL</th>
<th>Switch 1</th>
<th>Switch 2</th>
<th>Switch 3</th>
<th>Switch 4</th>
<th>Switches 5, 6, 7, 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic-D</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>(Not used)</td>
</tr>
<tr>
<td>Basic-S</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Everest</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>4X4 PRO</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>4Waves PRO</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>CONFIGURATION</td>
<td>Switch 5</td>
<td>Switch 6</td>
<td>Switch 7</td>
<td>Switch 8</td>
<td></td>
</tr>
<tr>
<td>First Release</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Impact level +20% for negative hammers. Only used in firmware 10.04. Contact Index support for further information.</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td></td>
</tr>
</tbody>
</table>

9.4.3 Changing Board Size

![Board Image]

9.5 Replacement Modules

See www.indexbraille.com for further information.

9.6 Removing Index Braille Software

9.6.1 Removing Index Printer Drivers on Windows

There are three reasons to remove the existing Index Braille Printer Drivers from Windows:

1. The embosser is no longer connected.
3. Trouble shooting.
1. Start the Printers and faxes dialogue: Start/ Settings/ Printers and Faxes/
2. Select the Index Braille printer and remove it.

9.6.2 Removing Index Printer Drivers on Mac OS X 10.4
See the iBraille User's Guide for details how to remove the Index Braille Printer Drivers for Macintosh.

9.6.3 Removing WinBraille from Windows
Use the standard Windows method to remove WinBraille, start/ settings/ control panel/ add remove program/
Select WinBraille from the list of available programs and request removal.

9.6.4 Removing Embosser Utility from Windows
Use the standard Windows method to remove Embosser Utility, start/ settings/ control panel/ add remove program/
Select Embosser Utility from the list of available programs and request removal.

9.7 Transport and Service
- Lock the embossing head.
- Pack the embosser in its original packing box. The warranty will only be valid if the embosser is transported in professional packaging.
- To get quick and effective service, please include a fault description and sender information.
- Before shipping, contact Index Braille for a service ID number.

9.7.1 Locking the Embosser Head
Place the embossing head in the correct position by pressing help + double and insert the print head lock.

9.7.1.1 Basic-D/S
9.8 Appendix

9.8.1 Letter Fonts

Embossed raised tactile letters, (A-Z, a-z), are used to give embosser feedback to sighted persons. You can, for example, press `help + help` to receive embosser information in raised tactile letters. You can also use a text file with esc sequences to emboss raised letters either as a complete document or as a part of a Braille document. See [Controlling the embosser with ESC sequences](#) for details. (Note: 4X4 PRO does not support letter graphics).

**Non-Western Alphabet**
You can get raised tactile graphics with other alphabets, for example Moon, Cyrillic, Arabic, etc. For further information please contact Index Braille support [support@indexbraille.com](mailto:支持@indexbraille.com).

9.8.2 Index Default Braille Table

Index Braille Code is the commonly used translation from the Western character set to Braille. The same translation is used with many names for example, MIT-code, US Grade 0, US Computer Braille, American Grade 0.
The Index Braille Table list is installed by default in all embosser.

1st Line: a b c d e f g h i j
1st Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦
2nd Line: k l m n o p q r s t
2nd Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦
3rd Line: u v x y z & = ( ! )
3rd Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦
4th Line: * < ☆ ? : $ ] \ [ w
4th Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦
5th Line: 1 2 3 4 5 6 7 8 9 0
5th Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦
6th Line: / + # > ' −
6th Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦
7th Line: ® ^ _ " . ; ,
7th Line: ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

9.8.3 List of Index file formats

Embosser Utility and Speech Tool
Embosser Factory Settings files (*.efs) = Specify default setup values, A, B, C.
Embosser Letter Font (*.elf) = Tactile letter font embosser test page, etc.
Embosser Braille Codes (*.ebc) = Own Braille code, Own 1, Own 2, Own 3, Own 4.
Embosser Component Packages (*.bcp) = Package of several Braille tables.
Embosser Flash Files (*.eff) = Package of files which can be used to Upgrade the embosser, speech, firmware, tables, etc.
Embosser Web Files (*.ibe) = For internal use at the Index Braille factory.
Embosser Calibration File (*.ecf) = Calibration of embosser production settings
WinBraille
Text Files (*.txt)
HTML Files (*.htm, *.html)
Rich Text Files (*.rtf)
Word Files (*.doc)
Braille File Format (*.brf) = for example Duxbury Braille translated file format.
WinBraille Files (*.wbr) = file containing the information in the translated Braille document.
WinBraille Template Files (*.wtf) = template file to define Braille document format.
WinBraille Interchangeable Files (*.wif) = file including the complete information used by WinBraille to
produce a Braille document. A .wif file can be opened in any computer even with other WinBraille settings.
Containing source document, Braille document, Braille translation tables, profiles, etc.

Index Speech Tool
Speech Files (*.ispf) = Local speech interface with words in Wave format. This file has to be converted into
the embosser speech format using the development platform at Index Braille factory.
Embosser Speech File (*.esf) = Local speech file ready to be used to upgrade the embosser using Embosser
Utility.

9.8.4 Power Supply Basic/Everest/ 4X4 PRO

Power Supply Information
Green LED indicates incoming 42 V.
Yellow LED indicates regulated 38.6 V DC to embosser main board.

Power Supply Data
Tolerances on incoming voltage 230 V +/- 20%, 115 V +/- 20%
Fuse glass 5x20 mm
Incoming fuse = 4.00 A/250 V Slow blow
Power supply fuse = 6.3 A/250 V Slow blow
Power 160 W