Reading Electronic Braille

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Introduction

This brief document contains information about reading or embossing electronic braille documents.

What is electronic braille?

Electronic braille (or soft braille) is a computer file containing a document in braille format. Electronic braille files contain braille signs (for example, braille contractions) and do not require further conversion into braille (for example by a braille translation program).

There are two main file types:

- BRF – Formatted Braille
- PEF – Portable Embosser Format

Both these file types contain braille signs.

It is possible either to read electronic braille files with a refreshable braille display or emboss them to create a paper copy.

Reading Electronic Braille

There are a few ways to read an electronic braille file:

- With a screen reader and braille display
- On a stand-alone braille note taker
- Visually on a computer screen

Using a screen reader and braille display

You can read an electronic braille file with a screen reader in combination with a refreshable braille display. We will not give specific instructions for a particular screen reader or braille display, but the following general tips should help you find the correct settings.

Typical screen reader settings

In your screen reader, make the following settings:

- Turn braille translation OFF
- Switch the braille translation table to USA Computer braille (sometimes called North American Braille Computer Code)

Once you have these settings, you can open a BRF file in an ordinary word processor or text editor, such as Windows Notepad and read through the text with the usual navigation keys, either on the computer keyboard or on the braille display.

Tip: Often BRF files contain contracted braille (grade 2), so reading a BRF file with speech may not give the best results – all the braille contractions will be read out as different symbols.

Note: Although the majority of English electronic braille files will use USA computer braille, if you received the electronic braille files from another non-English country, please make sure you change the braille table to match. For example, if you received a German file, set your screen reader to use the Euro computer code. If you're reading a Unicode braille file, then these steps are not needed.

What happens if you have the wrong settings?

If you have the wrong screen reader settings, then typically you will find one of the following:

1. If braille contractions come out as incorrect signs, but there is the correct number of signs, then it is likely that the braille table is not set correctly. Check that it is the USA computer code.

Typical incorrect output looks like this:

⠿⠮⠄⠢⠘⠿ ⠿⠳⠮⠄⠮⠱⠴⠿⠮⠮⠐⠴⠶ ⠿⠪⠮⠷

instead of:

⠹⠮⠄⠪⠱⠮ ⠹⠳⠮⠄⠮⠱⠴⠿⠮⠮⠱⠴⠴ ⠹⠪⠮⠷

2. If braille contractions appear to be other braille signs, often not the right number, then it is likely that the file it being double-translated. Make sure that your screen reader is set to computer braille and braille translation is turned off.

Typical incorrect output looks like this:

⠆⠃⠱⠆⠆⠲⠻⠆⠢ ⠆⠽⠆⠂⠻⠏⠻⠃⠒⠆⠴⠹ ⠆⠆⠃⠆

instead of:

⠰⠃⠴⠚⠆⠰ ⠰⠽⠆⠂⠻⠏⠻⠃⠒⠆⠴⠹ ⠰⠆⠃⠆

Other Settings

Though not essential, you might also find the following settings helpful:

- Word wrap, (sometimes called show complete words): ON. This will mean that a braille word is never split at the end of your braille display.
- Eight dot mode: OFF. This means that the lowest two dots (dots 7 and 8) on your braille display will only be used to show the cursor. Turning these extra dots off may make it easier to read the braille file as they will be removed from the electronic braille file.

Using a braille note taker

If you have a braille note taker, you can load the brf file onto it and read it using just the note taker (not connected to a computer). Again, we do not give specific instructions for a particular device, but the following settings are typical.

Typical settings needed

- No translation
- Set braille table to USA computer code (sometimes called North American Braille Computer Code)

Then use the normal navigation keys on your note taker.

If you have the incorrect settings, then the symptoms will be the same as for reading with a screen reader.

Viewing on a Computer Screen

If you are sighted and want to read a BRF file on a computer screen, follow these instructions. Note that you will need a braille font, such as "Braille" or "SimBraille".

If you have a braille translation package, this will be the best way to view the braille file.

Alternatively, if you do not have a braille translation package:
1. Load the file into a word processor, such as Microsoft Word.
2. Select All.
3. Change the font to the braille font, such as Braille or SimBraille. Note that you might like to increase the font size to, for example 20 point.

The resulting braille should be the same as what will appear on paper.

Note that most braille fonts simulate the USA computer braille encoding, so the braille dots should match up.

Note that if you have a Unicode braille file, then it will automatically appear as braille dots without applying a braille font.

Embossing Electronic Braille

In order to emboss a copy of an electronic braille file, you will most likely need braille translation software.

Simply load the braille file in, making sure that the options are set to do no interpretation or further processing of the file. The braille file already is translated into braille and already contains all the layout.

Then, check it appears correctly on the screen and then use the usual Emboss command.

Note: When embossing an electronic braille file, it is very important that the settings for number of characters per line and number of lines per page match the settings in your braille translation software and the settings on your embosser. Please check this first before embossing.

Technical Information

This section contains a little more technical information about BRF and PEF files.

BRF Files

The BRF (formatted braille) file is an unofficial standard for storing braille documents.
The file is basically a text file containing the following characters:

- Printable characters, exclamation to underscore (ASCII 33-95). These represent the 63 different braille dot patterns.
- Space (ASCII 32), represents a braille space.
- Carriage Return + Line Feed (ASCII 13+10): represents start of new line.
- Form Feed (ASCII 12): begins a new page.

The contents of a BRF file basically matches the basic information to send to a braille embosser.

The number of characters on a line, and the number of lines per page, should not exceed the number that will fit on a page.
The precise numbers will vary depending on the layout and paper size.

Note that this file type contains no special control codes or meta data.

Unicode braille is encoded using the special braille characters in Unicode: U+2800 to U+283f.

PEF Files

The Portable Embosser File format is a more sophisticated file that contains metadata on the number of characters per line and the number of lines per page.
A PEF file is an XML file and uses Unicode to represent the 63 braille dot patterns and space (Unicode U+2800-283f).

Each line of braille is enclosed in <row> and </row> tags; each page is enclosed in <page> and </page> tags; and so on for sections and volumes.

For further information on the PEF file format, go to www.pef-format.org.

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