Embosser Manual
Basic-D/S

Manual_Basic_1235_R1202A_eng (20080124)

INDEX
B R A I L L E

Table of Contents

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.
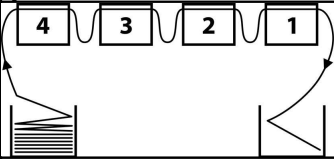
Service and Support: maintaining and servicing.

1.4 Document Conventions

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

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

1.5   Terminology

Term	Explanation
Embosser	Printer that produces Braille texts as raised dots in paper
Index Braille Code	Default installed text-to-Braille translation table
Own Braille Table	User-defined Braille translation tables made in computer or literary Braille
Braille translation files	Files used by WinBraille defining the text-to-Braille translation. The Braille translation files handle both contracted or uncontracted Braille
Embossing Module	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.
Master Module (1)	
Module 2, 3, 4	See picture above
Power Module	Module located below the embosser including power supply, communication, connectors and dip switch for module definition.
Contracted Braille/ Grade 2 Braille	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.

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.

Full name	Short name
WinBraille	WinBraille
Index Embosser Utility	Embosser Utility
Index IbPrint	IbPrint
Index Speech Tool	Index Speech
Index Braille Printer Driver	Index Printer Driver
Index Braille CD	Index CD
Index Braille Embosser(s)	Index Embosser(s)

1.7   Related Documents

Document Title	Description
Index Catalogue	The Index Braille Product Guide
WinBraille Users Guide	The Users Guide describes how to install and use WinBraille.

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.

Operating system	Office 2000	Office XP	Office 2003
Windows 2000	X	X	X
Windows XP, PRO	X	X	X
Windows XP, Home	X	X	X

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.

- 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.

Caution	If the power cable is connected before you have selected the voltage, the fuse can be damaged.

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).

Model	Page Size	Lines per page	Characters per line
Basic-D/S	Length 12" x width 11"	28	42
Everest	A4, 297x 210 mm	29	35
4X4 PRO Saddle stitch format	A3, 420 x 297 mm	29	35
4Waves PRO	Length 12" x width 11"	28	42

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 or from the Index CD. All software may be upgraded free of charge from the Internet.		
SOFTWARE	**FUNCTION, MODULES**	**REQUIREMENTS**
WinBraille 4.XX See WinBraille	• WinBraille Braille editor • Index Printer Drivers • Word Excel and Adobe Acrobat macro *See WinBraille User´s Guide for details.*	The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.
Printer Driver Only with WinBraille	• Index Printer Drivers *Run the WinBraille installation wizard and select "driver installation only"*	The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.
Printer Driver Only with Embosser Utility	• Index Printer Drivers *Run the Embosser Utility installation wizard and select "driver installation only"*	The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.
Embosser Utility [****]	• Embosser Utility • IbPrint *IbPrint is automatically installed when installing Embosser Utility. The IbPrint icon is placed on the desktop*	The installer must have administrator privileges on the computer, as well as the embosser model, firmware version, communication port, network, etc.

6.1.2   Ports and Cables

Computer Connections

INTERFACE	**CABLE**	**STANDARD**	**SETTING**	**INDEX PART NO**
Centronics	36 P, 3 meter	IEEE1284	SPP, EPP, ECP	1267
USB	USB A-B, 3 meter	USB	Plug & Play	1387
Network	UTP Cable CAT 5 RJ45	TCP/IP	Set IP address with: Embosser utility/ IP settings	
Serial (for service only)	9 P Female - Female, 3 meter		38400, 8, N, 1, Hardware	1447

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 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.
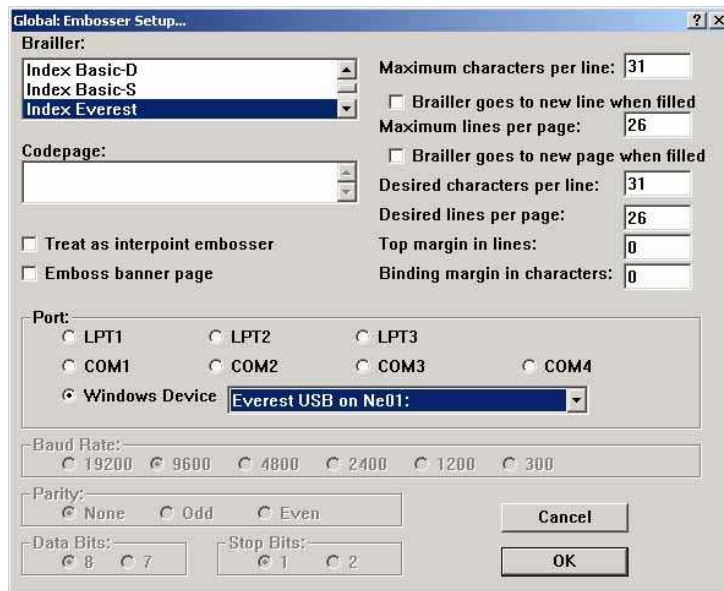
6.2   Mac OS X 10.4

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

INTERFACE	CABLE	STANDARD	SETTING	INDEX PART NO
USB	USB A-B, 3 meter	USB	Automatic	1387
Network	UTP Cable CAT 5 RJ45	TCP/IP	Choose System Preferences-> Network. Select DHCP or Manually enter an IP address	

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](#).

