

Application of SEMG in Computer Mouse Access for the Disabilities

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摘要

Abstract

Purpose: To improve the operating speed of the traditional row-column scanning computer keyboard-mouse composite panel controlled using a single key. Method: Using a single mouse input control window can avoid scanning unnecessary keyboard characters, thereby increasing the speed in performing mouse commands. In addition, the surface electromyographic (SEMG) sensing input can also be used to provide an input option for the disabled. Results: Eleven volunteers operated the single mouse input control window using the SEMG input and the traditional computer keyboard- mouse composite panel controlled using a single key. The average operating times were 121.3 +/- 8.9 sec and 208.6 +/- 10.7 sec, respectively. The difference was statistically significant ($p < 0.05$). Conclusions: The row-column scanning method with the single mouse control window using SEMG input can effectively decrease the operating time. Through this system, the disabled can operate a computer and lead an independent life