Name(s)

Evan T. Morikawa

Project Number

S0714

Project Title

Chording Glove: A Novel Alternative to Text Entry in Bluetooth Enabled Peripheral Devices

Abstract

Objectives/Goals

As the world trends towards a time when portable computing devices are miniaturized to the point where they become wearable, efficient human interface with these electronics becomes more difficult. The #qwerty# keyboard, while standard in the consumer market, is inherently large, inefficient, awkward, and not suitable for miniaturized electronics. A solution to this problem exists within single handed chording technology as a method of efficiently and portably entering text into peripherals. A chording device generates text through the striking of a combination of keys simultaneously; much like the chords that are played on a piano. This project intends to develop an efficient and effective means of inputting text through a wireless Bluetooth connection utilizing single handed chording technology.

Methods/Materials

This project demonstrates the effectiveness of this technology when placed on the fingertips of a wearable, portable glove. Buttons at the end of each fingertip relay signals to a PIC 18F4680 Microcontroller, which then interprets those signals and relays the proper output codes to an HID enabled Bluetooth transmitter. Through the Human Interface Device (HID) profile of the wireless Bluetooth stack, the device transmits the interpreted text input commands wirelessly to any HID Bluetooth enabled peripheral device such as a personal digital assistant (PDA) or cell phone.

Conclusions/Discussion

The resultant device effectively transmits a standard alphanumeric key set to any HID Bluetooth enabled device. Due to the compact nature and high level of efficiency constructed into the device, it has the potential to exceed input speeds exhibited with current portable input methods such as cell phone keypad entry and PDA graffiti; thereby making it a viable alternative for text entry in the consumer markets as well as for applications from the military to disabled persons.

Summary Statement

A novel and portable method of inputting text quickly and efficiently to any Bluetooth enabled device.

Help Received