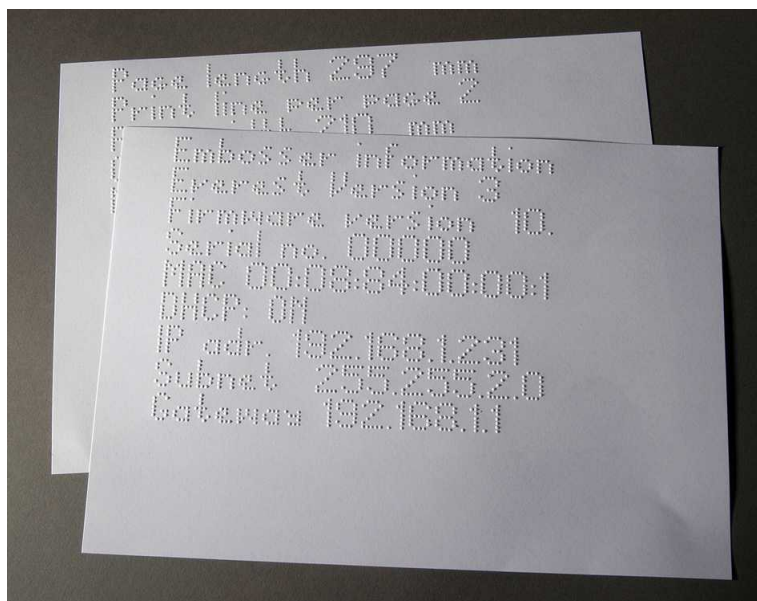## 7.2   Function Summary

7.2.1   Information

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

7.2.2   Common Commands

COMMANDS	FUNCTION
on line	Starts embossing. Cancels selected value in setup, numerical function, adjustments, etc.

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

	SETUP COMMANDS
setup	Save changes to the setup values.
group	Select group (paper/ page layout/ Braille/ communication/ option).
item	Select item within the selected group.
value	Select value, increase step by step.
1	Increase/ decrease the Numerical Value by one.
10	Increase/ decrease the Numerical Value by ten.
multiple	Toggle between increasing/ decreasing the Numerical Value.
on line	Cancel changes to the setup values.
normal	Restore to factory settings. Confirmed with echo "Setup 000 loaded".
c	Sets the values to Index default setup.

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.

Front panel key	Function
1 / value	Increase/ decrease the value by one.

10	Increase/ decrease the value by ten.
setup	Save the selected value.
multiple	Toggle between increase (+) and decrease (-).
on line	Cancel the numerical value function.
repeat	Set the lowest value.

7.2.5   Embosser Calibration

	EMBOSSER CALIBRATION
help + group	Start calibration of paper sensor (Everest / 4X4 PRO) see paper calibration.
help + item	Start calibration of actual paper length (Everest / 4X4 PRO) see paper calibration.
help + 10	Start setup of the distance between paper sensor and paper edge in paper calibration see first-line position.
help + 1	Start setup of the distance between paper edge and first Braille line see first-line position.
help + multiple	Start vertical alignment of the Braille cell.
help + double	Places the embossing head in transport position to enable inserting of the embossing head locks.

7.2.6   Extended Key Commands

	EXTENDED KEY COMMANDS
help + b	Start extended key command
group	Next group (1-5)
item	Next item
value	Value item
Group 1, Item 1,	4Waves PRO: Check the status of embossing modules. The master (1) checks the internal network communication with modules 2, 3 and 4.
Group 1, Item 2,	4Waves PRO: Starts the status check of the hammers in module 1, 2, 3 and 4. The status feedback is embossed with letter graphics.
Group 2, Item 1,	Print embossing-head information in letter graphics: impact level. batch no, etc.
Group 3, Item 1,	Own Braille tables information: flash-block information in letter graphics
Group 3, Item 2,	Letter information: flash-block information in letter graphics
Group 3, Item 3,	Factory default setting A, B, C information: flash-block information in letter graphics
Group 3, Item 4,	Speech version information: flash-block information in letter graphics
Group 3, Item 5,	Firmware version information: flash-block information in letter graphics

Group 4, Item 1,	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.
	• Text embossing speed
	    Echo "value normal start at #1600" 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 "saving #xxx". Where #xxx is the new text embossing speed.
	• Graphics embossing speed
	    Echo "saving #xxx start at #1300" 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 "saving #xxx". Where #xxx is the new graphic embossing speed.

