Research on the Interface Design of Remote Controller for Integrated Family Electronic and Electrical Systems

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ABSTRACT

Based on the trend of control integration of family electronic and electrical systems this design project intends to study and design the human interface of a remote controller for an integrated system including television, air conditioner, and audio system normally seen in the living room of a family. The investigation includes three steps. First, the study started with literature review with focus on trend of technology development to gain support for the design feasibility. Second, the advantage and disadvantage of remote controllers on current market are compared. Third, the necessity of different control functions was gained from questionnaire survey on ordinary users. Based on the aforementioned study design of the remote controller started with classifying all the necessary functions into major level and secondary level. Direct-pushing keys were used for major functions while function-selection keys were used for secondary ones. Two sets of adjusting key were arranged alongside the screen on the controller for similar control modes for three systems, such as channel selection and volume adjust for television or temperature adjust and wind speed adjust for air conditioner. Based on aforementioned design consideration the total number of the function keys was significantly reduced compared to existing remote controller with no much sacrifice of the convenience of the operation. After the determination of the layout for all the function keys a computer program was written to simulate the process of each function control. Users were asked to test the simulated controller on computer and do the appraisal to prove the completeness of the design.

Keywords : integration of family electronic and electrical systems ; human interface ; remote controller

Table of Contents

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