Electronic Braille Document Reader

ABSTRACT

An investigation is conducted into portable Braille devices which would allow visually impaired individuals to read electronic documents. Consumer research conducted on the existing Braille devices has identified the need for a portable and flexible E-books reader. This poster describes the design and development of an electronic device that will enable reading of any electronic text document through a single Braille cell.

Braille books tend to be bulky in size due to the minimum size requirements for each Braille cell. E-books can be read in Braille using refreshable Braille displays connected to a computer. However, the refreshable Braille displays are expensive, bulky and are not portable. These factors restrict blind and visually impaired individuals from accessing much of the literature which isn't available in Braille.

Our design of a novel Electronic Braille Document Reader will overcome the problem of carrying bulky Braille books by allowing multiple e-books to be saved in a portable memory device. By convert text from ASCII into Braille patterns, it will give an access to books which were never published in Braille. The single Braille cell design reduces the bulk of the device allowing it to be portable. An additional benefit of the device is that it can be integrated into a glove and worn thus giving the user freedom to carry on with other tasks while reading.

Our investigation has confirmed the feasibility of the Electronic Braille document reader built around a microcontroller system. Portable Electronic Braille Document Reader will provide substantial benefits to blind and visually impaired individuals, and overcome the limitations of Braille books.

Keywords: Braille, e-books, blind, visually impaired