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 *1* 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 possibly with 4Waves PRO.
   a) Activate multiple function by pressing *multiple*
   b) Count to 11 with the *1* 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

GROUP	ITEM	VALUE
paper	paper length, mm or inch	numerical
	paper width, mm or inch	numerical
	print folding (only 4X4 PRO)	0, 1, 2, 3 number of dots in the print folding line
	number of paper out (only 4Waves PRO)	numerical

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

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

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

GROUP	ITEM	VALUE
option	volume	1, 2, 3, 4, 5,
	setup	open, locked

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 mm, *1* = 0.1 mm)
2. Save it with *setup.*

Paper Width
1. Press *setup*/ *group* (paper)/ *item* (page width)/ select the numerical value (*10* = 1.0 mm, *1* = 0.1 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 inch, *1* = part of inch)
3. Save with *setup*

Paper Width
1. Press *setup*/ *group* (paper)/ *item* (page width)/ select the numerical value (*10* = 1 inch, *1* = 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

	Single sided	Double sided	Saddlestitch Binding	Z-folding double sided	Z-folding single sided
Basic-S	X				X
Basic-D	X	X		X	X
Everest	X	X			
4X4 PRO	X	X	X		
4Waves PRO	X	X		X	X

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 *setup*/ *group* (Braille)/ *item* (Braille table)/ select Index Braille Table or installed Own Braille Tables, save with *setup.*

Emboss current loaded own Braille tables with the extended key command ***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 *setup/ group* (Braille)/ *item* (reformatted)/ select normal or reformatted, save with *setup*			
	Typical use	**Function**	
Normal	DOS text formatted to the Braille page layout	The page format of the original is maintained	
Reformatted	Reformat the DOS text to the Braille page layout on your embosser	**Reformatting Rules**	
		Multiple spaces	replaced with one space
		One cr/lf	replaced with one space
		Two cr/lf	replaced with one cr/lf
		Three cr/lf	replaced with two cr/lf and two spaces, indented line
		Four or more cr/lf	two cr/lf
		One Form Feed	replaced with one space
		Two or more FF	replaced with one FF

Line Spacing

Press *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 *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 *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 *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.*

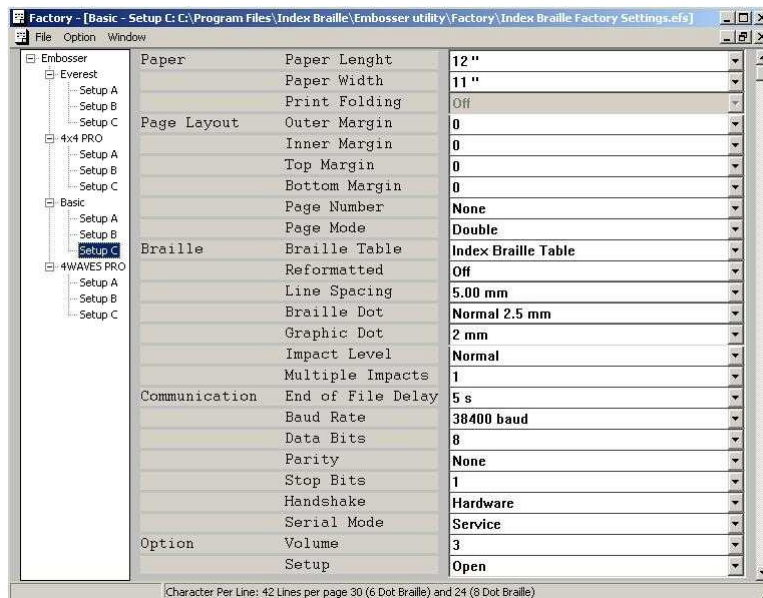**Lock/Unlock Setup on Front Panel**
Lock front panel: Press *setup*/ *group* (option)/ *item* (setup)/ select locked, save with *setup.*

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
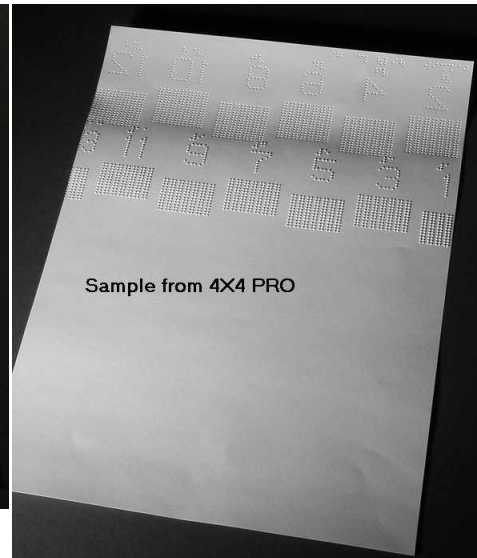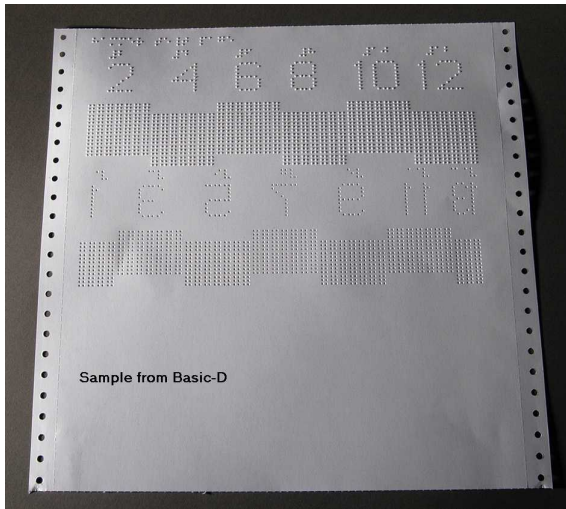

