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Reading Braille on Mobile Phones: A Fast Method with Low Battery Power Consumption

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Abstract: This paper develops a method for presenting the standard six-point Braille characters on mobile devices that feature a tactile feedback. The proposed method views each Braille character as a two-column code, each column consisting of three points. The eight different combinations of raised and lowered points of the three-point column are encoded with a single pattern of vibration, with the two columns of a Braille character are separated by a period of silence. The encoding scheme for the different point-combinations in a column is inspired by Morse code (a series of dots and dashes). The encoding scheme is optimized to reduce the average reading time per character and to reduce the average vibration time per character. These optimizations target increasing the speed of reading and increase the mobile device's battery life.