

The development of interfaces to operate Smartphones for quadriplegic people (The 4th)

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Keywords : Smartphone, Interface, Switch, Quadriplegia

1. INTRODUCTION

Recently various Smartphones are prevailing in the world. They are almost equal to PCs in function and are carried more easily than notebook PCs. Generally we must touch their display with our fingers. But the “iPhone series” can be operated by the external switches because they take into consideration for accessibility. Also the “Android phone series” can be connected to a mouse and a keyboard for PCs. Then they have a strong possibility of switch operation if the emulator of a mouse and a keyboard for general PCs will be made. In this report we will report each prototype interface for iPhone and Android phone.

2. THE PROTOTYPE INTERFACE FOR “iPhone”

Elements of the interface are a switch to operate iPhone, “Macro Switch Box”, “Deki iPad” (Deki Mouse Project) and a battery box. “iPhone” must be set to the switch control mode (auto highlight OFF) and Deki iPad must be set to four switches connection mode. Functions of each switch on that mode must be set to “Move the next item”, “Select the item”, “Show the highlight menu” and “Return home”. The prototype interface is the controller which function can change output signals by depending on the time when is from our pushing to releasing.

3. THE PROTOTYPE INTERFACE FOR “Android phone”

Elements of the interface are two switches to operate Android phone, the prototype controller, the display, “Android HUB” (Kaga high-tech co. ltd) and “USB mobile battery” (Panasonic). The past prototype interfaces have the problems about the size of display, the life of battery, the way to come back the home menu. This prototype interface has a

small display (W25×H21×D90 (mm)) and connects to an external battery. Therefore the problems are all solved.



Fig 1. The prototype interface for iPhone

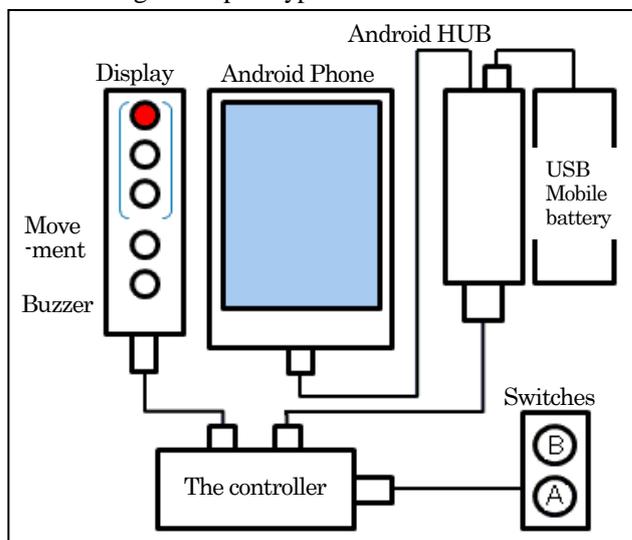


Fig 2. The prototype interface for Android phone

4. CONCLUSION

The interface for iPhone has been designed for a cerebral palsy person and two muscular dystrophy persons. The results of introduction and evaluation about the interface for Android phone will be report at the presentation.

Special thanks to Mr. Kenji Machida and Mr. Takahiro Maruyama.