Basic-S is always set for single sided embossing.

7.3   Embossed Feedback

### 7.3.1 Hammer Test Page

Press *help + on line*
The Hammer test page displays dot quality of hammers numbers 1-13.
VIDEO: hammer test page Everest.wmn

Sample from Basic-D

Sample from 4X4 PRO
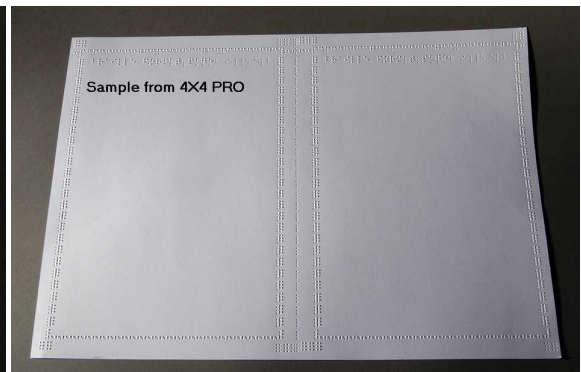
7.3.2 Braille Format Page

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.

Sample from Everest

Sample from Everest

Sample from Basic-D

Sample from 4X4 PRO
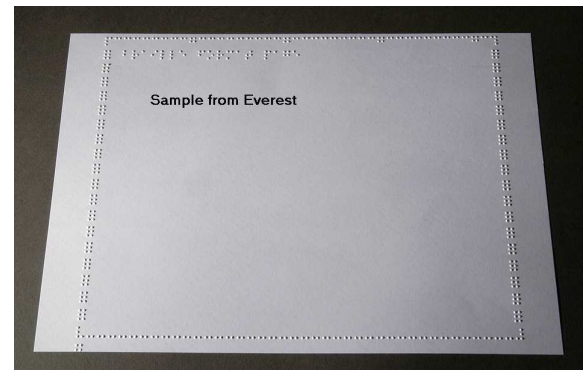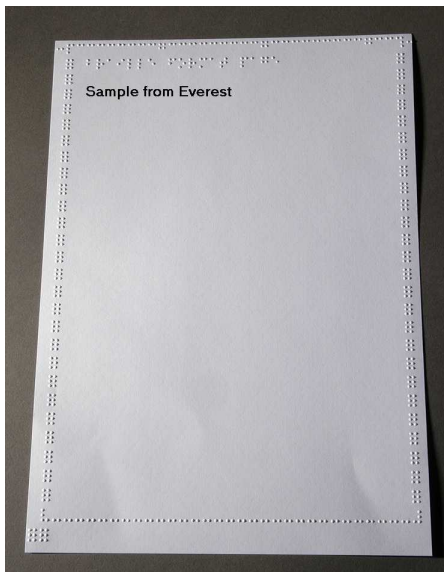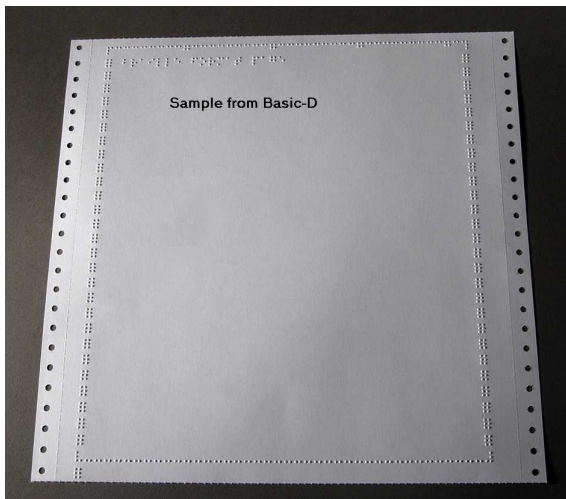
7.3.3 Calibration Page

The Calibration Page information is embossed during Paper Calibration.

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

Sample from Everest

7.3.4 Own Braille Table

Press *help + setup* to emboss a list of installed Own Braille tables.

