

Abstract

This research investigates the design considerations for highly integrated embedded control systems operating under real-time constraints. An analysis of the system requirements, task integration, and hardware/software trade-offs influencing the design of embedded systems was performed. Data acquisition and control tasks were studied to form a foundation for supporting 32-bit microcontroller based system design. Applications in the areas of communication, data acquisition and motor control were developed and implemented using the Motorola MC68332. The implementation of these tasks demonstrated the benefits of incorporating a 32-bit microcontroller into an embedded system.

Citation

"Embedded System Design with Considerations for 32-bit Microcontrollers," with Alan Clapp. AIAA conference, 1991.