Sample from Everest
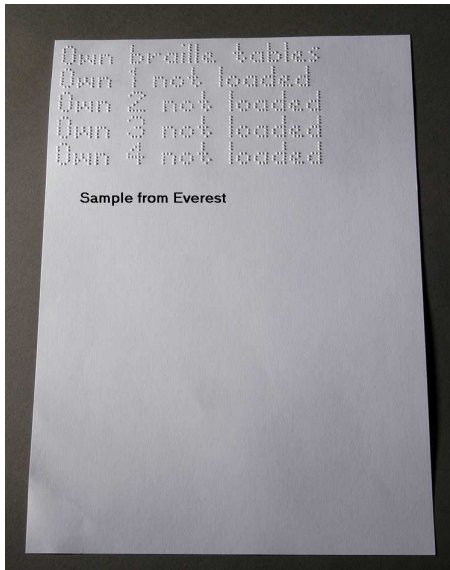
7.3.5 Letter Information Page
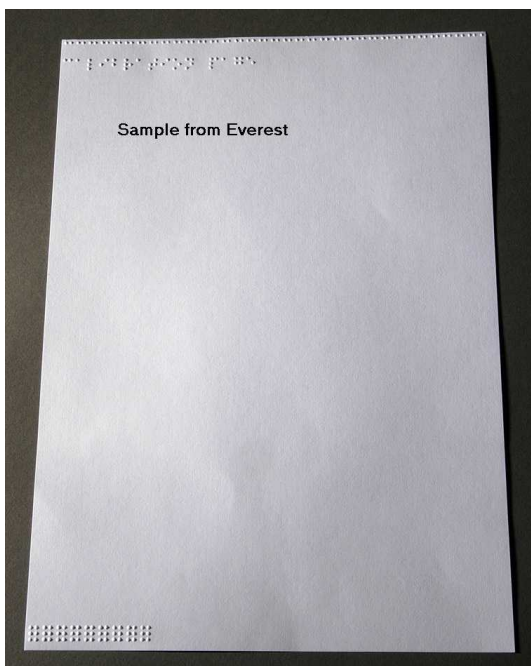
Press *help + help* to emboss the embosser information in relief letters (not 4X4 PRO)
Press *help + normal* to emboss the Braille embosser information page

Sample from Everest
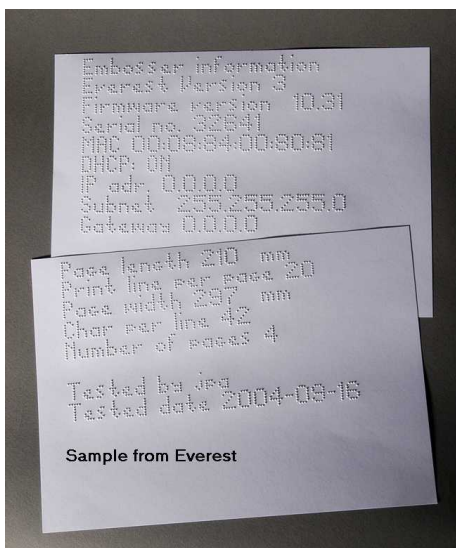
7.3.6 Embossing Head Information

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 ##%

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

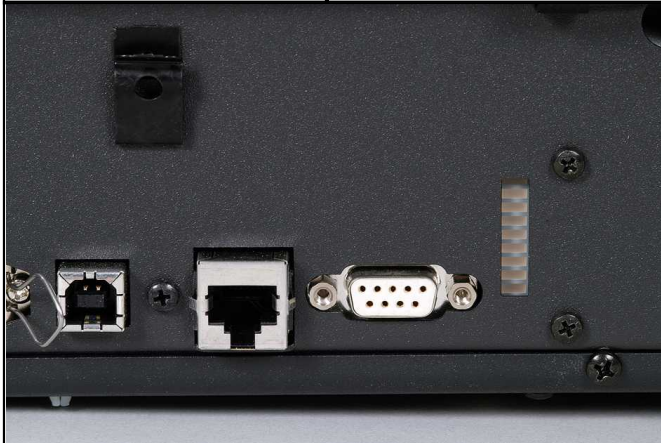| LED Position Starting from top LED	Basic-D/S LED Function	Everest/4X4 PRO LED Function
1	Paper out rollers	LAN
2	5 V	LAN
3	Not used	Not used
4	Not used	On/off line
5	Paper tractor	Not used
6	On/off line	Not used
7	Not used	Reflective paper sensor
8	LAN	5 V
9	LAN	Not used

7.5   Web Interface

Use a web browser to get embosser information or to update the firmware.
Type the LAN IP address of 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

help + value	Echo: IP Address, Subnet mask (not 4Waves PRO)
help + help	Embosses: information in letter graphics (not 4X4 PRO)

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.

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

Temporary Setting of Document Properties

Function		Valid values	Comments
Page Length	PL	See Page Length Value below	Calculate page layout
Page Width	PW	See Page Length Value below	Calculate page layout
Inner Margin	IM	0-10 characters	
Outer margin	OM	0-10 characters	
Top margin	TM	0-10 characters	
Bottom margin	BM	0-10 characters	
Multiple copies	MC	2-10,000 copies	

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	Not supported by 4X4 PRO
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.	Not supported by 4X4 PRO
Graphic Dot Distance	GD	0 = 2.0 mm resolution 1 = 2.5 mm resolution 2 = 1.6 mm resolution	Not supported by 4X4 PRO
Braille Dot Distance	TD	0 = 2.5 mm normal Braille cell inter point 1 = 2.0 mm Japanese Braille, interline 2 = 3.2 mm Jumbo Braille inter point	Embossing speed is maximum for 2.5 mm Braille cell mode.
Page Number	PN	0 = None 1 = Top 2 = Top-left 3 = Top right 4 = Bottom 5 = Bottom-left 6 = Bottom-right	Requires a corresponding top or bottom margin.
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.

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

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:

FUNCTION	EMBOSSER UTILITY	User Category, Comments, etc.
Upgrade embosser flash memory 1. Embosser firmware 2. Embosser speech interface 3. Default settings 4. Local default (local speech, default Setting abc, own tables)	**File/ Open...**/ From Internet or from local disc (Index CD)	System administrator
Set embosser network settings (Windows) 1. IP address 2. SubNet mask 3. Default gateway 4. DHCP 5. DHCP with host name	**Tools/ IP settings...**	System administrator
Distributor Default Settings 1. Local speech 2. Default settings A, B, C 3. Own tables 1-4	**Tools/Factory settings...**	Performed by Index Braille based on distributor information. Contact support@indexbraille.com for further instructions.
Install letter font	**Tools/Letter font...**	Performed by Index Braille based on distributor information. Contact support@indexbraille.com for further instructions.
Edit Own Braille tables	**Tools/Braille table...**	Performed by Index Braille based on distributor information. Contact support@indexbraille.com for further instructions.

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

Software Module	File Format	Included Software Components
Firmware Complete to version no	Firmware_Complete_xxxx.eff	Firmware, English Speech, Letter, Index Braille Default
Firmware Update to version no	Firmware_Update_xxxx.eff	Firmware only
Local Speech	Speech_Country_Company.eff	Speech only
Local Default	Custom_Default_Country_Company.eff	Local Speech, Default Setting ABC, Own tables
Embosser calibration	Calibration data.ecf	Calibration data

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

Correct alignment	**Incorrect Alignment**
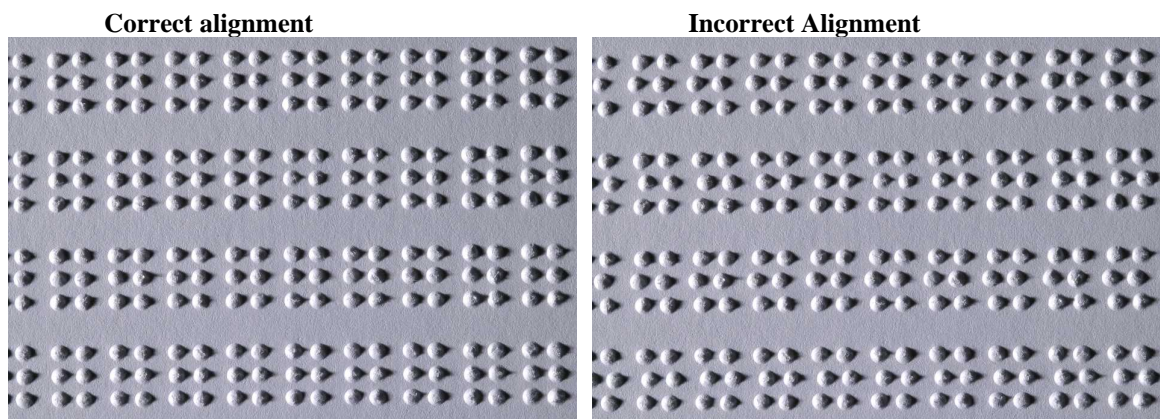
9.3 First Braille Line Position

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.
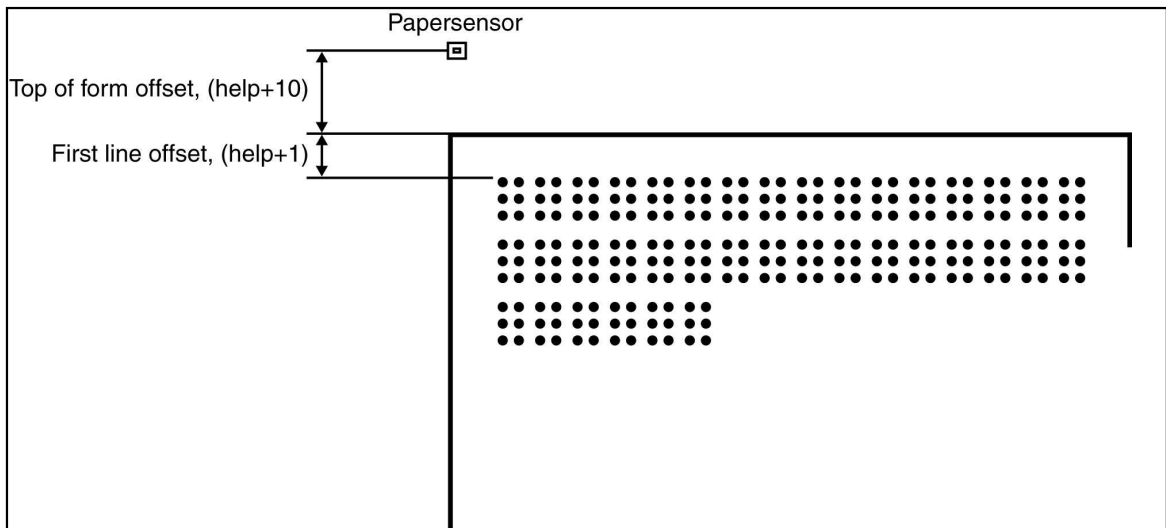Step 2. Adjust the First Line Offset to move the Braille to the preferred position on the paper.

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.
1. 4Waves PRO only - Repeat steps 1-3 for modules 2, 3 and 4.
4. When completed, the **Braille format page** is embossed with new first line offset value.
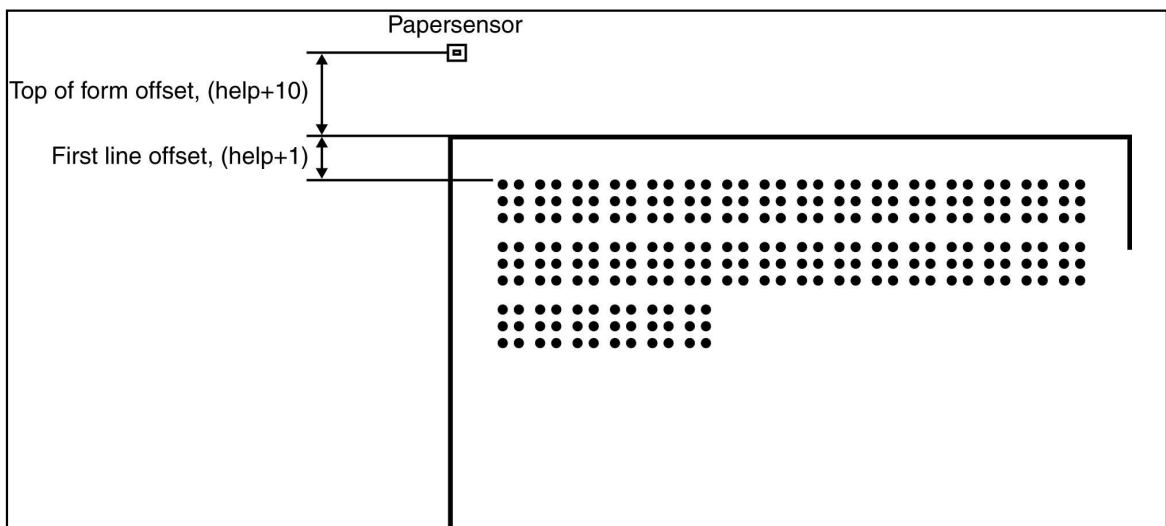
9.4   Replacing the Main Board

9.4.1   Main Board Contact Position

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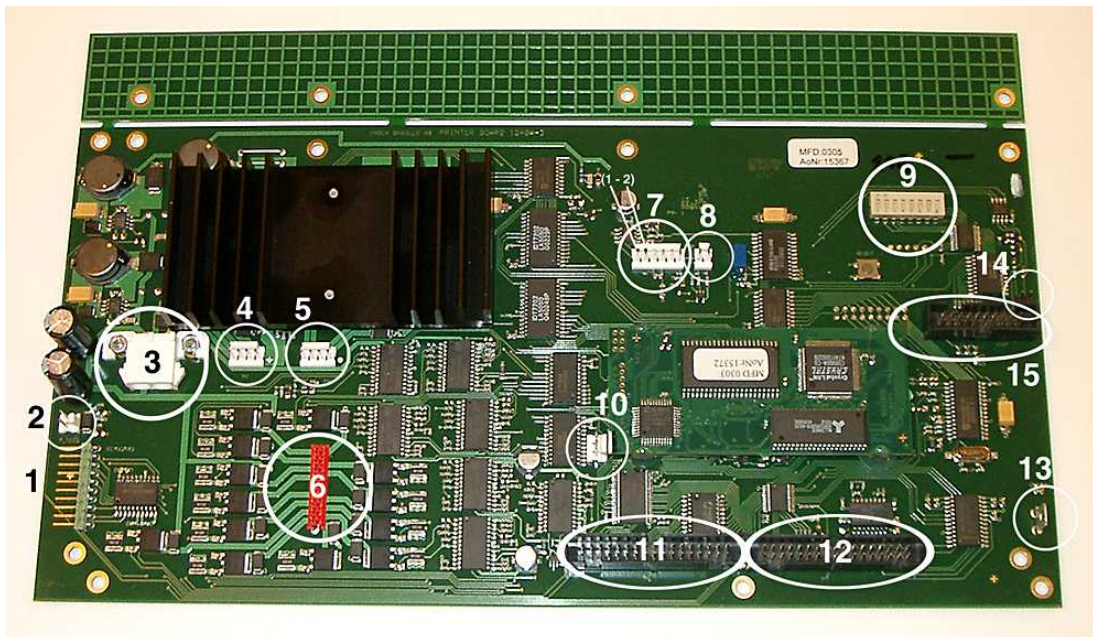
9.4.2 Setting the Dip Switches

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.

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

9.4.3 Changing Board Size

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.
2. Before installation of a new WinBraille version.
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
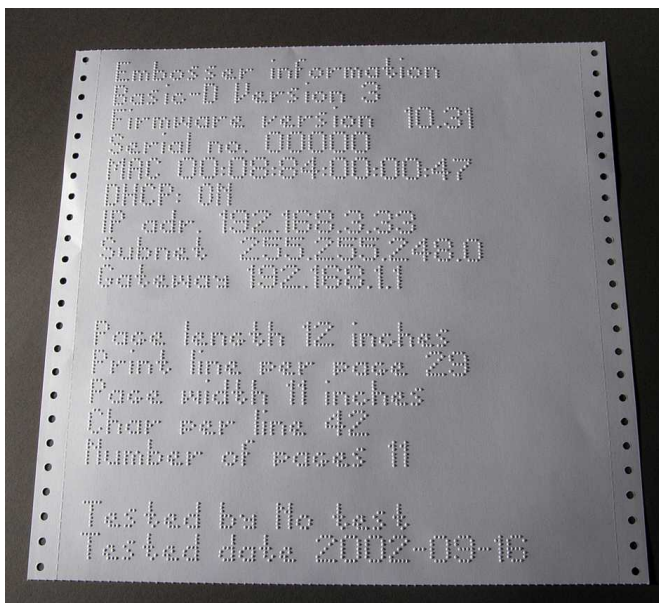
9.8.2 Index Default Braille Table

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

2nd Line:	k	l	m	n	o	p	q	r	s	t

3rd Line:	u	v	x	y	z	&	=	(	!	)

4th Line:	*	<	%	?	:	$	]	\	[	w

5th Line:	1	2	3	4	5	6	7	8	9	0

6th 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.
Braille 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.
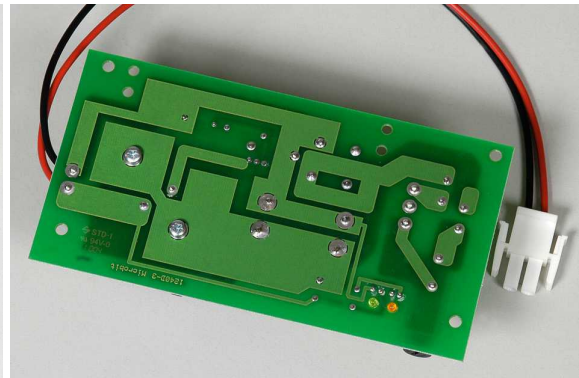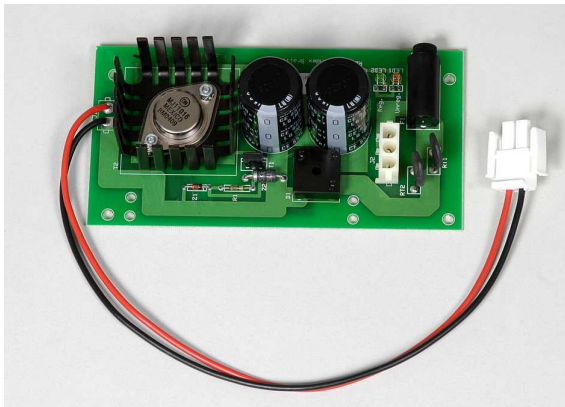
Power Supply Data
Tolerances on incoming voltage 230 V +/- 20%, 115 V +/-20%
Fuse glass 5x20 mm
Incoming fuse = 4.00 A/250 V Slow blow
Power supply fuse = 6.3 A/250 V Slow blow
Power 160 W

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